NATIONAL OPEN UNIVERSITY OF NIGERIA

COURSE CODE: LIS 212

COURSE TITLE: INDIGENOUS KNOWLEDGE MANAGEMENT

Course Guide

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Indigenous Knowledge Management

Introduction

Welcome to **LIS 212: Indigenous Knowledge Management**. This Course Guide is a brief description of what the course is about and the course material will give you the contents of what you are expected to learn in this course. It also contains some general guidelines on the amount of time you are expected to spend on each unit of this course in order to successfully complete the course. There is a separate Assignment File which contains detailed information on tutor-marked assignments that you are expected to answer at the completion of each unit.

What You Will Learn In This Course

This course will give you in brief the awareness of the importance of Indigenous Knowledge Management in library and information science. The course will introduce you to the concept of Indigenous Knowledge Management, sources and natures of Indigenous Knowledge; oral information systems; Typology and Features of Indigenous Knowledge; Indigenous Knowledge Systems (IKS);indigenous knowledge generation, acquisition and management; channels and methods of indigenous knowledge dissemination and transfer; Indigenous Knowledge Sharing and transfer; role of ICTs in Indigenous knowledge management; role of libraries and information Centres in development and management of indigenous knowledge; databases creation for IKS; ethical issues and considerations in indigenous knowledge

Course Aims

The aim of this course is to prepare you towards the application of Indigenous Knowledge (IK) in Library and Information Science. This will be achieved by

- Introducing you to Indigenous Knowledge (IK).
- Introducing you to indigenous knowledge generation, acquisition and management.
- Knowing the role of libraries and information Centres in development and management of indigenous knowledge

Course Objectives

To achieve the above aims, some general objectives are set for the course. The course is divided into units and each unit has specific objective at the beginning. You may want to refer to them during and after you might have completed a unit to check the pace of your progress. The general objectives set below cover the whole course. By meeting these objectives, you should have achieved the aims of the course.

On successful completion of the course, you should be able to

- Define and explain the meaning of Indigenous Knowledge Management (IK).
- Clarify the Features of Indigenous Knowledge; Indigenous Knowledge Systems (IKS).

Working through the Course

To complete this course, you are advised to read each study unit of this study material and read other materials, which may be provided by the National Open University of Nigeria (NOUN). Self-assessment exercises are included in each unit and you will be required to submit tutor-marked assignments for assignment purposes. There will be a final examination at the end of the course. The course will last for 22 weeks. The course will be divided into learnable units and you can allocate your own time to the units so that you can complete the course at a record time. You are advised to utilize the opportunity of tutorial sessions for comparing notes and sharing ideas with your colleagues.

Course Materials

Major components of the course are:

- The Course Guide
- Study Units
- Assignments
- References /Further Reading
- Presentation Schedule

Study Units

There are 17 study units divided into four modules in this course. The modules and units are presented as follows:

MODULE 1: INDIGENOUS KNOWLEDGE MANAGEMENT

Unit 1: Definition of Indigenous Knowledge Management (IKM)

Unit 2: Scope and Importance of Indigenous Knowledge

Unit 3: Types and Components of Indigenous Knowledge

Unit 4: Nature and Features of Indigenous Knowledge (IK)

Unit 5: Steps in IKM and Challenges associated with IKM

MODULE 2: INDIGENOUS KNOWLEDGE MANAGEMENT SYSTEM

Unit 1: Indigenous Knowledge System

Unit 2: Sources of Indigenous Knowledge and Causes of Indigenous Knowledge base destruction

Unit 3: Preserving and Documenting Indigenous Knowledge (IK)

Unit 4: Channels of Indigenous Knowledge (IK) Communication/Dissemination and approaches of Indigenous Knowledge

MODULE 3: THE ROLE OF ICTS AND INFORMATION CENTRES IN IKM

Unit 1: The Role of ICT in IKM

Unit 2: The role of libraries and Information Professionals in Indigenous Knowledge Management

Unit 3: The Role of Public Libraries in IKM

Unit 4: Preservation of Indigenous Knowledge and Causes of destruction in the Library

MODULE 4: ETHICAL ISSUES AND CONSIDERATIONS IN IKM

Unit 1: Indigenous Knowledge and Intellectual Property Rights (IPRs)

Unit 2: International Initiatives and Ethical Issues to Protect Indigenous Knowledge

Unit 3: Strategies and Approaches to Indigenous Knowledge Management

Unit 4: Reasons why Indigenous Knowledge need to be managed and protected

Each unit consists of table of contents, introduction, statement of objectives, main content, conclusion, summary and references. There are activities at every point that will assist you in achieving the stated objectives of the individual units of this course.

Assessment

Assessment method will be two-folds: Continuous assessment known as tutor- marked assignment (TMA) and written examination. The course materials are prepared to assist you to do your TMA(s) which is computer based. You are expected to utilize the information and knowledge from the recommended texts at the end of each unit. The TMA (s) will carry 30% of the total marks while the final examination of about two hours duration will be written at the end of the course and this will carry 70%.

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MODULE 1: INDIGENOUS KNOWLEDGE MANAGEMENT

Introduction

Welcome to Indigenous Knowledge Management class. In this module we are going to learn the basic concepts of Indigenous Knowledge Management. What does Indigenous Knowledge Management mean? Why is it important to us as librarians, information professionals?

Unit 1: Definition of Indigenous Knowledge Management

CONTENTS

1.0 Introduction

Sophisticated knowledge of the natural world is not confined to science. Human societies all across the globe have developed rich sets of experiences and explanations relating to the environments they live in. These 'other knowledge systems' are today often referred to as traditional knowledge or indigenous or local knowledge. They encompass the

sophisticated arrays of information, understandings and interpretations that guide human societies around the globe in their innumerable interactions with the natural milieu: in agriculture and animal husbandry; hunting, fishing and gathering; struggles against disease and injury; naming and explanation of natural phenomena; and strategies to cope with fluctuating environments (Nakashima, Prott & Bridgewater, 2000)

2.0 Objectives

At the end of this unit, you should be able to:

- define the term Indigenous Knowledge
- explain the concept of Indigenous Knowledge Management
- differentiate between Indigenous Knowledge and Indigenous Knowledge Management.

3.0 Main Content

3.1 Definition of Indigenous Knowledge (IK)

Any knowledge that is peculiar to a group of people in a community is an indigenous knowledge. It is not a documented knowledge. Usually it is passed from a generation to another generation which makes it difficult to identify the owner of the knowledge. Indigenous knowledge is commonly found in Africa. Indigenous knowledge can be defined as "A body of knowledge built up by a group of people through generations of living in close contact with nature" (Johnson, 1992). Generally speaking, such knowledge evolves in the local environment, so that it is specifically adapted to the requirements of local people and conditions. It is also creative and experimental, constantly incorporating outside

influences and inside innovations to meet new conditions. It is usually a mistake to think of indigenous knowledge as 'old-fashioned,' 'backwards,' 'static' or 'unchanging Indigenous people are the original inhabitants of a particular geographic location, who have a culture and belief system distinct from the international system of knowledge (e.g. the Tribal, Native, First, or Aboriginal people of an area). Some feel that such a definition is too narrow, in that it excludes peoples who may have lived in an area for a long period of time but are not the original inhabitants. This has led to widespread use of the term local knowledge, a broader concept which refers to the knowledge possessed by any group living off the land in a particular area for a long period of time. Under this approach, it is not necessary to know if the people in question are the original inhabitants of an area, the important thing is to learn how people - aboriginal or non-aboriginal - in a particular area view and interact with their environment, in order that their knowledge can be mobilized for the design of appropriate interventions (Johnson, 1992).

Indigenous knowledge is the local knowledge that is unique to a culture or society. Other names for it include: ‘local knowledge’, ‘folk knowledge’, ‘people’s knowledge’, ‘traditional wisdom’ or ‘traditional science’. This knowledge is passed from generation to generation, usually by word of mouth and cultural rituals, and has been the basis for agriculture, food preparation, health care, education, conservation and the wide range of other activities that sustain societies in many parts of the world (Nakashima, Prott & Bridgewater, 2000)

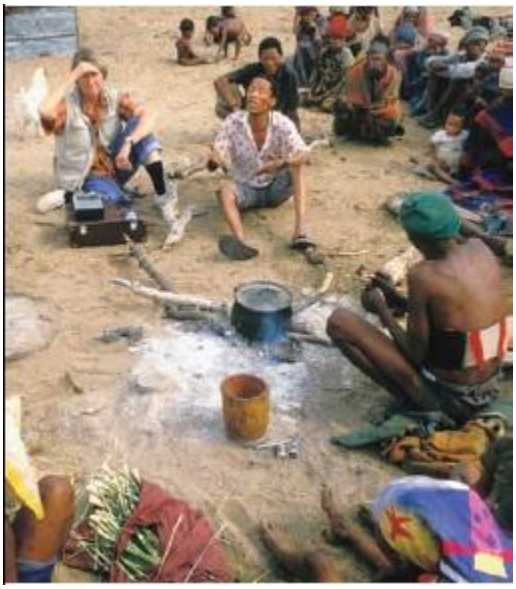
Indigenous people have a broad knowledge of how to live sustainably. However, formal education systems have disrupted the practical everyday life aspects of indigenous knowledge and ways of learning, replacing them with abstract knowledge and academic ways of learning. Today, there is a grave risk that much indigenous knowledge is being lost and, along with it, valuable knowledge about ways of living sustainably.

Indigenous knowledge (IK) generally speaking is the knowledge used by the locals of an area or community to make a living in a particular environment, it could be a knowledge of herbs used in healing a particular aliment or beliefs, innovation , acts, other forms of cultural experience and expression that belong to the group. Terms used in the field of sustainable development to designate this concept include indigenous technical knowledge, traditional environmental knowledge, rural knowledge, local knowledge and farmer's or pastoralist's knowledge. Indigenous Knowledge (IK) can also be broadly conceptualized as the knowledge that an indigenous (local) community accumulates over generations of living in a particular environment. This definition encompasses all forms of knowledge, technologies, know-how skills, practices and beliefs that enable the community to achieve stable livelihoods in their environment.

Indigenous, traditional or local knowledge has been defined as knowledge that is unique to a given culture or society and communities. It is a local know-how and cultural practices that belong to a community and are transmitted orally between generations.


Pictures showing Indigenous Knowledge

Source: Indigenous Knowledge @google.com

Pictures showing Indigenous Knowledge

Source: Indigenous Knowledge @google.com

3.2 Indigenous Knowledge Management (IKM)

The concept of IK management involves the identification, collection, codification, documenting, organizing, preservation, transfer, linking, application, dissemination and

sharing of knowledge on indigenous community livelihoods and ecosystems, for sustainable development. According to Kaniki and Mphahlele (2002) most knowledge management principles can be used in the management of IK although several issues need to be addressed for IK to be effectively managed for the benefit of all. One issue to be considered is that since IK was marginalized, and at times treated with suspicion, there is a need for awareness to be raised about its importance; society will recognize its usefulness and thus warrant the allocation of resources to it. Another issue to address in IK management is the fact that unlike Western knowledge, which is packaged in a shape ready for collection and housing in libraries, IK is primarily the property of communities and is shared and handed down in appropriate situations and according to certain rules. Individuals go through lifelong training in their particular environments, learning to subdue and coexist with nature (Mumba, 2002). There is a need for information professionals to define, recognize and manage this information. The time has come to realize that the problem is not with the user's lack of interest in using IK but there is a need to get in tune with what users reasonably want, need and in which form they require it (Mumba, 2002).

Another important issue in IK management is that in the effort to manage knowledge, one has to be in a good position to understand the desired goal of managing IK and who the knowledge is meant to benefit. The aim of managing IK can be diverted from its original reason if no desired goal for IK management is spelt out (Mumba, 2002). Owing to its special nature, IK needs innovative methods of definition, collection and dissemination. However, particular care needs to be taken to ensure that the final product is enjoyed fully

by the originators of the knowledge (Mumba, 2002). That means the originators of the knowledge need to be fully acknowledged.

Management of knowledge is extremely important. To have knowledge only is not sufficient but connecting knowledge with its application empirically or conceptually or even philosophically to desirable social ends is essential. IK systems generally provide a way of connecting a way of knowing, away of feeling and also a way of doing. Like the scientific knowledge, indigenous knowledge also needs to be managed on technical base. The essential steps as mentioned by Gorjestani (2000) are the ways of its transformation i.e. recognition and identification, validation, recording and documentation, storage in retrievable repositories, transfer and dissemination. These steps can be further elaborated as follows:

Recognition and identification: Some IK may be embedded in a mix of technologies or in cultural values, rendering them unrecognizable at first glance to the external observer (technical and social analyses may, therefore, be required to identify IK).

Validation: This involves an assessment of IK significance and relevance (to solving problems), reliability (i.e., not being an accidental occurrence), functionality (how well does it work?), effectiveness and transferability.

Recording and documentation: Recording IK and its documentation is a major challenge because of the tacit nature of IK (it is typically exchanged through personal communication from master to apprentice, from parent to child, etc.). In some cases, modern tools could

be used, while in other circumstances it may be appropriate to rely on more traditional methods (e.g., taped narration, drawings).

Storage in retrievable repositories: Storage is not limited to text document or electronic format; it could include tapes, films, storytelling, gene banks, etc.

Transfer: This step goes beyond merely conveying the knowledge to the recipient; it also includes the testing of the knowledge in the new environment. Pilots are the most appropriate approach in this step.

Dissemination: Dissemination to a wider community adds the developmental dimension to the exchange of knowledge and could promote a wider and deeper ripple impact of the knowledge transfer. We presume that the awareness, pilot applications, and "mainstreaming" are necessary steps required for a successful integration of IK into the development process which could help in managing indigenous knowledge. Higher education institutions need to play a role in harnessing and disseminating indigenous knowledge for sustainable development providing the knowledge base and transmitting of new skills. Libraries can be used for collecting, preserving and disseminating indigenous knowledge. Incorporating IK into an educational environment can help students feel ownership of the knowledge they bring to learning environments. IK needs to be addressed and integrated into educational programs settings or learning environments, and students better connected to material taught can become a major knowledge source for their community sustainable development.

To manage indigenous knowledge, the following **four factors** are important: dissemination of information, facilitating exchange of IK among developing countries, applying IK in development processes, and building partnerships.

4.0 Conclusion

No doubts, the management of IK is necessary in every society considering its relevance toward cultural and socio-economic development of the indigenous people and the society at large.

5.0 Summary

Indigenous knowledge (IK) generally speaking is the knowledge used by the locals of an area or community to make a living in a particular environment; it could be knowledge of herbs used in healing a particular aliment or beliefs, innovation, acts, other forms of cultural experience and expression that belong to the group. The unit discussed the concept of Indigenous Knowledge and Indigenous Knowledge Management, essentials steps and factors of IKM were identified under this unit.

6.0 Tutor-Marked Assignment

1. Clearly explain under four (4) heading the important factors for managing Indigenous Knowledge.

7.0 References/Further readings

Bates P., Chiba, M., Kube, S. & Nakashima, D. (2009) *Learning and Knowing in Indigenous Societies Today*, UNESCO, Paris

Gorjestani, N. (2000). Indigenous knowledge for development: Opportunities and

Challenges. United Nations Conference on Trade and Development. Geneva.

Grenier, L. (1998) *Working with Indigenous Knowledge: A Guide for Researchers*, IDRC, Canada.

IFAD (2003) *Indigenous Peoples and Sustainable Development*, Roundtable Discussion Paper for the Twenty-Fifth Anniversary Session of IFAD's Governing Council.

Johnson, T. (1992). *Lore: Capturing Traditional Environmental Knowledge*, (ed.) Dene Cultural Institute and International Development Research, Ottawa, Canada.

Johnston, A.M. (2005) *Is the Sacred for Sale. Tourism and Indigenous Peoples*, Earthscan, London.

Kaniki, M.A. & Mphahlele, K.M.E. (2002). Indigenous knowledge for the benefit of all: can knowledge management principles be used effectively? *SA journal of library and information science* 68(1):1-15.

Le Grange, L. (2007) 'Integrating Western and Indigenous Knowledge Systems: The Basis for Effective Science Education in South Africa? *International Review of Education*, 53(5-6), pp. 577-591.

Mumba, N. (2002). Metamorphosis or mutation: managing information in a changing world. In *SCECSAL 2002: from Africa to the world-the globalization of indigenous knowledge systems.* Pretoria: LIASA: 311-321.

Nakashima, D., Prott, L.& Bridgewater, P. (2000) Tapping into the world's wisdom, *UNESCO Sources*, 125, July-August, p. 12.

Raseroka, K.H. (2002). From Africa to the world-the globalization of indigenous knowledge systems: setting the scene. In Snymen, R. (ed.) *SCECSAL 2002: from Africa to the world-the globalization of indigenous knowledge systems. Proceedings of the 15th Standing Conference of Eastern, Central and Southern African Library and Information Associations, 15-19 April, Ceasars Gauteng Conference Centre, South Africa*. Pretoria: LIASA: 1-12.

Sillitoe, P. (2009) *Local Science Vs Global Science: Approaches to Indigenous Knowledge in International Development*, Berghahn Books.

World Bank (2004) *Indigenous knowledge: local pathways to global development*, Africa Regional Office, World Bank.

Additional Activities

Visit the following websites for more detailed explanation on the Unit and also watch YouTube videos:

https://www.researchgate.net/.../265197993_Indigenous_knowledge_as_a_key_to_sustai...

https://www.researchgate.net/.../46472800_Indigenous_Knowledge_Systems_Characteri...

https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/32058/114518.pdf?...

https://www.zef.de/uploads/tx_zefportal/.../deed_Chapter12_Eyong-C-Takoyoh.pdf

https://www2.hu-berlin.de/transcience/Vol4_Issue2_2013_3_18.pdf

https://www.unisdr.org/files/8853_IKPolicyNote.pdf

YouTube

https://www.youtube.com/watch?v=3a-AchNXcTc
https://access2perspectives.com/services/indigenous-knowledge/

stream.aljazeera.com/story/201808282109-0025702

https://www.youtube.com/watch?v=agQDKkueT-c

https://www.globallandscapesforum.org/video/science-indigenous-knowledge/

https://www.youtube.com/watch?v=2XeUkz1D3nw

Unit 2: Scope and Importance of Indigenous Knowledge

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1.0 Introduction

Indigenous Knowledge has been used for centuries by indigenous and local communities under local laws, customs and traditions. It has been transmitted and evolved from generation to generation. IK has played and still plays an important role in vital areas such as medical treatment, food security and the development of agriculture. IK is also the cause of a great variety of artistic expressions, including musical works (juju music of the South Western Nigeria, Egwu Ogene of the East Western Nigeria) and handicrafts(brass and bronze works of Benin, Bida).

2.0 Objectives

At the end of this unit, you should be able to:

- State clearly the boundaries of Indigenous Knowledge
- List the importance of Indigenous Knowledge to individual and to the community generally

3.0 Main Content

3.1 Scope of Indigenous Knowledge

Stated by Martine, (1998) IK constitutes the ancient knowledge of humanity, the deepest layer on which our science and culture have developed, the local solutions that have allowed the creation and management of ecosystems and cultural landscapes on the entire surface of the planet. It enables the development of solutions with a low energy and resource use that are able to adapt to environmental variability and to react to emergencies and catastrophes in flexible and multifunctional ways. Today, while entire planet systems risk ecological collapse, IK shows how to interact with the environment enhancing its resource potential without exhausting it. In addition, it cannot be excluded that traditional knowledge might have an industrial application, even if the tangible object to which the intangible knowledge relates has not been subject to any scientific interference or modification. IK is thus a valuable source of knowledge. IK may help to find useful solutions to current problems, sometimes in combination with modern scientific and technological knowledge.

IK encompasses very different types of knowledge. These may be distinguished by the elements involved, the knowledge's potential or actual applications, the level of codification, the individual or collective form of possession, and its legal status. The desire to protect IK has generated a significant body of literature and many proposals of regulation and for action in different international fora. Precisely how IK is defined has important implications for the kind and scope of a possible protection regime. IK includes, for example, information on the use of biological and other materials for medical treatment and agriculture, production processes, designs, literature, music, rituals, and other techniques and arts. This broad set includes information of a functional and of an aesthetic character, that is, processes and products that can be used in agriculture or industry, as well as intangibles of cultural value. Mostly, IK comprises of knowledge which has been developed in the past, but which still continues to be developed. Most IK is, in effect, of non-contemporary nature; it has been used for generations and in many cases collected and published by anthropologists, historians, botanists or other researchers and observers. However, IK is not static; it evolves and generates new information as a result of improvements or adaptation to changing circumstances. The context of IK varies significantly and its forms of expression. Some IK is codified, that is, formalized in some way (e.g. textile designs, Ayurveda traditional medicine). A great part of IK, however, is non-codified or tacit, such as, "folk", "tribal" or "indigenous" medicine, which is based on traditional beliefs, norms and practices accumulated during centuries old experiences of trial and error, successes and failures at the household level, and passed to successive generations through oral tradition (Martine, 1998)

IK may be possessed by individuals (eg healing practices and rituals), by some members of a group, or be available to all the members of a group (common knowledge), for example with knowledge on herbal-home remedies which is held by millions of women and elders. When its application, and in particular the delivery of IK-based products, can be made through commercial channels IK may be of commercial value. While some IK can be used and understood outside its local/traditional/communal context, this is not always the case. There are often spiritual components in the IK peculiar to each community. Knowledge that cannot be utilized beyond its communal context has little or no commercial value, despite the value that such knowledge may have for the life of the originating community (Martine, 1998).

3.2 Importance of Indigenous Knowledge

Indigenous Knowledge is a key element of the "social capital" of the poor; their main asset to invest in the struggle for survival, to produce food, to encompass shelter or to achieve control of their own lives. Owing to dynamic nature changes its character according to the needs of people and gains vitality from being deeply entrenched in people's lives.

Consequently, IK has the potential of being translated into commercial benefits by providing leads/clues for development of useful practices and processes for the benefits of mankind. Indigenous Knowledge is an integral part of the development process of local communities. Moreover, IK is an important resource in the development process and sharing IK within and across communities can help enhance cross-cultural understanding

and promote the cultural dimension of development example is the Argungu fishing festival in the North-Western part of Northern Nigeria where people of different culture come together. According to The World Bank Group (1998) the importance of IK is stated below:

a. It provides problem solving strategies for local communities, especially for the poor.
b. It represents an important contribution to global development knowledge.
c. IK systems are at risk of becoming extinct.
d. IK is relevant for the development process.
e. IK is an under-utilized resource in the development process.

3.2.1 Why is Indigenous Knowledge important to communities?

i. **Connecting to the past**: IK represents a powerful link to a community's past. It offers information about a people's history, the land they have lived on, how they procured and processed resources and their relationships to other communities, other species, and the cosmos.

ii. **Expressing the present**: IK informs a community's self-identity—how they understand themselves, each other, and how they fit in the wider world. To know how one's ancestors lived, what they valued, and what they knew is vitally important to understanding who is in the present. In many cases, practices based on IK—from harvesting plants to telling stories—connect generations, both living and long gone.

iii. **Anticipating the future**: Retaining and using IK may contribute to a community's future wellbeing. Skills learnt from IK can contribute to concrete endeavors such as asserting land claims, protecting traditional territory and natural resources, and continuing cultural practices of living on the land. IK can also be a key to affirming culture, particularly for indigenous communities living in colonial contexts. IK is the foundation of efforts to keep indigenous languages alive, enrich cultural expressions such as visual and performing arts and share community cultural values with the wider world.

3.2.2 Benefits for Local People

It is extremely important that local people benefit from the recording of their knowledge. Beyond contributing to project goals, documentation and storage of IK can benefit local people in the following ways:

a. IK can be preserved for future generations so that it does not disappear with the passing away of Elders.
b. IK can be legitimized in the eyes of younger generations by presenting it in a format that puts it on equal footing with the international knowledge system, which they are exposed to in state-run schools and through television and radio.
c. IK can be taught to younger generations in schools or other fora as a regular program.

d. IK can be made available to the least knowledgeable of a community. People can use research or their own experience to enhance IK, which they can pass on.
e. Problems and solutions can be identified through analysis of IK, resulting in further projects that can benefit the community.

Indigenous Knowledge is not only important in its own right, but is also important for the benefits it brings to the following people:

- The indigenous people who own and live it;
- All the other people around the world who can learn lessons for living sustainably from it; and
- The Earth which would be treated more carefully if indigenous knowledge and values were followed more widely.

4.0 Conclusion

IK includes information of different kinds and functions, developed in ancestral times but subject to contemporary improvement and adaptation. It is expressed in various documented and non-documented forms, and may possess commercial value depending on its potential or actual use. IK is a central's component for the daily life of millions of people in developing countries. Traditional Medicine (TM) serves the health needs of a vast majority of people in developing countries where access to modern health care services and medicine is limited by economic and cultural reasons. It is often the only affordable treatment available to poor people and in remote communities.

5.0 Summary

Indigenous Knowledge provides problem solving strategies for local communities, especially for the poor. Under this unit, scope of Indigenous Knowledge was clearly identified as well as the importance of IK to the Community and to the indigenous people. Its benefits to the communities and local people were also discussed.

6.0 Tutor-marked Assignment

1. Clearly explain why do you think IK is Important in Modern days.

7.0 References/Further Reading

Agrawal, A. (1995). Indigenous and Scientific Knowledge: Some Critical Comments. Indigenous Knowledge Development Monitor, 3(3). Yale University, Yale. Pacific Research and Evaluation Series of Symposia and Fono. Wellington, New Zealand.

Anae, M. M. (1998). Fofoa-i-Vao-'ese: The Identity Journey of New Zealand born Samoans. PhD thesis, Auckland, New Zealand.

Castro, L., & Tsuda, K. (2001). Samoan Medicinal Plants and Their Usage. Manoa, Hawaii: Agricultural Development in the American Pacific.

Efi, T. (2004).Clutter in Indigenous Knowledge, Research and History: A Samoan Perspective.

Gorjestani, N. (2000). Indigenous knowledge for development: Opportunities and Challenges. United Nations Conference on Trade and Development. Geneva.

Grenier, L. (1998) *Working with Indigenous Knowledge: A Guide for Researchers*, IDRC, Canada.

Le Grange, L. (2007) Integrating Western and Indigenous Knowledge Systems: The Basis for Effective Science Education in South Africa? *International Review of Education*, 53(5-6), pp. 577-591.

Martine, K. (1998) Biodiversity Prospecting and the Equitable Remuneration of Ethno

biological Knowledge: Reconciling Industry and Indigenous Interests, *Intellectual Property Journal*, No. 12, p. 265.

WorldBank.(1998).Indigenous knowledge. At http://www.worldbank.org/afr/ik/ikrept.pdf

Unit 3: Types and Components of Indigenous Knowledge

CONTENTS

1.0 Introduction

Indigenous knowledge is considered to be cultural knowledge in its broadest sense including all of the social, political, economic and spiritual aspects of a local way of life. Indigenous knowledge is embedded in a dynamic system in which spirituality; kinship; local politics and other factors are tied together and influence one another.

