Strategies of Indigenous Knowledge Management in Libraries

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Abstract. Indigenous knowledge (IK) is the knowledge that people in a given community developed over time, and has made positive contributions towards sustainable development. Indigenous communities around the world face ongoing threats to the survival of their indigenous knowledge in view of its tacit nature. Traditionally, libraries have concentrated more on promoting a reading culture than on managing and promoting IK. If IK is well documented, packaged and deposited in libraries and information centres, it could be directly accessed by individuals.The study explores how the indigenous knowledge can best be managed in the libraries in order to contribute positively to the community. Within this area of interest, this paper answers the question: what roles the library professionals can play in the management and preservation of IK. While highlighting the IFLA mandate towards the management and preservation of IK, different activities associated with the management of IK — such as, collection, recording and documentation, organization, preservation and storage, dissemination and networking are discussed. Concludes that library professionals need to be proactive in devising strategies for the management and preservation of IK with the help of their professional knowledge and skills in order to ensure access to this valuable resource.

Keywords: Indigenous knowledge; Tacit knowledge; Indigenous knowledge management; Documentation of Indigenous knowledge; Preservation of Indigenous knowledge.

1 Introduction

Knowledge has widely been acknowledged as the basic input to the sustainable development. Knowledge systems evolve through human interactions among themselves as well as with nature within and without. Over centuries indigenous people have learnt and practiced how to grow food and to survive in their environment. They have learnt and handed down their knowledge on what varieties of crops to plant, when to sow and weed, which plants are poisonous and which can be used as medicine, how to cure diseases and, at the same time, manage their environment in a sustainable and balanced manner. Such

indigenous knowledge (IK) is often passed down through generations orally and seldom in any form of documentation. The saying "When a knowledgeable or old person dies, a whole library disappears" (Manning, 2001) clearly illustrates the magnitude and importance of indigenous knowledge that the older generation have. This reinforces the urgent need for awareness and full participation from everyone within the communities to document their respective indigenous knowledge as their heritage so that it will not be lost. It has been observed that 80% of the world's population depend on indigenous knowledge to meet their medicinal needs and at least 50% rely on indigenous knowledge for food supply (Nyumba, 2006). Yet, IK is still an underutilized resource in the development process. Special efforts are, therefore, needed to understand, document and disseminate IK for preservation, transfer or adoption and adaptation elsewhere. Library professionals have not been at the forefront in terms of managing IK, in spite of the fact that it is becoming an important resource in planning and managing sustainable development projects. The following sections outline the different issues associated with the management and preservation of indigenous knowledge and the role that LIS professionals can effectively play in this process.

2   Indigenous Knowledge

Indigenous knowledge has in the past been suppressed, or at best ignored or neglected by mainstream western science (Britz & Lor 2003). The increasing attention on indigenous knowledge is receiving by academia and the development institutions have not yet led to a unanimous perception of the concept of indigenous knowledge. There is little research that has been done on the management of indigenous knowledge within the library and information science field. Ngulube (2002) and Muswazi (2001) are some of the few studies that have been done within the Library and information field.

Indigenous knowledge is unique to a particular culture and society. It is the knowledge a community possesses, and experiences generated over a long period of time by people living in that community or communities, and is usually passed on from generation to generation, through word of mouth. It is applied in many areas including agriculture, health, education, home management, etc. IK was first formally recognized as invaluable to Sustainable Development at the Rio Conference entitled *Our Common Future* in 1987. And now, indigenous knowledge is most effectively used in development projects as a source of innovative solutions because of its perspective of being intensely local and long term (Huysamen, 2003; Rouse, 1999).

Most authors explain their perception of indigenous knowledge, covering only some aspects of it. In contrast, in a manual for recording and using indigenous knowledge, IIRR (1996) provides the following definition of IK which may be considered as comprehensive and conclusive:

> *Indigenous knowledge (IK) is the knowledge that people in a given community developed over time, and continue to develop. It is based on experience; often tested over centuries of use; adapted to local culture*

and environment and is dynamic and changing. It is not confined to rural people. Rather, any community possesses indigenous knowledge, rural or urban, settled or nomadic, original inhabitants and migrants. IK is more than just technologies and practices. It includes information; practices; technologies; beliefs; tools; materials; experimentation; biological resources; human resources; education and communication.

