

# **TOWARDS ESTABLISHMENT OF INDIGENOUS KNOWLEDGE MANAGEMENT CENTRES FOR SUSTAINABLE DEVELOPMENT IN NIGERIA**

**Ogbonna ISAAC-NNADIMELE, PhD**

**Oyemike Victor BENSON, PhD**

**Uju Rosemary EWEAMA**

Department of Library and Information Science,  
Federal Polytechnic, Nekede, Owerri, Nigeria  
oisaac-nnadimele@fpno.edu.ng; +2348033740087  
ovbenenson@fpno.edu.ng, bensonoyemike@gmail.com

## **Abstract**

*Indigenous Knowledge (IK) is an essential component of the society. The paper contends that despite the overwhelming influence of western knowledge over indigenous knowledge, Nigeria cannot afford to allow its indigenous knowledge to go into extinction. The paper highlighted on the relevance of indigenous knowledge in development process of developing nation. It argues for the establishment of indigenous knowledge management centres as means of preserving indigenous knowledge for sustainable development in Nigeria. The economic, social and cultural values benefits derivable from establishing indigenous knowledge management centres (IKMC) were well articulated. Various challenges that could limit the success of establishing these centres were outlined with recommendations made in line with identified challenges. This paper contributed to the existing literatures on knowledge management, and also examined the rationale behind libraries involvement in building of knowledge society, library and information professionals as factor in building knowledge society, and the implications for library and information centers.*

## **Keywords**

Indigenous Knowledge, Knowledge Management, Sustainable Development, Knowledge Management Centre, Nigeria

## **Introduction**

In the 21<sup>st</sup> century, a new society is emerging where knowledge is the major production resources instead of capital and labour. Knowledge no doubt has become an integral component of human development. It is one of the factors that drive development all through ages. Recent discovery on the necessity of knowledge in driving development gave birth to knowledge economy. Knowledge has become the basis for human development because it expands humans' options, develops their abilities and their styles of life (Kumpikaite, 2007; Al-Slaihat, 2013). Knowledge economy is the economy based on knowledge and ideas, in which the key factors of prosperity and economic growth are the superior knowledge capitalization (Tocan, 2012). Knowledge and technology are at the heart and mind of the global economy and the countries that thrive will be those that encourage their people to develop the skills and competences they need to become better workers, managers, entrepreneurs, and innovators (Kefela, 2010). Knowledge's has become the most important capital in the present age, and hence the success of any society lies in controlling and making use of it. Knowledge is the most powerful engine of production (Balloni, 2010; Kefela, 2010). However, Hong, Scardamalia & Zhang citing Scardamalia & Bereiter (2003) notes that knowledge building is synonymous with knowledge creation and goes on throughout a knowledge society and is not limited to education. One of such area where knowledge should be built up for future generation is Indigenous Knowledge.

IK is a key element of the social capital of the poor and constitutes their main assets in their effort to gain control of their own lives (Githui, David & Maurice, 2015). As the world is migrating from the information society to the knowledge society, it is imperative that library and information professionals take proactive and pragmatic steps to collect valuable knowledge gained from experiences over the years and organized them in a way that it will be accessible by the next generations. One of the most important objectives of knowledge management is to bring together intellectual resources and make them available across organizational boundaries (Zaim, n.d.). Indigenous knowledge is primarily inherited from the ancestors through generations of the community (Mahalik & Mahapatra, 2010). Indigenous knowledge management comprised of a number of key elements namely capturing, storing, maintenance, dissemination and protection of IK and recording which allows the field workers to gather IK from within the communities using different methods (Khalala, Makitla, Botha & Alberts, 2014).

Preservation of indigenous knowledge has become an important and valuable input in the management of sustainable development programmes (Joshi, 2015). Indigenous Knowledge as it were is under serious threat and something practical ought to be done to ensure that it is preserved. Nevertheless, having recognized the place of IK in contemporary information conscious society, it is imperative that Library and information science professionals take up the challenge of harnessing the potentials of IK by setting up Indigenous Knowledge Management centres for the collection, preservation and management of IK. This is the thrust of the paper with the primary objective of advocating for the need to establish Indigenous Knowledge Management Centres (IKMCs) for sustainable development. The specific objectives are, to highlight on the characteristics and relevance of indigenous knowledge in sustainable development; discuss the economic, medical and educational value of indigenous knowledge; explain the rationale for libraries involvement in building knowledge society; highlight the implications establishing IKMCs for library and information practitioners; examine the reasons for which doctoral degree candidates practice knowledge sharing; and highlight the challenges to the establishment of indigenous knowledge management centres (IKMCs).