2.0 Objectives

At the end of this unit, you should be able to:

- state the different types of IK from different perspectives
- enumerates examples of IK under each type
- list the components of IK

3.0 Main Content

3.1 Types of Indigenous Knowledge

Several categories of Indigenous Knowledge (IK) were identified by different scholars, below are some of the categories:

The following types of IK were identified by Tavana, (2002) who stated two types of indigenous knowledge – explicit indigenous knowledge and tacit indigenous knowledge. These are discussed further below.

a. Explicit Indigenous Knowledge

Explicit knowledge consists of "facts, rules, relationships and policies that can be faithfully codified in paper or electronic form and shared without need for discussion" (Wyatt, 2001). Furthermore, Smith (2001) defines explicit knowledge as "academic knowledge or "know-what" that is described in formal language, print or electric media, often based on established work processes, use people-to documents approach". Explicit indigenous knowledge refers to traditional knowledge that is easily articulated, expressed, communicated and recorded. According to Tavana, (2002) examples of explicit indigenous knowledge is Samoan indigenous knowledge include the names of reef fish, the breeding times of birds or the way in which to use certain plants for medicinal purposes. The nature of explicit knowledge is that it is easy to store, transfer and communicate with others. As the erosion of explicit IK and indigenous communication are increasing, the need to transfer, store and retain this knowledge amongst indigenous communities is greater now more than ever before (Mehta, Alter, Semali, & Maretzki, 2013; Tikai & Kama, 2010).

b. Tacit Indigenous Knowledge

In contrast to explicit knowledge, tacit knowledge refers to the "practical, action-oriented knowledge or "know-how" based on practice, acquired by personal experience, seldom expressed openly [and] often resembles intuition" (Smith, 2001). Tacit knowledge is often difficult to express openly with words because it encompasses carrying out something without having to think about, like riding a bicycle for example. The very nature of tacit knowledge is that it is difficult to extract from the heads of individuals. It is very seldom found in books, manuals, databases or files as it is developed from mental models, values, beliefs, perceptions, insights, experiences and assumptions (Smith, 2001). Tacit indigenous knowledge refers to the types of traditional knowledge that cannot be easily expressed or articulated to outsiders (Tavana, 2002). Tacit IK is largely based on an individual's emotions, experiences, insights, observations and perceptions. Examples of a tacit indigenous knowledge are Samoan tacit indigenous knowledge which includes the deep respect that indigenous people have for their indigenous elders or the process of reaching a unanimous consensus within their society (meeting).

Moreover, while IK research originally emphasized indigenous technical knowledge of the environment, it is now accepted that the concept of IK goes beyond this narrow interpretation. IK is now considered to be cultural knowledge in its broadest sense, including all of the social, political, economic and spiritual aspects of a local way of life. Sustainable development researchers however, have found the following categories of IK to be of particular interest:

i. resource management knowledge and the tools,

ii. techniques, practices and rules related to pastoralism,

iii. agriculture, agro-forestry, water management and the gathering of wild food;

iv. classification systems for plants, animals, soils, water and weather;

v. empirical knowledge about flora, fauna and inanimate resources and their practical uses; and the worldview or way the local group perceives its relationship to the natural world.

With respect to its nature and holders, IK can broadly be classified by United Nations Environment Programme as**:**

1. Community indigenous knowledge
2. Publicly known indigenous knowledge
3. Individual indigenous knowledge
4. Documented indigenous knowledge
5. Vocal indigenous knowledge
6. Sacred indigenous knowledge
7. Secular indigenous knowledge

Community Indigenous Knowledge: indicates information that is not known to all but known only to a small group of people e.g. Tribal Knowledge. This knowledge is generally being transmitted verbally only to the members of the community.

Publicly known Indigenous Knowledge: refers to the information commonly known and used by the people with or without documentation. The medicinal use of *Neem*, mahogany, and other trees provides examples of this class.

Individual Indigenous Knowledge: is available only with an individual or certain member of a family. Usually this information is handed over orally from the elder to his successor.

Documented Indigenous Knowledge: means information that is well documented and available to the public.

Vocal Indigenous Knowledge: covers knowledge which is unwritten but preserved and handed over through generations orally.

Sacred Indigenous Knowledge*:* consists both sacred tangible as well as sacred intangible rights. Sacred tangible rights suggest the property rights in tangible objects used as part of or pertaining to something sacred. Community's right over sacred sites is an example for this category. There are also sacred intangible rights which include intellectual property and other intangible rights applicable to the costume, choreography and photographs etc. of traditional sacred dance belonging to the community.

Secular Indigenous Knowledge: refers to the communities' right over arts and crafts. In this context, it includes material proper for commercial exploitation, items such as the family crests used in ceremonial occasions on clothing, masks, dance screens, etc. It also includes rights in photographs, choreographies, music or audiovisual productions used in non-sacred events and ceremonies.

Three (3) tiers of Indigenous Knowledge were identified by Bolhassan, Cranefield, and Dorner, (2014) to include:

Tier 1: Base Indigenous Knowledge

This first tier of indigenous knowledge is shared publicly within the indigenous communities. According to the participants, this knowledge is accessible to all, and there is no need to ask for it. This knowledge is imparted during communal events in which everyone can observe, listen or partake. It is the duty of elders to impart essential life skills knowledge to family and community members. The intangible TCEs used during these events include music, dance and chants, while the material TCEs include gongs and the paraphernalia appropriate for the events. When communal participation is the norm in the carrying out of the processes for the events, this is the time for the sharing and transfer of knowledge to occur. It is during socialization amongst the community members when this type of knowledge is made accessible to all, for people to observe, and for participation of those who are willing. This first tier of knowledge provides the base knowledge to enable a person who is interested to pursue this knowledge further. Communal events described by the participants include the rites for the passage of life, such as birth ceremonies, betrothal, funerals, to ceremonies such as the commencement of building a house. These events also include community celebrations such as those connected to beliefs and legends and which usually require the total involvement of community members, young and old, from across the community's structure. The first tier of knowledge category also includes 'unspoken' knowledge associated with TCEs, such as identity or status indicators. For example, the Orang Ulu group use hornbill feathers in men's ceremonial hats to indicate the different strata of people within their community. The significance of the feathers as a TCE is as an identity indicator: the number of feathers carries the intrinsic knowledge of the status, authority and identity of the person who wears

them. Observing these events provides the community with prior shared knowledge that is common to everyone, and which improves with repeated exposure. Ingraining such knowledge in the minds of the community requires a conscious effort on the part of the community members. This is shared responsibility. Sharing of base knowledge also provides knowledge of 'who knows what' and 'who knows who' in the community. It is essential for those interested in the second tier of knowledge to know these points of reference.

Tier 2: Ceremonial and Ritual Indigenous Knowledge

Once a person has a grasp of the base knowledge, if the person chooses to pursue acquiring the knowledge further from the knowledge holder, the person will have to undergo a period of apprenticeship under the guidance of the knowledge holder. Tier 2 comprised knowledge that is accessible to those wanting to be an understudy of a master knowledge holder. This deeper level of knowledge was shared and transferred by the master knowledge holder to his/her understudy via tutelage and observation of hands on practice of the knowledge holder. In order to gain this knowledge, knowledge seekers had to be proactive in seeking it from the knowledge holder. Tier 2 involved active knowledge sharing and transfer.

Tier 3: Sacred Indigenous Knowledge

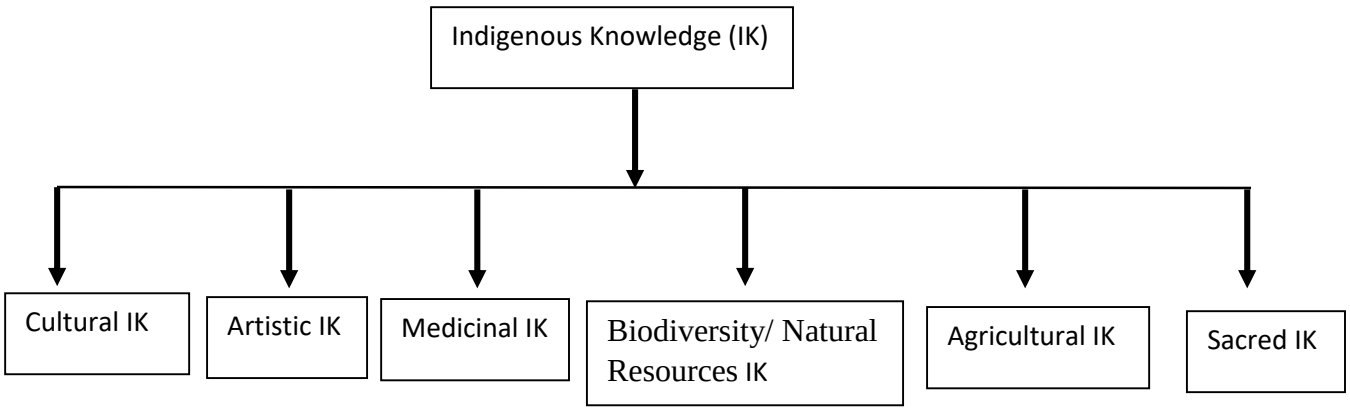
The final tier of knowledge requires fulfilling requirements which almost always have a 'third' dimension, i.e. the involvement of spiritual or 'divine' intervention. Certain types of knowledge within this category need to be sought or requested from the knowledge

holder. Another type of knowledge is bestowed upon a recipient who is chosen by the knowledge holder. Some knowledge is not to be shared at all. These types of knowledge form the top tier of indigenous knowledge, and are not accessible to all. There are certain sacred requirements needed in carrying out the processes of using the knowledge. As such, these requirements also need to be fulfilled in the sharing or transfer of such knowledge. For this level of knowledge, one can ask to acquire this knowledge from the knowledge holder, or one is chosen by the knowledge holder to be the person to pass on the knowledge to. There are also situations where knowledge seekers of these kinds of knowledge were turned away or not 'granted' the knowledge. This could be due to several factors such as age, gender, suitability, or even genealogy. According to the informants, there are types of knowledge in this tier where it is not the decision of the knowledge holder to identify or decide on the recipient. It would be the decision of the 'spiritual owner' of the knowledge, relaying the message to the knowledge holder through dreams or visions. In this example, the knowledge holder is just the 'knowledge keeper'. This final tier of indigenous knowledge is limited to a special kinship or circle of the community, confined to a small group of knowledge holders. This limitation has an impact on the sharing and transfer of such knowledge, as at times, it is not just between knowledge holder and knowledge receiver, but the role of an additional element in the knowledge process, that of 'divine' or 'spiritual' intervention. The importance of shared context

3.2 Components of Indigenous Knowledge

Thus in the broader sense, the term IK refers to knowledge possessed by indigenous people, in one or more societies and in one or more forms, including, but not limited to, art, dance and music, medicines, expressions of culture, biodiversity, knowledge and protection of plant varieties, handicrafts, designs, and literature. It also embraces information on the use of biological and other materials for medical treatment and agriculture, production processes, rituals, and other techniques. IK is an encompassing notion which covers several, if not many, areas of human creativity.

However, IK evolves and generates new information as a result of improvements or adaptation to changing circumstances. The figure below illustrates various components of IK.



4.0 Conclusion

It is now accepted that the concept of IK goes beyond tradition. IK is now considered to be cultural knowledge in its broadest sense including all of the social, political, economic and

spiritual aspects of a local way of life. However, the types of IK depend largely on the nature of the knowledge and the perspective of IK holders.

5.0 Summary

This unit highlighted different categories of IK from different facets for clear understanding of the IK; components of IK were also highlighted under this unit. The unit also discussed two types of IK which are Explicit indigenous knowledge and Tacit indigenous knowledge.

6.0 Tutor-Marked Assignment

1. Identify and discuss any three (3) Components of IK you have studied.

7.0 References/Further Reading

Battiste, M., (2008). Research ethics for protecting indigenous knowledge and heritage: institutional and researcher responsibilities., in Handbook of critical and indigenous methodologies., N.K. Denzin, Y.S. Lincoln, and L.T. Smith. SAGE Publications: Thousand Oaks. p. 497-509.

Becvar, K. and R. Srinivasan, Indigenous knowledge and culturally responsive methods in information research. *Library Quarterly*, 2009. 79(4): p. 421-441.

Bolhassan, R., Cranefield, J., & Dorner, D. (2014) Indigenous Knowledge Sharing in Sarawak: A System-Level View and Its Implications for the Cultural Heritage Sector. *Proceedings of the Annual Hawaii International Conference on System Sciences.* DO - 10.1109/HICSS.2014.419

Daniel, J. G., (2003). Spiritual but Not Intellectual? "The Protection of Sacred Intangible Traditional Knowledge," *Cardozo Journal of International and Comparative Law*, Vol. 11, p. 474.

Mehta, K., Alter, T. R., Semali, L. M., & Maretzki, A. (2013). Academic IK

Connections: Bringing Indigenous Knowledge and Perspectives into the Classroom. Journal of Community Engagement and Scholarship, 6(2), 83-91.

Smith, E. A. (2001). The role of tacit and explicit knowledge in the workplace. *Journal of Knowledge Management*, 5 (4), 311-321

Tavana, N. (2002). Traditional knowledge is the key to sustainable development in Samoa: Examples of ecological, botanical and taxonomical knowledge. In proceedings of the national 2001 National Environment Form, No. 3 (pp. 19-26). Apia Samoa: Ministry of Natural Resources and Environment.

United Nations Environment Programme, Convention on Biological Diversity. See <*www.Biodiv.org*>, visited on December 20, 2008.

Wyatt, J. C. (2001). Management of explicit and tacit knowledge. *Journal of the Royal Society of Medicine*, 94, 6-9.

Unit 4: Nature and Features of Indigenous Knowledge (IK)

CONTENTS

1.0 Introduction

Indigenous knowledge of the Earth is based on thousands of years' experience. It is developed and preserved by local and indigenous communities for centuries as a strategy for their survival in the biosphere. IK is often part of the social fabric and everyday life of a community and is generally not seen as a distinct body of 'knowledge' separate from the community's culture, but rather as integral with the community's culture and its identity as a community. Most often, the IK is known to the entire community and remains exclusively within it though occasionally, knowledge of a special skill or art is limited to a few members of the community.

However, within the society, the knowledge is in the public domain. This knowledge and its components are normally required for a regular lifestyle within the society. It is passed down through generations while still retaining its original individuality. Since its generation, preservation and transmission is based on cultural traditions, IK is essentially culturally oriented or culturally rooted and it is integral to the cultural identity of the social group in which it operates and is preserved.

2.0 Objectives

At the end of this unit, you should be able to:

- Differentiate between indigenous knowledge *Vis-À-Vis* formal knowledge
- State the nature and features of IK

3.0 Main Content

3.1 Indigenous Knowledge *Vis-À-Vis* Formal Knowledge

IK differs from formal knowledge in several aspects such as:

(i) ways of acquisition

(ii) storage and

(iii) transmission

According to UNDP, IK is acquired by past experiences and observation. It is usually a collective property of society. Many members of the society contribute to it over time and it is modified and enlarged as it is used. This knowledge is transmitted from generation to generation. IK is holistic in nature and is passed down through generations. It is evolved from both personal and collective innovations. On the other hand, formal knowledge is that type of knowledge that is produced and generated through formal institutions of learning including schools, colleges, universities and research institutes. IK does not have a special institution to administer it whereas formal knowledge is administered through various institutions of learning and practices. However, various modern developmental processes either marginalize or integrate indigenous communities, making them abandon their unique Indigenous or indigenous knowledge acquired over years.

3.2 Nature and Features

IK is a means of cultural identification of the indigenous or local community. Moreover, IK is seldom found in written form or expressed in any formal way, but it is transmitted orally and through practice. However, these aspects do not reduce either the validity or the value of this knowledge. IK is thus dynamic in nature and it is a system of constant evolution modifying and perfecting the existing knowledge in a unique Indigenous way. IK does not always imply that this knowledge must be old. Recently established knowledge which is based on existing knowledge can also be indigenous knowledge. What is Indigenous about the IK is not its antiquity but the way it is acquired and used. The social process of sharing knowledge which is unique in each indigenous and local culture lies at the very heart of its indigenousness. Though IK may not be antique, it has a unique social meaning.

Indigenous knowledge is collective in nature and is often considered as the property of the entire community and not belonging to any single individual within the community. It is transmitted through specific cultural and indigenous information exchange mechanisms for example, maintained and transmitted orally by elders or specialists such as breeders, healers, etc. and often to only a select few people within a community. A few varieties of IK is formalized or codified in some way. However, the lion share of IK is non-codified and is being passed to successive generations through oral tradition. Yet, another category of IK, which is only with the 'elder' of the particular community, may be uncanny to the remaining world. IK may be thus possessed by certain individuals or by some members of a group, or by all members of a group/indigenous community. Indeed, the number of

persons holding the knowledge does not affect the extent to which this knowledge is distinct and new to the outside world. However, indigenous knowledge can also be spread widely around the world, connected, *inter alia*, to the spread of genetic resources.

Characteristics of indigenous knowledge :

a. indigenous only to the extent that its creation and use are part of the cultural traditions of a community; it does not necessarily mean that the knowledge is ancient or static
b. representative of the cultural values of people and thus is generally held collectively
c. is not limited to any specific field of technology or the arts, and
d. is owned by a community and its use is often restricted to certain members of that community.

IK, in its various forms, though initially developed in ancestral times got modified, improved and adapted owing to the contemporary demands of the ever changing society and is still continue to develop. Thus, IK is, in effect, of non-contemporary nature; it has been used for generations and in many cases collected and published by anthropologists, historians, botanists or other researchers and observers. IK expressed in various documented and non-documented forms may possess commercial value depending on its potential or actual use. When IK can be used and understood outside its local/ communal context it acquires commercial value. Different industries make different use of indigenous knowledge. In the pharmaceutical industry, indigenous knowledge seems to be used mostly after an active compound has been identified to carry out subsequent research. In the seed industry, indigenous knowledge is not often used directly but a lot of indigenous

knowledge is incorporated into the germ plasma that companies acquire from other organizations. When its application, and in particular the delivery of IK-based products, can be made through commercial channels IK can have commercial value. Knowledge that cannot be utilized beyond its communal context has little or no commercial value, despite the value that such knowledge may have for the life of the originating community.

Kihwelo (2006) says that IK differs from formal knowledge in various ways including acquisition, storage and transmission. Warren (1991) characterizes IK as follows:

i. IK is an important natural resource that can facilitate the development process in cost-effective, participatory, and sustainable ways.

ii. It is local knowledge that is unique to a given culture or society.

iii. IK contrasts with the international knowledge system generated by universities, research institutions and private firms.

iv. It is the basis for local-level decision making in agriculture, health care, food preparation, education, natural resource management, and a host of other activities in rural communities.

v. Such knowledge is passed down from generation to generation, in many societies by word of mouth.

vi. IK has value not only for the culture in which it evolves, but also for scientists and planners striving to improve conditions in rural localities.

Kolawole (2001) says that IK is related to the entire culture of a people, including its identity and spiritual and religious beliefs. Other major features of IK are as follows:

a. It is not confined to tribal groups or the original inhabitants of an area and it is not confined to rural people. Any community possesses IK, rural or urban, settled or nomadic, original inhabitants or migrants (IIRR, 1996).

b. It is based on ideas, experiences, practices and information that have been generated either locally or elsewhere, and have been transformed by local people and incorporated into their way of life (Ina Hoi Riwa Foundation, 2000).

c. It is expressed in local languages (Langill, 1999).

d. IK is difficult to transmit to those who do not share the language, tradition and cultural experience (SARDC, n.d.).

According to the World Bank report, the WCIP also named other important features of IK:

a. IK is exclusive to a given culture or society;

b. It cannot easily be codified for fear of loss of some vital properties;

c. IK is fluid and does not work in formal organizations because it is too unstructured

d. IK is the life blood of a community (World Bank, 1998).

Similarly, Agrawal, (1995) uses a system of knowledge framework to explain the following features of IK:

i. IK is embedded in a particular community and exclusive to that community.

ii. People are dependent on this knowledge for survival.

iii. This type of knowledge does not conform to a certain situation or surroundings because the indigenous people believe in a certain standard or ideal.

iv. There are no contradictions in what the indigenous people believe no opposing or conflicting ideas in their belief system.

v. These people are committed to and practice their knowledge systems on a daily basis. They live by these rules and laws and are governed by the elders in the community. These laws and rules do not change over time to suit a situation as they are deeply rooted in the belief system of the indigenous people.

Chisenga (2002) identifies the major features of IK as follows:

a. IK is held by any community, whether it is a rural or urban community.
b. IK is based on experiences, practices and information that have been imparted by local people and merged into their way of life.
c. IK is conveyed in local languages.
d. It is difficult to communicate IK to those who do not share nor understand the language, tradition and cultural experiences involved.

Raseroka (2002) lists the following features of indigenous knowledge:

i. IK is generated within communities.

ii. It is location and culture specific.

iii. It is the basis for decision making and survival strategies.

iv. It is not systematically documented.

v. It covers critical issues: primary production, human and animal life, and natural resources management.

vi. It is dynamic and based on innovation, adaptation and experimentation.

Indigenous Knowledge is:

Adaptive: It is based on historical experiences but adapts to social, economic, environmental, spiritual and political changes. Adaptation is the key to survival.

Cumulative: It is a body of knowledge and skills developed from centuries of living in close proximity to nature.

Dynamic: It is not rooted in a particular point in history but has developed, adapted, and grown over millennia; it is not static.

Holistic: All aspects of life are interconnected, are not considered in isolation but as a part of the whole. The world is believed to be an integral whole. Indigenous knowledge incorporates all aspects of life - spirituality, history, cultural practices, social interactions, language, healing.

Humble: Indigenous knowledge does not dictate how to control nature but how to live in harmony with the gifts of the Creator.

Intergenerational: The collective memory is passed, within a community, from one generation to the next orally through language, stories, songs, ceremonies, legends, and proverbs.

Invaluable: It has been argued that indigenous knowledge, not capital, is the key to sustainable social and economic development. There is a growing recognition and respect for IK and a desire to collaborate with Indigenous communities on environmental monitoring projects.

Irreplaceable: There is nothing western science can do to replace or replicate indigenous knowledge. An aspect of indigenous knowledge that is sometimes overlooked by scientists, and others, is the critical connection between IK and language. Indigenous languages are in decline and as languages die, likewise the indigenous knowledge that is part of that language and the collective memory of the speakers of that language.

Moral: There is a morality in indigenous knowledge - a right and wrong way to interact with nature; there is a responsibility given from the Creator to respect the natural world.

Relative: Indigenous knowledge is not embodied at the same degree by all community members. Elders will obviously carry more knowledge than younger community members.

Responsible: Indigenous Peoples generally believe they are responsible for the well-being of the natural environment around them.

Spiritual: Indigenous knowledge is rooted in a social context that sees the world in terms of social and spiritual relations among all life forms. All parts of the natural world are infused with spirit. Mind, matter, and spirit are perceived as inseparable.

Unique: Indigenous knowledge is unique to a given culture or society. While there may be many similarities of IK between communities, it is the lived experience of each community that informs IK.

Valid: It does not require the validation of western science.

4.0 Conclusion

The indigenous groups all over the world have peculiar cultural belief systems which demonstrate their immense knowledge and respect for the earth. These systems contain rules that define how the environment should be treated. Their various rituals, ceremonies and prohibitions regulate the use of natural resources and resource management aiming at a balanced ecosystem. Indigenous people are the custodians of the invaluable biological and genetic wealth on the earth.

5.0 Summary

Indigenous knowledge is collective in nature and is often considered as the property of the entire community and not belonging to any single individual within the community. Under this unit, distinction between IK and formal knowledge were established, so also the nature and features of IK from different scholars were highlighted for proper identification among the other available knowledge.

6.0 Tutor-Marked Assignment

1. Identify and explain five (5) similarities and differences between IK and formal knowledge.

7.0 References/Further Reading

Agrawal, A. (1995). Dismantling the divide between indigenous and scientific knowledge. *Development and Change, 26*(3):1-40.Available: http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/4201/Dismantling_the_Divide.pdf:

Chisenga, J. (2002). Indigenous knowledge: Africa's opportunity to contribute to global information content. *South African Journal of Libraries and Information Science*, *68*(1):16–22. Available: https://doi.org/10.7553/68-1-759

Gorjestani, N. (2000). Indigenous knowledge for development: Opportunities and Challenges. United Nations Conference on Trade and Development. Geneva.

Grenier, L. (1998) *Working with Indigenous Knowledge: A Guide for Researchers,* IDRC, Canada.

IFAD (2003) *Indigenous Peoples and Sustainable Development*, Roundtable Discussion Paper for the Twenty-Fifth Anniversary Session of IFAD's Governing Council.

Ina H. (2000). Riwa Foundation. *Indigenous knowledge.* At http://www.geocities.com/yotawawa/indigeous_knowledge.htm

Johnson, T. (1992). *Lore: Capturing Indigenous Environmental Knowledge*, (ed.) Dene Cultural Institute and International Development Research, Ottawa, Canada.

Johnston, A.M. (2005) *Is the Sacred for Sale. Tourism and Indigenous Peoples*, Earthscan, London.

Kihwelo, P.F. (2006). Knowledge management and indigenous knowledge for development of Africa's information systems and services: some legal issues for information system experts. In *XVII Standing Conference of Eastern Central and Southern African Library Associations (SCECSAL XVII): librarianship as a bridge to an information and knowledge society in Eastern, Central and Southern Africa.* Dar-es-Salaam: Library Association of Tanzania: 632-647.

Kolawole O.D. 2001. Local knowledge utilization and sustainable rural development in the 21st century. *Indigenous knowledge and development monitor* 9(3):13-15.

Langill, S. 1999. *Indigenous knowledge: a resource kit for sustainable development researchers in dry land Africa.* Ottawa: International Development Research Centre. At http://www.idrc.ca/plaw/11e-IK.html

Le Grange, L. (2007) 'Integrating Western and Indigenous Knowledge Systems: The Basis for Effective Science Education in South Africa?', *International Review of Education*, 53(5-6), pp. 577-591.

Nakashima, D., Prott, L. & Bridgewater, P. (2000) Tapping into the world's wisdom, *UNESCO Sources*, 125, July-August, p. 12.

Raseroka, K.H. (2002). From Africa to the world-the globalization of indigenous knowledge systems: setting the scene. In Snymen, R. (ed.) *SCECSAL 2002: from Africa to the world-the globalization of indigenous knowledge systems. Proceedings of the 15th Standing Conference of Eastern, Central and Southern African Library and Information Associations, 15-19 April, Ceasars Gauteng Conference Centre, South Africa*. Pretoria: LIASA: 1-12.

Sillitoe, P. (2009) *Local Science Vs Global Science: Approaches to Indigenous Knowledge in International Development*, Berghahn Books.

Warren, D.M. 1992. *Indigenous knowledge, biodiversity conservation and development.* At http://www.ciesin.org/docs/004_173.html

World Bank (2004) *Indigenous knowledge: local pathways to global development*, Africa Regional Office, World Bank.