There are several terms that are often used to refer to indigenous knowledge: "local knowledge"; "indigenous technical knowledge"; "traditional knowledge"; "indigenous skill"; "people's knowledge"; "folk knowledge"; "rural people's knowledge"; "ethno-science" "oral tradition" and "cultural science".

3   Scope and Characteristics

It transpires that several inter-related aspects are more specific to the nature of indigenous knowledge, which could be summarized - (a) locally bound, indigenous to specific area (b) culture and context specific (c) non-formal knowledge (d) orally transmitted and generally not documented (e) dynamic and adaptive and (f) closely related to survival and subsistence for many people world wide. It transpires from the analysis of literature that the following characteristics highlight the IK and these characteristics distinguish IK from other knowledge (Ellen & Harris, 1996; Mazur, 1996):

- IK is local knowledge
    - ✓ generated within communities,
    - ✓ based on experience relating to innovation, adaptation, and experimentation,
    - ✓ adapted to the local culture and environment; and
    - ✓ expressed in local languages.
- IK is unique to every culture or society and hence, it is location and culture specific.
- IK is the basis for local-level decision making in:
    - ✓ Agriculture,
    - ✓ Health care,
    - ✓ Food preparation,
    - ✓ Education,
    - ✓ Livestock,
    - ✓ Environment management,
    - ✓ Natural-resource management, and
    - ✓ A host of other activities in communities.
- IK is the basis for survival strategies and provides problem-solving strategies for communities.
- IK is commonly held by communities rather than individuals.
- IK is transmitted orally and is not systematically documented.
- IK is tacit knowledge and therefore difficult to codify. It is embedded in community practices, institutions, relationships and rituals.

4   Manifestations of IK

Indigenous knowledge is very wide and it encompasses a number of fields. It is worth noting that some indigenous knowledge systems are not useful while others are very useful. Some indigenous knowledge systems could easily be accessed and some cannot be. This is due to the fact that some are used for economic purposes while some are not. Some notable manifestations of IK include the following (Sarkhel, 2011):

- Information, e.g. Trees and plants that grow well together; Indicator plants (plants that show the soil salinity or that are known to flower at the beginning of the rains).
- Practices and technologies, e.g. Seed treatment and storage methods; Bone-setting methods; Disease treatments
- Beliefs, e.g. religious festivals, ceremonies;
- Nutrition, Valuation of local food resources, design of seasonal diet recipes.
- Health, e.g. healers' tests of new plant medicines; Use of flora, fauna, metals and minerals for management of common and chronic ailments and preventive healthcare.
- Veterinary care, e.g. Diseases of livestock with locally available herbal resources.
- Human resources, e.g. local organizations such as kinship groups, councils of elders, or groups that share and exchange labour;
- Education, e.g. traditional instruction methods; learning through observation;
- Communication, e.g. story-telling;
- Agriculture & Fisheries, e.g. animal husbandry and ethnic- veterinary medicine; Use of IK is evident in Weather forecasting, Seed treatment, soil quality, bio-pesticides & fertilizers, life forms in rivers and oceans and their behaviour.
- Food and technology, e.g. fermentation;
- Tools, e.g. equipment for planting and harvesting; cooking pots and implements;
- Handcrafts, e.g. mat making, leather, textiles, metal work, pottery, fibers, jewelry.
- Performing Arts, e.g. Wide range of region specific folk and classical art forms
- Religion & astrology, e.g. Wide range of ethnic community-based world views and practices.

5   Library and Indigenous Knowledge Management (IKM)

The management of IK encompasses a set of interrelated activities concerning the identification, collection, codification, documenting, organization, preservation, transfer, linking, application, preservation, dissemination and sharing of knowledge on indigenous community livelihoods and ecosystems, for sustainable development. (Muswazi, 2001; Mabawonku, 2002). A library in general and a public library in particular is an appropriate anchor partner in the