However, to achieve the set objectives, the paper adopted content analysis, in which various literatures relating to the subject were used to draw inferences. Data was collected through the desk research approach from various sources, journals, research papers, internet resources and also through number of discussion with professionals from the field of librarianship and knowledge management.

### **Indigenous Knowledge: Conceptual Analysis**

Indigenous Knowledge Systems (IKS) are body of knowledge, or bodies of knowledge of the indigenous people of particular geographical areas that they have survived on for a very long time (Ngara & Mangizvo, 2013). Indigenous knowledge as described Ebijuwa (2015) is a way of knowing, seeing, thinking and doing things by a community of people overtime which has become a part of them and is being orally transmitted for one generation to another. In other words, IK is tied to the people's way of life. Subramanian and Pisupati (2010) referring to IK sees it as a dynamic knowledge system that distinguishes itself from mainstream knowledge in its method of knowledge generation, transmission and the principles and values related to its use for various purposes. Similarly, Eyong (2007) and Eze and Mba (2013) refers to IKs as "a set of interactions between the economic, ecological, political and social environments within a group or groups with a strong identity, drawing existence patterned behaviours that are transmitted from generation to

generations to cope with change”. This pattern to them, are sustained by micro level institutional arrangements vested with differentiated responsibilities that ensure the groups continuous survival.

However, Jaya (n.d.) seeing Indigenous Knowledge from a different perspective contends that it is not limited to indigenous peoples and can include knowledge originating from elsewhere but has been internalized by local people through local processes of learning, testing and adaptation. Nevertheless, Githui, David and Maurice (2015:32) gave a vivid description of Indigenous Knowledge when they asserted that:

“Indigenous Knowledge (IK) is the cultural and social experiences that drive a community to adapt certain values, practices and norms to co-exist in the environment sustainably. It is a common feature to all societies in the world. It is indigenous comparative advantages in social and economic development as certain skills for economic production and present in one community and not in others.

Therefore, *Indigenous Knowledge* is local knowledge acquired through experiences and is open to outside influences in order to meet new environmental demands (Nozizwe, Ncube & Moyo, 2014). Mahalik and Mahapatra (2010) referred to Indigenous Knowledge as the long standing traditions belief and practices of certain regional, local and indigenous communities. Ponge (2013) conceptualized Indigenous Knowledge as the accumulated set of common sense knowledge and ideas of the local people about their everyday realities of living. He sees it as the local knowledge that is unique to the given communities which forms the basis for their local level decision-making in agriculture and connects people directly with their environment.

Indigenous Knowledge therefore, is the locally accepted knowledge that is unique and consistent to a given culture or society. However, there seems to be no consensus in terms of the definition of the concept of Indigenous Knowledge. Indigenous knowledge refers to knowledge that is unique to a given culture or society.

### **Characteristics and Relevance of Indigenous Knowledge (IK) in Sustainable Development**

IK has survived through trial and error without any form of experimentation that characterizes western knowledge. It is mainly preserved in the memories of elders whose knowledge disappears when they die of old age and this has been lost at a high rate (Fabiya & Oloukoi, 2013; Nnadi, Chikaire, & Egudike, 2013). Indigenous Knowledge according to Eze and Mba (2013) were developed by experimentations even when these experiments were not documented and the knowledge systems were legitimized and fortified under suitable institutional frameworks, culture and practices. IK is largely inherent in human beings and it is not associated with any form of formal learning / training but transmitted or learnt orally (Ugboma, 2014). Indigenous Knowledge is developed and adapted continuously to gradually changing to generation and closely interwoven with people’s cultural values. Indigenous Knowledge which is Knowledge held in people’s brain are difficult to record transfer and disseminate. The generation, adaptation and use of IK are greatly influenced by the culture (Senanyake, 2006). However, the nature of IK amongst others includes: Uniqueness- Indigenous Knowledge is unique to particular culture of rural communities and a non defined area; Trans-generational- Indigenous knowledge is composed of knowledge and experiences from previous generation; and Culture oriented - It flows through the culture of a group of people within a geographical and cultural setting. It is part of the lives of the rural communities, with their livelihood depending almost entirely on specific skills and knowledge essential for their survival (Githui, David & Maurice, 2015).