World Bank (1998). Indigenous knowledge for development: a framework for action, 1–49. Available: http://www.worldbank.org/afr/ik/ikrept.pdf

Unit 5: Steps in Indigenous Knowledge Management and Challenges Associated With Indigenous Knowledge Management

CONTENTS

3.2 Challenges Associated with Indigenous Knowledge Management (IKM)

4.0 Conclusion

5.0 Summary

6.0 Tutor-Marked Assignment

7.0 References/Further Reading

1.0 Introduction

Knowledge management as pointed out by Kaniki and Mphahlele (2002) facilitates knowledge generation, sharing and re-use. The main challenges to the management of IK include the methods of identifying it, the access to it, the intellectual property rights and the media and format in which to preserve it. Another challenge is that there is a debate about whether or not to use the Western paradigm for preserving IK. Ngulube (2002) contends that the collection of IK be left to ethnographers, anthropologists, oral historians and other related professionals. According to Lawas and Luning (1996) the collection of IK is laborious, time consuming and costly. Thus proper storage and management must be ensured if the knowledge is to be made available and accessible for the benefit of human kind. Knowledge management in general is expensive because it involves financial, material, human and other resources for it to be successful (Davenport, 1988).

2.0 Objectives

At the end of this unit, you should be able to:

- explain the steps in Indigenous Knowledge Management (IKM)
- state the relevance of each step in IKM

- list the challenges of Indigenous Knowledge Management (IKM)

3.0 Main Context

3.1 Steps in Indigenous Knowledge Management (IKM)

The following are major steps in the management of IK as discussed by Mabawonku (2002):

i. Collection

In collecting IK, there is a need to define the knowledge to be collected, and the likely inhibitors (that could disturb the collection of IK). The culture and knowledge systems have to be identified and taboos considered. The resource person (IK holder) has to be identified and the media to be used for documentation. The resource person or IK holder is the key figure in documenting IK. It is therefore important that she/he is not only knowledgeable, but is also seen as a reliable source. This is to ensure that the IK collected is reliable and authentic. Having more than one resource person would be an advantage especially if there are divergent opinions or some vital links or even if the knowledge has been distorted somehow (Mabawonku, 2002). Some IK is best collected at specific times or seasons. An example would be that IK from ceremonies can only be collected during the time of the ceremony, therefore collection should coincide with the most appropriate period so that collection of IK will be successful (Mabawonku, 2002).

ii. organizing

If the IK has been recorded on cassette and/or video tapes, the next step is to edit the tapes and produce pictures and graphics. The content of the recording should then be summarized in writing either on computer or on a notebook, in other languages like English. Tapes must be labeled with labels containing bibliographic description and subject classification of the content (Mabawonku, 2002).

iii. Storage

The collected IK should be stored in large cupboards in an air conditioned room that is suitable for storage. More copies of the IK should be made on audio and /or video cassettes and circulated to other departments so that they could be borrowed if the need arises (Mabawonku, 2002).

iv. Dissemination

Dissemination of IK is very crucial in its management. This, as Mabawonku (2002) says, is because knowledge that is gained but is unavailable to others is wasted. IK dissemination should begin by distributing the collected IK to the respective indigenous groups (IK holders) and hand copies of their recordings distributed to other people. Abstracts and indexes that would create awareness of the collected IK should be compiled and made available (Mabawonku, 2002).

3.2 Challenges Associated with Indigenous Knowledge Management (IKM)

One of the major problems associated with indigenous knowledge management is what Barnhardt and Kawagley (2005) identified as “lack of indigenous people with advanced

indigenous expertise and western research experience to bring balance to the indigenous knowledge enterprise". Indigenous knowledge belongs to tacit knowledge category; it is knowledge mainly held in people's brain. Hence, it is difficult to record, transfer, and disseminate. Moreover, indigenous people are reluctance to share their knowledge. No adequate intellectual property rights are in place. And indigenous knowledge is often regarded as pseudo-science or anti-science.

a. Information Accessibility

Afolabi (2003) argued that "information is indispensably an ingredient for social, economic, industrial, political and technological advancement as it is apparent in every facet of human endeavors that no meaningful and enduring development can be achieved without it". Sturges & Neil (1990) reported that "rural inhabitants of Africa are increasingly appreciating the usefulness of relevant information to their development like their urban counterparts, due to convenient information transfer mechanisms such as associations, traditional institutions, age grades, community leaders and others". Opeke (2000) believed that "the world has entered an era where the source of wealth and power is increasing from information and human mental creativity as compared with physical resources".

b. Intellectual Property

Ownership is the "ultimate and exclusive right conferred by a lawful claim or title, and subject to certain restrictions to enjoy, occupy, possess, rent, sell, use, give away, or even destroy an item of property" (BusinessDictionary.com). In other words, ownership involves determining who has rights and duties over certain property. Schnarch (2004)

referred ownership to "the relationship of a community to its knowledge or information". The principle of ownership, according to him, states that "a community or group owns information collectively in the same way that an individual owns their personal information. Hence, gathering or managing of knowledge through an institution that is accountable to the group is a mechanism through which ownership may be asserted" (Schnarch, 2004).

According to Democratic Alliance (2011), "indigenous knowledge seldom has an identifiable author; it is passed down from generation to generation. It is often not recorded, or even impossible to record, existing in the minds of a community. It needs to be protected in perpetuity: protections should exist as long as the community exists."

However, Sahai (2002) warned that "diverse forms of indigenous knowledge have been appropriated by researchers and commercial enterprises, without any compensation to the knowledge creators or possessors". In view of this, Simeone (2004) suggested that "indigenous knowledge needs to be protected because the creators or possessors have the right to receive a fair return on what the communities have developed". Protecting indigenous knowledge will also facilitate continuity so that such knowledge could continue to be passed from generation to generation. All these put together calls for the need to enthrone the Intellectual Property Bill to protect indigenous knowledge so that such communities could benefit from the financial support from the developed countries.

c. Motivating Indigenous People

Indigenous people's right to self-determination must be ensured. In other words, they have the right to freely determine their political status and freely pursue their economic, social

and cultural development. The indigenous people must enjoy environmental security in relation to their hunting, fishing and other activities. Health is wealth, as a popular saying goes. A perfect health condition of the indigenous people must be guaranteed. Equal access to the relevant local knowledge for all stakeholders within the community must be allowed. Indigenous people will continue to be proactive once they have protection over the ownership of their knowledge and at the same time been adequately compensated for the released knowledge.

4.0 Conclusion

Indigenous knowledge is a profound, detailed and shared beliefs and rules with regards to the physical resource, social norms, health, ecosystem, culture, livelihood of the people who interact with environment both in rural and urban settings. It has been the basis for local level decision making in agriculture, health care, food preparation, education, natural resource management, and a host of other activities. IK represents an important component of global knowledge.

5.0 Summary

This unit discussed the steps involved in indigenous knowledge Management (Collection, Organizing, Storage and Disseminating) and challenges associated with indigenous knowledge management such as Information accessibility, intellectual property and motivating the indigenous people were also discussed.

6.0 Tutor-Marked Assignment

1. List and explain the solutions to the aforementioned challenges associated with Indigenous Knowledge Management.

7.0 References/Further Readings

Afolabi, A. K. (2003). Information needs, information sources, and information seeking behavior of commercial vehicle drivers in Ondo State. *Gateriay Library Journal, 6*(2), 89-90.

Barnhardt, R.; & Kawagley, A. O. (2005). Indigenous knowledge systems and Alaska native ways of knowing. *Anthropology and Education Quarterly, 36*(1), 8-23.

Davenport, T.H. (1998). *Some principles of knowledge business.* At http://www.bus.utexas.edu/kman/kmprin.htm Accessed 22/07/08.

Democratic Alliance (Cape Town). (2011). *South Africa: Intellectual property amendment bill –indigenous knowledge simply won't be protected by this law*. Retrieved 22 February 2012 from: http://allafrica.com/stories/201110281515.html

Kaniki, M.A. & Mphahlele, K.M.E. (2002). Indigenous knowledge for the benefit of all: can knowledge management principles be used effectively? *SA journal of library and information science* 68(1):1-15.

Lawas, C.M. and Luning, H.A. 1996. Farmer‟s knowledge and GIS. *Indigenous knowledge and development monitor, 4(1).* At http://www.nufic.nl/ciran/ikdm/4_1/articles/lawas.html

Mumba, N. (2002). Metamorphosis or mutation: managing information in a changing world. In *SCECSAL, from Africa to the world-the globalization of indigenous knowledge systems.* Pretoria: LIASA: 311-321.

Mabawonku, I.M. 2002. The systematic management of indigenous knowledge: a review of oral information projects in a library school. In *SCECSAL 2002: from Africa to the world-the globalization of indigenous knowledge systems.* Pretoria: LIASA: 49-60.

Ngulube, P. 2003a. Preservation and access to public records and archives in South Africa. PhD dissertation. Pietermaritzburg: University of Natal. At http://www.hs.unp.ac.za/infs/thesispn.pdf Accessed 01/05/07.

Ngulube, P. 2003b. Using SECI knowledge management model and other tools to communicate and knowledge management tacit indigenous knowledge. *Innovation* 27: 21-28.

Opeke, R. (2000). The challenges of the information age for education policy consideration. *African Journal of Educational Planning and Policy Studies, 1*, 195-202.

Suman, S. (2002). *Protection of indigenous knowledge and possible methods of sharing benefits with local communities*. (International Center for Trade & Sustainable Development.

Schnarch, B. (2004). Ownership, control, access and possession (OCAP) or self-determination applied to research: A critical analysis of contemporary first nations research and some option for First Nations communities. *Journal of Aboriginal Health, 1*(1), 80-95.

Simeone, T. (2004). *Indigenous traditional knowledge and intellectual property rights*. http://www.parl.gc.ca/content/lop/researchpublications/prb0338-e.htm

Sturges, P.; & Neil, R. (1990). *The quiet struggle: Libraries and information for Africa*. `London: Mansel.

MODULE 2: INDIGENOUS KNOWLEDGE MANAGEMENT SYSTEM

Introduction

An accumulated set of knowledge is commonly termed as indigenous knowledge management systems (IKS). This module will introduce you to the indigenous knowledge management system. Its definition, features, benefits and its limitations.

Unit 1: Indigenous Knowledge System

CONTENTS

1.0 Introduction

Due to risk and uncertainty that households may face in a single year a variety of complex production systems have been developed to provide for food and economic security. The production methods vary across regions, countries and continents but they all have been developed by the locally defined conditions and needs agriculturists face. However, for poor households, especially in the developing countries, adaptation and coping strategies

are closely linked to the adverse climates and resource poor areas in which they live. IKS for these communities are especially important because they provide farmers and households with the ability to survive and produce under risk due to, amongst others, climate, environmental constraints and incomplete market structure.

2.0 Objectives

At the end of this Unit, you should be able to:

- define IKS
- list and explain the features of IKS
- explain the benefits of IKS
- describe the limitations of IKS

3.0 Main Context

3.1 Indigenous Knowledge Systems (IKS)

Although there are a number of disagreements of how important IKS is in relation to Western Knowledge, there is a general consensus of IKS characteristics that can be identified in all societies (Agrawal, 1995). IKS serves many functions for a community, household and individuals by functioning as a base of knowledge to help process information, promote efficient allocation of resources and aid in production method decisions.

Indigenous Knowledge Systems (IKS) refers to the complex set of knowledge, skills and technologies existing and developed around specific conditions of populations and communities indigenous to a particular geo-graphic area. IKS constitute the knowledge

that people in a given community have developed overtime and continue to develop. It is the basis for agriculture, food preparation, health care, education and training, environmental conservation and a host of other activities. Indigenous know-ledge is embedded in community practices, institutions, relationships and rituals (Centre for Indigenous Knowledge Systems, 2005). Central to this definition is the idea of knowledge ownership. Here, the local population has privy to this knowledge as it has been handed down from generation-to-generation within their context. It is something that is interlinked with their way of life. Therefore, IKS becomes relevant in so far as it is not imported or imposed from outside. The moot point here is that solutions are easily availed to local decision-making processes as IKS interacts with the environment due to the fact that it also encompasses: technology, social, economic, philosophical, learning and governance systems (Business Referral and Information Network, 2005). Furthermore, indigenous knowledge has made and can still make a significant contribution to resolving local problems. There is also a need to distinguish between what is known as Western Knowledge Systems (WKS) and IKS. In regard to the former, such knowledge systems are regarded as universal due to the fact that western education is entrenched in many world cultures. WKS have long been noted for their rigorous observation, experimentation and validation procedures, all of which are carefully documented. The same cannot be said of IKS in particular when it comes to documentation (Kolawole, 2001). Needless to say, in our case WKS is perceived as being bound up with Western imperialism and culture, and that it is not always value-free or even objective. In many instances, it seeks after the obliteration of IKS. This position then takes us to our next point, which is the case of power.

The idiom ‘knowledge is power’ is not the least spurious at all. Whenever, we examine IKS we should not be oblivious to the power relations at play in the local, national, regional and global contexts.

3.2 Features of Indigenous Knowledge System

The first characteristic of IKS is that it is composed of knowledge from previous generations. The knowledge set provides structure to explain relationships between particular events in the community. Bharara and Seeland (1994), in their study of the Rajasthan, have observed a number of indicators that exist to predict certain climatic events and its effect on agricultural practices. The development of these indicators was purely observational and provides a base for current generations to understand what is normal and what is an anomaly (Bharara and Seeland, 1994). The knowledge set is influenced by the previous’ generations observations and experiment and provides an inherent connection to one’s surroundings and environment (Woodley, 1991). The knowledge is characteristic of the local climate, flora and fauna and cultural traits (Woodley, 1991). Therefore, IKS is not transferable but provides relationships that connect people directly to their environments and the changes that occur within it. While Woodley (1991) is attempting to make an ecological statement about IKS, defining IKS as a society’s connection to their surroundings and environment, it can also be interpreted to be a person’s connection to their culture and society. IKS is learned and identified by communities and people within a cultural context (Fields, 1991 & Bebbington, 1991). The knowledge base thus uses a specific language, sayings, and belief processes. This allows for cultural interaction and

acceptance that is not identifiable in other situations or cultural contexts (Bebbington, 1991). Not only does the knowledge base identify the culture from others but also it provides for social interaction and acceptance (Bebbington, 1991).

3.3 Benefits of Indigenous Knowledge Systems

The most important aspect of IKS is that it creates a moral economy. IKS identifies a person within a cultural context, therefore providing decision making processes or rules of thumb to be followed based on observed indicators or relationships within events (Bharara and Seeland 1994, Woodley 1991, and Biggelaar 1991). Members of communities act within these rules of thumb to maintain security and assurance or risk isolation from their community. In an uncertain and biased world these rules of thumb provide people with a sense of community, belonging and stability. The moral economy established by the knowledge set also decreases transactions costs. The need for the knowledge set is exemplified by the institutions and rules that are created within communities and regions (North, 1990). Institutions allow for a decrease in costs by providing knowledge that all people can access and understand. It also provides ease of communication and ability for individuals to work together. The community aspect of indigenous knowledge systems also helps in providing order and acceptance of local traditions (North, 1990). The knowledge base provides order and logic within a system and community, which is separate from other worldviews. While these rules of thumb aid individuals to work together it also provides the ability for communities to establish control and complete necessary social work that aids in the function of towns. Therefore, an IKS plays an important role in cohesion in

terms of households and communities. Rules of thumb help to create order out of disorder and explain how events occur and how to survive within the environmental constraints and uncertainty. These indicators and decision-making processes thus provide mental reliance for farmers when faced with uncertainty and risk (Bharara & Seedland, 1994, Walker & Jodha, 1986). When faced with uncertainty a farmer may not know what the best option will be for his crop or animals. IKS provides standards and rules which all members in a community follow, giving the farmer assurance that he is doing all that is possible (Bharara & Seeland, 1994). These standards allow a process of communication or a forum in which farmers can discuss production options and decisions can be assessed using a collective decision process based on the knowledge of ancestors. If the decision does not provide the expected results, it is added to the knowledge base and will aid farmers in future years. Diverse production systems insure that risk is minimized and ensure the survival of the community or household (Biggelaar, 1991, Bebbington, 1991). To ensure food and economic security, farmers may experiment with existing practices to adapt them to changing conditions or to improve yields. Therefore, farmers are by definition scientists, since they are constantly experimenting and attempting to improve current practices (Bebbington, 1991; Biggelaar, 1991). Kloppenburg (1991) also cites the important nature of experimentation to farmers as an essential tradition and characteristic of the knowledge base. A study of soil classifications by the Zuni in New Mexico showed similar methods of classifying and explaining soils types as soil scientists did. Other agricultural examples of experiments are the use of intercropping and staggered planting. Innis shows how intercropping produces different microclimates and how companion planting provides a

higher yield and decreases risk related to climatic changes. Women also possess extensive knowledge of local plants that can be found during poor agricultural years to provide food security (Rocheleau, 1991). The knowledge and experimentation involved with identifying foraging plants is a unique set of knowledge that must be accessed during vulnerable years. These few examples show the ingenuity and ability of farmers to manipulate their environments and produce favorable results. IKS has distinct characteristics and benefits to its users but unfortunately has not been an integral part of development projects. The next section will highlight failures, achievements and future possibilities for development projects especially in the context of climate.

3.4 Limitations of Indigenous Knowledge Systems

As with scientific knowledge, however, indigenous knowledge has its limitations. Indigenous knowledge is sometimes accepted uncritically because of naive notions that whatever indigenous people do is naturally in harmony with the environment. There is historical and contemporary evidence that indigenous peoples have also committed environmental 'sins' through over-grazing, over-hunting, or over-cultivation of the land. It is misleading to think of indigenous knowledge as always being 'good, ‘right’, or ‘sustainable’. For example, a critical assumption of indigenous knowledge approaches is that local people have a good understanding of the natural resource base because they have lived in the same, or similar, environment for many generations, and have accumulated and passed on knowledge of the natural conditions, soils, vegetation, food and medicinal plants

etc. However, under conditions where the local people are in fact recent migrants from a quite different ecological zone, they may not have much experience with the new environment. In these circumstances, some indigenous knowledge of the people may be helpful, or it may cause problems (e.g., use of agricultural systems adapted to other ecological zones). Therefore, it is important, especially when dealing with recent migrants, to evaluate the relevance of different kinds of indigenous knowledge to local conditions. Wider economic and social forces can also erode indigenous knowledge. Pressure on indigenous peoples to integrate with larger societies is often great, and as they become more integrated, the social structures, which generate indigenous knowledge and practices, can break down. The growth of national and international markets, the imposition of educational and religious systems and the impact of various development processes are leading more and more to the 'homogenization' of the world's cultures (Grenier, 1998). Consequently, indigenous beliefs, values, customs, know-how and practices may be altered and the resulting knowledge base incomplete. Sometimes indigenous knowledge that was once well adapted and effective for securing a livelihood in a particular environment becomes inappropriate under conditions of environmental degradation (Thrupp, 1989). Although indigenous knowledge systems have a certain amount of flexibility in adapting to ecological change, when change is particularly rapid or drastic, the knowledge associated with them may be rendered unsuitable and possibly damaging in the altered conditions (Grenier,1998). Finally, an often-overlooked feature of indigenous knowledge, which needs to be taken into account, is that, indigenous knowledge unlike scientific knowledge; sometimes the knowledge which local people rely on is wrong or even harmful

(Thrupp, 1989). Practices based on for example, mistaken beliefs, faulty experimentation, or inaccurate information can be dangerous and may even be a barrier to improving the wellbeing of indigenous people Thrupp (1989).

4.0 Conclusion

Indigenous people throughout the world have sustained their unique world views and associated knowledge systems for millennia even while undergoing major social upheavals as a result of transformative forces beyond their control. Many of the core values, beliefs and practices associated with those world views have survived and are beginning to be recognized as having an adaptive integrity that is as valid for today's generations as it was for generations past".

5.0 Summary

The most important aspect of IKS is that it creates a moral economy. This unit discussed the concept of indigenous knowledge systems (IKS), its definition, features and benefits, limitation of indigenous knowledge systems were also highlighted and discussed under this unit.

6.0 Tutor-Marked Assignment

1. Clearly differentiate between IKS and Scientific Knowledge Systems (SKS)

7.0 References/Further Reading

Agrawal, A. (1995). Dismantling the Divide Between Indigenous and Scientific Knowledge Development and Change, 413-439

Bharara, L.P. & Klaus, S. (1994). Indigenous Knowledge and Drought in the Arid Zone of Rajasthan: Weather prediction as a means to cope with a hazardous climate. *Internationales Asienforum*:53-71

Bebbington, A. (1991). Indigenous Agricultural Knowledge Systems, Human Interests, and Critical Analysis: Reflections on Farmer Organizations in Ecuador." *Agriculture and Human Values*: 14-24.

Biggelaar, C. D. (1991). Farming Systems Development: Synthesizing Indigenous and Scientific Knowledge Systems. ""*Agriculture and Human Values*: 25-36

Gary A. P., David M. K., & Marian, K. Viney, N., Jay, B., Raman, R. P., and Jonathan, A. S.(1999). Observation and experience linking science and indigenous knowledge at Zuni, New Mexico. *Journal of Arid Environments.* 331-340. Office of Global Programs National Oceanic and Atmospheric Administration. Compendium of Climatological Impacts. United States Department of Commerce. August 31 1999

Walker, T.S. & Jodha, N.S. (1986). How small Farm Households Adapt to Risk. Chapter 2. Crop Insurance for Agricultural Development Baltimore: Johns Hopkins University Press,

Woodley, E. (1991). Indigenous Ecological Knowledge Systems and Development *Agriculture and Human* Values. 8 (1991): 173-178 Xin, Sage Publications London.

Rocheleau, D. E. (1991). Gender, Ecology, and the Science of Survival: Stories and Lessons from Kenya. *Agriculture and Human Values* Winter-Spring (156-165).

Seeland, K. (1997). Nature is Culture: Indigenous Knowledge and soico-cultural aspects of trees and forests in non-Eurpean cultures. London; Intermediate Technology Publications

Grenier, L. (1998). Working with Indigenous Knowledge: A Guide for Researchers.

IDRC: Ottawa, Canada. Google Maps, April 2010

Thrupp, L.A. (1998). “Legitimizing Local Knowledge: From Displacement to Empowerment for Third World People". *Agriculture and Human Values*. Summer Issue. Pp.13-24.

Warren, D.M. (1991). Using Indigenous Knowledge for Agricultural Development. *World Bank Discussion* Paper 127. Washington, D.C.

Warren, D.M., Slikkerveer, L.J & D. Brokensha, D. (1997). The cultural dimension of development: Indigenous knowledge systems. London: Intermediate Technology Publications. World Bank. "Knowledge and Skills for the Information Age, The First Meeting of the Mediterranean Development Forum"; Mediterranean Development Forum.

Unit 2: Sources of Indigenous Knowledge and Causes of Indigenous Knowledge Base Destruction

CONTENTS

1.0 Introduction

Knowledge is a result of many processes like knowing, perceiving, thinking, remembering, reflecting, observing, finding out, inferring, proving and so on. Indigenous Knowledge as you read in the previous section, is justified belief. Indigenous knowledge has three elements which are:

1) existence of a group of ideas and phenomena,

2) these ideas and phenomena correspond to things which exist,

3) the correspondence is supported by beliefs.

Human being has traversed an arduous path in trying to arrive at reliable knowledge. Human being's efforts over several centuries to obtain knowledge have improved and depend on these sources of knowledge to understand the world around and solve his problems.

3.1 Sources of Indigenous Knowledge

The following are some of the sources from where human beings gain knowledge according to (IGNOU, 2007):

1) life experience,

2) social customs and traditions,

3) authority,

4) deductive and inductive reasoning.

a. Life Experiences

Humans need to find solutions to their problems so as to live in harmony with the world around. For this they need to understand various phenomena and activities they undergo

and make sense of their experiences. One of the most primitive and primary source of knowledge for human beings are their life experiences. Nomadic tribes learned from experience about the edibility of certain wild fruits and also that others were harmful. All their actions were based on whatever they experienced in performing their daily life activities. They observed weather patterns throughout the year and could ascribe reasons for floods or droughts. The experiences gained during the course of life accumulate into a body of knowledge and enable individuals to cope with life's problems. However, one cannot rely solely on personal experiences as a source of knowledge for tackling new problems. Sometimes this may lead to wrong conclusions if the experiences are examined uncritically. The inferences drawn may be affected by personal prejudices and may be influenced by subjectivity. Two people may perceive and report a particular situation or event in completely different ways.

b. Authority

Getting knowledge or seeking knowledge from authorities is a common practice. Whenever the individual comes across a new situation or encounters a problem that has never experienced before the individual takes recourse to seeking answers from established authorities, parents, teachers even older siblings and friends. However, such a practice should not be encouraged. Learners should be provided such learning experiences that engage them in learning tasks leading to solutions. Role of authorities, i.e. teachers in this case, should be that of a facilitator and guide leading them on the path of self-directed and independent problem solving. In a society that is evolving at a rapid pace the role and place of experts and trained individuals is important. Experts are required in every field and are

a valuable source of knowledge and skills, because of their level of expertise and knowledge. However, one must not lose sight of the fact that even experts can at times be wrong. One cannot accept their advice or guidance unconditionally. The truth of their statements should not be accepted without validation and authentication from other sources.

c. Customs and Traditions

Our customs and traditions are a rich source of knowledge. Many communities are storehouse of knowledge. All of us are used to certain patterns of behaviors in our daily lives which are customary. For example, the food we eat, clothes we wear and cultural practices we adopt, and so on. All these are accepted practices and serve as guides for our future behaviors. This is true especially in school settings where customary and traditional practices are relied on.

d. Inference

Inference is a term covering a number of forms of reasoning in which conclusions are drawn or judgments made on the basis of circumstantial evidence and prior conclusions rather than purely on the basis of direct observation or knowledge arrived at by direct observation. The conclusion may be correct, incorrect, partially correct, correct to within a certain degree of accuracy, or correct in certain situations. Five distinct inferential methods are recognized: deduction, induction, Bayesian inference (which is really a form of induction), abduction and reliability. Inferential methods are the principal methods of

science, although not all types are undisputedly considered applicable to all fields of inquiry.

e. Heuristics, folklore and commonsense

The generalizations we apply in everyday life in predicting and explaining each other's behavior, often collectively referred to as folk psychology is both remarkably successful and indispensable. A person's 'personal knowledge', what they believe, doubt, desire, fear, etc. is a highly reliable indicator of what they will do and we have no other way of making sense of each other's behavior than by ascribing such states and applying the relevant generalizations. This theory of knowledge is also known as intentional realism, which recognizes that we all in some way committed to the basic truth of commonsense psychology and, hence, to the existence of the states its generalizations refer to (Dretske 2000). Some such as Fodor, also hold that commonsense psychology will be vindicated by cognitive science, given that propositional attitudes can be construed as computational relations to mental representations (Fodor 1987). Churchland (1981) thinks that, as a theory of the mind, folk psychology has a long history of failure that can't be incorporated into the framework of modern scientific theories, including cognitive psychology. He argued that the states and representations folk psychology postulates simply don't exist; that it is comparable to alchemy and ought to suffer a comparable fate. On the other hand, Dennett (1987) seemed prepared to admit that the generalizations of commonsense psychology are true and also indispensable, but denies that this is sufficient reason to believe in the entities to which they appear to refer. He supports this stance on that basis that there is nothing more to having a propositional attitude than to give an intentional explanation of a system's

behavior by adopting the intentional stance toward it. Assuming a system is rational, if the strategy of assigning contently states to it and predicting and explaining its behavior is successful, then the system is intentional and the generalized propositional attitudes we assign to it are true (Dennett 1987: 29.)