IKM system because of the stability of its position both within the community and within the government structures through which it is established. Access to IK cannot be achieved without involving libraries because they are one of the building blocks of the local information and knowledge infrastructure. Therefore, indigenous knowledge should be integrated into library activities if these institutions are to serve the information requirements of the local populations. Libraries can efficiently and effectively plan, collect, codify, organize, preserve, use, control, and disseminate IK. Apart from gathering new information, librarians should also train and reach out to communities. Story hours should be used to record oral histories. Elderly members of the community should be invited to the library to tell their stories. With the necessary training in oral history, librarians would be able to record the stories to preserve them as oral histories. A library with content of local relevance will encourage communities to make use of library services, especially if they are empowered to participate in development of the content. Public libraries serving ethnic communities whose histories are locked up in written, pictorial and oral traditions are well positioned to provide a platform for public engagement in the collecting and disseminating of indigenous knowledge in the communities they serve. Existing public library infrastructure can be used as a platform from which the conservation of IK programme is to be launched. The use of computer for conservation of IK can be made if they support the maintenance and transmission of knowledge within those communities that developed the knowledge (Mosimege, 2005). Libraries elsewhere in the world have been preserving IK online for many years (e.g. Smithsonian Institution's Center for Folklife and Cultural Heritage (Smithsonian Institution), New York Public Library's Schomburg Center for Research in Black Culture (New York Public Library). These, and similar digitization programmes, are typically run by well funded academic or governmental institutions (Knight, 2008; Armstrong, 2008; Lee & Crichton, 2008). Until recently, the primary strategy for preserving IK has been neglected by the libraries. The major challenges to the management and preservation of IK identified by this study are collection development policies, access management, storage and preservation media, and intellectual property rights:

5.1 Collection Development Policies
Library professionals should design collection development policies for IK in collaboration with ethnographers, anthropologists, botanists, zoologists, oral historians and other related professionals to collect, organize, document and disseminate IK.

5.2 Access Management
The primary aim of IKM system is to provide access to collections and materials. It is no wonder that access to the indigenous information collected so far is very limited, because it is not well organized in terms of being indexed and abstracted (Warren and McKiernan, 1995). Library professionals have a long tradition during which they have developed significant skills in

the organization of knowledge. They can draw upon professional knowledge and skills in making IK accessible and, by implication, utilized. The following plans of action were suggested at the World Summits' on the Information Society (WSIS, 2003) to achieve the goal of providing equitable access to IK for all:

- Access to information and knowledge: It is concerned with the policies relating to public domain information, community access points (including such access in libraries), alternative software models (open-source and free software) and development of the digital public library services.
- Capacity building: It is concerned with skills needed for the Information Society, including information literacy, the use of libraries in digital environment and the empowerment of local communities to use ICT.
- Cultural diversity and identity, linguistic diversity and local content: This action plan focuses on promotion of respect for cultural identity, traditions and religions and dialogue among cultures as a factor in sustainable development. Libraries feature prominently in this plan, most notably their role in providing access to content and indigenous knowledge. By implication the role of libraries is extended to promote cultural heritage, support local content development and to enhance the capacity of indigenous peoples to develop content in their own language.

5.3 Protection of Intellectual Property Rights (IPR)

IK is the collective wisdom of a community on a specific subject — it could also be a skill, such as weaving — that is passed down from one generation to the next and usually in an oral tradition. The majority of the world's people rely on indigenous knowledge of plants, animals, insects, microbes, and farming systems for either food or medicines. It is not just poor countries and poor people that benefit from indigenous knowledge of the world's biodiversity. Indigenous knowledge has helped to fuel innovation and development in industries, ranging from agriculture and pharmaceuticals to chemicals, paper products, energy, and others. For the above reasons, IK is susceptible to notorious abuse and exploitation because other forms of knowledge have potential commercial value. There is an emerging debate on how to protect the intellectual property rights of IK practices. In this regard, the United Nations Draft Declaration on the Rights of Indigenous Peoples underscores the fact that indigenous peoples have the right to own and control their cultural and intellectual property pertaining to their sciences, technologies, seeds, medicines, knowledge of flora and fauna, oral traditions, designs, art and performances (United Nations, n.d.). But the conventional intellectual property law does not adequately cover or protect indigenous knowledge and innovations of local peoples (Mugabe, 1999). World Intellectual Property Organization (WIPO), one of the partners of the IK Initiative, has already begun to address these issues.