Indigenous Knowledge as opined by Olaide and Omolere (2013) has been noted to make a significant contribution to sustainable development of local communities, as it is seen as a set of perceptions, information and behavior that guide local community members to use the land and natural resources. IK has been widely applied to remedy situations where technology is lacking (Cheserek, 2005). Indigenous Knowledge has shown itself to be an important and effective resource in the life of rural Africa community, not only in the area of science, agriculture, and medicine but also in other areas (Ugboma, 2014). As noted by Githui, David and Maurice (2015), IK is the social capital of the poor, their main asset to invest in the struggle for survival to provide food, to provide for shelter or to achieve control of their lives. Indigenous Knowledge is developed and adapted continuously to gradually changing environments and passed down from generation to generation and closely interwoven with peoples cultural values.

Indigenous Knowledge if documented properly and used has the capacity to provide food and health security to millions of people in the developing world. Indigenous Knowledge is used at the local level by communities as the basis for decision pertaining to food security, human and animal health, education natural resources management and other vital activities (Githui, David & Maurice, 2015). Proper organization of indigenous knowledge is necessary as it shows the way for comprehensive community as well as of the nation as a whole (Bandyopadhyay & Majumder, n.d). Indigenous Knowledge according to Movarey, Hashemi, Hosseini and Rezvanfar (2012) provides problems solving strategies for local communities and helps shape local solution to revitalizing farming system and environment. It serves as the information base for rural communities, which facilitates communication and decision-making (Movareji *et al*, 2012).

### **Justification for Establishment of Indigenous Knowledge Management Centres (IKMC)**

Indigenous knowledge (IK) emanated from intellectual activities of a group of people in a traditional context. It covers all forms of knowledge. This knowledge includes skills, practices, know-hows, beliefs and technologies. Indigenous knowledge referred to both the knowledge of indigenous people and intellectual property of other communities Indigenous knowledge is an emerging field in library and information profession and has gained wider acceptance in the present global society and has generated a lot of concern on the need to preserve it (Mahalik & Mahapatra, 2010; Ebijuwu, 2015). The importance being attached to IK explains the need for effective management of IK especially in developing countries.

In this age, preservation of Indigenous Knowledge and culture has become important because of its compatibility with the preservation of local environment and sustained development of concerned communities. Most IK are disappearing due to the intrusion of foreign technologies and development concepts that promise short-term gains or solutions to problems without being capable of sustaining them (Senanyake, 2006). IK as noted by Msuya (n.d.) provides scientific solutions to problems that communities are facing. IK is still relevant in the modern times and it should be documented to enhance its access to the people that may need it. Documentation of IK helps to increase its availability to knowledge and to design relevant information services that will help local communities in Nigeria to exchange ideas (Lemu, 2013). According to Olaide and Omolere (2013), IK should urgently be documented to avoid the loss of vital information as the elderly custodians of knowledge disappear from the scene.

Indigenous Knowledge management as opined by Lodhi and Mikulecky (n.d.) could provide practical tools for poverty alleviation, sustainable development, and empowerment in general. They further asserted that management of Indigenous Knowledge is important because

whenever bearers of knowledge die, they will die with all the information, knowledge and wisdom, which could have been saved and passed to others. The need for preservation of Indigenous Knowledge was aptly captured by Owolabi and Okumola (2015:248) when they asserted that:

“information on indigenous knowledge practices have been on the decline due to lack of appropriate documentation and oral transfer of information from one generation to the next. It is also to be noted that indigenous knowledge information that is being lost, could provide basis for many scientific study and solution to problems of agriculture among farmers.”

Khalala, Makitla, Botha and Alberts (2014) contend that, it is very important for African communities to understand the importance of IK and for communities to play a major role in the collection/recording, safeguarding and dissemination of their own knowledge. Movarej, Hashemi, Hosseini and Rezvanfar (2012) notes that IK is often neglected as a key source of policy-related information because it is often undervalued relative to scientific knowledge, both by non-local project managers and local communities themselves. Recognizing the place of Indigenous Knowledge and the need to safeguard them, Pant and Moorthy (2013:95) contend that:

“There is need to develop indigenous knowledge management systems (IKMs) for indigenous communities through which they themselves take necessary steps to document and preserve their knowledge heritage whether it is traditional medicinal practices, plant varieties, genetic, resources, geographical indicators, or folk and cultural aspects of that community in a cost effective way.

Zaim (n.d.) explained that knowledge is meaningful when it is codified, classified, given a shape, put in a useful format and stored in such a way that it can be used by the right person, at the right time, in the right way. As pointed out by Githui, David & Maurice (2015), indigenous knowledge is a precious national resource that can facilitate the process of disaster prevention, preparedness and response in cost effective, participating and sustainable ways. Jaya (n.d.) is of the view that it should be realized that for a developing country to depend on foreign expertise and experience alone for transformation, it will not and cannot be the sole remedy for the problems encountered. He however, outlined several reasons for studying and conserving Indigenous Knowledge and these includes.

