THE ROLE OF THE ACADEMIC LIBRARY IN CAPTURING INDIGENOUS/LOCAL KNOWLEDGE AND HOW SUCH A PROGRAMME CAN BE FORMALISED: EXAMPLES FROM GHANA, TANZANIA UGANDA AND SOUTH AFRICA

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1. INTRODUCTION

With the enhancement of information and communication technology, science and society has begun to accept that "indigenous knowledge and indigenous knowledge systems are blending with the modern scientific and technical knowledge" (Jain & Jibril, 2016:2). More and more, indigenous knowledge is becoming significant world-wide. The continued existence of every culture, depends on its folklores, legends, customs, rituals, beliefs the knowledge that supports this needs to be preserved for future generations. For this reason, the capturing and preservation of indigenous knowledge is definitely essential for the preservation of the local communities and their identity, which is strongly related to their culture and development of Africa as a whole.

The wealthiness of Africa can be expressed in relation to the rich indigenous knowledge the continent possess. Dakora cited in Normann, Synman and Cohen (1996:109) confirmed that Indigenous knowledge abounds especially in the field of agriculture, and about 90% of the food grown in sub-Saharan are through traditional farming. For centuries, livelihood in the rural communities in Africa has been sustained by the use of the indigenous knowledge that has been acquired over the years. Africans have been guided by this rich indigenous knowledge in all aspect of their lives (Anyira & Onoriode, 2010: 1). Through the use of indigenous knowledge gained over the years in areas such as agriculture, education, food preparation, parenting, health management, natural resources management, art and culture African are able to make a meaningful life and sustain their environment (Khalala et al, 2014:1).

This knowledge has been so critical in all spheres of development. Indigenous people have always produced the knowledge that they need for their survival (Hays, 2013). However, the creation and capturing of indigenous knowledge, that is, the oral nature, by the indigenous people who are mostly farmers, rural dwellers and coupled with modernity has made indigenous knowledge practices look unattractive to use. Masemula (2013:10) stated that “the seemingly low status of indigenous knowledge, this knowledge is used in the west, notably by pharmaceutical companies as the basis for most allopathic medicines”. Nevertheless, as owners of indigenous knowledge perish the knowledge is lost with them unless it has been shared to other members of the community.

Hence, in recent times, the need to capture and repackage indigenous/local knowledge has increasingly gain attention. According to Archbishop Bernardito Auza (2016: Para. 1) the international community depends on knowledge of indigenous folks and their distinctive approach to development as an indispensable measure in the upkeep of our communal home and of human race. For that purpose, the struggle of indigenes to "preserve their heritage, language, religious traditions, and livelihoods is not only their concern, but a concern for the entire world". Researchers like (Phiri, 2008:1; Lwoga, Ngulube & Stilwell, 2010: 1) indicate that sustainable economic development of the African continent is largely hinged on the effective integration of the indigenous/local knowledge and the western knowledge. The benefits of the use of indigenous knowledge can fully be achieved if institutions like academic libraries that are have the skills in the creation and sharing of knowledge will capture, process and disseminate indigenous knowledge. Academic libraries embracing local knowledge as part of the collection will indeed preserve our local knowledge for posterity.

Unfortunately libraries in the African continent which are considered as custodians of community knowledge and one of the leading institutions that have the capacity in terms of personnel and technical know-how to capture, process, store, retrieve and disseminate indigenous knowledge has not done much. The Council for Scientific and Industrial Research [CSIR] (2016, para: 1) succinctly mention that "managing indigenous knowledge using information management standards in libraries is a new phenomenon worldwide, and in Ghana it is virtually absent. Most libraries do not acquire indigenous knowledge in any form let alone process and store it".

Since most of the challenges confronting African continent such as child mortality, food insecurity, poverty, malnutrition, infant mortality, environmental conservation, disasters and diseases facing the can be appropriately resolve through the use of our local knowledge (Mwaura, 2008:76).