Moreover, other sources of IK were identified by different scholars; the following are the main sources of IK as stated by Akullo et al. (2007):

i. Interactions with the elderly, parents, grandparents, relatives and friends.
ii. Visits where one finds a technology being applied and gets interested in it.
iii. Migration of people with different ethnicity from other parts of the country.
iv. Radio programs.
v. Extension workers.
vi. Own discoveries.

In addition to these sources of IK, it is stored in people's memories and activities. It is expressed in stories, songs, folklore, proverbs, dances, myths, cultural values, beliefs, rituals, community laws, local languages and taxonomy, agricultural practices, equipment, materials, plant species and animal breeds (Akullo et al., 2007).

3.2 Causes of the Destruction of the Indigenous Knowledge Base

An observation by Mchombu (2002) is that in the past, Western knowledge with its powerful tools was thought to have all the answers to humanity's problems. Since Western knowledge was dominant over traditional knowledge, it cast aside and disorganized the knowledge and traditions that rural groups had because they had less power to define

themselves and their view of the world. The literature review indicates that IK is in danger of being destroyed. Mchombu (2002) lists some reasons for the destruction of IK which include: young people turning away from their elders and breaking an ancient chain of orally communicated knowledge. An education system which is de-linked from the IK base and aimed at providing external information which was considered better than IK.

Ngulube (2002) supports Mchombu's latter observation when he says that "colonialism and the attitude of Africans who were converted to Christianity and Eurocentric elites undermined the place of IK in Africa. Consequently, its validity was widely questioned". Ngulube (2002) argues that it was the rigid approach of western scientific knowledge towards other knowledge systems that precipitated the devaluing and marginalizing of IK during foreign domination. IK was regarded as invalid, worthless and irrelevant when compared with western codified knowledge. An observation by Chisenga (2002) is that modern education systems in developing countries do not have IK subjects or modules in their curricula. Therefore, IK is not being passed from one generation to another in schools (Chisenga, 2002). Other reasons are as follows: a significant part of the land, forests and habitat of indigenous peoples and local communities in many countries are being affected by a combination of deforestation, logging, road construction and dam projects, mining, urbanization and conversion of forests to tree and agricultural plantations. The loss of resources and habitat has disrupted the social and ecological context within which the communities have made use of their IK. Thus the ability to maintain the knowledge or to use it is eroded (Khor, 2002). The future of IK is further endangered by the marginalization

of indigenous people in terms of education. For reasons such as discrimination and remoteness, many indigenous children lack access to formal education which in turn leads to further marginalization (Choike, 2003).

Although IK in the past was undermined, the literature that has been looked into by the researcher of this thesis brings to attention that IK is a significant resource for development. Where western social science, technological might and institutional models seem to have failed, IK is often viewed as the latest and the best strategy in the old fight against hunger, poverty and underdevelopment (Agrawal, 1995).

4.0 Conclusion

The term IK sources refer to the means by which indigenous people got indigenous Knowledge by IK sources, it means traces that the past has left of itself in the present, in the form of documents, artifacts, buildings, castles and forts, coins, institution, traditions, festivals, customs and so forth.

Knowledge is a complex, multifaceted concept. Knowledge sources for human needs vary in dependability and validity. A brief discussion of some alternative sources of evidence shows how research based information is different. Indigenous people acquired knowledge through traditions, authority, experience, borrowing, trial and error, role modeling and mentorship, intuition, reasoning and research.

5.0 Summary

Under this unit we learnt that indigenous knowledge has three elements which include: the existence of a group of ideas and phenomena, these ideas and phenomena correspond to

things which exist, the correspondence is supported by beliefs. Under this unit, we also discussed different sources of indigenous knowledge, causes of IK base destruction were also discusses extensively for better understanding.

6.0 Tutor-Marked Assignment

1. Identify and discuss any five (5) sources of indigenous knowledge you know.

7.0 References/Further Readings

Agrawal, A. (1995). Indigenous and scientific knowledge: some critical comments. *Indigenous knowledge and development monitor* 3(3): 3-6.

Akullo, D. (2007). *Indigenous knowledge in agriculture: a case study of the challenges in sharing knowledge of past generations in a globalized context in Uganda*. At http://www.ifla.org/IV/ifla73/papers/120-Akullo_Anzikwera-Birungi_Alum_Aliguma_Barwogeza-en.pdf

Chisenga, J. (2002). Indigenous knowledge: Africa‟s opportunity to contribute to global information content. In *SCECSAL: from Africa to the world-the globalization of indigenous knowledge systems.* Pretoria: LIASA: 93-100.

Choike, O. (2003). *IPRs and biodiversity: stop the theft of indigenous knowledge*. At http://www/choike.org/nuevo_eng/informes/6551.html

IGNOU, (2007). Unit 5, Concept and Nature of Knowledge. In Knowledge in Education (Block-2), (MES -012, Education Nature and Purposes), New Delhi: IGNOU

Kaniki, M.A. and Mphahlele, K.M.E. 2002. Indigenous knowledge for the benefit of all: can knowledge management principles be used effectively? *SA journal of library and information science* 68(1):1-15.

Khor, M. (2002). *Intellectual property, biodiversity and sustainable development: resolving the difficult issues.* London: ZED Books Ltd.

Mchombu, K.J. (2006). Harnessing knowledge management for Africa's transition to the 21st century. *In XVII Standing Conference of Eastern Central and Southern African Library Associations (SCECSAL XVII): librarianship as a bridge to an information*

and knowledge society in Eastern, Central and Southern Africa. Dar-es-Salaam: Library Association of Tanzania: 2-39.

Mchombu, K.J. (2002). *Sharing knowledge for community development and transformation: a handbook.* Canada: DLR International.

Ngulube, P. (2002). Strategies for managing and preserving indigenous knowledge in the knowledge management era. In *SCECSAL 2002: from Africa to the world-the globalization of indigenous knowledge systems.* Pretoria: LIASA: 61-69.

Ngulube, P. (2003a). Preservation and access to public records and archives in South Africa. PhD dissertation. Pietermaritzburg: University of Natal. At http://www.hs.unp.ac.za/infs/thesispn.pdf

Ngulube, P. (2003b). Using SECI knowledge management model and other tools to communicate and knowledge management tacit indigenous knowledge. *Innovation* 27: 21-28.

Unit 3: Preserving and Documenting Indigenous Knowledge (IK)

CONTENTS

1.0 Introduction

World organizations such as UNESCO, IFLA, the World Council of Indigenous People and the World Bank have recognized the need for the capture and documentation of IK,

but they have yet to devise formal, standardized and sustainable practices and policies for the purpose. Indigenous people should be involved in this process, as Gupta (2010) has argued. Standardizing procedures is imperative in the social sciences: just as one has standardized procedures and processes for scientific knowledge, one should have recognized procedures for collecting, capturing and preserving IK.

Kaniki and Mphahlele (2002) propose the use of information communication technologies (ICTs) to capture and document IK, and this is worth considering. They cite the example of the Campbell Collections library, which uses digitization to preserve and disseminate important African artifacts to the global community via the web. This type of sharing of IK has been successful at the Campbell Collections and the authors suggest that the practice be expanded (Kaniki & Mphahlele, 2002). Sithole (2007) cites Chisenga's (2000) insistence that IK in Africa needs to be codified into print and electronic formats for both audio and video to make it widely accessible through global infrastructure. Chisenga says "databases of IK experts or carriers" should be developed in various communities to "act as pointers to experts on various aspects of IK" such use of ICT is of course not appropriate for the rural communities of Africa, where the people rely on IK for their daily living.

Kaniki and Mphahlele (2002) suggested that IK needs to be looked into at the community level with recording and sharing done in and among local communities. They argue that using ICTs or knowledge management principles to manage and record IK can only be done at certain levels. Owing to the nature of IK, not all of it can or should be managed like scientific knowledge. Accordingly, there is a need to apply a number of principles for managing IK in order to preserve and protect it (2002). Lastly the authors insist that owners

of intellectual property must be recognized and rewarded accordingly. Agrawal (1995) proposes using *in situ* methods to preserve the IK of the rural people, which means that preservation must occur in and be appropriate to in the original context where IK is created and used.

Agrawal (1995) observes, however, that "in situ preservation cannot succeed without the indigenous population gaining control over the use of lands in which they dwell and the resources on which they rely" (Agrawal, 1995). Those who are seen to possess knowledge must also possess the right to decide on how to save their knowledge, how to use it and who shall use it (Agrawal, 1995). It is important to note that in situ preservation is likely to make IK costlier for those outsiders who wish to gain access to and disseminate it.

2.0 Objectives

At the end of this unit, you should be able to:

- explain how IK can be preserved and documented
- state the relevance of preserving and documenting IK
- list some of the tools used in preserving and documenting IK

3.0 Main Context

3.1 Preserving and Documenting Indigenous Knowledge

IK differs from Western knowledge and may have to be managed in ways that challenge conventional methods of managing knowledge. This view is supported by Ngulube (2002), who nevertheless notes that IK should be gathered, organized and disseminated systematically. The emphasis here falls on the systematic processes that Western systems

adhere to, not necessarily on the application of Western methods to problems and challenges that are unique to indigenous knowledge.

Msuya (2007) examines challenges and opportunities in the protection and documentation of IK in Africa. He argues that there is a "threat of IK extinction due to lack of recording and problems associated with documentation and protection of the knowledge from bio piracy". The knowledge is used without the consent of the indigenous people, who are given no acknowledgement for their work. An example is the hoodia plant that has been patented for medicinal purposes. No recognition or compensation was given to the indigenous Kalahari community that shared this knowledge with the global world. This is a clear example of bio piracy. Msuya also discusses other ethical issues pertaining to IK, with the emphasis on returning IK benefits to the owners of the knowledge (see also Gupta, 2010) and highlights challenges in IK preservation. He suggests measures that can be taken to alleviate the challenges, which include, among others, developing appropriate IK policies and practices (Msuya, 2007).

Chisenga (2002) speaks convincingly of the need to capture and document IK in Africa using ICT, but in the same breath lists the problems and challenges associated with doing this:

a. IK is tacit knowledge that people should be willing to verbalize and share. Yet indigenous people are not always willing to share this knowledge with people from outside their communities. One way of mitigating this problem is presumably to take the advice of Gupta (2010) and Martin and Mirraboopa (2003) on prior

informed consent (PIC), and to follow proper etiquette when dealing with the people concerned.

b. Because IK is tacit or implicit, it is difficult to record, transfer and disseminate. Yet Chisenga is adamant that IK should nevertheless be recorded, transferred and disseminated using ICT. According to Kaniki and Mphahlele (2002), citing the example of the Campbell Collections Library, ICT can indeed be used to record, transfer and disseminate IK.
c. For many people IK is a livelihood. The fact that they alone are holders of such knowledge puts them at an advantage, and entitles them to be paid for consultations. Such people would therefore see sharing their IK as compromising their favourable position in the community. If they are persuaded to share their knowledge, then they should be given the recognition and compensation that they deserve.
d. Certain forms of IK cannot be easily transferred to other communities. Outside of its community of origin, the knowledge may be meaningless and useless.
e. There is also the danger of IK being exploited by multinational corporations, as has been the case with the hoodia plant that Chisenga (2002) makes mention of.

In spite of these reservations, Chisenga (2002) still speaks of capturing and documenting the IK of the people of Africa using ICT. Agrawal (1995) suggestion of in situ preservation should help to overcome some of the problems outlined above, especially in the case of IK in rural Africa.

Chisenga (2002) goes on to remark that "where it is found necessary to share IK with others, international languages should be used". This statement is problematic in the sense

that translating IK into international languages would destroy the specificity that is its core; the message would essentially be lost in translation. There are also certain indigenous terms that simply do not have an English equivalent. These are the reasons why it is so difficult to capture and document IK and why it will remain to some extent tacit knowledge. However, if one adheres to the recommendations proposed by Martin and Mirraboopa (2003) and Gupta (2010) for obtaining prior informed consent (PIC) and involving the indigenous people in the process of capturing and documenting IK, these difficulties should be to an extent remediated. This is done to build relationships like trust, respect for the communities IK with a community you want to research.

3.2 The Importance of Documenting and Disseminating Indigenous Knowledge

The knowledge of documenting IK is not a new one (Ngulube, 2002). Missionaries and colonial district officers during the colonial era collected information on customary patterns of land tenure, livestock and traditional beliefs and rites. Documenting IK will help ensure that communities, villages are not at disadvantage because of the unique beliefs and folkways that pattern their way of living. IK is mainly tacit in other words it is embedded in the practices and experiences of its holders. Tacit knowledge is exchanged through personal communication and demonstration from mentor to apprentice and from parent to child (ren). IK is usually disseminated through various family histories, taboos, symbols, myths and legends, rituals, festivals. Indigenous knowledge is known to be passed down through generations by word of mouth, which suggests the importance of

documenting and preserving it for fear of it being lost or miscredited. Although IK is mainly transferred verbally by word of mouth, its value in the form of practices associated with herbs, livestock, farming is gaining importance world-wide. It makes absolute sense to document this information and give indigenous people due recognition for their work.

Though some authors noted the examples of success and failure in attempts to document IK. Ngulube (2002) highlights the success of a project to document the natural and supernatural healing practices of the Fulani pastoralists in the north-west province of Cameroon. Sithole (2007) discusses Zimbabwe's National Library and Documentation Services Act of 1986, and its failure to make any meaningful impact on everyday practice in terms of documenting indigenous knowledge. This Act, he says, exists on paper but has nothing to show in terms of library development most likely because of poor infrastructure. An initiative regarding IK in Durban has begun with the Ulwazi Programme (Ulwazi Programme: n.d.), which – in partnership with the eThekwini Municipal Library – seeks to document the indigenous knowledge of local communities in the greater Durban area. The result is a storehouse of mainly African culture with a few entries on Indian culture. The rationale behind the Ulwazi program was to draw the rural areas of the Municipality into the information society by providing much needed digital skills for recording relevant oral knowledge that might otherwise be lost. The library provided support, training, and data collection for the project. The technology used was open source software and the social media. The main portal was developed as a wiki and allowed anyone to register and submit an article. Content is organized through a series of categories and sub-categories. The system is multi-lingual.

The Campbell Collections comprise another initiative to preserve IK in Durban and its surrounds. The Campbell Collections hold African artefacts, paintings, books and photographs. When describing her Africana collection in an article published in *Africana Notes and News* in September 1945, Campbell wrote: "This Library has approximately 20,000 books, and I have specialized chiefly in history and Bantu life" (University of KwaZulu-Natal, n.d.).

According to a statement by the Leshiba Community Development Trust (n.d.), Southern African Development Community (SADC) member countries constitute a vast potential source of indigenous knowledge. The Trust's IK center is aimed at creating an environment that welcomes the participation of indigenous people in development work, to ensure that the projects benefit local people on many fronts.

The importance of documenting IK provides evidence that local communities/ villages or families are the owners of a complex and highly developed knowledge system. Documentation is a satisfactory way to "authenticate and grant IK protection from bio piracy and other forms of abuse".

4.0 Conclusion

It is clear that for any indigenous society to develop morally, socially, economically the indigenous people must protect, preserve and documents their IK effectively and efficiently for them to take full advantage of its future and proper usage. This could be achieved through having policies been enacted, proper documentation of the IK, promotion of local legacies.

5.0 Summary

Documenting IK will help ensure that communities, indigenous villages are not at disadvantage because of the unique beliefs and folkways that pattern their way of living. IK is mainly tacit in other words it is embedded in the practices and experiences of its holders. This unit has shown there is a need to capture, preserve and disseminate IK before it is forever lost to succeeding generations. This could be achieved through advance knowledge, preservation of knowledge, protection of the local legacies.

6.0 Tutor-Marked Assignment

1. List and explain any five (5) tools used in preserving and documenting IK

7.0 References/Further Readings

Agrawal, A. (1995). Dismantling the divide between indigenous and scientific knowledge. *Development and Change*, *26*(3):1-40. Available: http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/4201/Dismantling_the_Divide.pdf:

Duran, B. E. S. (2002). *American Indian belief systems and traditional practices*. Available:www.wellnesscourts.org/files/Duran%2520%2520American%2520Indian%2520Belie f%2520Systems.pdf+&cd=1&hl=en&ct=clnk [2016, February 3].

Gupta, A.K. (2010). Indigenous knowledge: Ways of knowing, feeling and doing. *Science and the Public*, Vol XV, Part 2. Volume & issue 165-182. Available: http://scholar.googleusercontent.com/scholar?q=cache:Zs6YFGpeT48J:scholar.google.com/&hl=en&as_sdt=0,5

Kaniki, A. M., & Mphahlele, M. E. K. (2002). Indigenous knowledge for the benefit of all: can knowledge management principles be used effectively? *African Journal of Library and Information Science*, *68*(1):1–22. Available: http://journals.co.za/docserver/fulltext/liasa/68/1/liasa_v68_n1_a1.pdf?expires=14

94913833&id=id&accname=58009&checksum=DD854202C534EA80D187AE6FBC832 544

Msuya, J. (2007). Challenges and opportunities in the protection and preservation of indigenous knowledge in Africa. *International Review of Information Ethics*, *7*:1–8. Available: http://www.i-r-i-e.net/inhalt/007/38-msuya.pdf

Ngulube, P. (2002). Managing and preserving indigenous knowledge in the knowledge management era: challenges and opportunities for information professionals. *Information Development*, *18*(2):95–102. Available: https://doi.org/10.1177/026666602400842486

Okore, A.M., Ekere, J. N., & Ekere, E. H. N. (2009). Promoting access to indigenous knowledge in the digital age: libraries as facilitators. P*aper presented at the Nigerian Libraries Association 47th Annual General Conference 2009, Ibadan, Oyo State. 26-31 July 2009* (p. a). Available: file:///C:/Users/yunnusf/Downloads/fulltext_stamped%20(4).pdf.

Sithole, J. (2007). The challenges faced by African libraries and information centers in documenting and preserving indigenous knowledge. *IFLA Journal*, *33*(2):117–123. https://doi.org/10.1177/0340035207080304.

Unit 4: Channels of Indigenous Knowledge (IK)

Communication/Dissemination and Approaches of Indigenous Knowledge

CONTENTS

1.0 Introduction

Communication in Africa just like in other parts of the world may occur without any deliberate attempt by an information sender. Communication occurs in different forms like verbal or non-verbal; oral or written; formal or informal and intentional or unintentional. They are all interactive and do not exist in isolation of one another. For instance, observers might get much from the action of people's way of dressing, physical appearance and body language. So, the receiver must decode the incoming information against the backdrop of

their culture and match it with existing knowledge. Always culture and existing knowledge have impact on encoding, decoding and matching processes, which sometimes produce noise in the communication channel and results in no two people with a very few exceptions having exactly the same knowledge about anything. This explains why there are problems in defining and classifying African communication systems.

Indigenous channels are important conduits of change. 'Traditional' does not mean 'static'. Time and time again, research has shown that most farmers, men and women do not learn about new technologies through the media or the extension services, but rather from their friends and neighbors or through their own experiments. Indigenous channels enjoy high credibility because they are familiar and controlled locally. Local audiences are often skeptical of externally controlled mass media, viewing them merely as government propaganda. External channels have a limited range. Television and newspapers are confined largely to the richer, urban households of the developing world. Schools reach only the young. Even the most common external channels, radio and extension services, fail to contact many people. Indigenous channels, by contrast, have a much wider audience, reaching those who do not read or write. They are crucial for the exchange of information with those people who are out of the reach of external channels. Development programs can use indigenous channels both to collect and to disseminate information. 'Keeping an ear to the ground' by consciously tapping indigenous channels can help project officials discover the local situation and get reactions to project initiatives and projects can make explicit use of these channels much progress has been made in this area especially with

folk media such as songs a puppet shows, but still there remains great potential for work and co-operation with indigenous organizations. Indigenous channels offer opportunities for local participation in development efforts. Indigenous channels allow local people to communicate among themselves and with development professionals using forms they are familiar with. Control is key here: professionals are often reluctant to give up control over the communication process in development projects.

2.0 Objectives

At the end of this unit, you should be able to:

- list and explain the channels of IK communication/dissemination
- explain the socio-cultural advantages of traditional media
- describe the approaches to IK

3.0 Main Context

3.1 Channels of Indigenous Knowledge Communication/Dissemination and Transfer.

Indigenous communication is important for many reasons. Indigenous communication has value in its own right. It is an important aspect of culture and it is the means by which a culture is preserved, handed down and adapted. But indigenous communication is being eroded by exogenous systems - the mass media, schools, agricultural extension, bureaucracies - endangering the survival of much valuable information. Exogenous channels have limited range. Television and newspapers are largely confined to urban areas

in the Third World. Even the most widespread exogenous channels, extension personnel and radio, fail to reach many rural people. Indigenous channels, by contrast, are ubiquitous. They are needed to convey messages to people out of the reach of exogenous channels. Indigenous channels have high credibility because they are familiar and are controlled locally, indigenous channels are highly credible. Local audiences are often skeptical of the externally controlled mass media. Indigenous channels are important conduits of change. Research has shown the importance of informal, interpersonal contacts in persuading people to adopt, or reject, innovations. Such contacts are often made through indigenous channels. Development programs can use indigenous communication to collect and to disseminate information. Outsiders can tap indigenous channels for information on the local situation and for feedback on project initiatives. Many projects rely on indigenous channels to diffuse innovations and development messages. Some have made explicit use of indigenous channels such as folk media and village organizations. There remains much untapped potential in using such approaches. Indigenous channels offer opportunities for participation by local people in development efforts. They allow local people to communicate among themselves and with development professionals and decision makers. Local people can retain control over local media more easily than over technology-intensive media. If indigenous communication is ignored, the result might be inappropriate development efforts. Below are some of the channels used to communicate/disseminate IK*:*

1. **Folk media** are the indigenous equivalents of exogenous mass media, folklores are used to teach morals, create amusement and laughter, expose the follies of people and extol their virtues. Folktales are also referred to in literature as oral narratives or oral performances, for example “why the tortoise has a broken shell”; “Odu na Ola”. Folktales by its nature involves face-to-face interaction. Both the narrator and his audience are in close contact and in constant interaction. This close contact tends to enhance the source credibility of the source and makes the content of the story very real.

They include festivals, plays, puppet shows, dance, song, storytelling and poetry. Of the various indigenous channels, the folk media have been most used to support development activities. In Indonesia, India and other countries, puppetry and other folk media have been used to promote family planning and political messages, often with success.

2. **Indigenous organizations** include religious groups, village meetings, irrigation associations, mothers' clubs and loan associations (van den Akker 1987). These organizations orchestrate much communication through formal meetings of members by messages sent about activities and obligations and through work activities.

3. **Economic relationships and service suppliers** such as traders, farm input suppliers, and indigenous specialists such as healers and midwives are important sources of information for local people. Market traders provide information on prices, varieties and fertilizer use. Healers explain diseases and treatments. Any society has individuals who are regarded as authorities in their field of specialization. They are potent sources of indigenous knowledge on that topic.

4. **Deliberate instruction**. When we are children, our parents, families and peers teach us how to eat, how to behave, how to cook, plough and plant. Warren (1964) calls this process "deliberate instruction." It continues during adolescence and adulthood through initiations and other rites of passage, apprenticeship arrangements and the instructions given by village elders. Deliberate instruction would seem far more important in the communication of technical information than are the occasional folk media performance or village festival or even than the mass media and schools. Yet deliberate instruction has received very little attention from development specialists.

5. **Unstructured channels** Indigenous communication occurs in many other settings: discussions at home and at the market place, in the fields and on the road, in the teahouse and chief's house, and wherever else people meet and talk. A major part is communication among kin and peer groups. This communication is not organized or orchestrated but spontaneous and informal.

Many other forms of indigenous communication exist: African memorized narratives, Balinese land ownership records written on palm leaves, folklore and proverbs to mention but a few. Direct observation may be important: a farmer may observe a neighbor's bumper crop and decide the variety used is a good one.

6. The Town-Crier

Soola (1999) describes the town-crier as a potent force in information dissemination as it remains an authoritative voice of the traditional authority. The town-crier is usually an eloquent fellow who understands the community and wherever he beats his gong, heads turn and ears twitch. The people recognized that the message must be important and urgent to warrant the dispatch of the crier. Also, Nwuneli (1983) talked of the town-crier model that is used in many West African communities as well as a number of East and Central African communities as an all- purpose, general –information disseminator. But the choice of the hardware (drums, gongs, bells) for information dissemination often depends on what has been previously agreed upon by the community. Thus, when a town-crier makes an announcement for instance, of the death of a traditional chief or an important member of the community, the response or feedback from different village- communities to this message will invariably be the same grief, wailing, shock, sorrow and mourning among others.

7. **Oral Poetry/ Narrative**

In many ways, the artiste controls society with the beauty of his language and voice, the philosophical bent of his utterances and the overall relevance and aptness of his art to life. In fact, he cites instances where the artiste hypnotizes and spellbinds his audience. Among the Yoruba tribe of South-Western Nigeria: *Ewi* is often used to convey information to eulogize achievements, to guide individuals through the murky waters of the world's hazardous terrain, to celebrate the inexorable link between life and death and to satirize unacceptable behaviors and practices.

8. Festivals

Africans history is never complete without mentioning of their festivals. Various festivals and carnivals are celebrated every year. Some are in tandem with universal celebration while some are unique and peculiar to the Africans. Christmas, Easter, New Year, Sallah, Masquerades, New Yam, City Carnivals and host of other similar occasions call for outdoor activities of merry-making and always include music and dance with instrumentalists as well as dancers exhibiting their dexterity. Marriages, naming, burial and chieftaincy titles are often a must-attend for Africans. Masquerades, the spirits of the forefathers, parade in beautiful costumes to the accompaniment of small instrumental groups. Dancing groups both old and new of men, women and excited children fill the streets and village squares. Awareness of specific development programmes can be built and incorporated into local festivals through the use of prize-awards.

9. Music/Lyrics

Music and lyrics constitute essential aspects of socio-cultural and religious life in Africa. Developmental messages when incorporated into songs can be used to create awareness and educate rural dwellers on various issues.

Music springs from the life of the society and is normally performed to express shared values on a number of ritual and social occasions. The venues of performance as well as the genres of the music performed by the musicians are prescribed or somehow determined by the norms of the particular society. Music when performed in its rightful context, nearly always carries information which is for the most part intended to elicit some form of response from listeners, among whom or to whom it is performed.

10. Drama

Local drama groups provide opportunities for local expressions on human scale likely interest a wider range of individual. A radical change in thinking, on a subject matter, brought to reality, through drama, is expected to occur when the individual or the group visualizes the outcome of behaving in a particular way. Drama arouses deep psychological and cultural emotions. The use of well-known and popular actors and stars in local community programs has continued to prove a successful strategy almost everywhere it is used. Actual behavioral change almost always requires personal touch, maybe through influential members of the community or someone who has experience.

11. Records

Many societies keep formal records - written, carved, painted or memorized. South Asian treatises on animal management written on palm leaves, ancient bai lan scripts on leaves preserved in Thai Buddhist temples and similar leaves containing records of land ownership and tax obligations in Bali are examples. Such records do not have to be written: African storytellers narrate memorized historical epics and genealogies at length. Proverbs and folklore are other vehicles.

3.2 Socio-cultural Advantages of Traditional Media

The perceptible advantages which folk or traditional media have over modern mass media in promoting development obviously constitute reasons why media have widespread use in development campaigns. Compared with modern mass media, the folk media are more familiar and closer to the people at the grassroots level and this fact would seem to make them more effective channels through which the ordinary folk can be presented with new

and development ideas such as modern family planning. Being personal forms of entertainment as well as channels of communication, the folk media such as traditional drama, storytelling and folk singing are effective parts of the way of life of the people and thus provide fruitful means of disseminating ideas to them.