- Indigenous Knowledge is generally an under-utilized resource;
- It is important and relevant for the development process;
- It provides a basis for problem solving strategies for local communities particularly the poor;
- It is fundamental representative of an important contribution to global development knowledge; and
- Investigating first what local communities know about Indigenous Knowledge help improve understanding of local conditions and provide productive context for activities designed to help the communities.

Similarly, Madaan (2007) outlined several factors that triggered interest in knowledge management. These factors include:

1. The pace of change has accelerated dramatically during the past decade.
2. Globalization and geographic dispersion changed the organization's scope.
3. Downsizing and re-engineering resulted in staff attrition and knowledge drain. This prompted organizations to access their knowledge core and make more effective use of it.
4. Networking and data communications made easier and faster to share knowledge. Knowledge sharing is becoming the best way to distribute expertise across and around the firm by a technology.
5. Increasing dominance of knowledge as a basis for improving efficiency and effectiveness triggered many academic libraries to find the means for utilizing the knowledge they have gained from previous experience.

Nnadi, Chikaire and Ezudike (2013) observed that many Indigenous Knowledge practices are at risk of becoming extinct because of rapidly changing natural environments and fast pacing economic, political and cultural changes on a global scale. Although, Fabiyi and Oloukoi (2013) submit that Indigenous Knowledge is still undervalued because it is oral, holistic and culturally buried under taboos. They further advanced that despite the importance of Indigenous Knowledge in addressing global environmental changes issues; it is still not documented and is difficult to understand. Evidently, preserving IK would facilitate knowledge transfer. However, Zaim (n.d.) buttressed that knowledge transfer is not a one directional movement of knowledge from one location to another. According to Lwoga, Ngulube and Stilwell (2011), IK is mainly preserved in the memories of elders, and shared through oral communication and traditional practices and demonstration. From the literatures, the reasons for preserving IK are to: retain it for future generation; protect it from unfair usage and exploitation; and to facilitate knowledge sharing among stakeholders.

### **A Discourse on the Medical, Agricultural and Educational Values of Indigenous Knowledge**

The values of indigenous knowledge in medical practices in Nigeria can be seen in the utility of the knowledge in research, community development, educational and healthcare delivery services. Information on Indigenous Knowledge in medical practices can be used to research in many aspects of traditional medical practices and to acquire knowledge on local plants and herbs used in the development of drugs for treatment of many ailments. Nakata *et al* (2014) averred that the restoration and maintenance of IK is recognized as a vital ingredient for restoring and maintaining the health and wellbeing of indigenous communities world-wide. Similarly, Ebijuwa (2015) in her study noted that alternative healthcare practitioners used IK to treat health related challenges in primary healthcare.

Traditional medicines according to Pant and Moorthy (2013) based on various ecological products are the alternative to the modern medicine system and even in some cases, the only way to provide the affordable treatment to the poor people. Adigun (2014) observed that about 80 percent of the people in local communities depend on traditional medicine for their health needs, due to the inaccessibility of modern facilities, either because they are expensive and unaffordable or are outrightly not located in local communities. Traditional knowledge as noted by Joshi (2015) serves the health needs of vast majority of people, especially in underdeveloped and developing countries

and it is being used by indigenous people, researcher, clinicians academicians. Recognizing the medical value of IK, Ugboma (2014) stated that the use of herbs as preventive medicine has contributed to the reduction of infant mortality. Indigenous medical practitioners according to Senanyake (2006) tackle prevention as well as therapy, perceiving illness and healing holistically. Therapies to him, often enhance healing by creating the whole being rather than targeting specific symptoms, and trace the disease to the context of the person's life, rather than a bacteria or virus. In the Indigenous medical knowledge dimension, herbs are used as preventive medicine. It is used by most local herb traditionalist as alternative means of treating diseases. Despite the acceptance of western medical knowledge, the significance of long-established local knowledge cannot be neglected, particularly in the development of genetic resources that contributes to pharmaceutical and agricultural business (Baro & Fyneman, 2011).

In agriculture, the value of IK was underscored by Movarej, Hashemi, Hosseini & Rezvanfar (2012:101) when they asserted that:

incorporating local knowledge into project activities such as, sustainable agriculture development projects can reduce the risks associated with relying on non-relevant technology and with adopting alternative resources of Indigenous Knowledge, use techniques and practices that have adapted and tailored over exists resources and structures. Indigenous Knowledge can help promote biodiversity and environmentally conservation by characterizing applying sound environmentally practices that are appropriate for the particular landscape.