1.1 Statement of the Problem

Various studies have realized the importance of indigenous knowledge in most aspects of human life (Nyong, Adesina, & Elasha, 2007; Mortimore & Adams, 2001; Gadgil, Berkes, & Folke, 1993). Indigenous knowledge has been used in enhancing climate change adaptation and

mitigation, in agriculture and in managing biodiversity (Manandhar, Pandey, & Kazama, 2012; Nazarea, 2006; Joshi & Joshi, 2000). Despite its importance, indigenous knowledge is managed in the memory of the beholder (Tapfumaneyi & Rupande, 2014). Moreover, in spite of its benefits most countries and academic libraries have not put in place systematic documentation strategies for capturing and managing indigenous knowledge (Malekani, 2016; Makwara, 2013). According to Greyling (2010: para 1), most libraries and information centres in the African continent are ill equipped to make a significant contribution to the present worldwide digital knowledge economy. Absence of management systems for indigenous knowledge is the results of the low local content on the web. This impedes the acceptance of local communities into digital resources and prevents the acquisition of digital skills. Thus, the current study is set to investigate how academic libraries in Africa have been involved in the management of indigenous knowledge.

1.2 Objectives of the study

This paper therefore, aims to find out the role of academic libraries in Africa in managing indigenous/local knowledge. Specifically, the paper intended to:

i. Explore the technology available in managing indigenous
ii. Examine empirically how libraries in sub Saharan African countries have been managing indigenous knowledge if at all and;
iii. Recommend on how capturing of indigenous knowledge can be formalized in academic libraries.

2. LITERATURE REVIEW

This section presents a review of literature related to management of indigenous knowledge and how academic libraries in Africa have been involved.

2.1 Definition of key terms

Information and Communication Technologies

According to Suryawanshi and Narkhede (2012), ICT refers to technology that aids functions that involve information. Such functions include collecting, processing, storing and presenting data. These functions are increasingly also covering collaboration and communication. It is for this reason that Information Technology (IT) has become Information and Communication Technology (ICT).

Academic library

An academic library is a library that enhances access to most of the information resources that have been selected and acquired to fulfill the needs of learners, departments, faculty and staff of an academic institution in order to support teaching, learning, research and other needs in the university (Alfrih, 2010). It is an entity in a postsecondary institution with an organized collection of printed or other materials, or a combination thereof, staff trained to provide and interpret such materials as required to meet the informational, cultural, recreational, or educational needs of clientele, that has an established schedule in which services of the staff are available to clientele and provides a physical facilities necessary to support such a collection, staff and schedule (Tabs, E.D. (2000). Usually academic libraries are in higher learning institutions and are set to provide library service to students and academic staff of higher learning institutions.

Indigenous Knowledge

Indigenous/local Knowledge can be generally referred to as the information that a local community or society gathers from generations to generation of dwelling in a specific environment (United Nations Environment Programme, n.d: 1). Indigenous knowledge is local, practical and enforced through learning by doing (Lwoga 2011). This type of knowledge is based on experience of local people, it is shared through interpersonal communication, and it is highly

volatile. It therefore, comprises technologies, skills, practices, and beliefs, language, food transferred orally to generation on to generations that assist the community to make meaningful life. Nakata et. al (2005:8) indicate that indigenous/local knowledge is communally owned and are represented as “stories, songs, folklore, proverbs, cultural values, norms, beliefs, rituals, local languages, and agricultural practices, including the development of plant species and animal breeds”. It is can therefore be described as holistic. In commenting on indigenous knowledge, Tella (2007:186) briefly indicate that is very relevant for the following reasons:

- "it provides problem solving strategies for communities;
- it is relevant for the development process; and
- contributes significantly to global development knowledge;
- it is relevant for the development process; and
- it is an under-utilized resource in the development process"

2.2 Uses and Importance of Indigenous Knowledge

The importance of indigenous knowledge in solving cultural, economic, environmental, medical and social problems cannot be undermined (Nyong et al., 2007; Mortimore & Adams, 2001; Gadgil et al., 1993). This type of knowledge is originated and used in a specific community. Tapfumaneyi and Rupande (2014) describe indigenous knowledge to be unique to a given culture. This is because socio-cultural, economic, environmental and medicinal concerns of one community may not necessarily be the same as those of the other. Moreover, the approach and knowledge used by one community to solve a given problem may not necessarily be the same as that used by the other to solve the same problem. However, indigenous knowledge provides the basis for decision making and problem solving among most people in local communities (Tapfumaneyi & Rupande, 2014).

