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# REPACKAGING INDIGENOUS KNOWLEDGE FOR NON-INDIGENOUS USERS IN UNIVERSITY LIBRARIES

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# **REPACKAGING INDIGENOUS KNOWLEDGE FOR NON-INDIGENOUS USERS IN UNIVERSITY LIBRARIES**

## **Introduction**

Users of libraries, including indigenous and non-indigenous users, seek for information for knowledge in libraries for their research work because knowledge, they say, is power. Such information are contained in various information sources and media, including indigenous knowledge. Indigenous knowledge (IK) can be broadly defined as the knowledge that an indigenous (local) community accumulates over generations of living in a particular environment (United Nations Environment Programme, n.d). It is the unique, traditional, local knowledge existing within and developed around the specific conditions of people indigenous to a particular geographical area (Grenier, 2008). Indigene, therefore, is the root word of indigenous which means “Originating” and “naturally” produced in an area. Indigene is referred to people, animals, flora, fauna or languages native to a particular land or region. Knowledge on the other hand means information and understanding gained through leaning or experience.

Indigenous Knowledge (IK), therefore, is a systematic body of knowledge acquired by local people through the accumulation of experience, informal experience, and intimate understanding of the environment in a given culture. According to Obomsawin (2002), it represents the accumulated experience, wisdom and know-how unique to a given culture, society, and for community. Local people, including farmer’s, herbalists, women, rural artisans and goat and cattle rearers are the custodians of indigenous knowledge system (IK). As they have extended histories of interaction with the natural environment, indigenous knowledge is not like the international knowledge system which is generated by Universities, research institutions and private firms.

Mole and Dim (2009) in their own opinion stated that IK is unwritten knowledge that is unique to a given culture and society. Nyana (2009) do not find the restrictions of this concept and expanded its scope. He argued that IK is not confined to tribal groups or the original inhabitants of the area. He asserts that IK is not tied to the rural people rather any community possessing indigenous knowledge-rural or urban, settled or nomadic, original inhabitants and migrant continuing. IK is found in people’s memories and activities and that is why when an elder dies, it is as if a library had been burned down.” and that is why it is tacit in

nature. IK has many facets such as information of the communities, beliefs or religious faiths, tools used in agriculture, materials in house construction work, experimentation in farming and health care, natural resources in flora and fauna, human resources and expertise in skills artisans, education and learning and communication of information.

IK also covers the knowledge, innovation, and practices of indigenous and local communities around the world, developed from experience over centuries, and adapted to the local culture and environment, transmitted orally from generation to generation (Nakata and Langton, 2005). Indigenous knowledge (IK) is stored in peoples memories and activities and is expressed in stories, songs, folktales, proverbs, dances, myths, cultural values, beliefs, rituals, community laws, local language and taxonomy, agricultural practices, equipment, materials, plant species, and animal breeds (Nakata and Langton, 2005).

Furthermore, Mabawonku, (2005) in one of her write ups, titled promoting indigenous knowledge publishing in Nigerian languages reviewed several concepts which are used synonymously with IK. These concepts are: ethno science, indigenous knowledge, community environmental knowledge, technical knowledge and people's knowledge. Other terms used are: cultural, traditional, local and community knowledge. Many of these assertions made use of "traditional", "local", and "cultural: and their related variants is meant to differentiate IK from the formalized, standardized and universal knowledge system sometimes called modern or "western" knowledge systems created by private firms, government establishment, research institutions, learned societies and higher institutions of learning (Pakenham, 2001 and Akinde, 2008). However, the believes and views of all these experts indicate that IK is a body of knowledge generated and utilized by native people in their specific geographical areas but these concepts did not provide single definition of the concept relating sources with other components.