6 IFLA Mandate

To implement effective mechanisms for technology transfer, capacity building, and protection against exploitation in accordance with the convention on Biological Diversity, the International Labour Organization (ILO) Convention 169 and other conventions relating to sustainable development and the interests of indigenous peoples, IFLA acknowledges the intrinsic value of and importance of IK and the need to consider it holistically in spite of contested conceptual definitions and uses (IFLA, 2003). IFLA notes the need:

    i.   To recognize the significance, relevance and value of IK in providing solutions to some of the most difficult modern issues and encourages its use in project planning and implementation;

    ii.   To protect IK for the benefit of indigenous peoples as well as for the benefit of the rest of the world;

IFLA also recognizes that the character of IK does not lend itself to print, electronic or audio-visual means of recording. But, in order to ensure its continued preservation, access and elaboration IFLA recommends that libraries and archives should (IFLA, 2003):

    i.   Implement programmes to collect, preserve, disseminate indigenous knowledge resources;

    ii.   Make available and promote information resources which support research and learning about indigenous knowledge, its importance and use in modern society;

    iii.   Publicize the value, contribution, and importance of indigenous knowledge to both non indigenous and indigenous peoples;

    iv.   Involve elders and communities in the production of resources and teach children to understand and appreciate the indigenous knowledge background and sense identity that is associated with indigenous knowledge systems;

    v.   Urge governments to ensure the exemption from value added taxes of books and other recording media on indigenous and local traditional knowledge; and

    vi.   Encourage the recognition of principles of intellectual property to ensure the proper protection and use of indigenous knowledge products derived from it.

7 Documentation and IKM

Indigenous knowledge, which has generally been passed from generation to generation by word of mouth, is in danger of being lost unless it is formally documented and preserved. Warren and McKieman (1995) advocated the codification and documentation of IK. How then we codify IK which is largely oral? How do we preserve communicate IK? How do we communicate IK using conventional means? These questions can not be answered very easily, but the SECI knowledge management model as suggested by Ngulube (2003) has made

an effort to link tacit and explicit knowledge through four phases: socialization, externalization, combination and internalization (SECI). The major issues associated with the preservation and management of IK are discussed below:

7.1 Collection

Maundu (1995) suggests that before any collection of indigenous knowledge can take place, the following should be done:

- Define goals and objectives;
- Set out a general area of operation where information is to be collected and community projects implemented;
- Formulate questions for use during the study (It should be clear how the data are to be collected and analyzed: qualitatively, quantitatively, or both.);
- Establish who to talk to (i.e., the most resourceful individuals in the community), where such people are to be found, and how and when to meet them;
- Develop the right relations with all key players in the project (such as administrators, traditional leaders, opinion leaders) by informing and sensitizing them;
- Formulate a plan of action, mobilize the necessary resources and put the required personnel and equipment in place.

There is no doubt that the interviews, field works and observations are the best methods of collecting IK. Folklore, songs, poetry, and theater can reveal a great deal about a people's values, history, and practices. These are often not written down and need to be recorded. Secondary sources include published and unpublished documents, databases, videos, photos, museums, and exhibits.

7.2 Recording and Documentation

Charyulu (n.d.) points out that recording and documentation of IK is a major challenge because of its tacit nature as it is typically exchanged through personal communication from master to apprentice, from neighbor to neighbor, from parent to child, etc. There is no single approach for recording IK. The methods may be modified and combined to suit each field study. Library professionals need to collaborate with relevant subject experts to record and apply IK successfully. This section briefly outlines sources and methods that may be used for recording IK. The description of most methods is organized as follows:

- Definition
- Vernacular name, if any
- Characterization of the method—A step-by-step explanation of how the method can be used.
- Purpose—General usefulness of the method, not necessarily regarding TIK.
- Materials—Things needed when using the method.
- Value—Usefulness of the method for recording IK.

- Notes—Additional explanations.