In climate and weather prediction, local communities use local indicators for forecasting weather (Makwara, 2013). Local communities can forecast through personal experience and by observing changes in behaviours of animals, insects, plants and meteorological and astronomical indicators (Tapfumaneyi & Rupande, 2014). Giving an example, Tapfumaneyi and Rupande describe the mating behaviour of domestic birds like guinea fowl may be used for weather forecast. In other

communities, appearance of some insects like ants, movement of birds and insects, regeneration of leaves in plants is used in forecasting weather (Maferetlhane, 2012).

Scholars like (Makwara, 2013; Mugwisi, Ocholla & Mostert, 2012) appreciate the role played by indigenous knowledge in agriculture where it facilitates soil fertility management, selection of seeds, post harvest management, and animal health, reproduction and treatment of diseases. Through long term experience, local people have been employing various techniques for improving soil fertility. Malekani (2016) mentions that local farmers have been practicing intercropping for the purpose of increasing soil fertility. Others use dung manure, shift to other farms for the previous farm to restore fertility and use ashes to meet the same purposes.

In most countries in Africa, usage of traditional medicine and indigenous health services is still predominant. In the modern age, traditional medicine and health services is being given alternative names so as to cope with the modernity of societies. Ocholla and Onyancha (2005) mention one of the names for traditional medicine to include alternative medicine. Regardless of the names, indigenous knowledge is important health of indigenous people. Munguti (1997) says "indigenous knowledge has become the basis for the management of ill-health and diseases". The studies of (Yirga, 2010; Munguti, 1997; Singida, 1994) acknowledge the role played by indigenous medicine in the health care system.

Indigenous knowledge plays an immeasurable role in the area of indigenous languages. These languages are rich in terms of vocabularies and have been used for passing indigenous knowledge from one generation to the other. Despite their richness and importance, indigenous languages have been gradually eroded in Africa since the onslaught of colonialism, now they are considered to be inferior to other languages (Tapfumaneyi & Rupande, 2014). Managing indigenous languages is important because majority of beholders of indigenous knowledge are elderly people who speak other languages with difficulties. Eyong (2007) clearly points out that loss of indigenous language is most cases associated with loss of indigenous knowledge.

The use of indigenous knowledge in environmental conservation has shown tremendous results in some areas. For example, most climate change adaptation and mitigation projects are using indigenous knowledge in strategies to sustain natural vegetation. In supporting this argument, Eyong (2007) says "loss of indigenous knowledge lead to further environmental degradation". Hence the need to capture and managed it for effective use.

Generally, the usage of indigenous knowledge is in all spheres of life. Therefore, neglecting the capturing of usage of indigenous knowledge only means leaving so many people behind in the development process. This will make it difficult for most of the rural folks to be included in the socio-economic development that the Africa is aiming at.

2.3 How Indigenous Knowledge has been Captured/Challenges

Indigenous knowledge is in danger of being lost unless it is formally documented and preserved (Stevens, 2008; Ngulube, 2002). To limit this risk, indigenous knowledge must be documented and preserve for long term usage. Various technologies have been adopted for documenting indigenous knowledge. Scholars (Nyumba, 2006; Ngulube, 2002) mention written forms, audio-visual recordings or photos as some of the important techniques used for capturing indigenous knowledge. Written forms can either be print or electronic formats. Generally, indigenous knowledge can be captured through paper, audio or video recordings, cameras or through other modern ICT tools. Decision of what technique to be used in capturing indigenous knowledge largely depends on the type of indigenous knowledge to be captured.

Various technologies are used for managing indigenous knowledge. However, with technological advancements ICTs are now widely adopted (Chikonzo, 2006). ICTs enhance the storage and dissemination of indigenous knowledge to a wider audience (Adam, 2007). ICTs used in managing indigenous knowledge may include telecommunications technologies, computers, information networks and software (Adam, 2007; Chikonzo, 2006). These technologies are used for capturing, storing and disseminating indigenous knowledge; they enhance a cost-effective model for dissemination of indigenous knowledge and enable the accessible indigenous knowledge.