Indigenous knowledge is cumulative, representing generations of experiences, careful observations, and trial-and-error experiments. It stands apart as a distinctive body of knowledge, which has evolved over many generations in a particular ecosystem. It defines the social and natural environment; is based within its own philosophic and cognitive system, and includes first-hand working knowledge. It is dynamic and is continuously influenced by internal creativity and experimentation as well as by contact with external systems. Indigenous knowledge is culture specific, constantly evolving, and instigating from age-old beliefs,

traditions, experiences and observations, indigenous to a specific area, non-formal, orally transmitted and usually not documented (Jain, 2008). IK is the local knowledge that is unique to a given culture or society (UNESCO, 2002). It is the basis for local-level decision-making in agriculture health care, food preparation, educational natural resources management and a host of other activities in rural communities. Indigenous knowledge could help address the common challenges of the individuals such as poverty, environmental degradation, enhance equity and lead to sustainable development, increased participation in research as well as in the development process. IK can play an immense role in the promotion of sustainable development. It is a means by which life could be saved and as a medium of increasing food supply and income generation. In view of its immense role in promoting the quality of life, this paper posits that use of such knowledge should not be restricted to the indigenous community. In this research, the challenge is not about the usefulness and appropriateness of the IK for both indigenous and non indigenous information seekers but about exploring and taking advantage of their usefulness and appropriateness and repackaging them for the hitherto neglected non indigenous library users.

Also, important and valuable as IK may be, they do not disseminate themselves. Access and utilization of IK could be facilitated through the digital technology. Digital revolution has changed the nature of information management and dissemination. The prevalent format, the speed of information creation, delivery and dissemination have all changed. It has transformed scholarly communication as scholars adapt their teaching and research strategies to the new information environment (Anyira, 2010). It is facilitating an increase in scholarly output in fields that were already expanding faster than libraries ability. As rightly stated by Batiste and Henderson (2004), libraries and digital information resources can play a critical role in the education of today's students.

The digital information resources via the internet and its search engines have created expectation that digital content is seamless and accessible. Users want to be self-sufficient and have unmediated access to information. The new information technologies have changed this information seeking behavior of users, giving the content that once belonged to libraries over to the users (Kargbo, 2006).

Lack of digital information is the bane of the rural dwellers in Nigeria. The situation has been worsened by the current economic situation in Nigeria which makes it extremely difficult for these people

dwellers who are mostly engaged in agricultural practices to obtain computers they will use to access internet. Access to digital information is dependent on whether one lives in urban or rural area. Those who live in urban areas are at a more advantage position to use internet. Sadly however, about 4.2 billion people (or 60%) of the world's population –majority in the developing world- also do not have access to the internet (Cook & Polgar, 2015).

### **The Expanding Role of Indigenous Knowledge**

IK is not only the original research and expression of local knowledge, it is also referred to as the complex process of access, interpretation, synthesis and repackaging of local and global knowledge (Pakenham, 2001). A number of authors including Langill (1999) and Chisenga (2002) have identified some characteristics of indigenous knowledge as follows: It is generated within communities; it is oral and rural in nature. It is also based on experience; it is often tested over centuries; it is adapted to the local culture and environment, and it is expressed in local languages. It is not confined to tribal groups and rural people or the original inhabitants of an area but it is based on ideas, experiences, practices and information that have been generated either locally or elsewhere, and is tacit knowledge, and therefore not easily codifiable.

Indigenous knowledge encompasses a number of fields. Some indigenous knowledge systems could easily be accessed and some cannot be. Some are used for economic purposes while others are not. Indigenous knowledge is more than just technologies and practices. Dlamini, (2005) identified types of indigenous knowledge to include the following:

- Information, e.g. trees and plants that grow well together;
- Beliefs e.g. religious festival ceremonies;
- Health e.g. healers tests of new plant medicines;
- Human resources e.g. local organization such as kinship groups, councils of elders, or groups that share and exchange labour;
- Education e.g. traditional instruction methods; apprenticeship; learning through observation;
- Communications e.g. story-telling;
- Agriculture, e.g. animal husbandry and ethnic-veterinary medicine;
- Food and technology e.g. fermentation;

- Practices and technologies e.g. seed treatment and storage methods; tools; e.g. equipment for planting and harvesting; cooking pots and implements;
- Arts and crafts e.g. handicrafts like mat making.

Over the years, policy makers, development planners and the public at large have become increasingly aware of the important role indigenous knowledge can play in the promotion of sustainable development. They view indigenous knowledge as having the potential to help save lives and increase food security and income. The importance of indigenous knowledge for sustainable development was recognized in the Brundtland Commission's report at the Earth summit in Rio De Janeiro in 1992 (World Bank, 2002) and incorporated in Agenda 21 documents of the United Nations and the International Conference on Biodiversity. Chapter 34 of Agenda 21 states that traditional technologies:

- help to ensure access - in particular on the part of developing countries - to scientific and technological information, including information on the state-of the art technologies.
- facilitate the maintenance and promotion of environmentally indigenous technologies that may have been neglected or displaced, in particular in developing countries, paying particular attention to their priority needs, and taking into account the complementary roles of men and women (UN, 1992).