IK can be documented in the form of:
- Descriptive texts such as reports
- Taxonomies
- Inventories (For example, lists of plant species, tables listing remedies and their preparations, etc.)
- Seasonal pattern charts
- Maps
- Matrices
- Decision trees
- Audiovisual forms, such as - photos films, videos, or audio cassettes
- Dramas, stories, songs, etc.
- Drawings
- Daily calendars

Since IK is dispersed in various local entities, it has to be retrieved from obscurity because of past efforts to deny its role in development (Flavier, J.M; De Jesus, & Vavarro, 1995) Thus, in every country there has to be systematic programmes that would identify, analyze, systematize and promote IK. The recording may require audio-visual technology, taped narration, drawings, or other forms of codifiable information. In case the tacit nature of a practice does not lend itself to such recording, information about locations, individuals or organizations that can demonstrate or teach a practice could be used as a pointer to the source of IK.

7.3 Organization
When the IK has been collected, recorded or documented, it must be properly organized for easy retrieval (Onyango, 2002). The knowledge representation systems like thesauri could be used for the organization and retrieval of recorded IK, which tends to be multidisciplinary in nature. For example, discourse on IK and practices are coming from the life sciences and natural sciences, such as biology, botany, medicine (both human and animal), pharmacology, agronomy, soil science, anthropology, economics, sociology and applied technology, to mention only a few. The problem of access to IK is compounded by a lack of standardized indexing terms and by inconsistent indexing policies. The use of a controlled vocabulary such as thesauri and other controlled lists of keywords, ontologies, classification systems, clustering approaches, taxonomies, gazetteers, dictionaries, lexical databases, concept maps/spaces, semantic road maps, etc. (Hill and Koch, 2001) can facilitate the organization of IK in information retrieval systems. In fact, the International Symposium on Indigenous Knowledge and Sustainable Development, held in September 1992 at the International Institute for Rural Reconstruction (IIRR) in the Philippines, recommended the building of specialized community-based and centre-based thesauri for organizing IK (Anonymous, 1993). Mosimege (2005) proposed to organize information

relating to IK in three broad categories of history, culture and environment. This, in turn, will promote the forming of a social network among web users. He also proposed to use folksonomies within these three broad categories. Contributors will be free to use traditional names for concepts peculiar to the community to create sub-categories and article names. The advantage of folksonomies, in contrast to a controlled vocabulary, is that it is open-ended and can respond quickly to changes in the way users categorize content (Hartman, 2006).

7.4 Preservation and Storage

Previously, indigenous knowledge has been commonly preserved through oral means and demonstration rather than documentation. However with the help of library professionals, IK can be easily preserved in different formats. Storage of IK involves categorization, indexing, relating IK to other information, making it accessible and conserving, preserving and maintaining it for later retrieval. This could include electronically stored and indexed abstracts, directories of experts or applications. According to Ngulube (2002), storage of IK should not, however, be restricted to only text documents or electronic formats. Meta-information needs to be produced to make retrieval more user-friendly. Hence, it should also include other retrievable types of repositories of information such as tapes, films, story telling, gene banks, etc. In essence, all these media are impermanent. Library professionals should ensure the longevity of the documented IK by devising preservation strategies. Selection of the media to be used for capturing IK is largely governed by circumstances and convenience of collection, rather than by long-term implications of the storage media for the preservation of IK. Preservation of IK can also be achieved through establishing a community web portal using Web 2.0 technology. The memory database may be embedded in the portal as a wiki, allowing collaborative writing and sharing of ideas, content, images, oral histories and videos between members of the local community.

7.5 Dissemination and Networking

Dissemination of information about IK calls for the existence of the surrogate, i.e. records of information about the sources of IK. It should contain information regarding the availability of IK, who provides it, where is it available and so on. Secondly, active dissemination of specifically selected information to a variety of audiences, using a variety of channels, will help to reduce the gap between those who ask, and know how and where to ask, and those who do not. There are many modes or channels of disseminating IK. The use of modern ICT is still the exception rather than the rule in the direct exchange of indigenous knowledge within and between communities. As the countries establish connectivity, electronic networking would be most appropriate to facilitate exchanges of IK and to link the existing local IK centers in various countries. However, the rural poor who have no access to ICT and who are the owners of IK may end up being marginalized yet again. So libraries, which are imbedded in communities, ought to find ways and means of making sure that they do get

access to their information. Agrawal (1995) mentions pamphlets, newsletters and journals as perfect formats for the documentation and the dissemination of this information. However, this could only benefit the literate and the people most in need (rural and illiterate) of this knowledge will end up not benefiting. Therefore this means different modes or formats ought to be utilized, which may include video and radio broadcasts in local languages; telecentres for two-way knowledge flow from the local communities outward (indigenous practices) and from the global community inward (international practices) as introduced in several countries (e.g., Senegal, South Africa, etc.); workshops; storytelling; films; and many more.