The African Union Heads of State and Government in 2010 made a declaration that demands all countries to consider ICTs as an important tool for Africa's development agenda. The extensive use of ICT infrastructure was seen as the prerequisite for the African countries to develop the ICT sector with the view of achieving sustainable development (South African Department of Arts & Culture 2010,19). Although this idea is recognized it benefits in relation to capturing and preserving indigenous knowledge has been encouraging as expected. Most African countries are still struggling with managing indigenous knowledge projects.

2.4 Challenges associated with capturing and managing indigenous knowledge

In Africa, there are still challenges associated with documenting indigenous knowledge in most of the countries. Chisenga (2002) mentions some challenges to include: unwillingness of holders of indigenous knowledge to share knowledge that it becomes documented; some categories of indigenous knowledge are hardly documented; and that indigenous knowledge is a source of income to some of the owners, documenting it is just like making everyone aware of that knowledge. Other challenges in capturing indigenous knowledge include lack of funds and labour requirements (Anyira, Onoriode & Nwabueze, 2010).

Capturing indigenous knowledge involves identifying the material to be preserved and then documented in different formats relevant to type of knowledge itself (Hunter, 2005). Before capturing indigenous knowledge, one has to determine optimum and most culturally appropriate approach to selecting, eliciting, recording, describing and disseminating this knowledge without insensitivity, intrusion, constraints, degradation or misrepresentation of the content (Hunter, 2005). In most cases, this is overlooked by majority of people involved in capturing indigenous knowledge.

Capturing indigenous knowledge involves the use of equipment and tools that are closetful. With advancements in technology, ICTs are the most used technologies for capturing, storage and dissemination of indigenous knowledge. Use of modern technologies which are not readily available to every academic library, equipment software, hardware and internet connectivity poses a challenge to capturing indigenous knowledge (Anyira *et al*., 2010). To a great extent, lack of equipment and the necessary infrastructure has been limiting the documentation of indigenous knowledge.

The other challenges limiting indigenous knowledge documentation is related to languages. Indigenous knowledge is in local languages and for documenting it translations are needed (Anyira *et al*., 2010). This has been difficult mostly when those capturing it are not familiar with that local language. Moreover, most of national or international languages may sometimes lack appropriate terminologies to explain what captured indigenous is about.

Documenting indigenous knowledge is expensive; it requires a lot of funds (Jain and Jibril, 2016). Funds are needed for buying equipment and installing the necessary infrastructure. As mentioned by Jain and Jibril (2016), lack of funds has limited majority of African countries from documenting indigenous knowledge.

The other challenge experienced during documentation is the distortion of meaning in indigenous knowledge (Eyong, 2007). This is reducing the reliability and authenticity of such knowledge and makes some of it not worthy for the next generation. This challenge is accelerated by immigration now happening in most indigenous and local communities.

Indigenous knowledge belongs to some communities and some to individuals or clans. It is passed from one generation to the other within the community or clan line. Documenting it requires adhering to intellectual property rights and thus copyright issues. This has been a challenge because some holders may not be willing to share knowledge and let it be accessed to others. The problem becomes more serious when indigenous knowledge is used as a source of income. Kawooya (2006) looks at intellectual property and copyright challenges where many of the holders of the knowledge lack control or even ownership of indigenous knowledge cultural creation. Jain and Jibril (2016) say '*sometimes, it is difficult to establish the ownership of indigenous knowledge*'.

There may be other challenges which are more specific to some communities, clans or individuals. It is important to understand them before embarking into the documentation process as it can help libraries get prepared with regard to costs, infrastructure and type of man power.

2.5 The Role of Academic Libraries

According to the Forestry Research Institute of Ghana (2016, para. 1) "Indigenous knowledge forms the basis for local level decision making in Agric, human and animal health, food security, education, natural resources management and must be protected." It is therefore, imperative that practical steps are taken to prevent local knowledge mainly on agriculture, medicinal plants, culture from diminishing by acquiring, processing, storing, retrieving and disseminating indigenous knowledge for posterity.