Again, being grassroots entertainment media, they cover primary and intimate social groups and any messages they carry reach such groups and any messages they carry reach such groups and therefore reach the well-established communication network of any community.

Traditional modes of communication deal with the values and beliefs of the people and this would seem to make them useful means through which social engineers can bring about behavioral changes in people such as adopting family planning practices. This is because people's value and beliefs play vital role in their acceptance or rejection of such innovation as modern family planning.

Unlike modern mass programs which are usually produced for large, heterogeneous and diverse audiences, the folk media can use local dialects to disseminate ideas in a most intimate and down-to-earth way at the village level in rural areas.

3.3 Approaches to Indigenous Knowledge

Various underlying views of indigenous knowledge can be identified in the literature. These views are riot all mutually exclusive -- indeed, they overlap to some degree. Some individuals lean toward one view without necessarily rejecting the validity of the others. Below are brief stereotypes of seven such views.

1. The Scientist studies indigenous knowledge for its own sake -- as an interesting phenomenon that may yield insights into culture (as in anthropological research) or the physical world (as in biomedical research to identify plants that contain hitherto unknown active ingredients for drugs). The scientist views knowledge as something to be shared openly for the betterment of all humankind.

2. The Development Agent sees that farmers and other local people are acutely attuned to their surroundings. They have intimate knowledge of their soils, climates, and markets. Recommendations derived from outside research may not fit local needs and require costly inputs. The development agent recognizes that recommendations are more likely to be useful and sustainable if they are based on existing practices and are couched in terms that local people readily understand.

3. The Facilitator pressures for indigenous knowledge as a resource that local people can use to further their own development. Instead of trying to persuade farmers to adopt technologies developed elsewhere, in this view, agricultural extensionists and other development workers should facilitate farmers' experiments and encourage local people to exchange information.

4. The Conservationist views with alarm the current rapid rates of environmental destruction and biodiversity loss. Traditional, minority societies occupying remote, often forested and mountainous areas, are suffering similar disruption under the onslaughts of environmental destruction, urbanization, and outside culture. The conservationist advocates the protection of these societies and the preservation of their cultures and knowledge in situ.

5. The Political Advocate perceives local people as being suppressed by wealthy, often foreign, elites. This view supports the protection of rights and the end of exploitation. It denies the scientist's ideal of sharing of wisdom for mutual betterment instead seeing relationships with potential of exploitation. Sanctions must protect the weaker party -- for instance by introducing patent rights for indigenous knowledge to prevent their expropriation by outsiders.

6. The Capitalist by contrast, sees indigenous knowledge as a resource to be tapped by outsiders in pursuit of a profit. Examples of this are the "chemical prospecting" of tropical forests by drug companies and germ plasm collecting by crop breeding firms. Both may draw on the knowledge of local people to identify promising sites, species, and uses. The capitalist makes a large investment of knowledge and money in developing, say, a new crop variety from such germ plasm. This, it is argued, dwarfs the original local contribution and justifies the firm's patenting of the variety. Aspiring to the scientist's quest for knowledge and free access to information, universities and herbariums are often unwitting partners of the capitalist.

7. The Skeptic views indigenous knowledge at best as amusing and at worst as dangerous superstition -- a barrier to progress. According to the skeptic, indigenous knowledge should be eradicated as soon as possible through education and the modernization process. If only local people were "rational," the skeptic argues they would recognize the superiority of introduced technologies or new economic forms. Sadly, the skeptic's view is the dominant one among policy makers and government personnel.

4.0 Conclusion

IK is stored in peoples' memories and activities. "It is expressed in stories, songs, folklore, proverbs, dances, myths, cultural values, beliefs, rituals, community laws, local languages and taxonomy, agricultural practices, equipment, materials, plant species and animal breeds"

Indigenous knowledge is not written down. It is held in people's heads, passed down from one generation to the next by word of mouth. But how is this information communicated? How do people learn indigenous knowledge? Who is involved? How is the communication organized?

Indigenous communication includes the transmission of entertainment, news, persuasion, announcements and social exchanges of every type. Effective communication is an iterative process between people who want both to share their knowledge with others and to listen to what others have to say. There is no 'perfect' medium for this exchange of views: the best medium is the one which is appropriate to the people taking part. You will

know from years of communicating with others that you try to present your ideas in a way which suits the needs, levels of understanding, and expectations of the audience.

5.0 Summary

If indigenous communication is ignored, the result might be inappropriate development efforts. This unit discussed the channels of IK communication/dissemination and transfer as well as the importance of the channels such as the town crier; folk media etc, Approaches to IK were also highlighted under this unit.

6.0 Tutor-Marked Assignment

1. Identify the advantages and disadvantages of traditional channels of communication/disseminating IK.

7.0 References/Further Readings

Akker, P. V. (1987). Savings clubs (jam'iyyat iddikhar): The Egyptian experience.

Development (2/3):145-147, Altieri, Miguel A. Towards a grassroots approach to rural development in the Third World. Agriculture and Human Values 1(4):45-48.

Anil K. G. (1999). Making Indian Agriculture More Knowledge Intensive and

Competitive: The Case of Intellectual Property Rights, Indian J. Ofagric Econ. 342, 346-52.

Brokensha, D. Warren, D. M. & Oswald, W. (1980). Indigenous knowledge systems and

development. Lanham, MD, University Press of America.

Compton, J. L. (1980). Indigenous folk media in rural development. Ch. 17

Diaz, B. J. (1975). The role of folk media: A point of view. Instructional Technology

Report 1.2 informational Center on Instructional Technology, Washington, DC, Academy for Educational Development.

Efi, T. (2004). Clutter in Indigenous Knowledge, Research and History: A Samoan Perspective. *Pacific Research and Evaluation Series of Symposia and Fono. Wellington,* New Zealand.

Everett M. (1983). *The diffusion of innovations*. New York, Free Press, (1983).

Forsyth, M. (2013). How can Traditional Knowledge Best Be Regulated? Comparing a Proprietary Rights Approach with a Regulatory Toolbox Approach. The Contemporary Pacific, 25(1), 1-31

Gorjestani, N. (2000). Indigenous knowledge for development: Opportunities and Challenges. United Nations Conference on Trade and Development. Geneva.

Grenier, L. (1998). Working with Indigenous Knowledge: A Guide for Researchers. Ottawa, Canada: International Development Research Centre

Guchteneire, P., Krukkert, I., & Liebenstein, G. V. (1999). Best Practices on Indigenous knowledge. Joint Publication of the Management of Social Transformations Programme (MOST) and the Centre for International Research and Advisory Networks (CIRAN). Netherlands.

Kidd, R. (1982). The popular performing arts, non-formal education and social change in the Third World: A bibliography and review essay. Bibliography 7, The Hague, Centre for the Study of Education in Developing Countries (CESO).

Lent, J. A. (1982). Grassroots renaissance: Folk media in the Third World. *Media Asia* 90):9-17

Mundy, P., & J. Lin, C. (2000). Indigenous communication and indigenous knowledge. In: Warren, D. Michael, David B., and Slikkerveer L. J. (eds.). In press. Indigenous knowledge systems: The cultural dimension of development. London, Kegan Paul International, (in press).

Nicholls, R. W. (1992). Music and dance associations of the Igede of Nigeria: The relevance of indigenous communication learning systems to rural development projects. Ph.D. dissertation, Washington, DC, Howard University.

Reppika, J. (1992). Regional Program for the Promotion of Indigenous Knowledge in

Asia. Indigenous knowledge and sustainable development. An international symposium held at the International Institute for Rural Reconstruction, September 20-26.

Semali, L. M., & Kincheloe, J. L. (1999). *What is Indigenous Knowledge*? Voices from the Academy. New York: Falmer Press.

Tikai, P., & Kama, A. (2010). A study of indigenous knowledge and its role to sustainable agriculture in Samoa. Ozean Journal of Social Sciences, 3(1), 65-79.

Twarog, S., & Kapoor, P. (2004). Protecting and Promoting Traditional Knowledge: Systems,National Experiences and International Dimensions. *United Nations Conference on Trade and Development*. (pp. 400). New York & Geneva.

Valbuena, V. T. (19896). Philippine folk media in development communication. Singapore, Asian Mass Communication Research and Information Centre.

Wang, G. (1982). Indigenous communication systems in research and development. Paper presented at the conference on Knowledge Utilization: Theory and Methodology, Honolulu, HI, East-West Center.

Wyatt, J. C. (2001). Management of explicit and tacit knowledge. *Journal of the Royal Society of Medicine*, 94, 6-9.

MODULE 3: THE ROLE OF ICTS AND INFORMATION CENTRES IN INDIGENOUS KNOWLEDGE MANAGEMENT

Introduction

The role of Information and communication technology (ICT) cannot be ignored when indigenous knowledge management (IKM) is involved. It plays a vital role in capturing, dissemination, preservation of the IK. In this module we are going to learn the some of the vital roles of ICT in IKM.

Unit 1: The Role of ICT in Indigenous Knowledge Management

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1.0 Introduction

Information and Communication Technology (ICT) has been defined as electronic technologies for collecting, storing, processing, and communicating information. ICT is

the complete system of technologies. It is comprised with two strong technologies; one is Information technology (IT) that actually deals with the hardware and software elements, which allow us to access, store, organize and manipulate the information by electronic means. The second is communication technology, which deals with equipment, infrastructure and software through which information can be received, accessed and disseminates, e.g. phone, fax, modem, networks etc. major component of Information infrastructure are as:

- Electronic communication infrastructure;
- Online information repositories;
- Legal framework; and
- ICT skilled workforce.

Increasingly, communities and organizations around the world are realizing the value and significance of indigenous knowledge and the importance of preserving it for future generations. The capture and preservation of indigenous knowledge is being used to revitalize endangered cultures, improve the economic independence and sustainability of indigenous communities and to increase community-based involvement in planning and development. In parallel with the increasing recognition of the value and relevance of indigenous knowledge to today's world and the need to preserve it, is recognition of the role that Information Technologies (IT) can play in its capture, management and dissemination.

2.0 Objectives

At the end of this unit, you should be able to:

- define the term ICT in relation to IKM
- explain the roles of ICT in IKM
- list the ICT tools used in IKM

3.0 Main Context

3.1 Role of Information and Communication Technology (ICT) in Indigenous Knowledge Management

Since ancient time, vital information on health, child rearing, natural resources management etc. are often encoded in unique forms such as proverbs, myths, rituals, and ceremonies. With the advent of technology, it is imperative to look for ways of processing indigenous knowledge in the same way as scientific information.

Information and Communications Technology (ICT) plays major roles in improving the availability of indigenous knowledge systems and enhancing its blending with the modern scientific and technical knowledge.

According to Adam (2012), ICT can be used to:

i. Capture, store and disseminate indigenous knowledge so that traditional knowledge is preserved for the future generation

ii. Promote cost-effective dissemination of indigenous knowledge

iii. Create easily accessible indigenous knowledge information systems

iv. Promote integration of indigenous knowledge into formal and non-formal training and education

v. Provide a platform for advocating for improved benefit from IK systems of the poor

In fact, proper application of ICT is essential to stimulate the flow of indigenous knowledge and the incorporation of modern scientific and technological understandings to traditional knowledge. Scientific weather forecasts may be more credible to a local community, if ways are found to integrate them with indigenous knowledge that local people have relied on for generations.

The use of modern ICT is still the exception rather than the rule in the direct exchange of indigenous knowledge within and between communities. As the countries establish connectivity, modern ICT could become a powerful enabler for the exchange of IK. In the near future, however, more traditional and appropriate tools for dissemination could be used to facilitate the transfer and exchange of IK. The following represents the kind of tools that could be used depending on the local circumstances and the degree of access and connectivity of a country and a community. External support to build local capacity, including the dissemination of such tools among local communities could facilitate the process of IK exchange:

Video and radio broadcasts in local languages could disseminate IK practices using story telling techniques, especially in the rural areas;

Telecenters could help make knowledge flow in a "two-way street" from the local community's outward (indigenous practices) and from the global community inward (international practices). Telecenters are being introduced in several countries (e.g., Senegal, South Africa, etc.).

Electronic networking would be most appropriate to establish exchanges among civil society groups and to link the nearly dozen existing local IK centers in various countries.

The main use of ICT for promoting indigenous knowledge such as capture, store and disseminate IK so that traditional knowledge is preserved for the future generation, promote cost-effective dissemination of IK, create easily accessible IK information systems, promote integration of IK into formal and non-formal training and education, provide a platform for advocating improving and gets benefits from IK systems to the poor. During natural disasters in rural areas survival mostly rely on IK, because the non-formal means by which IK is disseminated provides a successful model for other education on disaster risk reduction (Lodhi & Mikulecky, 2000).

ICTs include telecommunications technologies such as telephony, cable, satellite and radio, as well as digital technologies, such as computers, information networks and software, Personal Computers, Digital camera, Scanner, Smartphone, Calculator, Smartphone, CD, DVD, Pen drive, Microchip, Cloud, Internet, Teleconference, Video conferencing, Mobile technology, e-mail, Cellphone.

The new information and communications technologies such as computers and the Internet can help generate wealth and jobs, build bridges between governments and citizens, forge

relationships among organizations and communities, and improve the delivery of essential services to poor people. ICTs can be used to:

- capture, store and disseminate indigenous knowledge so that traditional knowledge is preserved for the future generation
- promote cost-effective dissemination of indigenous knowledge
- create easily accessible indigenous knowledge information systems
- promote integration of indigenous knowledge into formal and non-formal training and education
- provide a platform for advocating for improved benefit from IK systems of the poor

3.2 ICT Tools

A reliable and accessible infrastructure (radio, TV, telecommunications, Internet) is a prerequisite for modern information exchange. The starting point for economic development in the information age is the existence of a suitable ICT infrastructure. Many countries have made significant stride in rolling out infrastructure to various parts through Rural Connectivity Project, Woreda Net, Schoolnet and AgriNet, but this has yet to make dent on the flow of indigenous knowledge. Many people still see the internet as a consumption tool as a means of recreation, information gathering and shopping but the internet has been a key resource for exchange of knowledge. Some attempts have made by different projects to set of open source software tools to enable indigenous communities to protect their unique cultures and knowledge through digitization. Different software tools and platforms ranging from database management systems, Geographic Information

Systems to text and speech and character recognition tools, graphical touch screens, audio and video editing tools may be considered for the management and dissemination of indigenous knowledge. Knowledge management tools and platforms ranging from content management systems to group collaboration tools, synchronous and asynchronous communication can also help to capture and share indigenous knowledge. More advanced and new tools like wiki (collaborative authoring), blogging (personal journal, commentary and online diaries) and podcasting (syndication of digital media for playback on portable players and computers) could also be adapted to capture and disseminate indigenous knowledge. However, the application of these tools should be preceded by understanding of the context of local innovators and those who benefit from indigenous knowledge. Low-tech approach to IK should be a starting point as the majority of those who use IK system may not have advanced technologies

4.0 Conclusion

ICT has made tremendous impact in the field of indigenous knowledge management. The capture, storage and dissemination of IK have greatly benefited from the application of ICT. If properly utilized ICT will ensure that the available indigenous knowledge is preserved and easily accessed. There is no doubt that ICTs hold significant potential for supporting the recording, management, dissemination and long term preservation of indigenous knowledge.

5.0 Summary

Information and Communications Technology (ICT) plays major roles in improving the availability of indigenous knowledge systems and enhancing its blending with the modern scientific and technical knowledge. This Unit discussed the roles of ICT in IKM and different uses of ICT in IKM were identified in this unit, various ICT tools that can be used in the management of indigenous knowledge were also highlighted.

6.0 Tutor-marked Assignment

1. Identify and discuss and five (5) disadvantages of using ICT for IKM

7.0 References/Further Reading

Adam, Lishan. (2012). *Information and communication technologies, knowledge management and indigenous knowledge: Implications to livelihood of communities in Ethiopia*. Retrieved: http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan040822.pdf

Dyson, L. E., Hendriks, M. & S. Grant, S. (eds.), (2007). *Information Technology and Indigenous People*, Hershey, PA, USA: Information Science Publishing.

Gorjestani, N., nd. *Indigenous Knowledge for Development: Opportunities and Challenges*. Available [online] www.unctad.org/trade_env/docs/gorjestani.doc

Greyling, E. H., (2007). Preserving Indigenous Knowledge: a Model for Community Participation in African Libraries. *Knowledge Management Africa Conference*, Nairobi, Kenya, 15-17 July.

Greyling, E. and Zulu, S., (2010). Content development in an indigenous digital library: A case study in community participation. *International Federation of Library Associations and Institutions (IFLA) Journal*, 36(1): 30-39, March.

Herselman, M. and Britton, K., 2004. Analysing the role of ICT in bridging the digital divide amongst learners. *South African Journal of Education*, 22(4): 270-274.

Lodhi S &Mikulecky P, (2000), Management of Indigenous Knowledge for Developing Countries, Communication and Management in Technological Innovation and Academic Globalization.

National Aboriginal Health Organization (NAHO), (2001). *Establishing a leading knowledge- based organization*. Available [online] at www.naho.ca/english/pdf/about_knowledge_based_organization.pdf

Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5(1): 14-37, February.

Unit 2: The Role of Libraries and Information Professionals in Indigenous KnowledgeManagement

CONTENTS

1.0 Introduction

Sithole (2007) notes that the library has "emancipated itself from the traditional resources of the written and printed word to incorporate other communication media and digital technologies". But, he observes, the role of libraries will need to be further redefined if they are to participate in any meaningful way in the documentation and dissemination of IK. To harness IK locally and disseminate it globally, the library would need to use a

variety of platforms, such as websites and open access platforms. The IK could be uploaded onto these platforms, thereby making it globally available.

Ngulube (2002) sees the role of information professionals as a proactive one in terms of managing society's knowledge resources. This means that librarians who work with the public and the youth should equip themselves with the skills to engage with indigenous people in the community and actively work with them to capture, document and preserve IK.

To ensure this happens, librarians would need appropriate training to develop skills outside the range of traditional library duties. They would need for example, to be familiar with the proper etiquette to engage with the elders of an indigenous community (Gupta, 2010; Martin & Mirraboopa, 2003).

2.0 Objectives

At the end of this unit, you should be able to:

- state the roles of Libraries and Information Professionals for IKM
- explain the Importance of IK for Libraries and Information Professionals
- list and explain the challenges of IK for Information Professionals

3.0 Main Context

3.1 The Roles of Libraries in Indigenous Knowledge Management

Libraries can promote access to indigenous knowledge by creating an environment which permits face-to-face forums and networking sessions to discuss IK. Anyira, Onoriode, and

Nwabueze (2010) and Okore, Ekere and Ekere (2009) suggest having lectures by traditional healers, priests, and so on, recorded in audio or video format.

This appears to be a more appropriate way to capture IK for posterity than physically writing it down. In the reduction to writing of stories, belief systems and so on, their essence can easily be lost. It is because of this fact that IK cannot be captured, documented and preserved in the same way as scientific knowledge.

Librarians have to adopt new roles to capture and preserve IK, according to Kaniki and Mphahlele (2002), Ngulube (2002) and Sithole (2007). Apart from learning new skills, librarians have to ensure the proper storage and management of this information if it is to be made available and accessible to all. Ngulube (2002) notes that inadequate management of IK has resulted in the loss of most of the indigenous knowledge captured by colonial district officers.

The first step would be to teach the management of IK to librarians in library schools. Another strand would be for world organizations to involve indigenous people in this task. Indigenous people can assist in drawing up frameworks and maybe even lecture on what is expected for an interview to take place in an indigenous setting. This suggestion is in line with the recommendation by Okore, Ekere and Ekere (2009) that libraries work in partnership with library schools to create indigenous knowledge collections, which can be repackaged and made accessible. It is important for graduates of library schools who will work in libraries to have knowledge regarding the preservation of IK. Stevens (2008) shares the view that library and information professionals should partner with indigenous communities.

Underhill (2006) insists that libraries and archives look at the broad issues involved in the preservation of IK. The author emphasizes that libraries must consider IK not simply as part of a historical archive but a contemporary body of relevant knowledge.

Stevens (2008) explains that whilst libraries have not traditionally focused on these areas, they can assist indigenous communities to manage and preserve IK by providing "resources and expertise in collection, organization, storage and retrieval". This is true of public libraries because the librarians work directly with members of the public and most especially the youth.

According to the International Federation of Library Associations' statement on indigenous traditional knowledge (International Federation of Library Associations [IFLA], 2014), libraries can help in the following ways:

- In the collection, preservation and dissemination of IK.
- To inform the public on the contribution and importance of IK.
- To involve indigenous people in the community with collection, dissemination and preservation of IK.
- To support efforts aimed at ensuring that indigenous people and their IK are protected by intellectual property laws.

Although IFLA has issued this statement it does not explain how library and information professionals should go about collecting and preserving IK. Again, the importance of IK and the need to preserve it are emphasized while no guidance is provided on how to actually go about this. Although several authors have made suggestions or hinted at ways that

information professionals can incorporate the preservation of IK into libraries, there are no definite rules or guidelines in place to direct library interventions of this kind.

In its Statement on Indigenous Traditional Knowledge, IFLA (2008) recommended that libraries:

1. Implement programs to collect, preserve and disseminate indigenous and local traditional knowledge resources.

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

3. Publicize the value, contribution, and importance of indigenous and local traditional knowledge to both non-indigenous and indigenous peoples.

4. Involve Elders and communities in the production of resources and teaching children to understand and appreciate the traditional knowledge background and sense identity that is associated with indigenous knowledge systems.

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

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

3.2 The Role of Information Professionals

Since indigenous knowledge is “an important asset with regard to the social capital of local people and constitutes the main resource for their livelihoods” (Lwoga, Ngulube, and

Stilwell, 2011), it is imperative for information professionals to preserve and manage indigenous knowledge and provide guidance and access to the populace in a way that best suit their needs.

Chisenga (2002) observed that "Africa produces a great deal of information and knowledge relevant to and useful for its environment". And he believed that there is "the need for information from Africa to be harnessed, repackaged and added to the global information infrastructure". Lwoga (2011) believed that "lack of a cohesive approach for managing knowledge suppresses the efforts of the poor to take advantage of their innovations and skills to improve their activities".

The need for a community to safeguard its indigenous knowledge calls for the acceptance of such knowledge by successive generations. However, such acceptance, as Kurin (2004) put it "must be genuine and cannot be derived through such coercive forms as legally requiring the sons and daughters who practice a tradition to continue in their parents' footsteps".

3.3 Importance of Indigenous Knowledge for Libraries and Librarians

Because of the skills and expertise to organize access, disseminate and facilitate engagement with information, librarians are best placed to manage and preserve indigenous knowledge. As noted by Nakata & Langton (2005), in August 2004, the Northern Territory Minister for Local Government, Mr. John Ah Kit, made a statement to Parliament, "One of the aims of libraries is to preserve our indigenous culture and encourage community development. A vital key to this is to increase opportunities for libraries in remote areas to

assist in the development of information literacy and basic literacy skills", which is true. Were (2015) considers African libraries as "goldmines in indigenous research and knowledge". Public libraries around the world, for example, Australia, India, South Africa, Zimbabwe are playing key role in managing IK. Greyling & Zulu (2010) believe that "A library with content of local relevance will encourage communities to make use of library services", hence, Durban public libraries have initiated an indigenous digital library project and libraries are crowd sourcing to collect local IK. Libraries are using social software technology and IK is preserved through establishing a community web portal using Web 2.0 technology. A memory database is embedded in the portal as a wiki allowing collaborative writing and sharing of content. In the long-term, this project aims African public libraries to become part of the global information society by establishing sustainable digital library services of local relevance (Greyling & Zulu, 2010).

The IFLA/UNESCO Public Library Manifesto (1994) describes the public library as the local center of information which provides access to all kinds of knowledge and information. It describes the role of the librarian as that of "an active intermediary between users and resources." The Manifesto further notes that the library services and collections must include all types of appropriate media and modern technologies as well as traditional materials. Wendland (2007) further notes that libraries and archives as repositories of indigenous and other cultural materials, fulfill vital preservation, educational, scholarly and access functions for benefit of whole society.

On a similar note, Isah, Bashorun & Omopupa (2012), reiterate that traditionally, "libraries and archives are custodian of knowledge and cultural heritage; they hold drawings,

paintings and other documentary artifacts, including manuscripts, records, books, audiovisual items, etc."

IFLA (2014) recommends libraries and archives to:

i. implement programs to collect, preserve and disseminate indigenous and local traditional knowledge resources;
ii. publicize the value, contribution, and importance of indigenous and local traditional knowledge to both non-indigenous and indigenous peoples;
iii. involve elders and communities in the production of IK resources; and,
iv. encourage the recognition of principles of intellectual property to ensure the proper protection and use of IK.

Thus, increasingly, libraries are recognizing IK as an important source of developmental information.

3.4 Challenges of Indigenous Knowledge for Information Professionals

There are numerous challenges that librarians encounter in managing, preserving and dissemination of indigenous knowledge. These major challenges are:

a. Tacit nature of indigenous knowledge*:* Since IK is mostly tacit and embedded in a particular community practices and experiences, it is a challenge in itself to record, manage and disseminate it. According to Makinde & Shorunk (2013), indigenous knowledge is individually based, which makes it difficult to document and communicate it to other people.
b. Copyright and intellectual Property rights*:* IK faces serious challenges related to copyright and intellectual property right in the collection, preservation and provision

of access to IK (Okore, Ekere & Eke, 2009; Anyira, Onoriode & Nwabueze, 2010; Adeniyi & Subair, 2013). Web-based management, storage and dissemination of indigenous knowledge have made the issues of copyright and intellectual Property rights more complex and challenging. Sometimes, it is difficult to establish the ownership of indigenous knowledge.

c. Inadequate funding*:* Lack of adequate funding hinders librarians' efforts to manage IK (Okore, Ekere & Eke, 2009; Anyira, Onoriode & Nwabueze, 2010), which has bearing on inadequate infrastructure and training.
d. Librarians' poor attitude towards IK*:* There is empirical evidence that librarians' poor attitude towards IK challenges the management of IK.
e. Competition between traditional and new structures*:* It is a challenge for librarians to afford and adopt new technology-based structures such as tele-centers, which are becoming important platforms for capturing, transferring and giving access to IK (Okore, Ekere & Eke, 2009).
f. Inadequate infrastructure*:* Lack of basic equipment for preservation and dissemination of indigenous knowledge is a serious challenge (Anyira, Onoriode & Nwabueze, 2010).
g. Time consuming: Generally, IK is assumed as technically easy, yet it can be laborious, time consuming, costly and sometimes disappointing (Anyira, Onoriode & Nwabueze, 2010; Makinde & Shorunk, 2013) and thus it pauses a challenge.
h. Insufficient staffing*:* Staffing challenge is well-known issue in libraries especially in African countries, which limits librarians' involvement with IK (Anyira,

Onoriode & Nwabueze, 2010) as librarians have several other commitments related to provision of information services to their users.

i. Language challenge*:* There are language barriers between indigenous communities and librarians to communicate in a common language. Documentation and communication of IK in languages understood by other community members is another important challenge (Anyira, Onoriode & Nwabueze, 2010).

j. Scientific validation: Scientific validation is another challenge with IK, since IK is based on generations' long experience and it is not tested in laboratories like scientific knowledge (Kashweka& Akakandelwa, 2008).

k. Knowledge is power syndrome & lack of cooperation from local communities*:* Because IK is a source of status and income for indigenous people; they are always secretive and often suspicious and afraid of documenting IK outside their customary oral exchange. They fear that if it is documented, it will be misused or stolen or even used against them and they may not be able to claim it, thereby rendering them powerless (Makinde & Shorunk, 2013). This is a challenge for librarians. Because of knowledge is power syndrome, sometimes indigenous people are reluctant to share their tacit knowledge with others (Okore, Ekere & Eke, 2009; Anyira, Onoriode & Nwabueze, 2010, Adeniyi & Subair, 2013; Ebijuwa, 2015), which makes it difficult for librarians to capture and document IK.

l. Disappearance of traditional knowledge and skills**:** Another challenge is loss of indigenous knowledge and skills due to memory loss or death of elders and the

deliberate or inadvertent destruction of indigenous knowledge (Owiny, Mehta & Maretzki, 2014).