According to many research works, it is clear that when local knowledge is left out of the planning and policy making process, the results are that the development is either less successful or, in some cases, disastrous (Ty and Cuc, 2008). Western techno-scientific approaches are (in themselves) an insufficient response to today's complex web of social, economical, political and environmental challenges (Grenier, 2008). In conformity with the potential uses of indigenous knowledge, Berkes (2003) suggested that IK has been lauded as an alternative collective wisdom relevant to a variety of matters at a time when existing norms, values, and laws are increasingly called into question.

Indeed, development efforts which ignore local communities, local technologies and local systems of knowledge are liable to waste considerable amounts of time and money and eventually fail. This is because, compared with modern technologies, traditional technologies have been tried and tested and have proved effective, inexpensive and locally viable and culturally appropriate (Grenier, 2008). Grenier added that development practitioners are of the opinion that indigenous knowledge can:

- i) create mutual respect, encourage local participation and build partnerships for joint problem solutions;
- ii) facilitate the design and implementation of culturally appropriate development programmes, avoiding costly mistakes;
- iii) identify techniques that can be transformed to other regions;
- iv) help identify practices suitable for investigation, adaption and improvement;
- v) help build a more suitable future

Indigenous knowledge is no doubt important in many respects.

Information communications (ICT) is considered a powerful tool for economic development and the growth of societies. However, instead of helping overcome society's inequalities caused by the digital era, they have instigated an increase of the people that resided aside of the information age (Carvalho, et al, 2012). The ICT can be very beneficial for recreating indigenous knowledge for the non indigenous information seekers. The benefits include: easy access to online courses, availability of information anywhere and at any time, feeling of independence and confident, the ability to keep up with the rest of the class, and to use materials in alternate formats (Fichten cited by Wu et al 2014).

### ***Current Challenges in the Use of Indigenous Knowledge by Non Indigenous Users***

Indigenous communities preserve and transmit knowledge using techniques like oral storytelling and experiential instruction. Stevens (2008) asserts that the channels for communicating IK have become inaccessible to even the indigenous people themselves not to talk of the non indigenous people, because of the modern dependence on the written word and loss of facility with indigenous languages.

Indigenous communities face a threat to the survival of their languages and culture. Stevens (2008) states that, while information centers such as libraries have not traditionally focused on these areas, they can help indigenous communities manage and preserve IK, by providing resources and expertise in collection, organization, storage and retrieval. IFLA (2008) recommends that libraries collect, preserve, and disseminate indigenous knowledge, publicizing the value, contribution and importance of IK to both non-indigenous and indigenous people. They should also involve elders and communities in the production of IK and encourage the recognition of intellectual property laws to ensure its proper protection and use.

World Commission on Environment and Development as far back as 1987 echoed similar sentiments as it lamented the threats to traditional lifestyles and called for action to halt an impending catastrophe. It stated that some traditional lifestyles are threatened with virtual extinction by insensitive development over which the indigenous people have no participation. Their traditional rights should be recognized and they should be given a more decisive voice in formulating policies about resource development in their areas. Indigenous Knowledge differs greatly from western knowledge and must be managed in ways that may challenge conventional methods.

Many non indigenous information seekers or library users, as the case may be, find it difficult to use or understand indigenous knowledge resources due to language or communication barrier. It appears IK materials are designed for people indigenous in that locality. It requires the services of translators or interpreters or other similar resources persons for non indigenous people to make effective use of IK information resources.

In support of a paradigm shift to enhance accessibility and usability of IK, Okore, et al (2009) state that: though there is so much indigenous knowledge in different indigenous communities of the developing world, the availability of such knowledge has not translated to its accessibility or use.

To promote access and understanding of indigenous knowledge, there is, therefore, the need for a paradigm shift to meet the information need of the indigenous and non indigenous communities. There is also the need to provide ICT's such as computers, internet, digital cameras, camcorders, and so on, to allow libraries to make IK accessible. There is, therefore, urgent need for the repackaging of IK.