8   Conclusions

Library professionals should be proactive in their approach to managing society's knowledge resources. They must ensure that IK, although based on orality and oral traditions, should be managed and preserved just like other documentary materials that are grounded in western codified knowledge schemes. They need to devise strategies for making indigenous information and knowledge accessible by:

- preparing inventories and registers of indigenous knowledge systems, taking into account the intellectual property implications of such inventories and registries;
- developing collection development policies for IK bearing in mind the implications of the storage media for its preservation;
- developing standardized tools for indexing and cataloguing of IK;
- making IK accessible to the community, especially young people, by means of marketing strategies; and
- compiling bibliographies of IK resources.

References

Agrawal, Arun. (1995). Dismantling the divide between indigenous and scientific knowledge. Development and Change. 26 (3), p. 415-439.

Anonymous. (1993). Recommendations and Action Plan. Indigenous Knowledge and Development Monitor, 1 (2). Retrieved from http://www.nuffic.nl/ciran/ikdm/1_2/articles on 9.11.2014.

Armstrong, P. (2008). Library and Archives Canada: towards a trusted digital repository. *Proceedings of the 74th* International Federation of Library Associations Conference, Quebec City, 10-14 August, 2008.

Asah, F. (2003). Indigenous knowledge systems: linking local and global wisdom. *COMLA Bulletin*, 1, p.13-18.

Britz, J.J. and Lor, P.J. (2003). A moral reflection on the information flow from North to South: an African perspective. *Libri*, 53; 160-173.

Brush, S. B. (1993). Indigenous Knowledge of Biological Resources and Intellectual Property Rights: The Role of Anthropology. California. American Anthropological Association. p.653-686.

Charyulu, A.S. Dissemination of Indigenous knowledge: a way to sustainable agriculture. Retrieved from http://www.manage.gov.in/managelib/faculty/chary.htm on 30.5.2010.

Ellen, R. and Harris, H (1996). Concepts of indigenous environmental knowledge in scientific and development studies literature - A critical assessment; draft paper East-West Environmental Linkages Network Workshop 3, Canterbury.

Flavier, J.M; De Jesus, and Vavarro, (1995). The regional program for the promotion of indigenous knowledge in Asia, In: Warren, D.M. et al. Ed. The cultural dimension of development: indigenous knowledge systems. London: Intermediate Technology Publications, p. 479-487.

Hartman, K. (2006). Knowledge management using Weblogs, Wikis and RSS. Proceedings of the 17th Standing Conference of Eastern, Central & Southern African Library & Information Associations, Dar es Salaam, 10-14 July 2006.

Hill, L. and Koch, T. 2001. Networked knowledge organization systems: introduction to a special issue. Journal of Digital Information, 1(8). Retrieved from http://jodi.ecs.soton.ac.uk/Articles/v01/i08/editorial on 9.11.2014.

Huysamen, R. (2003). Indigenous knowledge systems: relevance and function in SA organisatios**.** HR Future, July; 46-48.

IIRR. (1996). Recording and using indigenous knowledge: A manual. International Institute of Rural Reconstruction, Silang, Cavite, Philippines. Retrieved from http://www.panasia.org.sg/iirr/ikmanual/ on 23.04.2014.

International Federation of Library Associations (IFLA). (2003). IFLA statement on indigenous traditional knowledge. *IFLA/LAC Newsletter*, 42, p.5-6.

Knight, S. 2008. National Digital Heritage Archive: securing the future. Proceedings of the 74th International Federation of Library Associations Conference, Quebec City, 10-14 August, 2008.

Lee, D. and Crichton, D. (2008). Best Practices in Library services for Aboriginal Peoples in Saskatchewan. Proceedings of the 74th International Federation of Library Associations Conference, Quebec City, 10-14 August, 2008.