Agriculturally, IK is important not only that it can provide effective alternatives to Western know-how and gives extra options to local people when carrying out their farming operations (Nnadi, Chikaire & Ezudike, 2013). Lwoga, Ngulube and Stilwell (2011) suggests that IK should not be separated from the individuals who hold it; instead efforts should be made to enable the communities become more innovative and creative in sharing and preserving of their own knowledge, and to adopt other knowledge systems for sustainable agricultural growth in sub-saharan African. Indigenous Knowledge systems are important components of the agricultural sector (Nozizwe, Ncube & Moyo, 2014). It has no doubt contributed immensely to sustainable agriculture and food security (Nnadi, Chikaire & Ezudike, 2013). The various observations and experiences of indigenous agricultural practices in African if properly documented and stored forms the bulk of best practices in agriculture which can be passed down from generation to generation (Baro & Fyneman, 2011). Similarly, Senanyake (2006:91), x-raying IK within the context of education affirmed that:

indigenous peoples traditional model of education is a balanced and complimentary model acceptable to the local community. It is an education system gradually developed from the accumulated knowledge of many generations. It leads to the development of a whole person in a dynamic family and community context.

Also, Eze and Mba (2013) stressed that indigenous learning was not only concerned with the regular socialization of the younger generation into custom, values and the collective opinions of the public, but also lay a very strong emphasis on learning useful skills and the possession of knowledge that would be useful to the long-established society.

## **Rationale for Libraries and Librarians involvement in Building a Knowledge Society**

Knowledge managers as pointed out by Mckeen and Staples (2001) are those key individuals charged with the task of making the knowledge management successful. Libraries as argued by Bandyopadhyay and Majumder (n.d.) can also take part in the present knowledge management activities and coordinate these for optimal use. Librarians have played key roles in the collecting, storing, organizing and disseminating of knowledge to society (Yaacob, Jamaluddin, & Jusoff, 2010). Library and information centres should be developed/modified based on the perfect environment for new media applications (Kumar, 2010). Technology enabled constant connectivity has helped in generation and use of more information and production and distribution of knowledge (Malham, 2011).

In building knowledge society, librarians can contribute significantly in many ways since, technology is the driving force of the knowledge, it is imperative that librarian help in the design of technology-based services that can facilitate knowledge sharing. Yaacob, Jamaluddin & Jusoff (2010) argue that librarians have important role to play in overcoming the digital divide and making reference and sharing global knowledge. They recognized the fact that librarians are trained to be experts in information searching selecting acquiring, organizing, preserving repackaging, disseminating and serving (Kumar, 2010). Al-slaihat (2013:417) maintained that:

establishing knowledge society is not only done by transferring technology and consuming it or by accepting reality or pricing knowledge but creativity and production engagement happens by having a comprehensive vision that does not forget that products, knowledge tools and techniques hide values and make others.

Yaacob, Jamaluddin and Jusoff (2010:15) reasoned that even though the advent of internet has brought predictions of the demise of library, it has proven that libraries are, not only crucial but librarians role as knowledge providers has become even more significant. A knowledge-based economy as posited by Salem (2014) gives the economy of a country a forward thrust and places it at a strategic competitive advantage that results in increased income and revenue, new and increased employment opportunities and as well triggers knowledge distribution. The increased importance of knowledge as noted by Kefela (2010) provides great potential for countries to strengthen their economic and social development by providing more efficient ways of producing goods and services and delivering them more effectively and at a lower costs to a greater numbers of people. The above therefore points to the necessity of librarians being fully involved in the building of knowledge society.

## **Limitations to Establishment of Indigenous Knowledge Management Centre (IKMCs)**

Establishing IKMCs despite its associated benefits are not without challenges and these include the following:

- a. ***Retaining the original content of IK:*** According to Nakata et al (2014), a key problem of managing and preserving indigenous knowledge has been how to re-present this knowledge in ways that denote its local context, its historical journey through archives and the disciplines, and its onward use and engagements according to indigenous protocols of knowledge management.
- b. ***Lack of technical know-how:*** The form of trainings given to librarians in most library schools focused more on the organization of knowledge in printed documents whether in



soft or hard copy. The implication is evidence in lack of technical know-how in management of IK. It is not just about establishment of IKMCs, do librarians have the requisite know-how to manage IK. The possession of technical know-how would go a long way in determining the extent librarians would succeed in management of IK.