### **Rationale For Repackaging IK for Non-Indigenous Users**

Indigenous knowledge is no doubt important in many respects. It plays a prominent role in cultural identity and development. Indigenous knowledge (IK) is a vital component of culture and has come to play an important role in international debate on cultural policy and development planning. However, IK is an enormous and underutilized national resource in most developing countries (Gramser and Appleton, 2005). Many development activities and programmes including education have failed in most developing countries including Nigeria because indigenous knowledge has not been properly given much attention.



Indigenous Knowledge materials, therefore, constitute an important research resource in university libraries. It enables library clientele to identify that knowledge for development is not limited to scientific and technical knowledge but also to community based knowledge system. IK has become valuable not only to those who depend on it in their daily lives, but to modern industry and agriculture as well. Warren (1991) noted that IK has made a tremendous contribution to crop production by poor farmers. Okuneye and Ayinde (2004) added that small scale resource farmers have good reasons for sticking with their local knowledge and farming practices, because modern technologies can only be successful and sustainable if IK is taken into consideration.

In developing countries, indigenous knowledge is an enabling component of development and indigenous people are aware of the relationship between culture and development. Over the years, policy makers, development planners and the public at large have become increasingly aware of the important role indigenous knowledge can play in the promotion of sustainable development. They view indigenous knowledge as having the potential to help save lives and increase food security and income.

Despite its enormous value, indigenous knowledge has been a largely underutilized national resource in many countries, especially by the non-indigenous population (Gramser and Appleton, 2005). Many non indigenous information seekers or library users, as the case may be, find it difficult to use or understand indigenous knowledge resources due to language or communication barrier. It appears IK materials are designed for people indigenous in that locality. It requires the services of translators or interpreters or other similar resources persons for non indigenous people to make effective use of IK information resources.

Its underutilization stems partly from the creation, handling and management of IK, the predominance of written words, and the rapidly increasing reliance on Information and communication Technology in research and scholarship. IK has been traditionally packaged for the exclusive use of the indigenous people. Non indigenous people find it difficult to utilize them. Research is a global activity and should, therefore, not be restricted by the structure and format of literature. It is in reaction to this challenge that this paper is designed to examine the need and strategies for Repackaging IK for non-indigenous users via digital technology in libraries.

The assumption upon which this study is based is the observation that indigenous or traditional knowledge has been marginalized in the management of information resources, especially for utilization by non indigenous users and realization that there is a dire need for repackaging them through the use of digital technology.

### ***Strategies for Repackaging Indigenous Knowledge for Non-Indigenous Users***

Repackaging is putting together information gathering from different sources and organizing it to be meaningful. Repackaging IK refers to presentation of IK in more understandable, readable, acceptable and usable forms. It is its customization taking into accounts the needs and characteristics of the individual or user groups and matching them with the information to be provided so that diffusion of information occurs. There is need for repackaging the indigenous knowledge in a way or format that will be understandable, readable, acceptable, and usable. Okore, et al (2009) called for the preservation of local culture in paper and digital format and have promoted the exchange of information.

Saracevic, Woods and Bunch as cited by Chista (2011) use the term information repackaging to refer to the way an information centres and services select appropriate materials, reprocess and package the materials according to user specifications. Repackaging can be done through various forms for example, popular theatre, drama, storytelling and the use of songs. Modern technology makes it much easier to repackage information through integration of graphics and texts. Information technology assists in repackaging information into oral form for example, the use of pod casts in rural areas to record oral history and songs. The use of tape recorders also assists in capturing a fading memory with regards to traditional knowledge. Modern technology is important in implementing a paradigm shift because information and communication technologies (ICT's) are free from the fetters of time and space. Libraries need to utilize modern technology to promote access to indigenous knowledge with regards to promoting a culture of knowledge sharing amongst indigenous and non indigenous people.

Tsiko (2004) suggested the need for documentation. He states that this is critical at a time when traditional knowledge is being marginalized by high culture resulting in assimilation and cultural genocide. With due consideration to intellectual property rights, it is imperative to document this knowledge that has practical uses in agriculture, forestry, health and sustainable development.

With the emerging ICT tools and indigenous ICT expertise, much of the invaluable traditional knowledge can be saved, documented, improved upon, digitized, repackaged (to preserve, for posterity, etc) and transmitted for the use of communities within and outside a particular country. In other words, for ICT to be an empowerment tool and a conveyor of the locally relevant messages and information, it has to provide opportunities for local people to interact and communicate with each other and with the outside world, expressing their ideas, knowledge and culture in their own languages. This enables the people to take decisions that affect their lives, grasp economic and social opportunities, and deal with misfortunes and disasters etc.