4.0 Conclusion

It is obvious that Libraries and Information Professionals play a significant role in the management of IK, despite the fact that they face a lot of challenges along the way, being them (Libraries and Information Professionals) as the custodians of knowledge; therefore, it is their responsibilities to preserve and manage IK for effective use and for future generation. Indigenous knowledge 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. The goal of managing indigenous knowledge is to provide the right information to the right people at the right time.

5.0 Summary

Libraries can promote access to indigenous knowledge by creating an environment which permits face-to-face forums and networking sessions to discuss IK. This unit explicitly explained the roles of Libraries and Librarians in the management of IK, the importance of IK for Libraries and Information Professionals was also discussed along with the challenges faced by Information Professionals and librarians in documenting IK.

6.0 Tutor-marked Assignment

1. Provide solutions to the aforementioned challenges of IK faced by Librarians and Information Professionals

7.0 References/Further Reading

Adeniyi, I.A. & Subair, R.E. (2013). Accessing Indigenous Knowledge Resources in Libraries and the Problems Encountered by Librarians Managing IK in Oyo State, Nigeria. *Library Philosophy and Practice* (e-journal). Paper 1988. [Online]. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2391&context=libphilprac

Anyira, I.; Onoriode, O.K. & Nwabueze, A. (2010). The Role of Libraries in the Preservation and Accessibility of Indigenous Knowledge in the Niger Delta Region of Nigeria. Library Philosophy and Practice, ISSN 1522-0222, [Online]. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1400&context=libphilprac

Chisita, C.T. (2011). Role of libraries in promoting the dissemination and documentation of indigenous agricultural information: Case Study of Zimbabwe. [Online]. http://www.ifla.org/past-wlic/2011/78-chisita-en.pdf,

Greyling, E. & Zulu, S. (2010). Content development in an indigenous digital library: A case study in community participation. International Federation of Library Associations and Institutions (IFLA) Journal, 36 (1): 30-39.

Gupta, A.K. (2010). Indigenous knowledge: Ways of knowing, feeling and doing. *Science and the Public*, Vol XV, Part 2. Volume & issue 165-182. Available: http://scholar.googleusercontent.com/scholar?q=cache:Zs6YFGpeT48J:scholar.google.com/&hl=en&as_sdt=0,5

IFLA (2014). IFLA Statement on Indigenous Traditional Knowledge. [Online]. Available at:http://www.ifla.org/publications/ifla-statement-on-indigenous-traditional-knowledge,

Isah, A.; Bashorun, M.T.; & Omopupa, K.T. (2012). Libraries and Preservation of Indigenous Knowledge in Developing Countries: The Nigeria Experience. In Library and Information Science in Developing Countries: Contemporary Issues. Edited by, Adeyinka Tella, Abdulwahab Olanrewaju Issa.

International Federation of Library Associations [IFLA]. (2014). Statement on indigenous traditional knowledge. Available: https://www.ifla.org/publications/ifla-statement-on-indigenous-traditional-knowledge

Kaniki, A. M., & Mphahlele, M. E. K. (2002). Indigenous knowledge for the benefit of all: can knowledge management principles be used effectively? *African Journal of Library and Information Science*, *68*(1):1–22. Available:http://journals.co.za/docserver/fulltext/liasa/68/1/liasa_v68_n1_a1.pdf?expires=1494913833&id=id&accname=58009&checksum=DD854202C534EA80D187AE6FBC832 544

Chisenga, J. (2002). Indigenous knowledge: Africa's opportunity to contribute to global information contents. *South African Journal of Libraries and Information Science*, *68*(1), 16.

International Federation of Library Associations and Institutions. (2008). *IFLA statement on indigenous traditional knowledge*. Retrieved from: http://www.ifla.org/publications/ifla-statement-on-indigenous-traditional-knowledge

Kashweka, K. and Akakandelwa, A. (2008). Indigenous Knowledge and the attainment of MDGs in Africa: opportunities and challenges. Proceedings of the 18th Standing Conference of Eastern, Central and Southern African Library Associations. 15th - 18th July, 2008, Lusaka, Zambia

Kurin, R. (2004). Safeguarding intangible cultural heritage in the 2003 UNESCO Convention: A critical appraisal. *Museum International, 56*(1&2), 66-77. Retrieved from: http://onlinelibrary.wiley.com/doi/10.1111/j.1350-0775.2004.00459.x/pdf

Langton, M. (2005). Traditional indigenous biodiversity-related knowledge. *Australian Academic & Research Libraries, 36*(2).

Lwoga, E. T. (2011). Knowledge management approaches in managing agricultural indigenous and exogenous knowledge in Tanzania. *Journal of Documentation, 67*(3), 407-430.

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.

Makinde, O. O. & Shorunke, O.A. (2013). Exploiting the values of indigenous knowledge in attaining sustainable development in Nigeria: The place of library. [Online]. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=2185&context=libphilprac

Martin, K., & Mirraboopa, B. (2003). Ways of knowing, being and doing: a theoretical framework and methods for indigenous and indigenes research. *Journal of Australian Studies*, *27*(76):203–214. Available: https://www.griffith.edu.au/__data/assets/pdf_file/0008/507392/Martin-2009.pdf

Nakata, M. & Langton, M. (2005). Australian Indigenous Knowledge and Libraries. *Australian Academic & Research Libraries*, 36(2): 1-211. [Online]. Available at: http://www.alia.org.au/publishing/aarl/AARL_vol36_no2_2005

Ngulube, P. (2002). Managing and preserving indigenous knowledge in the knowledge management era: challenges and opportunities for information professionals. *Information Development*, *18*(2):95–102. Available: https://doi.org/10.1177/026666602400842486

Okore, A.M., Ekere, J.N. and Eke, H.N. (2009). Promoting access to indigenous knowledge in digitize age: Libraries as facilitators. Libraries Create Future: A paper presented at the Nigerian Libraries Association 47th Annual General Conference 2009, Ibadan, Oyo State, from 26-31 July 2009.

Sithole, J. (2007). The challenges faced by African libraries and information centres in documenting and preserving indigenous knowledge. *IFLA Journal*, *33*(2):117–123. https://doi.org/10.1177/0340035207080304

Underhill, K. J. (2006). Reviewed work(s): Australian indigenous knowledge and libraries by Martin Nakata and Marcia Langton. *The American Archivist*, *69*(2):528–531. http://www.jstor.org/stable/pdf/40294334.pdf

Wendland, W. (2007). Intellectual Property and Traditional Cultural expressions and Traditional knowledge: Key Issues. [Online]. Available at: http://archive.ifla.org/IV/ifla73/papers/095Wendland-en.pdf

Were, J. (2015). Women in Tech: Rebuilding the link between librarians and farmers. [Online].Available at: http://ictupdate.cta.int/en/Feature-Articles/Women-in-Tech-Rebuilding-the-link-between-librarians-and-farmers

Unit 3: The Role of Public Libraries in Indigenous Knowledge Management

CONTENTS

1.0 Introduction

The UNESCO Public Library Manifesto (1994) describes the public library as the local centre of information which provides access to all kinds of knowledge and information. It describes the role of the librarian as that of "an active intermediary between users and resources". The Manifesto further notes that the library services and collections must include all types of appropriate media and modern technologies, as well as traditional materials (Mnkeni-Saurombe & Zimu, 2013).

Wendland as cited in Chisita (2011) notes that libraries and archives as repositories of formal scientific and indigenous and other cultural materials perform vital preservation, educational and scholarly functions of access for the benefit of whole society (Chisita 2011).

2.0 Objectives

At the end of this unit, you should be able to:

- explain the roles of Public Libraries in IKM
- state the challenges of managing and preserving IK in Public Libraries
- describe the role of multi-purpose community resource centre in IKM

3.0 Main Context

3.1 Role of Public libraries in Indigenous Knowledge Management

Community libraries have shown strong tendency towards preserving local culture in digital and paper format and promoting exchange of information in many countries, particularly in Latin America. The International Federation of Library Association asserts that libraries could help in

i. collecting, preserving and disseminate indigenous and local traditional knowledge
ii. publicizing the value, contribution, and importance of indigenous knowledge to both non-indigenous and indigenous peoples
iii. raising awareness on the protection of indigenous knowledge against exploitation
iv. involving elders and communities in the production of IK and teaching children to understand and appreciate the traditional knowledge
v. encouraging the recognition of principles of intellectual property to ensure the proper protection and use of indigenous knowledge and products derived from it.

Part of the mandate of public and national libraries is to document and preserve the cultural heritage of the nation, which includes indigenous knowledge (Makinde & Shorunke, 2013). Hence, the largest International Federation of Library Associations and Institutions (IFLA) acknowledges the intrinsic value and importance of indigenous traditional knowledge and local community knowledge and the need to consider it holistically in spite of contested conceptual definitions and uses (IFLA, 2014). Recognizing the importance of indigenous knowledge, particularly public libraries are playing important roles in management and preservation of indigenous knowledge all over the world including Nigerian public libraries.

The International Federation of Library Association (2003) asserts that libraries could help in:

a. collecting, preserving and disseminate indigenous and local traditional knowledge
b. publicizing the value, contribution and importance of indigenous knowledge to both non-indigenous and indigenous peoples.

Burtis (2009) have recommended that library should diffuse its traditional role of collecting, preserving and providing access not only to materials of scientific origin but to IK resources so as to make all information available. Many libraries recognize IK as an important source of developmental information. Nakata and Langton (2005) observe that the library and information profession has a lot to learn if they are to meet the information needs of indigenous people and appropriately manage IK. This may require libraries to move outside their comfort zone. The development of services is also demanding, requiring new disciplines, technologies, and collaborations. Indigenous people continue to be

generous in sharing their knowledge with libraries and so libraries must maintain the momentum (Nakata and Langton, 2005).

3.2 Challenges of Managing and Preserving Indigenous Knowledge in Public Libraries

Like other libraries in Africa, public libraries encounter the following challenges among others:

i. **Lack of Storage facilities:** There is a serious lack of storage facility to store audio-visual materials featuring indigenous knowledge, such as, DVDs, CDs, films etc.

ii. **Unwillingness to disclose cultural information:** Often indigenous people are not willing to disclose cultural information hence, this is posing a challenge for the librarian to capture and preserve IK.

iii. **Inadequate Infrastructure:** The public library do not have sufficient space, where one can comfortably seat and view the videos on IK without disturbing other library users. Often, libraries do not have adequate equipment, such as, video camera and tape recorders to capture indigenous knowledge are not provided and mostly public libraries have to rely on other stakeholders for necessary equipment.

iv. **Lack of funds**: Public libraries do not have sufficient funds to complete some partially completed projects on IK, such as unable to complete editing videos and consolidate them into a one complete film.

v. **Low spirit of volunteerism:** Spirit of volunteerism among indigenous people is slowly dying; hence people need to be paid for their skills/ input of indigenous knowledge in order to encourage indigenous people to come forward to share their knowledge.

3.3 Role of Multi-purpose Community Resource Centres

Multipurpose community centres are increasingly becoming the main venues for organizing IK and disseminating it using digital technologies. Access to indigenous knowledge databases, audio and video footages can be made available to members of communities through tele-centers. Technologies and tools ranging from speech to text, text to speech, mobile phones, PDAs, community radios, etc. can be installed and tried out for suitability for sharing of indigenous knowledge. Community centres that may have radios can also serve as a hub for broadcasting and exchange of information among members. Participatory videos and radio programming initiatives can be launched at community centres to capture indigenous knowledge and exchange within and beyond the communities.

4.0 Conclusion

Public library is the local center of information which provides access to all kinds of knowledge and information. It describes the role of the public library as that of "an intermediary between users and all the resources. Public libraries and archives as repositories of indigenous and other cultural materials fulfill vital preservation, educational, scholarly and access functions for benefit of whole society. Public libraries and archives are custodian of knowledge and cultural heritage; they hold drawings,

paintings and other documentary artifacts, including manuscripts, records, books, audiovisual items, etc.

5.0 Summary

Collecting, preserving and disseminate indigenous and local traditional knowledge is one of the roles of libraries. This unit described the numerous roles of public libraries in indigenous knowledge management and the challenges of managing and preserving IK in public libraries, the role of multi-purpose community resource center was also discussed under this unit.

6.0 Tutor-marked Assignment

1. Describe the role of archive center in IKM and challenges faced by archive centers in IKM.

7.0 References/Further Reading

Abdulmumin, I, Bashorun, M.T & Omopupa, K.T. (2012). *Libraries and Preservation of Indigenous Knowledge in Developing Countries: The Nigeria Experience.* Library and Information Science Book. IGI Global Disseminator of Knowledge. USA

Alemna, A. A. (2005). The role of libraries in harnessing indigenous knowledge in Ghana. *Ghana Library Journal.* Special Issue. 17: 23-56. Anonymous, Traditional Medicine, Fact Sheet No 134, September 1996, in (World Health Organization, 1996)

Olatokun (2010) Indigenous Knowledge of Traditional Medical practitioners in the treatment of sickle cell anemia*) Indian Journal of Traditional Knowledge.* Vol. 9 No1, pp. 119-125.

Unit 4: Preservation of Indigenous Knowledge and Causes of Destruction in the Library

CONTENTS

1.0 Introduction

It is difficult to define IK because it varies along with the indigenous people of the world (Stephen, 2008). Common features have been identified, to create a working definition, such as this one provided by UNESCO:

Indigenous knowledge refers to a complete body of knowledge, knowhow and practices maintained and developed by people generally in rural areas, who have extended histories of interaction with the natural environment. These sets of understandings, interpretations and meanings are part of a cultural complex that encompasses language, naming and classification systems, practices for using resources, ritual, and spirituality and worldview. It provides the basis for local level decision-making about many fundamental aspects of day-to- day life.

2.0 Objectives

At the end of this unit, you should be able to:

- explain the preservation of IK in Libraries
- mention the causes of destruction of IK base
- list and explain the techniques to preserve and capture IK
- state the problems associated with IK preservation

3.0 Main Context

3.1 Preservation of Indigenous Knowledge in the Library

Indigenous communities preserve and transmit knowledge using techniques like oral storytelling and experiential instruction. Battiste and Hendersen (2004) state that IK systems can only be understood through the methods of a particular community such as apprenticeships, ceremonies, and practice and in the environment in which the system originates. Stevens (2008) asserts that the channels for communicating IK have become inaccessible to the indigenous people themselves, especially young 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 cultures. Stevens (2008) states that, while 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. IK differs greatly from western knowledge and must be managed in ways that may challenge conventional methods. Okore, et al., (2009) observes that libraries have made progress in the

preservation of local culture in paper and digital format, and have promoted the exchange of information.

According to IFLA (2008), libraries can help in:

i. Collecting, preserving, and disseminating IK. Publicizing the value, contribution, and importance of IK to both non-indigenous and indigenous people

ii. Involving elders and communities in the production of IK

iii. Encouraging the recognition of intellectual property laws to ensure the proper protection and use of IK

3.2 Causes of Destruction of Indigenous Knowledge Base

An observation by Mchombu (2002) is that in the past, Western knowledge with its powerful tools was thought to have all the answers to humanity's problems. Since Western knowledge was dominant over traditional knowledge, it cast aside and disorganized the knowledge and traditions that rural groups had because they had less power to define themselves and their view of the world. IK is in danger of being destroyed; Mchombu (2002) lists some reasons for the destruction of IK which include:

i. Young people turning away from their elders and breaking an ancient chain of orally communicated knowledge.

ii. An education system which is de-linked from the IK base and aimed at providing external information which was considered better than IK.

Ngulube (2002) supports Mchombu's latter observation when he says that "colonialism and the attitude of Africans who were converted to Christianity and Eurocentric elites undermined the place of IK in Africa. Consequently, its validity was widely questioned". Ngulube (2002) argues that it was the rigid approach of Western scientific knowledge towards other knowledge systems that precipitated the devaluing and marginalizing of IK during foreign domination. IK was regarded as invalid, worthless and irrelevant when compared with western codified knowledge. An observation by Chisenga (2002) is that modern education systems in developing countries do not have IK subjects or modules in their curricula. Therefore, IK is not being passed from one generation to another in schools (Chisenga, 2002). Other reasons are as follows:

A significant part of the land, forests and habitat of indigenous peoples and local communities in many countries is being affected by a combination of deforestation, logging, road construction and dam projects, mining, urbanization and conversion of forests to tree and agricultural plantations. The loss of resources and habitat has disrupted the social and ecological context within which the communities have made use of their IK. Thus the ability to maintain the knowledge or to use it is eroded (Khor, 2002).

3.3 Techniques to Preserve and Capture Indigenous Knowledge

In Nigeria, indigenous knowledge is the unique, traditional, local knowledge existing within and developed around specific conditions of women and men indigenous to a particular geographic area including horns, drums, stories (Christopher, 2015). It is preserved by recording interviews of resource persons and create microfilm records and

cameras are used to capture indigenous information and people buy indigenous materials to preserve them (Anyira, Onoriode & Nwabueze, 2010). In some notable communities of Nigeria, indigenous knowledge has been transferred "from one generation to the other through ancient drums, gongs, and storytelling" (Christopher, 2015). According to Okore, Ekere & Eke (2009) indigenous knowledge preservation methods include documentation, digitization, video recording, and providing internet access.

According to Okore, Ekere & Eke (2009) and Christopher (2015), libraries can facilitate preservation and promotion of indigenous knowledge in many ways for its increased accessibility including:

a. Documenting IK stories by recording into audio tapes and videos;
b. Publish IK into books or journals;
c. Materials that cannot be preserved through documentation can be converted into artifacts to preserve;
d. Libraries can also provide a current awareness service through mass education, where sons and daughters of a community can be taught knowledge of their forefathers' indigenous to their community;
e. Libraries can create an environment for face –to-face forums. For example, organize talk shows involving traditional rulers, elderly people and professionals in various vocations from different subject areas ranging from agriculture, traditional medicine, ecosystem, herbal healing , conflict resolution. Information collected during these talks can be edited and made available in videos, CDs or DVD.

f. Libraries can also sponsor competitions on documentary of indigenous technology, traditional songs and cultural attire. Entries can be made in audio, video or print format and this collection of indigenous knowledge made during such activities could be processed and made accessible to users of the library.

g. Libraries can partner with library schools to create indigenous knowledge collection which can be edited and made accessible to people; and

h. Libraries can invite adults to tell stories to children about their community in the library to document IK and the adults could also teach dance steps, enact plays and dramas explaining IK of a particular community (Okore, Ekere & Eke, 2009; Christopher, 2015).

Thus, there are several techniques; audio-tapes, CDs, books, journals, artifacts, talk shows, story-telling and most recent web-based platforms, that can be used and already being used by many libraries in order to capture, preserve and to make IK more accessible.

3.4 Problems Associated With Indigenous Knowledge Preservation

Some of the problems associated with traditional knowledge are as follows:

i. Cultural identities of some of the communities are eroding because of the socio economic pressures, effect of globalization, growing opportunities in the job markets, change lifestyle, migration from homeland, etc.

ii. This knowledge is implicit. Most of it is not available in written form.

iii. Changed lifestyle may also weaken the knowledge transfer process to future generations.

iv. There is dearth of respect and appreciation for this knowledge. Lack of awareness leads to misunderstanding and fails to realize the true value i.e. its scientific and technical qualities

v. Preservation of this knowledge

vi. Protection of this knowledge against misuse – Commercial exploitation of knowledge by third parties.

4.0 Conclusion

The future of IK is further endangered by the marginalization of indigenous people in terms of education. For reasons such as discrimination and remoteness many indigenous children lack access to formal education which in turn leads to further marginalization. Although IK in the past was undermined but some literature brings to attention that IK is a significant resource for development. Where western social science, technological might and institutional models seem to have failed, IK is often viewed as the latest and the best strategy in the old fight against hunger, poverty and underdevelopment. Libraries should collaborate with indigenous people to acquire, store and make IK accessible. Libraries and librarians should prioritize the management of IK. IK management equipment and tools should be provided in libraries. Efforts should be made to collect and package IK and make it available on the internet. Efforts should also be made to persuade traditional institutions and resource persons in indigenous communities to share IK with libraries for proper preservation and accessibility.

5.0 Summary

Indigenous knowledge refers to a complete body of knowledge, knowhow and practices maintained and developed by people generally in rural areas, which have extended histories of interaction with the natural environment. Under this unit, preservation of IK in libraries (Collecting, preserving and disseminating IK)were discussed along with the causes of destruction of IK base, the unit also described the techniques to preserve and capture IK and problems associated with IK preservation.

6.0 Tutor-Marked Assignment

1. Provide preventive measures for the causes of IK base destruction

7.0 References/Further Readings

Adam, L. (2007). Information and communication technologies, knowledge management and indigenous knowledge: Implication to livelihood of communities in Ethiopia. Available: http://www.eictda.gov.et

Agrawal, A. (1995). Indigenous and scientific knowledge: some critical comments. *Indigenous knowledge and development monitor* 3(3): 3-6.

Anand, S. (2009). Cultural heritage, indigenous knowledge, and scope of communication for sustainable development. Available: http://www.bhu.ac.in/instituteofagriculturalscienceBHU/EXTENSION_EDUCATION/internationalpercent seminar/Heritage_culture_and_Communic/HCC_12.pdf

Anyira, I.; Onoriode, O.K. & Nwabueze, A. (2010). The Role of Libraries in the Preservation and Accessibility of Indigenous Knowledge in the Niger Delta Region of Nigeria. Library Philosophy and Practice, ISSN 1522-0222, [Online]. Available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1400&context=libphilprac

Battiste, M., & Hendersen J.Y. (2004). Protecting indigenous knowledge and heritage: A global challenge. Saskatoon: Purich.

Choike, O. (2003). *IPRs and biodiversity: stop the theft of indigenous knowledge*. At http://www/choike.org/nuevo_eng/informes/6551.html Accessed 22/07/08.

International Federation of Library Associations and Institutions (2008). IFLA statement on indigenous traditional knowledge. Available: http://www.ifla.org/publications/ifla-statement-on-indigenous-traditionalknowledge

Khor, M. 2002. *Intellectual property, biodiversity and sustainable development: resolving the difficult issues.* London: ZED Books Ltd.

Chisita, C.T. (2011). Role of libraries in promoting the dissemination and documentation of indigenous agricultural information: Case Study of Zimbabwe. [Online]. http://www.ifla.org/past-wlic/2011/78-chisita-en.pdf,

Chisenga, J. (2002). Indigenous knowledge: Africa's opportunity to contribute to global

information contents. *South African Journal of Libraries and Information Science, 68*(1), 16.

Christopher, O.O. (2015). Indigenous knowledge storage and access for cultural continuity: the role of the library in Nigeria. *International Journal of Innovative and Applied Research*, 3(1): 59- 63.

Kaniki, A. M., & Mphahlele, M. E. K. (2002). Indigenous knowledge for the benefit of

all: can knowledge management principles be used effectively? *African Journal of Library and Information Science*, *68*(1):1–22. Available:

http://journals.co.za/docserver/fulltext/liasa/68/1/liasa_v68_n1_a1.pdf?expires=1494913833&id=id&accname=58009&checksum=DD854202C534EA80D187AE6FBC832 544

Mchombu, K.J. (2002). *Sharing knowledge for community development and transformation: a handbook.* Canada: DLR International.

Mchombu, K.J. 2006. Harnessing knowledge management for Africa‟s transition to the 21st century. *In XVII Standing Conference of Eastern Central and Southern African Library Associations (SCECSAL XVII): librarianship as a bridge to an information and knowledge society in Eastern, Central and Southern Africa.* Dar-es-Salaam: Library Association of Tanzania: 2-39.

Nakata, M. & Langton, M. (2005). Australian Indigenous Knowledge and Libraries. *Australian Academic & Research Libraries,* 36(2): 1-211. [Online]. Available at: http://www.alia.org.au/publishing/aarl/AARL_vol36_no2_2005

Ngulube, P. (2002). Strategies for managing and preserving indigenous knowledge in the knowledge management era. In *SCECSAL 2002: from Africa to the world-the globalization of indigenous knowledge systems.* Pretoria: LIASA: 61-69.

Ngulube, P. (2003). Using SECI knowledge management model and other tools to communicate and knowledge management tacit indigenous knowledge. *Innovation* 27: 21-28.

Okore, A.M., Ekere, J.N. and Eke, H.N. (2009). Promoting access to indigenous knowledge in digitize age: Libraries as facilitators. Libraries Create Future: A paper presented at the Nigerian Libraries Association 47th Annual General Conference 2009, Ibadan, Oyo State, from 26-31 July 2009.

Stevens, A. (2008): A different way of knowing: Tools and strategies for managing indigenous knowledge. *Libri* (58): 25-33.

MODULE 4: ETHICAL ISSUES AND CONSIDERATIONS IN INDIGENOUS KNOWLEDGE MANAGEMENT

Introduction

Ethical issues and consideration in IKM is a vital aspect of this course. In this module we are going to learn the indigenous knowledge and Intellectual Property Rights, International Initiatives to protect IK etc.

Unit 1: Indigenous Knowledge and Intellectual Property Rights (IPRs)

CONTENTS

1.0 Introduction

As has been repeatedly stressed, IK is now widely recognized as having played and is still playing crucial roles in economic, social and cultural life and development, not only in traditional societies but also in modern societies. It is now recognized as being a precious resource that is critical to the future development or even survival of humankind. As IK becomes more significant, fears have grown that populations who have been responsible

for developing and preserving the knowledge will lose them to unscrupulous "outside operators" asserts Ngetich (2005).

The rights of IK holders for their knowledge to the use of their knowledge and to the products arising from such use must also be recognized. The misappropriation of IK holders' resources, their knowledge or the products of their knowledge, would not only violate their rights, but also adversely affect the conservation and use of the knowledge as the IPRs obtained by corporations and their institutions may erode the community's rights to continue using their resources or to continue with their traditional practices (Khor 2002). This has resulted in many policy analysts advocating the use of IPRs to protect the rights of the knowledge owners to their indigenous resources (Ngetich, 2005).