- c. **Communication gap:** Cheserek (2005) sees deteriorating communication between the elderly and the young elites as major challenge facing indigenous knowledge system. Most of indigenous knowledge are undocumented and are available orally or in memory of the group of the community of a region or area (Mahalik & Mahapatra, 2010).
- d. **Inadequate Infrastructure:** Unavailability of necessary infrastructures required to effectively manage IK in developing countries is a serious threat to the success and sustainability of establishing of IKMCs. Modern technologies are required to effectively establish and operate IKMCs.
- e. **Ownership:** According to Janke (2005), each indigenous community asserts ownership of communally owned heritage material. He noted further that when Indigenous Knowledge is removed from an indigenous community, the community loses control over the ways in which it represented and used.
- f. **Language Barriers:** As noted by Pant & Moorthy (2013), safeguarding of traditional knowledge is impeded because it is available in languages other than English and it becomes almost impossible for patent officers to recognize the non-patentable knowledge on the basis of prior art.

### **Implications Establishing Indigenous Knowledge Management Centre (IKMCs) for Librarians, Libraries and Information Centres (LICs)**

In order to ensure establishment and proper management of indigenous knowledge management centres, there are several implications for library and information professionals:

- i. **Provision of knowledge management and competitive intelligence (CI) services:** According to Yaacob, Jamaluddin and Jusoff (2010), libraries need to reposition or enhance themselves to act as knowledge management centres for small businesses.
- ii. **Full response to change:** Library and information professionals in this digital age have no other alternative than to embrace change by incorporating information and communication technologies (ICT) to knowledge management. ICTs no doubt have become the major driver of knowledge management, hence, the need to embrace change.
- iii. **Partnership with stakeholders in ICT domain:** Library and information practitioners (ILPs) have to adopt practical partnership approach to indigenous knowledge management for it to be successful. In other words, it is imperative that ILPs partners with stakeholders in the information management sector, especially, stakeholders with skills and competence in ICT application to information and knowledge management. As rightly pointed out by Kumar (2010), there should be a strong communication and an effective partnership between the institutions library and its computing service. Libraries can collaborate with the other sector of the business or public domain to ensure that knowledge is shared and distributed evenly, this is because, knowledge not shared or distributed would be underutilize and not be useful.

- iv. **Good leadership:** if libraries are to succeed in implementing knowledge management, it will require a strong leadership and vision from the top administration, which can influence the organization's knowledge sharing efforts in a positive way (Yaacob, Jamaluddin & Jusoff, 2010).
- v. **Training and re-training of Librarians:** Since ICTs has been acknowledged as the backbone that drives sustainable knowledge management, it is imperative that librarians are adequately trained in the application of ICT to Indigenous Knowledge Management. As noted by Ullah (2014), ICTs are changing at very fast speed and more sophisticated equipments and facilities are being developed and since they are useful for libraries, it is imperative that library professionals update their skills to handle and operate these technologies efficiently.
- vi. **Massive deployment of ICTs facilities:** It has been acknowledged that information and communication technology plays major roles in improving the availability of indigenous knowledge systems. Librarians, information managers and other stakeholders are expected to deploy ICT-related technologies to the management of IK.
- vii. **Through Innovation and Creativity:** The success of knowledge-based economy requires innovation and creativity, qualities that are especially promoted by the higher education system. (Mironescu & Feraru, 2012). Library and information practitioners as well as other stakeholders in the knowledge management sector should be creative and innovative in order to effectively manage IK. In other words, they should move away from the conventional approach of knowledge management to a more pragmatic approach.

## **Conclusion**

Indigenous Knowledge is an integral component of any society irrespective of the level of development. The relevance of IK in the medical, agricultural and educational sector cannot be denied. The major purpose of this paper is to advocate the need for establishing Indigenous Knowledge Management Centres (IKMCs) with respect to developing countries and its implication for librarians, libraries and information centres. However, establishment of IKMCs are not without challenges, these includes: retaining the original content of IK, lack of technical know-how, inadequate infrastructure, communication gap, ownership, and language barriers. These challenges pose a number of implications for library and information practitioners such as the need for full response to changes in the profession, partnership with stakeholders in the ICT domain, good leadership, training and re-training of librarians, massive deployment of ICTs facilities into knowledge management, and innovative and creative drive among librarians. It is clear that establishment of indigenous knowledge management centres (IKMCs) is a factor in sustainable development of developing economies and as such must be embraced by all stakeholders in the information and knowledge management sector. Librarians as key actors in information and knowledge management must therefore be at the forefront in this drive.

## **References**

- Adigun, T. A. (2014). Application of competitive intelligence in indigenous knowledge: The role of the library professionals in Nigeria. *Journal of Research in Education and Society* 5 (2), 7-17.
- Al-Slaihah, M. M. (2013). Contemporary challenges that hinder building knowledge society in Jordan from the educational experts perspective. 1<sup>st</sup> Annual International Interdisciplinary Conference. AIIC 2013, 24-26 April, Azores Portugal.