Mabawonku, I.M. (2002). The systematic management of Indigenous knowledge: a review of oral information projects in a library school. *In* Snyman, R. (ed.) SCECSAL 2002: From Africa to the world- the globalization of indigenous knowledge systems. Proceedings of the 15th Standing Conference of Eastern, Central and Southern African Library and Information Associations, 15-19 April, Caesars Gauteng Conference Centre, South Africa. Pretoria: LIASA, p.49-60.

Manning, R.W. (2001). Introduction. In: Mcllwaine, J. and Whiffrin, J. Eds. *Collecting and safeguarding the oral traditions: an international conference*. Munchen: K.G. Saur; p.viii.

Maundu, P. (1995). Methodology for collecting and sharing indigenous knowledge: a case study. Retrieved from http://www.nuffic.nl/ciran/ikdm/3-2/articles/maundu.html on 05.05.2014.

Mazur, R.E. (1996). The indigenous knowledge movement: global support for local resource and decision-making control. In: Norman, H.; Snyman, I. & Cohen, M. (eds.) Indigenous knowledge and its uses in Southern Africa. Pretoria: HSRC Publications, p.151-158.

Mosimege, M. (2005). Indigenous knowledge systems policy in South Africa: development of digital libraries and implications for benefit sharing and intellectual property. Presentation made at the Commons-Sense Conference, Johannesburg, 27 May 2005.   Retrieved   from http://www.commonssense.org/presentation/mosimege/Mosimege.pdf on 02.6. 2014.

Mugabe, J. 1999. Intellectual property protection and traditional knowledge. Nairobi: African Centre for technology studies. p.37.

Muswazi, P. (2001). Indigenous knowledge management in Swaziland: perspectives. Information Development, 17(4), p.250-255.

Ngulube, Patrick. (2002). Managing and preserving indigenous knowledge in the knowledge management era: challenges and opportunities for information professionals. Information Development, 18(2), p.95-101.

Ngulube, Patrick. (2003). Using SECI knowledge management model and other tools to communicate and manage tacit indigenous knowledge. Innovation. 27, p.21-30.

Nyumba, J.B. (2006). The role of the library in promoting the application of Indigenous Knowledge (IK) in development projects. Proceedings of the 72nd International Federation of Library Associations Conference, Seoul, 20-24 August 2006.

Onyango, F. (2002). Global challenges and local solution: lessons from practical experiences- the Kenyan experience. In: Snyman, R. (ed.) *SCECSAL 2002: From Africa to the world- the globalisation of indigenous knowledge systems. Proceedings of the 15th Standing Conference of Eastern, Central and Southern African Library and Information Association, 15-19 April, Caesars Gauteng Conference Centre, South Africa*. Pretoria: LIASA: p.249-258.

Rouse, J. (1999). Global dissemination of indigenous knowledge: contradictions, or the Way forward. Retrieved from http://www.worldbank.org/afr/ik/global_ik990615.htm on 17.05.2014.

Sarkhel, Juran Krishna. (2011). Management and preservation of tacit indigenous knowledge: Issues and perspectives. In Arjun Dasgupta, Ed. LIS profession in the changing environment: Professor Prabir Roychaudhury Memorial Volume. Kolkata: Indian Association of Special Libraries and Information, p.256—283.

United Nations (UN). (n.d.). Draft Declaration on the Rights of Indigenous Peoples. Prepared by the Aboriginal and Torres Strait Islander Commission, Canberra, Australia. Retrieved from http://www.gcc.ca/Political_Issues/international/ on12.8.2014.

Valbuena, Victor T. (1986) Philippine folk media in development communication. Singapore, Asian Mass Communication Research and Information Centre, p.46.

Warren, Charles P. (1964). Progress report III: Deliberate instruction in non-literate societies. Chicago, IL, Department of Anthropology, University of Chicago, p. 10

Warren, D. M. (1991). Using indigenous knowledge in agricultural development. World Bank Discussion Paper No.127. Washington, DC: The World Bank. p.1.

Warren, D.M. and McKiernan, G. (1995). CIKARD: a global approach to documenting indigenous knowledge for development. In Warren, D.M., Slikkerveer, L.J. and Brokensha, D. Eds. The cultural dimension of development: indigenous knowledge systems. London: Intermediate Technology Publications, p.426–434.

WSIS, (2003). The Geneva Declaration of Principles and plan of Action. Geneva: WSIS executive Secretariat. 28p.