Indigenous knowledge can be made available to the less knowledgeable within the community, especially the young, by means of the printed word and other learning materials. Also individuals and agencies such as researchers and groups involved in biodiversity activities could use it to enhance their understanding of indigenous knowledge. It could also be applied in adult literacy classes through reading and learning about, say, the benefits of indigenous food plants and conservation, as well as about the need to preserve their culture.

Interviews of elderly people on Indigenous Knowledge or indigenous information could be tape-recorded and kept in memory bank. This is the practice in the Cayman Islands as reported by Alegbeleye (2000). This was eventually merged with their national Archives.

Some of the tools that are relevant to implement the shift include: Tape recorders; Radio; Television; Newspaper, Telephones; Computers; Cameras (e.g. video cameras, camcorders, etc); ICTs via internet, e-mails, list servers and other facilities; fax; CD-Rom; Printed materials/documents (e.g. brochures, posters etc); Diskettes; Social gathering in communities. These tools can be used either singly or combined for a good effect.

Information-based institutions such as libraries can promote access to indigenous knowledge by creating an environment which permits face-to-face forums and network formation to discuss and debate on issues that might be useful to members of the communities. For example, libraries can organize talk shows involving traditional rulers, elderly people and professionals to gather and record information on various local vocations from different subject areas ranging from agriculture, ecosystem, medical care, and conflict

resolution. Libraries can work in partnership with library schools to create indigenous knowledge collections, which can be repackaged and made accessible". Stevens (2008) believes that libraries and information professionals should partner with indigenous communities.

### ***Expected Challenges in the Repackaging of Indigenous Knowledge for Non-Indigenous Users***

According to Ijaytuyi (2005), indigenous knowledge is tacit in nature. Therefore, if it is coded the resultant effect of this is loss of some of its properties, as it is exchanged through personal communication from master to apprentice, from parent to child, from king to subjects, from neighbour to neighbour and from priests to parish. Because indigenous knowledge is orally transmitted down from generation to generation, recording and documenting it poses a great challenge.

Another major problem facing Indigenous Knowledge especially is documentation. In many developing countries, there is uneven documentation of indigenous information. Alegbeleye (2000) explained that some countries have fairly good access to indigenous information, like Zimbabwe, Jamaica and the Cayman islands in the Caribbean Sea, 500 miles off Miami. Interviews are conducted with informants, transcribed, translated and edited by historians and these are catalogued and indexed for public consumption. In Jamaica in 1981, the government created a cultural heritage memory bank solely for the preservation of culture, of which Indigenous Knowledge is characteristic. In the Cayman Islands, interviews of elderly people on Indigenous Knowledge or indigenous information are also tape-recorded and kept in memory bank. This was eventually merged with their national Archives. This has not been the practice in many developing countries.

### ***General Recommendations for Overcoming the Challenges and Enhancing the Repackaging of IK for Non- Indigenous Users***

1. Libraries need to utilize modern technology to promote access to indigenous knowledge with regards to promoting a culture of knowledge sharing amongst indigenous and non indigenous people.
2. There is need for documentation. It is imperative to document this knowledge that has practical uses in agriculture, forestry, health and sustainable development.
3. Indigenous knowledge can be made available to the less knowledgeable within the community, especially the young, by means of the printed word and other learning materials.

4. Interviews of elderly people on Indigenous Knowledge or indigenous information could be tape-recorded and kept in memory bank. This is the practice in the Cayman Islands as reported by Alegbeleye (2000). This was eventually merged with their national Archives.

5. Libraries can organize talk shows involving traditional rulers, elderly people and professionals to gather and record information on various local vocations from different subject areas ranging from agriculture, ecosystem, medical care, and conflict resolution.

6. Libraries can work in partnership with library schools to create indigenous knowledge collections, which can be repackaged and made accessible". Stevens (2008) believes that libraries and information professionals should partner with indigenous communities.