- Anwar, M. A. (2010). Role of information management in the preservation of indigenous knoweldge. *Pakistan Journal of Information Management and Libraries*, 2010, 11 (1), Available online at: <http://eprints.rclis.org/25603/>
- Balloni, A. J. (2010). Challenges and reflections on knowledge society and socio-technical systems. *The International Journal of Managing Information Technology (IJMIT)*, 2(1), 21-37.
- Bandyopadhyay, R. & Majumder, K. (n.d.). Organising traditional knowledge for inclusive development: role of libraries. Available online at: <https://www.banglajol.info/index.php/BJLIS/article/view/12914>
- Cheserek, G. (2005). Indigenous knoweldge in water and watershed management. "Marakneet" conservation strategies and techniques. FWU, Topics of Integrated Watershed Management Proceedings. Available online at: <https://www.uni-siegen.de/zew/publikationen/volume0305/cheserek.pdf>
- Ebijuwa, A. S. (2015). The role of libraries in the preservtaion of indigenous knoweldge in primary healthcare in Nigeria. *International Journal of Digital Library Services*, 5 (2), 43-54.
- Eyong, C. T. (2007). Indigenous knoweldge and sustainble development in Africa: case study on central Africa. *Tribes And Tribals, Special Volume*, 1; 121-139.
- Eze, U. T. & Mba, I. N. (2013). Integrating African indigenous knoweldge in Nigeria's formal education system: It's potential for sustainable development. *Journal of Education and Practcie*, 4(6), 77-82.
- Fabiyi, O. O. & Oloukoi, J. (2013). Indigenous knoweldge system and local adaptaion strategies to flooding in Coastal Rural Communities of Nigeria. *Journal of Indigenous Social Development* 2(1), 1-19.
- Githui, W. David, N. & Maurice, S. (2015). The role of indigenous knoweldge in socio-economic development. *International Journal of Science and Research (IJSR)*. 4 (4), 32-37.
- Hong, H., Scardamalia, M. & Zhang, J. (n.d.). Knowledge society network: toward a dynamic sustained network for building knowledge. Available online at: [https://scholarsarchive.library.albany.edu/cgi/viewcontent.cgi?article=1003&context=etap\\_fac\\_scholar](https://scholarsarchive.library.albany.edu/cgi/viewcontent.cgi?article=1003&context=etap_fac_scholar)
- Janke, T. (2005). Managing indigenous knoweldge and indigenous cultural and intellectual property. *Australian Academic & Research Libraries*, 36 (2), 95-107. DOI:10.1080/00048623.2005.10721251.
- Jaya, E. (n.d). The role of university in promoting indigenous knoweldge systems in Zimbabwe with reference to traidtional practices in rural areas. Available online at: [http://www.appropiatetech.net/files/2nd\\_icat\\_proceedings\\_part\\_3.pdf](http://www.appropiatetech.net/files/2nd_icat_proceedings_part_3.pdf).
- Joshi, P. P. (2015). Preserving traditional knowledge (viral diseases). *Knowledge Librarian*, 2 (2), 170-186.
- Kefela, G. T. (2010). Knowledge-based economy and society has become a vital commodity to countries. *International Journal of Educational Research and Technology*, 1 (2), 68-75.
- Khalala, G., Makitla, I., Botha, A. & Albers, R. (2014). A case for understanding user experiece: Challenges confronting indigenous knoweldge recorders in rural communities in South Africa. In: Cunningham, P. & Cunnigham, M. (eds.). 1<sup>st</sup> Africa 2014 Conference Proceedings. Available online at:
- Kumar, S. A. (2010). Knowledge management and new generation of libraries information services: a concepts. *International Journal of Library and Information Science*, 1(2):24-30.
- Kumpikaite, V. (2007). Human resource development in the knowledge society. *Ekonomika ir vadyba: aktualijos ir perspektyvos*. 2 (9):122-127.
- Lemu, A. A. (2013). Documentation and access to information resources on Hausa indigenous medical practices in states of Northern Nigeria. A. Ph.D Dissertation submitted to the Department of Library and Information Science, Ahmadu Bello University, Zaria.
- Lodhi, S. & Mikulecky, (2010). Management of indigenous knoweldge for devloping countries. COMATIA'10 Proceedings of the 2010 international conference on Communication and management in technological innovation and academic globalization.