Preferably Academic libraries in Africa should keenly promote and protecting indigenous knowledge, and should serve as hub for communities and people wishing to gain access to organized indigenous knowledge. The expertise of the library staff in acquiring, processing, storing and disseminating of information placed academic libraries in a better position to manage indigenous knowledge. According to Isah, Bashorun & Omopupa (2012: 24) generally “libraries and archives are custodian of knowledge and cultural heritage; they hold drawings, paintings and other documentary artifacts, including manuscripts, records, books, audiovisual items"

The use of local knowledge can be very useful information resources for teaching, learning and conducting research since indigenous knowledge itself represents all forms of practices, skills’ and way of life of the local folks. Libraries should therefore, be in the lead in creating awareness and appreciation of indigenous knowledge in local communities. It begins by identifying sources of indigenous knowledge, capturing, storing and disseminating by increasing awareness and creating means of access and use. Through this the interest in indigenous knowledge will be generated in the academic community and indigenous knowledge will be used effectively (Makinde, & Shorunke, 2013).

This can be achieved through using information and communication technology and digitized media, this will help academic libraries to make means for disseminating indigenous knowledge of local communities to the international world, by ensuring that that indigenous knowledge is properly preserved, as well as changing local communities from consumer of information into production of information (Tjiek, 2006). For the purpose of the social of responsibility of the library in our present day, the modern-day library has to make provision for access to oral information, electronic and any other media. (Greyling, 2010: Para. 2).

This responsibility has social consequences such as cultural rights and livelihoods. For academic libraries to rise up to this task they should design creative means of using multi-media that has a wider listening audience in the society (Greyling, 2007). Libraries through the use of ICTs can capture, store and disseminate indigenous knowledge so that traditional knowledge is reserved for posterity. Generate easily accessible indigenous knowledge information systems and reducing the cost of disseminating indigenous knowledge (Adams, n.d).

3 METHODOLOGY

This study involved academic libraries from four countries namely Ghana, Tanzania, South Africa and Uganda for assessing how they manage indigenous knowledge. Investigations were made at some libraries in these four countries such as the Muhimbili University of Health and Allied Sciences Library, the Sokoine National Agricultural Library and the University of Dar es Salaam Library from Tanzania, the University of KwaZulu-Natal Library, University of Limpopo Library, University of South Africa Library and University of Venda Library from South Africa. Others were the University of Ghana Library, Kwame Nkrumah University of Science and Technology Library, University of Cape Coast Library and the University of Development Studies Library from Ghana, and the Makerere University Library, Uganda Christian University Library, and Ndenje University Library from Uganda.

Online content analysis, analysis of relevant documents and key informant interviews were used for collecting data. Online content analysis involved the review of the major academic library websites from each country. An analysis of relevant documents related to how academic libraries from each of the four countries managed indigenous knowledge was conducted.

Relevant literature were searched through Google Advanced Search, Google Scholar, Emerald and Ebscohost. Boolean operators were used for increasing the relevance of search results. Data collected through the two techniques were supplemented by key informant interviews which involved twelve librarians randomly selected among CPD Intake 8 participants from the four countries. Findings are presented in the form of descriptions and are found in Section Four.

4 FINDINGS AND DISCUSSIONS

This section gives empirical evidence on how Academic Libraries in Africa have been managing indigenous knowledge. General findings indicate that only few academic libraries in Africa manage indigenous knowledge fewer are involved in capturing it. Specific empirical evidence from Ghana, Tanzania, Uganda and South Africa also indicate the same phenomena (see section 4.2 for details).

4.1 Technologies available in academic libraries for managing indigenous knowledge

Findings from review of reports and journal articles, online content analysis and key informant interviews indicate that most academic libraries in Africa have the basic ICT infrastructure for managing different types of knowledge. Scholars (Pima, Odetayo, & Iqbal, 2016; Enakrire, 2016; Dadzie, 2015; Adoma & Ponelis, 2015; Lwoga, 2014) indicate academic libraries in Africa have adequate number of computers, fixed and wireless infrastructure and skilled staff to managing different formats of knowledge. Libraries have websites and some have Institutional Repositories for managing and disseminating knowledge. These structures can be used to managing indigenous knowledge if captured.