The World Bank asserts that prior to 1992; IK and resources were seen as the common heritage of mankind. There were no international laws regulating access to genetic resources. As a result, there was an increase in the commercial use of the knowledge and biological resources of indigenous peoples. The rapid depletion of environmental resources and the need to reward both users and providers, gave rise to the Convention on Biological Diversity (CBD) which for the first time acknowledged the value of IK. It established a framework for providing access to genetic resources and a means for fair and equitable benefit sharing (World Bank, 2002).

2.0 Objectives

At the end of this unit, you should be able to:

- explain indigenous knowledge and Intellectual Property Rights (IPRs)
- list the problems related to IK and IPRs

- mention the possible solutions to the problems related to IK and IPRs
- discuss the problematic ethical issues related to IK

3.0 Main Context

3.1 Indigenous Knowledge and Intellectual Property Rights (IPRs)

IPRs are a means of acquiring ownership over a particular resource that is intangible in nature. It usually involves the protection of some form of invention created by the human mind. This includes a wide variety of creations, ranging from new music, novels, drugs, to computer software and products obtained from the use of IK (World Bank, 2002). The IDRC publication (undated: 1) defines IPRs as mechanisms to protect individual and industrial, inventions and are usually in effect for a specified period. These legal rights can be attached to information if the information can be applied to making a product that is distinctive and useful. Legal rights prevent others from copying, selling, or importing a product without authorization (IDRC, undated: 1).

The CBD introduced the notion of IPRs as a strategy for conserving biodiversity by granting countries sovereign rights over their resources. This was complemented by the Agreement on Trade-Related Intellectual Property Rights (TRIPS) into the mainstream of the World Trade Organisation (WTO) system which established new disciplines for many countries in patents, copyrights, geographical indications, trademarks and industrial designs. The main objective of the agreement is to create an international standard for minimum (IPR) protection (World Bank, 2002). Ngetich (2005) defines IPRs as basically a mechanism to allocate ownership of knowledge and distribute benefits from it among

competing claimants. Proponents of IPRs seek to resolve three types of dilemmas that become prominent as the value of IK grows: ethical, managerial and preservationist.

According to Ngetich (2005) ethical dilemmas arise because IK resources lie mainly in marginal environments and are often threatened with extinction. The managerial issue relates to the question of creating ownership rights over IK resources that will ensure appropriate rewards to innovators and thereby maximize future innovations. The concern is based upon the belief that the increasing poverty of indigenous populations is leading them to undertake activities that erode biodiversity. If therefore they receive material benefits in exchange for their stewardship of genetic materials, the decline would be halted. IPRs therefore can simultaneously satisfy the ethical and managerial dilemmas created in the extraction of indigenous medical resources because once indigenous populations possess formal ownership rights, they should be able to negotiate rules of access and use, fees, and royalties with other interested parties (Ngetich, 2005).

Preservationist issues arise in terms of long term management and protection of existing IK resources. The guarantee of ownership rights to indigenous peoples would also safeguard the future of IK, thus helping to resolve preservation issues. This is because as beneficiaries and owners of IK, the indigenous people will strive to protect IK resources (Ngetich, 2005). This argument applies to medical resources but it could just as easily apply to other IK resources. IPRs are supposed to help protect investment into research, development and stimulate innovation by providing incentives to invest, progress and develop others (Shah, 2002). Large transnational corporations like Monsanto, DuPoint and

others have been investing in biotechnology in such a way that, without the IK holders‟ knowledge or consent, patents have been taken out on indigenous plants which have been used for generations by the local people. The people then find that the only way to use their age old knowledge is to buy it back from the big corporations. An example is that of Brazil which has some of the richest biodiversity in the world, large multinational corporations have already patented more than half of the known plant species (Shah, 2002).

The United Nations Draft Declaration on the Rights of Indigenous Peoples underscores the fact that indigenous peoples have the right to own and control their cultural and intellectual property pertaining to their sciences, technologies, seeds, medicines, knowledge of flora and fauna, oral traditions, designs, art and performances (United Nations, n.d.). The Economic Commission for Africa recommends that "oral traditions and IK in African communities should be exploited in all their forms of expression, giving cognizance to the protection of intellectual property rights" (United Nations, 2001).

3.2 Problems Related to Indigenous Knowledge and Intellectual Property Rights

The individualistic nature of IPRs creates several complications when applied to local communities and they are as follows:

a. IPRs fail to take into account the fact that communities where IK is found have a holistic approach to their environment and find it difficult to separate the resources from which their livelihood stems into distinct economic and social assets. This

leads to another critical problem. It is difficult to define an innovation and a beneficiary in local communities, given the need to prove novelty and non-obviousness. This is because in most indigenous communities, knowledge is acquired over time and passed on from one generation to the next. Through this process it keeps evolving and changing in character. Therefore, it is difficult to establish when such knowledge was actually discovered and when it entered the public domain (World Bank, 2002).

b. IK is being developed by being shared amongst members of the community such as the elders, who have the wisdom of years of experience which adds further value to knowledge. This makes it the public domain of the community and therefore fails to meet the non-obviousness criteria of a patent. It gets more complicated to identify the inventor if an entire community is involved in the evolution of the IK. This problem is further complicated in cases where the same IK is used by different communities across the world (World Bank, 2002).
c. In patenting IK there is a need that it be documented. Most IK is passed from one generation to another through oral traditions and not written records (World Bank, 2002).
d. There is also controversy surrounding IPRs concerning the protection of local plant species. The Trade Related Intellectual Property Rights (TRIPs) agreement states that members may exclude from patentability "plants and animals other than micro-organisms and essentially biological processes for the production of plants and

animals other than non-biological and microbiological processes…" (World Bank, 2002).

e. Another key concern shared by indigenous peoples worldwide is that the present intellectual property rights regime favors multinationals and other non-indigenous interests. Where IP protection may apply, the prohibitive cost of registering and defending a patent or other IPR effectively limits its availability to the vast majority of indigenous communities, primarily in developing countries. In this way, the existing IPRs regime is seen to help corporate interests and entrepreneurs lay claim to IK without appropriate acknowledgement or compensation for the communities who have developed that knowledge (Simeone, 2004).

f. An IPR approach is unacceptable to many indigenous groups. For indigenous peoples, life is a common property which cannot be owned, commercialized and monopolized by individuals. Accordingly, the patenting of any life form and process is unacceptable to indigenous peoples (IDRC, undated).

3.3 Possible Solutions to the Problems Related to Intellectual Property Rights

After looking at the problems related to IPRs some possible solutions have been made by the World Bank (2002).

i. There has been a suggestion that patent laws be modified to ensure that all patent applications disclose the country of origin of biological materials and IK used to develop the invention.

ii. To prevent IK that is already in the public domain from being patented as a new invention in another country, it is vital to provide written documentation of such practices. In this way indigenous communities can challenge patents being granted to others for practices that are traditionally their own (World Bank, 2002).

iii. The creation of national, regional and international registries of IK could support benefit sharing among industry and local communities. They could support IPR-related measures such as strengthening traditional knowledge's status as prior art, enabling defensive publications.

iv. There are other possible mechanisms for establishing IPRs over IK and resources. These include the use of geographical indications (place names or words associated with a place to identify the origin, type and quality of a product. These are unique in their ability to reward collective traditions while allowing for evolution. They emphasize the relationships between human cultures and their local environment and can be maintained as long as the collective traditions survive. It is immaterial whether the inventor is an individual, family or large corporation.

v. Other forms of protection include copyrights and trade secrets. Copyrights are often used to protect traditional folklore from unauthorized duplication. The World Intellectual Property Organization (WIPO) has protected folklore from different parts of the world as copyrights. **Trade secrets** are a means of protecting confidential information that can give others, such as a business firm, a competitive advantage. Trade secrets could be an effective way of protecting IK in that local communities could restrict access to their territories and information to outsiders through agreements that secure confidentiality and economic benefits. Such practices have been initiated in countries such as Ecuador with the support of the Inter-American Development Bank (World Bank, 2002).

3.4 Problematic Ethical Issues Relating to Indigenous Knowledge

Indigenous knowledge in sub-Saharan Africa has socio-economic, cultural, spiritual, intellectual and political values. Despite the intellectual efforts of many people to create an ethical order in research in indigenous knowledge for example by developing ethical guidelines, many contentious issues still remain unresolved. Issues such as the appropriation of knowledge and collective versus individual ownership of knowledge remain contentious (IPHRC, 2004).

Understanding western social systems and the role of education in the process of knowledge and cultural transmission and how they impact cross-cultural relations, is a necessity in coming to terms with any research on indigenous knowledge in sub-Saharan Africa. It would be desirable to understand the intellectual undercurrents of unequal power relations and the issues of knowledge contexts so as to clarify the foundation of the ethics

problems relating to indigenous knowledge research in sub-Saharan Africa. Indigenous knowledge holders in sub-Saharan Africa, like in other developing regions elsewhere face various difficulties. In some cases, the very survival of the knowledge is at stake, as the cultural survival of communities is under threat. External social and environmental pressures, migration, the encroachment of modern lifestyles and the disruption of traditional ways of life can all contribute to weakening the traditional means of maintaining or passing knowledge on to future generations. There may be a risk of losing the very language that gives the primary voice to a knowledge tradition and the spiritual world-view that sustains this tradition.

Either through acculturation or diffusion, many traditional practices and associated beliefs and knowledge has been irretrievably lost. Thus, a primary need is to preserve the knowledge that is held by elders and communities throughout the world.

Intellectual property rights and indigenous knowledge

The exclusive nature of property rights poses an immediate obstacle to any system of intellectual property rights in indigenous knowledge (Cross, 2010). There is the question of "who exactly should own the underlying property right?" In the case of other intellectual property rights, Cross argues that ownership is straightforward as it usually vests in the person responsible for developing the invention or work. Considering that indigenous knowledge is developed in a particular culture, it would by analogy stand to reason that the culture itself would own and control the property.

However, a “culture,” unlike other legal fictions like a corporation or a nation, is not fixed and does not necessarily speak with a single voice. Determining who within the culture can make decisions concerning the property presents intractable difficulties.

The World Intellectual Property Organization (WIPO) 2005) identifies a number of the IK characteristics which have implications on religious, legal, economic, social and ethical issues of indigenous knowledge in sub-Saharan Africa. All the issues are of immense interest, but this paper confines itself to addressing ethical issues. According to WIPO, indigenous and local communities justly cherish indigenous knowledge as a part of their very cultural identities.

Maintaining the distinct knowledge systems that give rise to indigenous knowledge can be vital for their future well-being and sustainable development and for their intellectual and cultural vitality. For many communities, indigenous knowledge forms part of a holistic world-view, and is inseparable from their very ways of life and their cultural values, spiritual beliefs and customary legal systems. This means that it is vital to sustain not merely the knowledge but the social and physical environment of which it forms an integral part. Indigenous knowledge also has a strong practical component, since it is often developed in part as an intellectual response to the necessities of life: this means that it can be of direct and indirect benefit to society more broadly.

4.0 Conclusion

Intellectual Property Rights (IPRs) can provide an effective means of protecting IK, its systems and plant varieties. Documenting IK in writing which can then be used to challenge a patent claim is very important.

5.0 Summary

This unit described the IK and Intellectual Property Rights (IPRs), the problems related to IK and IPRs, possible solutions to the problems such as IK is being developed and shared amongst members of the community most times the elders, who have the wisdom of years of experience which adds further value to knowledge were also provided in details, this unit also provided an explanation on problematic ethical issues related to IK.

6.0 Tutor-Marked Assignment

1. List and explain any five (5) challenges that will hinder effective protection and preservation of IK.

7.0 References/Further Readings

Indigenous Peoples' Health Research Centre (IPHRC). (2004). The ethics of research involving indigenous peoples: A Report the Indigenous People's Health Research Centre to the Interagency Advisory Panel on Research Ethics. Online [Available]: http://ahrnets.ca/files/2010/05/ethics_review_iphrc.pdf.

Khor, M. (2002). *Intellectual property, biodiversity and sustainable development: resolving the difficult issues.* London: ZED Books Ltd.

Ngetich, K. (2005). *Indigenous knowledge, alternative medicine and intellectual property rights concerns in Kenya.* At http://www.codesria.org/Links/conferences/general_assembly11/papers/ngetich.

Simeone, T. (2004). *Indigenous traditional knowledge and intellectual property rights.* At http://www.parl.gc.ca/information/library.PRBpubs/pr0338-e.htm

World Bank. (2002). *Indigenous knowledge and intellectual property rights.* At http://www-wds.worldbank.org/servlet/WDSContentServer/ WDSP/IB/ 2002/ 01/ 25/000094046_02011504020266/Rendered/PDF/multi0page.pdf

World Intellectual Property Organization (WIPO). (2005). Intellectual property and traditional knowledge. Online [Available]: http://www.wipo.int/export/sites/www/freepublications/en/tk/920/wipo_pub_920.pdf

Unit 2: International Initiatives and Ethical Issues to Protect Indigenous

Knowledge

CONTENTS

1.0 Introduction

The importance of protecting and preserving IK has been recognized in several international instruments including the Universal Declaration of Human Rights, the Convention on Biological Diversity, the Draft United Nations Declaration on the Rights of Indigenous Peoples, the International Labour Organization Convention No. 168 and the International Covenant on Economic, Social and Cultural rights (Simeone, 2004). The Rio Declaration (known as Agenda 21) and the Convention on Biological Diversity adopted at the 1992 Earth summit in Rio de Janeiro, Brazil, emphasize the need for governments to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities" and encourage the right of traditional communities to share in the

economic and social benefits arising from the utilisation of such knowledge, innovations and practices (Simeone, 2004).

2.0 Objectives

At the end of this unit, you should be able to:

- list and explain international initiatives to protect IK and their contributions
- explain the ethical issues in research on IK
- describe the current issues in the management of IK in Africa
- explain the protection and preservation of IK in Africa

3.0 Main Context

3.1 International Initiatives to Protect Indigenous Knowledge

Prior to the aforementioned, a number of United Nations agencies are also involved in addressing the protection of IK under the existing intellectual property rights system and they are as follows:

i. World Intellectual Property Organization (WIPO)

The WIPO is a specialized United Nations agency responsible for the worldwide promotion of the IPRs of innovators and creators. It is responsible for various activities promoting the protection of indigenous intellectual property system in protecting IK (Simeone, 2004). One of the activities is that in an attempt to identify the concerns of IK holders, the WIPO's Global Intellectual Property Issues Division has organized, since its creation in 1998, several regional roundtables, meetings and consultations and has conducted fact-finding missions to 28 countries, including Canada (DFAIT, 2003).

ii. The World Trade Organization's Trade related aspects of Intellectual Property Rights (TRIPS)

TRIPs is a key international agreement promoting the harmonization of national IPR regimes. Although TRIPs covers four types of IPRs; patents, geographical indications, undisclosed information (trade secrets) and trademarks, it does not acknowledge or distinguish between indigenous, community-based knowledge and that of industry. Furthermore, it makes no reference to the protection of IK (Ngetich, 2005).

iii. Convention on Biological Diversity (CBD)

CBD is the only major international convention that assigns ownership of biodiversity to indigenous communities and individuals and asserts their right to protect this knowledge (Ngetich, 2005). It has the objective of promoting the conservation and sustainable use of biological diversity and ensuring the fair and equitable sharing of the benefits arising out of the use of genetic resources. One component of the implementation of this convention involves the respect, preservation and maintenance of the knowledge, innovations and practices of indigenous and local communities concerning the conservation and sustainable use of biological diversity (DFAIT, 2003).

iv. The United Conference on Trade and Development (UNCTAD)

UNCTAD is another international organization that has also contributed to IK and IPRs discussions. UNCTAD among many activities sponsored a meeting of experts in November 2001 and co-hosted with the government of India a seminar in April 2002 to discuss the various strategies available to protect IK, practices and innovations, including the application of IPRs.

Among the diverse activities and programmes developed in relation to indigenous peoples within UNESCO'S various sectors, the Local and Indigenous Knowledge Systems (LINKS) programme is aimed at empowering local and indigenous people in various aspects of environmental management by advocating recognition and mobilization of their unique knowledge. It also contributes to the safeguarding of traditional knowledge within indigenous communities by reinforcing their inter-generational transmission. The above paragraphs have highlighted the contributions made by several international instruments in an attempt to protect and preserve IK.

3.2 Ethical Issues in Research on Indigenous Knowledge

As highlighted earlier, IK has been practiced in Africa since time immemorial. With globalization, whereby countries in the world are open and connected in all spheres of life, there are ethical issues that need to be considered when one is discussing IK systems in Africa. One such issue is the ownership of research findings or discovery. For example, if research on IK is conducted in a certain remote village in Africa, with information provided by the villagers themselves as respondents, who owns the findings of that research, or the innovation for that matter?

The tendency has been that researchers from the West conduct research and after data collection, they are seen no more. The ownership remains with the researcher who patents the findings. The indigenous people are used only to generate data and have no knowledge of the outcome of the data they have produced. If the innovation is a resource with economic value, it is patented by the researcher often without involving the respondents.

This is unethical. Equally important is that research methods used in IK should be appropriate to the indigenous community. The kind of data collection methods, data analysis and presentation of the findings should be brought down to a level that the indigenous people would understand. It should be considered unethical to use research methods that may have a negative impact on the people, whether physically or otherwise. For instance, research methods that may subject respondents to harmful practices or bodily harm should be considered illegal.

Another ethical issue is that IK systems should be inclusive. They should include all groups in the community and no group should be marginalized. For example, all age groups (youths, elders, etc.) should be included in research and enjoy the benefits accrued from IK. In terms of gender, both men and women should be involved in the IK research process. In many areas in Africa, women have been marginalized and given low priority when it comes to information generation and use (Nkebukwa, 2007). IK researchers should tape information from all social groups. More importantly, they have to be gender sensitive. In terms of the use of IK, profit has to be returned to the people who are the owners of the knowledge.

Any benefit accrued from IK must also benefit the owners of the knowledge. In many cases, IK discoveries have been made and patented elsewhere without the indigenous people being aware of this. The researchers who claim ownership of the innovations end up benefitting from ownership and utility of the IK. There has to be promotion of a positive identity and consciousness of IK. People have to appreciate the existence, relevance and use of IK that is available locally. IK is knowledge just like any other knowledge that can

help people in a local setting. If valued and used appropriately, it can help liberate people in Nigeria and Africa as a whole from overdependence on Western knowledge.

Similarly, the negative side of IK has to be identified. This implies that we have to present IK in a critical manner and analyze it objectively to be able to see its negative side. In other words, there has to be a balanced view of IK systems. We have to be able to present and discourage the negative side of IK. It has to be noted that not all IK is good. For example, some people in Africa practice witchcraft. This is an indigenous form of knowledge but harmful, as it affects others without their consent. Such types of IK should be revealed and completely discouraged.

3.3 Current Issues in the Management of Indigenous Knowledge in Africa

There are pertinent issues with regard to the management of IK systems in Africa. One of them is the threat of extinction of IK. As mentioned, most IK practices have not been recorded/ documented in written format. The knowledge is transmitted orally from one generation to the next. In this way, IK easily faces extinction due to a lack of recording. Among the leading reasons for the possible extinction of IK is that the focus has been on IK that has a direct cash value, thus ignoring the "non-cash" knowledge. For example, attempts have been made to research and document medicinal plants as such initiatives lead to the discovery of substances that can be used by large pharmaceutical industries to develop medicines.

On the other hand, not much has been done in areas such as traditional dances, rituals and languages as they do not contribute directly to economic productivity. The main area of concern has largely been unable to document its IK so as to protect and prevent it from

becoming extinct or from being pirated. It should be noted that there is less appreciation of IK today than there used to be in the past. Western-based knowledge has taken over in the educational system. Anyone practicing IK as a means to obtain solutions such as for medical problems is looked down upon as outdated and primitive. Western medical technology has taken over. The issue therefore, is how to ensure that IK is integrated into the global knowledge system for its survival.

There is also concern about the need to take stock of what IK can be found in Africa. For example, the following needs to be addressed:

• What kind of IK exists in different parts of Africa?

• Where is it? If someone wants particular knowledge, where it be gotten?

• Who owns the knowledge or has to be consulted to access it?

• Under what conditions is the knowledge accessible? In other words, what intellectual property rights exist in getting access to the knowledge? For IK systems in Africa, therefore, how should they be preserved? What measures need to be taken to ensure preservation of the knowledge so that it is transmitted from generation to generation?

Lack of written memory on IK has also led to its marginalization. IK is usually not documented; it is orally transmitted, the new generations who spend most of their time in formal education are exposed more to Western education systems and less to IK. As such, there is little appreciation of the existence of IK in Africa.

3.4 Protection and Preservation of Indigenous Knowledge in Africa

It is common knowledge that Africa is very rich in IK. The issue of protecting the knowledge is a topical one. There is, however, a debate on the promotion and development

of existing IK. Which of the two should be given priority? Should Africa first put more emphasis on the protection of what is currently there? or should it first promote the IK for wider awareness?

During the conference on African Information Ethics held in Pretoria, South Africa, in February 2007, IK panel members deliberated on the issue of promotion versus protection of IK and which should be given priority. The discussion was very stimulating and in the end, it was agreed that Africa should focus on promoting IK, particularly in the areas of medicinal plants, game reserves, the environment, etc., and add value to the knowledge as a prerequisite for its protection. Whereas protection was acknowledged to be important, the argument was that IK should be made known widely through promotion after which the next stage is protection. Protection before promotion was seen to be an inward-looking approach. Other members of the panel however, were of the opinion that both should be done simultaneously.

4.0 Conclusion

Ethical approach on indigenous knowledge should ensure that the use of the knowledge should maintain the integrity of the indigenous people, not disparage the indigenous culture from which the knowledge is derived, and allow for the proper identification or attribution of the indigenous peoples as a source of the knowledge. Nearly all the indigenous knowledge is not documented. The knowledge should be documented so that it would be easy to transmit it to the future generations.

5.0 Summary

This unit provided the list and discourse on International Initiatives to protect IK, the unit also provided ethical issues in research on IK, current issues in the management of IK in Africa were also discussed together with the protection and preservation of IK in Africa.

6.0 Tutor-Marked Assignment

1. Identify and discuss the contribution of African Initiative to protect Indigenous Knowledge.

7.0 References/Further Readings

Department of Foreign Affairs and International Traid (DFAIT). (2003). *Traditional Indigenous Knowledge and Intellectual Property Rights.* At http://www.dfait-maei.gc.ca/aboriginalplanet/750/resource/global/rewipo-en.asp

Covin, T.J. & Stivers, B. 1997. Knowledge management focus in US and Canadian firms. *Creativity and Innovation Management*, 63: 140–150.

Johnson, M. (1992). *Lore: Capturing traditional environmental knowledge.* Ottawa, Canada: IDRC.

Kaniki, A. & Mphahlele, K. (2002). Indigenous knowledge for the benefit of all: Can knowledge management practices be used effectively? *South African Journal of Library and Information Science,* 68(11): 1–15.

Msuya, J. (2012). Challenges and opportunities in the protection and preservation of indigenous knowledge in Africa

Ngetich, K. 2005. *Indigenous knowledge, alternative medicine and intellectual property rights concerns in Kenya.* At http://www.codesria.org/Links/conferences/general_assembly11/papers/ngetich.pd

Nkebukwa, A. 2007. *The generation and dissemination of information on HIV/AIDS in rural Tanzania: An assessment through a gendered grassroots AIDS model.* PhD thesis, Department of Sociology, University of Dar es Salaam, Tanzania.

Rajasekan, B. & Arren, M. (1992). *A framework for incorporating IKSs into agricultural extension organization for sustainable agricultural development in India.* Paper presented at the Ninth Annual Conference of the Association for International Agricultural and Extension Education, Arlington, VA, United States.

Saleti, X. (2007). *The protection of IKS in the era of knowledge economy: The South African experience.* Unpublished paper.

Scheinman, D. (2002). *Traditional medicine in Tanga today: The ancient and modern worlds meet.* http://siteresources.worldbank.org/extindknowledge/Resources/iknt51.pdf.

Simeone, T. 2004. *Indigenous traditional knowledge and intellectual property rights.* At http://www.parl.gc.ca/information/library.PRBpubs/pr0338-e.htm

Unit 3: Strategies and Approaches to Indigenous Knowledge Management

CONTENTS

3.0 Main Context

3.1 Strategies that can be used for IK management and protection

3.2 Approaches to Indigenous Knowledge Management

4.0 Conclusion

5.0 Summary

6.0 Tutor-marked Assignment

7.0 References/Further Reading

1.0 Introduction

IK management involves the identification, collection, codification, documenting, organizing, preserving, transfer, linking, application, dissemination and sharing of knowledge on indigenous community livelihoods and ecosystems, for sustainable development (Mabawonku, 2002). IK if not recorded and preserved, will be lost and remain inaccessible to other indigenous systems as well as to development workers. IK is vital in development projects to offer sustainable solutions and its use is now considered one of the cornerstones that can guarantee the survival of the economies of the developing world in the wake of scarce resources and reduced donor funding (Ngulube, 2002).

2.0 Objectives

At the end of this unit, you should be able to:

- explain the strategies that can be used for IK management and protection
- list and explain the approaches to indigenous knowledge management.