- Lwoga, E. T., Ngulube, P. & Stilwell, C. (2011). Challenges of managing indigenous knowledge with other knowledge systems for agricultural growth in sub-Saharan Africa. *Libri*, 61; 226 – 238. DOI:10.1515/libr.2011.019.
- Madaan, D. (2007). Knowledge management in libraries: gaining competitive advantage through e-learning. 5<sup>th</sup> International CALIBER-2007, Panjab University, Chandigarh, 6-10 February, 2007.
- Mahalik, P. R. & Mahapatra, R. K. (2010). Documentary indigenous traditional knowledge in Odisha Orissa Review; 99-103.
- Malhan, I.V. (2011). Challenges and problems of library and information education in India: an emerging knowledge society and the developing nations of Asia. <http://unllib.un/ed/lpp>.
- McKeen, J. D. & Staples, D. S. (2001). Knowledge managers: who they are and what they do. Available online at: [https://www.managementexchange.com/.../rcm\\_in\\_the\\_new\\_business\\_environment.pdf](https://www.managementexchange.com/.../rcm_in_the_new_business_environment.pdf)
- Mironescu, R. & Feraru, A. (2012). E.U.'s strategy of building a knowledge economy. *Studies and Scientific Researches Economics Edition*, 16/17; 147-152.
- Mosoti, Z. & Masheka, B. (2010). Knowledge management: The case for Kenya. *The Journal of Language, Technology & Entrepreneurship in Africa*, 2(1):107-133.
- Movarey, M., Hashemi, S. M. K., Hosseini, S. M. & Rezvanfar, A. (2012). Facilitating sustainable agriculture: Integrating indigenous knowledge in current agricultural knowledge and Information systems. *Cercetari Agronomic in Moldova XLV*(1):93-103.
- Msuya, J. (n.d). Challenges and opportunities in the protection and preservation of indigenous knowledge in Africa. <http://www.i-r-i-e.net/inhalt/007/38-msuya.pdf>
- Nakata, M. et al (2014). Using modern technologies to capture and share indigenous astronomical knowledge. *Australian Academic Academic & Research Librarians*. Available online at: <https://arxiv.org/ftp/arxiv/papers/1409/1409.1307.pdf>
- Nnadi, F. N., Chikaire, J. & Ezudike, K. E. (2013). Assessment of indigenous knowledge practices for sustainable agriculture and food security in Idemili South Local Government Area of Anambra State, Nigeria. *Journal of Resources Development and Management*, 1; 14-21.
- Noziziwe, D., Ncube, B. Moyo, M. (2014). Globalization and Ndebele Indigenous knowledge system in Agriculture: challenges and opportunities. *European Journal of Globalization and Development Research*, 9(1): 518-528.
- Olaide, I. A., & Omolere, O. W. (2013). Management of indigenous knowledge as a catalyst towards improved information accessibility to local communities: A literature review. *Chinese Librarianship: an International Electronic Journal*, 35. <http://www.iclc.us/cliej/cl3510.pdf>.
- Owolabi, K. E. & Okunlola, J. O. (2015). Farmers utilization of indigenous knowledge techniques for the control of cocoa pests and diseases in Ekiti State, Nigeria. *Asian Journal of Agricultural Extension & Sociology*, 4(3): 247-258.
- Pant, A. & Moorthy, A. L. (2013). Knowledge management and safeguarding Indian traditional knowledge. *Annals of Library and Information Studies*, 60; 88-97.
- Salem, M. I. (2014). The role of universities in building a knowledge-based economy in Saudi Arabia *International Business & Economics Research Journal*, 13(5): 1047-1057.
- Senanayake, S. G. J. N. (2006). Indigenous knowledge as a key to sustainable development. *The Journal of Agricultural of Agricultural Science*, 29(1): 87-94
- Tocan, M. C. (2012). Knowledge based Economy assessment. *Journal of Knowledge Management, Economics and Information Technology*, 5; Available online at: [http://www.scientificpapers.org/wp-content/files/1323\\_Madalina\\_TOCAN\\_Knowledge\\_based\\_economy\\_assessmen.pdf](http://www.scientificpapers.org/wp-content/files/1323_Madalina_TOCAN_Knowledge_based_economy_assessmen.pdf)
- Ugboma, M. U. (2014). Availability and use of indigenous knowledge amongst rural women in Nigeria. *Chinese Librarianship: an International Electronic Journal*, 38. URL: <http://www.iclc.us/cliej/c/38ugboma.pdf>
- Yaacob, R. A., Jamaluddin, A. & Jusoff, K. (2010). Knowledge management and challenging roles of academic librarians. *Management Science and Engineering*, 4(4):14-23.
- Zaim, H. (n.d). Knowledge management implementation in IZGAZ. *Journal of Economic and Social Research*, 8(2):1-25.