4.2 Academic libraries in Ghana and Indigenous Knowledge Management

The use of indigenous knowledge in Ghana is not new; it has existed since the foundation of the country. Like other countries in Africa, indigenous knowledge application in Ghana is extensive. It is practiced in all the ten regions and used in several diverse disciplines (Sraku-Lartey, et al, n.d.). It has been used tremendously to help in the development of communities, by older folks and rural areas in handling issues such as land preservation, health, food preservation, climate change, agriculture and in other areas. The Government has acknowledged indigenous knowledge as a resource that can be adopted for national development. Indigenous knowledge has been captured as a part of the National Science and Technology and Innovation Development Programme in Ghana (Sraku-Lartey, et al, n.d. : slide ...). It relevance and continuous use depends on careful and conscious efforts to capture, process, preserve and disseminate for use, especially, in this present environment where technology and formal education is considered supreme. The introduction of western knowledge has made it look less attractive to the younger generation. The preservation of indigenous knowledge therefore, requires commitment from the government not just lip service as well as non-governmental organizations and information related institutions and more importantly libraries.

The library is a place of knowledge creation and sharing. Akhubela (1990) in Prah (1999: 25) mentioned that "…indeed, libraries and information centers have, without question, been regarded as the custodians of wealth of knowledge possessed by a given socially group. They are the mediators of texts, symbols and discourses". Plockey (2 015:32) confirmed that libraries and

the information profession, specifically those in the universities and research institutions, play a critical role in relation to the management of indigenous/local knowledge and information. The role of librarians in acquisitioning, collecting, organizing, disseminating and as intermediaries of information, make them helpful to producers or folks who want to use indigenous knowledge (Plockey, 2015:33).

However, in Ghana not much has been done in relation to the capturing and preservation of indigenous knowledge. Indigenous knowledge still remains in the minds of individuals. This does not guarantee the continuity of it use. Though it used by rural folks and still being used, it has not been documented by the state or its libraries. A research conducted by Plockey (2015:40) indicated that all the major government university libraries in Ghana that she studied which were the University of Ghana, Kwame Nkrumah University of Science and Technology, University of Cape Coast, University of Education, University for Development Studies, University of Mines and Technology, University of Professional Studies, University of Health and Allied Sciences, and University of Energy and Natural Resources, none captures indigenous knowledge.

Plockey's visit to these libraries in the period between August 2014 to January 2015 to interact with the library staff about the capturing of indigenous knowledge revealed a gloomy picture. She found that academic libraries in Ghana has virtually nothing to do with the capturing of indigenous knowledge unless it is already processed and deposited with the library. One of the librarians succinctly stated that: "*In academic libraries we do not deal with oral traditions.* This response depicts the opinions of all the 21 librarians she interviewed. The Council for Scientific and Industrial Research [CSIR] (2016: para 1) confirm this by indicating that "managing indigenous knowledge using information management standards in libraries is a new phenomenon worldwide, and in Ghana it is virtually absent. Most libraries do not acquire indigenous knowledge in any form let alone process and store it". It can be confidently be said that academic libraries in Ghana do not capture indigenous knowledge as part of the information resources that can be beneficial to teaching, learning and research activities in academia.

The management of indigenous knowledge by academic libraries in Ghana is not positive, however, the Forestry Research Institute of Ghana under the Council for Scientific and Industrial Research with support from Elsevier foundation started documenting and building a database for

indigenous plants and foods in Ghana. The project started in January 2015 and will end December 2016. Currently the Institute has recorded 289 essential food and medicinal plants and the database is available in their library. FORIG has taken a step further in training librarians in all the institutes under the CSIR in the area of digitization of indigenous knowledge. The training focused on the role of the library and librarians in the digital environment, preserving digital resources and generating digital resources.

4.3 Academic libraries in managing indigenous knowledge in Tanzania

In Tanzania, there are several projects collecting indigenous knowledge on different aspects. Indigenous knowledge related to climate change, traditional medicine, culture and agriculture is being collected mainly through research projects. With funding by the Norwegian through Norwegian University of Life Sciences (NMBU), Three Universities from Tanzania namely Ardhi University (ARU), Sokoine University of Agriculture (SUA) and University of Dar es Salaam (UDSM) run the Climate Change Impacts, Adaptation and Mitigation (CCIAM) Programme.

This programme has several projects and among them is the CCIAM Documentation Project. which project is managed by libraries of the institutions. The documentation project has been enhancing the management of indigenous knowledge in the area of climate change. In this project, libraries are only involved in the storage and dissemination of knowledge as the capturing is done by researchers specializing in areas related to climate change. The CCIAM Documentation Project has an Institutional Repository through which knowledge is managed and disseminated. It is found at http://www.taccire.suanet.ac.tz/xmlui/.