### **Conclusion**

Libraries and digital information resources can play a critical role in the education of today's students. The digital information resources via the internet and its search engines have created expectation that digital content is seamless and accessible for all. One of the areas where this expectation can be met is indigenous knowledge. This paper has presented IK as knowledge which is the unique, traditional, and local existing within and developed around the specific conditions of people indigenous to a particular geographical area. It is the basis for local level decision making in agriculture, healthcare, food preparation, education, natural resource management and a host of other activities in rural communities. IK is thought to be distinguished from scientific knowledge, the later being associated with western technology (Mavhura, Manyena, Collins, and Manatsa, 2013). As a result, indigenous knowledge could help address the common challenges of the individuals such as poverty, environmental degradation, enhance equity and lead to sustainable development, increased participation in research as well as in the development process. IK can play an immense role in the promotion of sustainable development. It is a means by which life could be saved and as a medium of increasing food supply and income generation. In view of its immense role in promoting the quality of life, this paper posits that use of such knowledge should not be restricted to the indigenous community. With the use of the digital technology, and indigenous ICT expertise, much of the invaluable traditional knowledge can be repackaged and transmitted for the use of communities within and outside a particular community for the use of both indigenous and non-indigenous users.

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## References

- Akinde, T.A. (2008). Indigenous Knowledge Dissemination and Use: A Discuss. *Samaru Journal of Information Studies*, 8 (2). 45
- Alegbeleye, G.O (2000). Access to Indigenous Information: Being a Paper Presented at the Kopano Conference, on the Role of Arts, Culture and Heritage in the Africa Renaissance, July 20-25; 1-8.
- Anyira, I. (2010). The Role of Libraries in the Preservation and Accessibility of Indigenous Knowledge in the Niger Delta Region of Nigeria. *Library Philosophy and Practice* (E- Journal) <http://Digitalcommons.Unl.Edu/Libphilprac/387>.
- Batiste, M. and Henderson, J. Y. (2004). *Protecting Indigenous Knowledge and Heritage: A Global Challenge*. Saskatoon; Purich.
- Berkes, F. (2003). Traditional Ecological Knowledge in Prospective. In Inglis J. (Ed) *Traditional Ecological Knowledge*, Ottawa: IDRC. 1-9
- Carvaiho, D, Bessa, M. Oliveira, L, Guedes, C, Pere E, & Mgaihaes, L. (2012). New interaction paradigms to fight the Digital Divide: A Pilot case study Regarding multi-touch technology. Proceedings of the 4<sup>th</sup> international conference on software Development for enhancing Accessibility and fighting info – exclusion procedia computeb Sc. Vol 14, 128 – 137.
- Chisenga, J (2002). Indigenous Knowledge: Africa's Opportunity to Contribute to Global Information Content. South African. *Journal of Library and Information Science*, 68 (1): 16-20

- .Chisita, C. T. (2011). Role of Libraries in Promoting the Dissemination and Documentation of Indigenous Agricultural Information: Case Study of Zimbabwe. Available: <http://Conference.Ifla.Org/Ifla77>.
- Cook, A. M. & Polgar, J. M. (2015). *Technologies that Assist People who have disabilities in Assistive Technologies: Principles and practice*. 4<sup>th</sup> ed. 13 – 39.
- Dlamini, D (2005), the Management of Indigenous Knowledge in Swaziland, With Specific Reference to the Swaziland National Library Service SNLS. A Mini-Thesis Submitted in Partial Fulfillment of the Requirements for Degree of Master Bibliothecologiae in the Department of Library and Information Science, University of the West Cape.
- Ekere, F.C. and Ekere, J.N (2009). Repackaging Indigenous Knowledge and Cultural Resources for Knowledge Societies. *Global Review of Library and Information Science* .5,
- Escobar, a (1995). *Encountering Development: The Making and Unmaking of the Third World*. Princeton NJ: Princeton University Press.
- Gamser, M and Appleton, H. (2005). Tinker, Tiller Technical Change: Peoples Technology And Innovations Of The Far In Warren D, Michael, L.J. Slikkerveer, and Brokensha, D. (eds), *The Cultural Dimension of Development: Indigenous Knowledge System*. London: Intermediate Technology Publications 340-350.
- Grenier, L (2008). Working with Indigenous Knowledge: A Guide for Researchers. Ottawa: IDRC.
- Haywood, T. (1995). *Info-Rich-Info-Poor: Access and Exchange in the Global Information Society*. London: Bowker.
- Huysamen, R. (2003). Indigenous Knowledge Systems: Relevance and Function in S.A. Organizations. *HR Futures*, July: 46-48.
- Ijatuyi, O.A. (2005), Indigenous Knowledge: Potentials and Challenge in Nigeria. *International Journal of Social and Policy Issues* 3 (1), 196-208.