The Directorate of Library Services at Muhimbili University of Health and Allied Sciences (MUHAS) manages indigenous knowledge on traditional medicine through its Institutional Repository. Knowledge on indigenous medicine is usually captured by the Institute of Traditional Medicine which is one of the academic institutes at MUHAS. Most resources from this Institute are found in the Institute of Traditional Medicine community of the MUHAS Institutional Repository which is found at http://ir.muhas.ac.tz:8080/jspui/.

The University of Dar es Salaam through the Institute of Resource Assessment has been capturing adequate indigenous knowledge on natural resources management. The University of Dar es Salaam Library has been managing such knowledge through its Institutional Repository found at http://repository.udsm.ac.tz:8080/xmlui/. Moreover, the University of Dar es Salaam Library is directly involved in capturing, storing and disseminating indigenous knowledge. Collected indigenous knowledge is current being organized before being disseminated to a wider audience.

Generally, academic libraries in Tanzania are mostly involved in storing and disseminating indigenous knowledge as most of them have the basic infrastructure needed for the capturing and organizing indigenous knowledge. Capturing is done by subject specialists from other departments within the universities. Despite the availability of basic infrastructure for managing different formats of indigenous knowledge, only very few resources are found in IRs of most academic libraries in Tanzania.

4.4 Academic Libraries and Indigenous Knowledge in South Africa

Management of indigenous knowledge in South Africa is more propagated by the National Research Foundation (NRF). Through NRF, the Indigenous Knowledge System is formed and universities are among its components. Some Universities in South Africa are part of the Indigenous Knowledge Systems Centre while others have nodes. The system has there were five conglomerate partner institutions that make up the Department of Science and Technology-National Research Foundation (DST-NRF) Centre in Indigenous Knowledge Systems (CIKS). These partner institutions are the; University of KwaZulu-Natal (UKZN), North-West University (NWU), University of Limpopo (UL), University of South Africa (UNISA), and University of Venda (UNIVEN). The main responsibilities of Centre in Indigenous Knowledge System are to aid research, education and training, information brokerage, networking and service rendering. This is conforming to the objectives of the South African National Indigenous Knowledge Systems Policy of 2004 which has labelled Indigenous Knowledge System in higher education as a key element of human capital and social transformation. The Higher Education Quality Committee (HEQC) and the Council on Higher Education (CHE) recently approved the

accreditation of a two-year Masters of Indigenous Knowledge Systems (MIKS) programme. (SANBio: http://www.nepadsanbio.org/network/indigenous-knowledge-system-iks-node.html)

The five consortium partnering universities are at the forefront in the management and preservation of Indigenous Knowledge and also serve as champions in the promotion or post-graduate research and training in South Africa. For example, the University of Kwazulu-Natal has been championing Indigenous Knowledge Systems research in African indigenous agriculture, food security including climate change; African traditional governance and leadership; African Indigenous languages. The North-West University, on the other hand, has been a champion in Indigenous Knowledge Systems curriculum development since 2001; the Universities of Limpopo and Venda have a rich bio-diversity and African Indigenous Knowledge Systems-based rural communities; and UNISA has a DST/NRF Chair in Development Education which has championed Indigenous Knowledge Systems research and post-graduate training. (UKZN: http://aiks.ukzn.ac.za/dst-iks-doc-centre)

Despite the good strategy being implemented by NRF and some Universities in South Africa, most libraries are just involved in storing and enhancing access to indigenous knowledge. However, compared to other libraries in Africa, academic libraries in South Africa are positioned at a better stage for capturing and storage indigenous knowledge. This is because they have most of the equipment and infrastructure for managing any format of indigenous knowledge.

4.5 Academic libraries and Indigenous knowledge in Uganda:

Nyumba (2006) points out that Uganda National Council of Science and Technology (UNCST) emphasizes documentary heritage and preservation of information and adopted a steering committee for indigenous knowledge in 1999 to commit especially academic institutions to raise awareness and preserve indigenous culture. Uganda National Library and Makerere University Library were chosen and mandated to collect, keep and disseminate information as legal deposits for all information written by a Ugandan or about Ugandans, Uganda or East Africa. Before such information is put to use two copies are deposited to the two legal deposits.