International Federal of Library Associations and Institutions (2008). IFLA Statement on Indigenous Traditional Knowledge. Available: <http://www.ifla.org/publication/ifla-statement-on-indigenous-traditional-knowledge>

Kargbo, J.A. (2006). Indigenous Knowledge and Library Work in Sierra Leone. *Journal of Librarianship and Information Science*, 38: (2) 71-77.

Langill, S.R. (1999), Indigenous Knowledge: A Resources Kit for Sustainable Development Researcher in Dry Land Africa. Ottawa: International Development Research Center (Online). Available: <http://www.idrc.ca/plaw//E-ik-html> (Retrieved 20/3/2011).

Maundu, P (1995) Methodology for Collecting and Sharing Indigenous Knowledge: A Case Study. *Indigenous Knowledge and Development Monitors* 3 (2).

Mole, A.J.C. and Dim, C.L. (2009). Recreating Agricultural Information Services for the Rural Communities by Rural Public Libraries: Challenges and Strategies. A Paper Presented At Nigeria Library Association Enugu Branch Annual General Conference (2009) Enugu, Enugu State 2-4 December, 2009.

Nakata, M. and Langton, M. (2005). Australian Indigenous Knowledge and Libraries. Available [http://www.alia.org.au/publishing/aarl/aar\\_vo136](http://www.alia.org.au/publishing/aarl/aar_vo136), No22005 (Reprint).PDF.

Nyana, S. A. (2009), Creating a Library System that serves the need of rural communities in Africa south of the Sahara. *Journal of pan-African studies* 3 (1).

Obomasawin, R. (2002), indigenous knowledge and sustainable development (online) available: <http://www.acidi-cida.gcca/cidaind.nsf>. (Retrieved 16/08/11).

Okuneye P.A. And Ayinde, I.A. (2004). *The Relevance of Local and Indigenous Knowledge for Nigeria Agriculture*. Available: <http://ma.caudillweb.com/Documents/Bridging/Papers/Adedipe.Nimbe/Pdf>.



- Okore, A.M. Et Al. (2009). Promoting Access to Indigenous Knowledge in Digitized Age: Libraries as Facilitators. Libraries Create Future: A Paper Presented at the Nigeria Libraries Association 47<sup>th</sup> Annual General Conference 2009, Ibadan, Oyo State, From 26-31 July 2009.
- Rajasekaran, B and Martin, R.A. (1990), Evaluating the role of farmers in the Trainings and Visit Extension System in India. Paper Presented at the tenth farming system Research/ Conference, East Lansing, Michigan, October 14-18.
- Reyes, V. (2006). The future Role of the Academic Librarians in Higher Education, *Portal :Libraries and Academy*, 6 (3), 301 – 310.
- Stevens, A. (2008). A difference was of knowing: tools and strategies for managing indigenous knowledge labri 58: 25-33 available: <http://www.librisjournal.org/pdf.2008pp25-33.pdf>.
- Tsiko, S. (2004) Vital To Document Traditional Knowledge. *The Herald Friday*, 26 November, 2004.
- Ty, H.X and Cuc. L.T. (2008). *Indigenous Knowledge of the Vietnam Uplanders in Agriculture and Natural Resources Management*. Hanoi: Agriculture Publishing House.
- UNESCO (2002) Indigenous Knowledge Available <Http://Www.Unesco.Org/Most/Bpikpub2.Pdf>.
- United Nations (1992). *The Global Partnership for Economic Development: A Guide to Agenda 21*. New York: United Nations.
- Waren, D.M (1991). Using Indigenous Knowledge in Agriculture Development: *World Bank Discussion Paper*, No. 127. Washington DC: The World Bank.
- World Bank (2002) World Development Report 1991. Oxfords: OUP.
- World Commission On Environment and Development (WCED) (1987). *Our Common Future*. New York, Oxford University Press.
- WU, T. et al (2014). Is digital divide an issue for students with learning disability? *Computers in human behavior*, 39, 112 – 117.