Collaboration between university libraries through forming the Consortium for Uganda University Libraries (CUUL) has also widened a base of participants providing a national

platform. (Kawooya, 2006) mentions the participation of Ugandan academic libraries in Database of African Theses and Dissertation (DATAD), a project of the Association of African Universities, is one continental initiative deeply involved indigenous knowledge related research since the bulk of African theses and dissertations directly or indirectly intersect with Africa's indigenous knowledge.

Thought at different levels and different collections the libraries in this study are to some extent involved in acquiring, capture, recording, documenting, narrations, experiences; codifying, indexing, and abstracting the indigenous knowledge already collected, develop standardized tools for indexing, cataloguing to accommodate tacit knowledge semantic, compiled bibliographies of the available resources, and prepared data banks, inventories and registers.

Makerere University Library is slightly ahead of the others in the consortium with a repository that is already populated and hosted, using DATAD, having a folk music archive, specific tribal values and customs collections. Ndejje has a manual system of capture and storage indigenous knowledge. Preservation and storage of indigenous knowledge by creating archives and taking up digitization projects, makes indigenous knowledge accessible through ICTs, working with Dspace open source technology, digital libraries, digital and mobile technologies. This can be made in order to widely disseminate indigenous to grassroots communities, it must be built as inexpensively as possible, ideally using components that are freely available.

Collection development librarians have worked on Collection Development Policies to include indigenous knowledge as a specialized collection. Other related policies like ICT policy, Preservation and conservation policies etc. are encouraged to include indigenous knowledge. Nyumba (2006) advises libraries to build indigenous knowledge capacity by balancing both social and technical input by identify indigenous knowledge specialists in the community, train archivists and equipped them with special skills in order to work with decision makers and other stakeholders. Also put in place a digitization unit, a bindery, equipment like hardware and software and all that is requires for preservation.

5 SUMMARY AND CONCLUSION

This study investigated the role of academic libraries in Africa in managing indigenous knowledge. Findings indicate the African content has rich indigenous knowledge that has not been not been managed as it should be. Also most academic libraries in Africa have the basic ICT infrastructure for managing indigenous knowledge, however, only few academic libraries in Africa manage indigenous knowledge and very few are involved in capturing it. Moreover, academic libraries in South Africa are positioned at a better place than most of others in Africa because they have access to more modern technologies for capturing and storing different formats of indigenous knowledge. Generally, academic libraries in Africa have not adequately been involved in incorporating indigenous knowledge in their collections. This has made indigenous knowledge still remains a gold mine that has to be explored for social, economic and environmental development.

RECOMMENDATIONS

To formalize capturing of indigenous knowledge, academic libraries must do the following:

- There is the need for awareness creation among academic libraries because the awareness is missing. Of all the institutions available academic libraries have the human resources with relevant skills and the basic infrastructure for managing any category of knowledge and information there we will sell the idea of the need to capture indigenous knowledge in our libraries to the head librarians in our various libraries.

- We also propose that academic libraries should take practical steps in considering acquiring indigenous knowledge materials as part of the academic libraries' collection. As our users interact with indigenous knowledge it will generate interest in use of indigenous knowledge.

- Academic libraries should identifying specific indigenous knowledge project and capture it from time to time depending on the needs of the community.

- Academic libraries should collaborate with other libraries at national and international level in preserving indigenous knowledge and;

- Furthermore, we propose that libraries run courses on indigenous knowledge to students to attract their interest.

- Consortia of academic libraries in Africa should directly be involved in promoting the preservation of indigenous knowledge;

- University management should support academic libraries in terms of funds for capturing and managing indigenous knowledge;

- Governments should educate local people on the importance of preserving indigenous knowledge;

- Collaborate with local people for them to willingly indigenous knowledge to be preserved for future generations;

- Intellectual property and copyright issues should be sorted before embarking into actual capture of indigenous knowledge;

- Collaboration with other libraries at national and international level on how best to manage IK;

Until academic libraries acknowledge the need to capture and manage indigenous knowledge and become part of the library collection, indigenous knowledge will remain unattractive to use and its importance will elude us.

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