3.0 Main Context

3.1 Strategies that can be Used for Indigenous Knowledge (IK) Protection and

Management

The following are some of the "strategies" as Ngulube (2002) calls them, which may be used to manage IK. The strategies have been taken from Ngulube (2002) and Kaniki and Mphahlele (2002). They are discussed because they were used as a guide in finding out how the four institutions which are the focus of this unit, managed their IK.

i. Indigenous Knowledge Management Strategy 1

The Economic Commission for Africa recommends that "oral tradition and indigenous knowledge in African communities should be exploited in all their forms of expression, giving cognizance to the protection of intellectual property rights" (United Nations, 2001). The first strategy is that since there is IK that is unique to certain individuals, intellectual property rights (IPRs) should be upheld so that indigenous communities can benefit from commercial use of their IK. After organizing the IK, information professionals can then invoke their knowledge and skills in enforcing copyright matters to protect the IPRs of indigenous people (Ngulube, 2002). In agreement with this observation, Kaniki and Mphahlele (2002) noted that humans have recognized that money, time, effort and other resources invested in the creation and/or development of intellectual property or know-how (knowledge) must be recognized and rewarded. Legal frameworks, rules and regulations, such as copyright laws, patent laws, trademarks and trade laws have been put in place to protect an individual's intellectual property. It is therefore important for IK managers to identify who owns what and who has the right to use an individual's knowledge (Kaniki & Mphahlele, 2002). The individual's creativity and invention needs to be recognized and protected.

ii. Indigenous Knowledge Management Strategy 2

Warren and McKiernan (1995) quoted by Ngulube (2002) point out that access to IK collected so far is very limited because it is not well organized in terms of being indexed and abstracted. This adds to its being underutilized in development projects. The lack of marketing strategies also accounts for the low level of use of IK. The problem of access to IK is compounded by a lack of standardized indexing terms and by inconsistent indexing policies. The use of a controlled vocabulary like "thesauri and other controlled lists of keywords, ontologies, classification systems, clustering approaches, taxonomies, gazetteers, dictionaries, lexical databases, concept maps/spaces, semantic road maps etc, can facilitate the organization of IK in information retrieval systems (Ngulube, 2002). As suggested by the International Symposium on Indigenous Knowledge and Sustainable Development held in September 1992 at the IIRR in the Philippines, specialized community-based and centre-based (information centre) thesauri for cataloguing IK must be made (Ngulube, 2002). Ngulube (2002) says that the use of knowledge representation systems like thesauri are important in organizing and retrieving recorded IK, which tends to be multidisciplinary in nature. The use of a thesaurus will go a long way in aiding authors and publishers to make information more accessible by providing indexing information that uses controlled vocabulary or terms from a thesaurus, or by rendering other linguistic assistance to searchers and readers. According to Ngulube (2002) controlled vocabularies facilitate knowledge management and systematic access to knowledge systems and that is why they are increasingly becoming one of the major tools for organizing and managing information from a variety of sources.

iii. Indigenous Knowledge Management Strategy 3

Library and information professionals should play a leading role in the compilation of annotated bibliographies that are descriptive and evaluative. These bibliographies can be very useful in informing readers of the relevance, accuracy and quality of the IK held in various national information resource centres. Bibliographies eliminate chaos, disorganization and inapplicability of miscellaneous contributions to knowledge systems (Ngulube, 2002).

iv. Indigenous Knowledge Management Strategy 4

Another strategy that would help to ensure the management and preservation of IK is the application of marketing principles to IK. This would facilitate the utilization of IK as well as the production of user-oriented rather than producer-oriented services. As Ngulube (2002) noted, development projects still appear to make little use of IK and in order to enhance its utilization, people need to be made aware of its existence. Ngulube (2002) in support of the previous statement argues that the use of IK is largely dependent on and is accelerated by the knowledge of its existence and access to it. This therefore means IK should be marketed in order for it to be used.

v. Indigenous Knowledge Management Strategy 5

Information professionals are required to ensure the longevity of the documented IK by devising preservation strategies. A discouraging factor in the management and preservation of IK is that its collectors are usually more concerned about its immediate utility which causes them to allow the selection of the media for capturing IK to be dictated by

circumstances and convenience of collection, rather than by long term implications of the storage media for the preservation of IK. The storage of IK is not limited to text documents or electronic formats, but could include cassette tapes, films, storytelling, gene banks, CDs, DVDs, video and others (Ngulube, 2002).

vi. Indigenous Knowledge Management Strategy 6

An important strategy to successful management and preservation of IK is that qualified knowledge managers be given the duty to manage it. Kaniki and Mphahlele (2002) noted that key resources in organizations require managers to facilitate their generation, distribution and use. This, they say, is because if not appropriately managed, resources can be misused and thus depleted. They support this by pointing out that collecting and categorizing knowledge, establishing knowledge-oriented technology infrastructure and monitoring the use of such knowledge are some of the tasks that knowledge managers should perform.

vii. Indigenous Knowledge Management Strategy 7

Knowledge managers dealing with IK have to identify and use effective motivators and motivating techniques to facilitate knowledge sharing. Kaniki and Mphahlele (2002) suggest that holders and generators of all types of information including IK must be assured that they will be appropriately compensated, rewarded and/or recognized for their knowledge. Kaniki and Mphahlele (2002) say that information and knowledge in them are not useful unless they are applied to specific situations. They continue to say that access to knowledge while important is not sufficient. To be useful and profitable, knowledge must

be applied. The IK managers may have access to IK holders but if the person with the IK does not share it then the knowledge is in effect irrelevant.

viii. Indigenous Knowledge Management Strategy 8

IK can be managed and preserved by being done continually. The continuous management and preservation of IK ensures that new knowledge unknown by managers is discovered adding to the already collected knowledge. Kaniki and Mphahlele (2002) suggest that continuous management of knowledge is necessary because new problems and situations arise and require new solutions. This means that there is therefore no stage when knowledge is fully managed.

ix. Indigenous Knowledge Management Strategy 9

Another strategy for the management of IK is that since it has often been marginalized, and at times treated with suspicion or simply ignored, mechanisms to recognize its usefulness must be put in place. Davenport (1998) as quoted by Kaniki and Mphahlele (2002), suggest that in order to recognize the usefulness of anything in society and thus warranting the allocation of resources to it is firstly, raising awareness about the issue. This means IK managers have a duty to raise awareness about the usefulness and importance of IK. This then can open doors for financial assistance and any other necessary assistance to support the management of IK. Such practices can help persuade even development professionals and scientists that IK is an invaluable resource that must be taken seriously.

x. Indigenous Knowledge Management Strategy 10

The use of the community language would be central to the management and preservation of IK. Abbott (2002) suggests that if a community loses its language and changes to another language they not only would be losing a unique system of man-made symbols but also all the IK that the language carries with it. Abbott (2002) says that language as culture is the collective memory bank of a people's experience in history. Suggestions here are that:

A. The local language should be used as the working language in all management of IK processes. Interpretation can then be done to disseminate to those who do not know the language. This means records should also be kept in the community's own language.

B. Orthography for the recording of such transactions must be made available.

C. Reading matter which is culturally familiar and suitable like folk-tales and practical advice on food storage and hygiene should be produced.

D. IK managers should operate in the community language (Abbott, 2002).

xi. Indigenous Knowledge Management Strategy 11

Although tacit IK is largely experiential and contextual, it can be managed. Ngulube (2003) asserts that although all knowledge is tacit, it can be articulated both tacitly and explicitly through artifacts that the indigenous people produce (traditional technologies), music, story-telling and use of the Socialization, Externalization, Combination and Internalization (SECI) knowledge management model. The SECI model links tacit and explicit knowledge

through socialization, externalization, combination and internalization. This means knowledge creation entails converting tacit knowledge into explicit knowledge and back again (Ngulube, 2003). To explain the SECI knowledge management model Ngulube (2003) begins by saying that knowledge can change from tacit to tacit through the process of socialization. This could happen through face-to-face conversations, social interaction, story-telling, music and dance. Knowledge can also be converted from tacit to explicit through the process of externalization. This happens when a person holding tacit knowledge puts it down in any secondary form, (that is a document or image or rock painting or clay pot), where another can retrieve it even in the absence of the person holding it.

The externalization of IK is evident in the indigenous technologies and artifacts. The change from explicit to explicit occurs when a secondary form of knowledge is used to make another secondary form and it is called **combination**. Lastly, the knowledge can be converted through internalization, which is a process of converting explicit knowledge to tacit, for instance, when external knowledge from documents, databases and artifacts is used to create new knowledge for a person that can also be transferred to others. The process of internalization is fundamental to ensuring that explicit knowledge does not become obsolete and irrelevant (Ngulube, 2003). From the SECI model of Nonaka and Tekaeuchi, quoted by Ngulube (2003), it is evident that tacit indigenous knowledge could be managed using the same model. Ngulube (2003) suggests that knowledge workers could manage the processes of conversion and documentation as well as the communication of

IK through the exploiting of some of the ways that indigenous societies used to preserve knowledge such as music and dance, artifacts and technology, and storytelling.

3.2 Approaches to Indigenous Knowledge

Various underlying views of indigenous knowledge can be identified in the literature. These views are riot all mutually exclusive - indeed they overlap to some degree. Some individuals lean toward one view without necessarily rejecting the validity of the others. Below are brief stereotypes of seven such views.

1. **The Scientist** studies indigenous knowledge for its own sake -- as an interesting phenomenon that may yield insights into culture (as in anthropological research) or the physical world (as in biomedical research to identify plants that contain hitherto unknown active ingredients for drugs). The scientist views knowledge as something to be shared openly for the betterment of all humankind.

2. **The Development Agent** sees that farmers and other local people are acutely attuned to their surroundings. They have intimate knowledge of their soils, climates, and markets. Recommendations derived from outside research may not fit local needs and require costly inputs. The development agent recognizes that recommendations are more likely to be useful and sustainable if they are based on existing practices and are couched in terms that local people readily understand.

3. **The Facilitator** pressures for indigenous knowledge as a resource that local people can use to further their own development. Instead of trying to persuade farmers to adopt

technologies developed elsewhere, in this view, agricultural extensionists and other development workers should facilitate farmers' experiments and encourage local people to exchange information.

4. **The Conservationist** views with alarm the current rapid rates of environmental destruction and biodiversity loss. Traditional, minority societies occupying remote, often forested and mountainous areas, are suffering similar disruption under the onslaughts of environmental destruction, urbanization, and outside culture. The conservationist advocates the protection of these societies and the preservation of their cultures and knowledge in situ.

5. **The Political Advocate** perceives local people as being suppressed by wealthy, often foreign, elites. This view supports the protection of rights and the end of exploitation. It denies the scientist's ideal of sharing of wisdom for mutual betterment, instead seeing relationships with potential of exploitation. Sanctions must protect the weaker party -- for instance by introducing patent rights for indigenous knowledge to prevent their expropriation by outsiders.

6. **The Capitalist**, by contrast, sees indigenous knowledge as a resource to be tapped by outsiders in pursuit of a profit. Examples of this are the "chemical prospecting" of tropical forests by drug companies and germ plasm collecting by crop breeding firms. Both may draw on the knowledge of local people to identify promising sites, species, and uses. The capitalist makes a large investment of knowledge and money in developing, say, a new crop variety from such germ plasm. This it is argued, dwarfs the original local contribution and justifies the firm's patenting of the variety. Aspiring to the scientist's quest for

knowledge and free access to information, universities and herbariums are often unwitting partners of the capitalist.

7. **The Skeptic** views indigenous knowledge at best as amusing, and at worst as dangerous superstition -- a barrier to progress. According to the skeptic, indigenous knowledge should be eradicated as soon as possible through education and the modernization process. If only local people were "rational," the skeptic argues, they would recognize the superiority of introduced technologies or new economic forms. Sadly, the skeptic's view is the dominant one among policy makers and government personnel

4.0 Conclusion

IKM has had tremendous impact in the lives of indigenous people and the entire society, the capture, storage and dissemination of IK have greatly benefited from the strategies and approaches employed by the custodians of indigenous knowledge. If the strategies and approaches are properly utilized, the available indigenous knowledge will be managed and protected effectively.

5.0 Summary

Under this unit, strategies that can be used for IK protection and management were identified and explained in details, in the same vein seven (7) approaches to IK were also highlighted and discussed.

6.0 Tutor-Marked Assignment

1. Propose strategies specifically for Africa that can be used for IK Management

7.0 References/Further Readings

Abbott, G. (2002). The importance of activating indigenous languages in the drive for development. *Information development* 18 (4): 227-230.

Kaniki, M.A. and Mphahlele, K.M.E. (2002). Indigenous knowledge for the benefit of all: can knowledge management principles be used effectively? *SA journal of library and information science* 68(1):1-15.

Khor, M. (2002). *Intellectual property, biodiversity and sustainable development: resolving the difficult issues.* London: ZED Books Ltd.

Mabawonku, I.M. (2002). The systematic management of indigenous knowledge: a review of oral information projects in a library school. In *SCECSAL 2002: from Africa to the world-the globalization of indigenous knowledge systems.* Pretoria: LIASA: 49-60.

Ngetich, K. (2005). *Indigenous knowledge, alternative medicine and intellectual property rights concerns in Kenya.* At http://www.codesria.org/Links/conferences/general_assembly11/papers/ngetich.pd

Ngulube, P. (2003). Using SECI knowledge management model and other tools to communicate and knowledge management tacit indigenous knowledge. *Innovation* 27: 21-28.

Ngulube, P. (2002). Strategies for managing and preserving indigenous knowledge in the knowledge management era. In *SCECSAL 2002: from Africa to the world-the globalization of indigenous knowledge systems.* Pretoria: LIASA: 61-69.

United Nations. 2001. *Report of the expert preparatory group meeting on African virtual library and information network (AVLIN) and knowledge management. Second meeting of the committee on development information (CODI), Economic Commission for Africa*. Addis Ababa, Ethopia, September 4-7.

World Bank. (2002). *Indigenous knowledge and intellectual property rights. At:* http://www-wds.worldbank.org/servlet/Wdscontentserver/wdsp/IB/2002/01/25/000094046_02011504020266/Rendered/PDF/multi0page.pdf

Unit 4: Reasons Why Indigenous Knowledge Need to be Managed and Protected

CONTENTS

4.0 Conclusion

5.0 Summary

6.0 Tutor-Marked Assignment

7.0 References/Further Reading

1.0Introduction

There is a danger that IK which generally has been passed from generation to generation by word of mouth will be lost. The loss of IK will impoverish society in that the world needs a diversity of knowledge systems for sustainable development (Ngulube, 2002). Ngulube (2002) cites the rapid change in the way of life of local communities to have largely accounted for the loss of IK. The influence of modern technology and education has caused younger generations to underestimate the utility of indigenous knowledge (IK). It is believed that some 80% of the world's population depends on IK to meet their medicinal needs, and at least rely on IK and crops for food supplies. This therefore increases the need for the management and preservation of IK (Ngulube, 2002). Kaniki and Mphahlele (2002) also raise a disheartening point that it is now common to see some of IK being introduced as a modern idea and then transferred across the borders without recognition of and compensation for the originators of the ideas.

2.0 Objectives

At the end of this unit, you should be able to:

- state the rationales behind IK management
- describe the justification for IK protection

- list issues to be considered when managing and protecting IK

3.0 Main Context

3.1 Reasons Why Indigenous Knowledge Need to Be Managed

The following are more of the reasons why IK needs to be managed:

a. Lengisugi (2006) says that IK plays a major part as the information base of the society, which facilitates communication and decision-making. IK therefore provides problem-solving strategies for local communities and helps share local visions and perceptions of environment and society.

b. IK which was previously equated as heathenism, barbarism and witchcraft is nowadays sought after and stolen to be stored in the "citadel" of Western European institutions of higher learning and scientific research (Kihwelo, 2006).

c. IK is now widely recognized as having played and still playing crucial roles in economic, social and cultural life and development, not only in traditional societies but also in modern societies (Khor, 2002).

d. Mchombu (2002) asserts that IK is rich in cultural knowledge that provides identity to young people. It helps us answer the questions about who we are and what our history is about appropriate technology and useful medicinal plants for curing human and livestock diseases.

e. In order for an individual to cope with daily problems and at a higher level of complexity, make a significant difference or change in his/her life, society or community all knowledge including IK is necessary. The level and amount of

knowledge that an individual, organization or community possesses at a particular time cannot resolve and facilitate all the problem-solving and decision-making processes encountered in the course of the IK beholder's existence. The implications of this are that an individual or organization must learn continuously and acquire and generate new knowledge. They must be aware of who owns knowledge that is relevant and appropriate to particular situations (Kaniki and Mphahlele, 2002). This covers IK as well as any other knowledge.

3.2 Reasons Why Indigenous Knowledge Need to Be Protected

Protection of indigenous knowledge is essential in many aspects. Lack of proper legal and policy frameworks for the protection of IK in the developing countries provides a vacuum for the developed and industrialized nations to exploit the indigenous knowledge and resources of indigenous communities. Protection of indigenous knowledge will stop the multi-national pharmaceutical companies from the North, who purport to discover herbal medicines owned and used by the indigenous communities for thousands of years, from patenting the medicinal plants and its derivatives at the expense of the indigenous communities.

Since, IK incorporates information and know-how on a variety of matters including resources management, indigenous medicines, crafts, artistic designs and cultural assets, its adequate protection is essential to preserve the cultural values of aboriginal communities. It is a cultural heritage property right which must be protected and shared equitably in the interest of all humankind. The need to protect indigenous knowledge is

more relevant now than ever before in the IP global market. It has been revealed that commercial interests very often violate indigenous intellectual property rights. Although such violations do not formally constitute a breach of written legal standards, as neither national legislations nor international standards acknowledge the rights of indigenous people, these violations are still accountable to indigenous customary law.

The underlying principles for granting protection to IK, inter alia, are equity considerations, conservation concerns, preservation of Indigenous practices and culture, promotion of its use in modern developments, prevention of appropriation of components of IK by unauthorized parties, facilitating access to IK, etc.

a. **Equity Considerations**

The argument for protection of IK is principally based on equity considerations. IK generates value for new industries especially in the field of pharmaceuticals, plant breeding, food preservation etc. The current system of appropriation of IK for the new lines of modern industries neither recognizes IK adequately nor does it compensate satisfactorily the IK holders. For example, the farmers are not being compensated for the germ plasm they create and the value they contribute for the new industry. Similarly, the indigenous medicinal practitioners and healers are not being compensated for the information they impart to the bio prospectors regarding the use of medicinal plants found in their surroundings. The holders of IK usually do not charge for the herbs, seeds etc. they deliver or vital information they pass on.

Generally, there is no compensation or sharing of benefits by the inventors with the IK holders. While the inventors of IK derived products earn in dollars through adequate IPRs, the protection of indigenous knowledge would therefore, be necessary to bring equity.

b. For Stimulating Conservation

Another factor underlying the claim for protection of indigenous knowledge is based on the importance of such knowledge for conservation purposes. It is an undisputed fact that IK involves vital information highly useful to modern science and health care. However, protection of IK against loss and misappropriation and adequate compensation to Indigenous knowledge holders are core elements to stimulate the broader use of IK. Since the indigenous population inhabit the world's most useful biological diversity, the preservation of the same would be important for the future use. Principle 3 of the Rio Declaration on Environment and Development, 1992 also states that the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations. An encouragement to preserve and conserve the biological diversity through adequate means is necessary to stimulate the activities of indigenous and local communities. The recognition of rights would encourage them to conserve the natural resources. If fairly compensated, they would have more incentives to conserve and preserve the same not only for the existing generation, but for the generations to come.

c. Preservation of Indigenous Practices and Cultures

The preservation of IK is not only a key component of the right to self-identification and a condition for the continuous existence of indigenous and Indigenous peoples; it is also a

central element of the cultural heritage of humanity (Carlos, 2001). The crisis affecting the world's diverse cultures and languages is according to some estimates far greater than the biodiversity crisis. The recognition of their culture would raise the profile of that knowledge and encourage respect for it both inside as well as outside the knowledge holding communities. This will make the learning and development of such knowledge a more attractive prospect for the younger members of such communities, thus perpetuating its existence and continuing its Indigenous lifestyles and cultures. The possibilities of economic returns for the use of that knowledge by third parties acts as a further incentive for community members to respect their knowledge and continue to engage in practices in which that knowledge is used and generated.Lack of motivation in the younger generation to learn the tradition is another reason cited for the protection of IK. There is a fear that IK will suffer extinction with the death of the elders of the community. IK is generally viewed with disdain and as being inferior since it does not confirm to the accepted scientific methods of learning in the context of the modern reductionist approach of science (WIPO, 2001). Only by concerned efforts to protect it and accord it due respect can this trend be stopped.

d. For Indigenous Peoples' Participation in Development Process

IK is a significant resource which contributes to the increased efficiency, effectiveness and sustainability of the development process. Since efficiency, effectiveness, and sustainability are key determinants of the quality of development work, integrating IK with modern developments has a strong case for successful development. IK, owing to its close association with bio diversity, is a crucial factor for sustainable development. Indigenous

institutions, indigenous technology, and low-cost approaches can increase the efficiency of development programs because IK is a locally owned and managed resource. Building on IK would be an effective means to reach the poor since IK is often the only asset they control and are familiar with. Utilizing IK helps to increase the sustainability of development efforts because the IK integration process provides for mutual learning and adaptation, which in turn contributes to the empowerment of local communities. Hence empowerment of local communities is a prerequisite for the integration of Indigenous knowledge in the development process. There is also a need to preserve IK as a component of a strategy for sustainable human development. IK like any other knowledge needs to be constantly used, improved and further adapted to the evolving local contexts. Proper support to holders of IK and indigenous communities' knowledge exchanges can help to disseminate useful and relevant IK. It would enable communities to participate more actively in the development process.

Several IK based practices and techniques can successfully be integrated into local, national, regional, and global development efforts. Thus, rather than "protecting" Indigenous knowledge in a way that limits access to it, governments can aim to promote the use of indigenous knowledge, complementing this with measures to prevent misappropriation. IK is an underutilized resource in the development process. Legal protection may help to exploit the opportunities of IK based products and services. IK is a critical resource for strengthening local innovation, and innovation is important for reinforcing or even rebuilding local cultures. Therefore, there is also a need to enable these communities to harness IK for their economic uplift and growth.

e. To Facilitate Access

A guarantee of protection of IK, as in the case of IP, may create the basis of trust required for the local/indigenous communities to part with their knowledge and improve their position to obtain value from it. Adequate protection would in turn work as a tool for facilitating access to Indigenous knowledge. If some rights were recognized, knowledge holders may be more prepared to provide access to their knowledge.

f. For the Conservation of Environment and Management of Biodiversity

The protection of IK is important for the conservation and sustainable development of the environment as much of the world's crop diversity has been conserved and preserved by indigenous/local peoples, which has helped in the protection and conservation of biodiversity. Their knowledge is central to the conservation and preservation of genetic resources (GRs) and other bio-resources. Most of these communities live in areas where the vast majority of the world's plant genetic resources (PGRs) are found. There is also a danger that the biological resources increasingly subjected to IPRs and patents are likely to be plucked to extinction which raises concerns over their exhaustibility and loss of habitat besides the loss of lifestyles and livelihoods to indigenous communities that have nurtured and used these resources for generations. This may also ultimately affect food security.

International recognition and protection of IK would help in the protection/ conservation of the environment and in the management of biodiversity. The movement of Indigenous communities from their natural habitat and their increasing assimilation with modern

society would lead to its extinction and prejudicially affect biodiversity. This also raises concerns about the protection of IK.

3.3 Issues to Consider in Managing and Protecting Indigenous Knowledge

The following are six (6) major issues to consider when managing and protecting IK postulated by Terri and Maiko (2017):

a. **Misappropriation of Indigenous arts and crafts:** is the first issue explored. Examples have included copying of artistic work, reproduction of fake indigenous arts and craft products such as backpacker painted didgeridoos. Whilst copyright laws were used in this case to stop the copying and importation of indigenous artistic works there are still examples of exploitation and appropriation occurring overseas. This problem extends to the:

b. **Misuse of Indigenous languages and clan names**: which are being used commercially without the consent of their traditional custodians. There are existing mechanisms in trademarks laws like disclaimers or oppositions that can help, but indigenous people may lack the resources or the knowledge about them to be able to use those mechanisms to their benefit. This lack of knowledge and awareness of indigenous issues should also be addressed within IP Australia as trademarks examiners could play a much bigger role in protecting indigenous languages from unwanted exploitation.

c. **Recording and Digitization of Indigenous Knowledge:** also poses problems for indigenous people. While copyright affords certain indirect mechanisms by

controlling access to and use of the recorded form of the indigenous knowledge (such as the written document, sound recording or film) and requiring third parties to obtain legal consent for the use of the works, those rights are owned by the legal owner – the author or creator of the recording, who is often not the indigenous person who is the subject of the recording. Once indigenous knowledge is recorded, controlling access, use and interpretation of underlying indigenous knowledge contained in those works is often beyond the control of the indigenous knowledge rights owners. Third parties are free to use the underlying indigenous knowledge so long as they do not infringe any Intellectual Property rights that subsist in the manner in which indigenous knowledge is expressed in the work.

d. **The Traditional Knowledge of Indigenous People is Being Commercially Exploited without Benefits Flowing to Communities**: Benefit sharing is the next logical step following consultation and consent. However, there are limited requirements under law to share benefits with communities who provide access to their indigenous knowledge. Not sharing the benefits of a community's indigenous knowledge with that community can be offensive and propagates dispossession.

e. **Use of Indigenous Knowledge Relating to Genetic Resources:** Indigenous skills, techniques and other knowledge relating to bush foods, medicinal plants and other genetic resources remain largely unprotected. More and more, this knowledge is used and commercialized for scientific research and development. Within the access and benefit sharing framework of Australia's biodiversity laws, patent laws, research funding initiatives and protocols, positive scientific

collaborations have emerged for indigenous people. Indigenous people are asserting their rights to indigenous knowledge and pushing for recognition of their meaningful contributions. However, much can still be done to safeguard indigenous knowledge in research and from unauthorized use and commercialization.

f. **Misuse of Particularly Sensitive Sacred Secret Knowledge**. Indigenous communities have customary laws that dictate whether indigenous knowledge is considered sacred or secret. Such laws restrict, for spiritual reasons, the use and availability of that knowledge. This knowledge needs to be protected from harm, and while there are no special laws for protecting sacred secret knowledge specifically, already some protections are available for example through the laws of confidential information. Sacred secret knowledge is also recognized in heritage and environmental legislation, which have special provisions to allow sensitive information or sacred sites to be protected.

4.0 Conclusion

As mentioned, indigenous knowledge must be managed and protected because it plays a crucial role in the sustainable development of society. Managing and protecting indigenous knowledge will enhance equity, reduce environmental degradation and lead to sustainable development, as well as increased local participation in the development process.

5.0 Summary

This unit clearly described the rationales behind indigenous knowledge management and Protection, six (6) major issues(Misappropriation of Indigenous arts and crafts, Misuse of Particularly Sensitive Sacred Secret Knowledge, Use of Indigenous Knowledge Relating to Genetic Resources, The Traditional Knowledge of Indigenous People is Being Commercially Exploited without Benefits Flowing to Communities etc) to consider in managing and protecting indigenous knowledge were also highlighted and discussed.

6.0 Tutor-Marked Assignment

1. Provide a terse for or against managing and protecting indigenous knowledge in the modern society

7.0 References/Further Reading

Carlos, M. C. (2001). Indigenous knowledge and Intellectual Property, Issues and Options Surrounding the Protection of Indigenous Knowledge, Quaker United Nations Office, Geneva, p. 7.

Daniel, G. (2003). TRIPS, Doha and Indigenous Knowledge, *Journal of World Intellectual Property,* Vol. 6. No. 3, p. 403-19.

Dutfield. G. (2001). "Indigenous People, Bio-prospecting and the TRIPS Agreement", Perspectives on Intellectual Property: IP in Biodiversity and Agriculture", Sweet and Maxwell, London, p. 146.

IFAD (2003) *Indigenous Peoples and Sustainable Development*, Roundtable Discussion

Paper for the Twenty-Fifth Anniversary Session of IFAD's Governing Council. Indigenous Knowledge World Bank, available at <http://www.IKwb.org/web/?page_id=4 &language =i.t>

Kaniki, M.A. and Mphahlele, K.M.E. 2002. Indigenous knowledge for the benefit of all: can knowledge management principles be used effectively? *SA journal of library and information science* 68(1):1-15.

Khor, M. (2002). *Intellectual property, biodiversity and sustainable development: resolving the difficult issues.* London: ZED Books Ltd.

Kihwelo, P.F. (2006). Knowledge management and indigenous knowledge for development of Africa's information systems and services: some legal issues for information system experts. In *XVII Standing Conference of Eastern Central and Southern African Library Associations (SCECSAL XVII): librarianship as a bridge to an information and knowledge society in Eastern, Central and Southern Africa.* Dar-es-Salaam: Library Association of Tanzania: 632-647.

Lengisugi, N.O. (2006). Massae Resource Centre for Indigenous Knowledge in Tanzania. In *XVII Standing Conference of Eastern Central and Southern African Library Associations (SCECSAL XVII): librarianship as a bridge to an information and knowledge society in Eastern, Central and Southern Africa.* Dar-es-Salaam: Library Association of Tanzania: 589-598.

Mchombu, K.J. (2006). Harnessing knowledge management for Africa‟s transition to the 21st century. *In XVII Standing Conference of Eastern Central and Southern African Library Associations (SCECSAL XVII): librarianship as a bridge to an information and knowledge society in Eastern, Central and Southern Africa.* Dar-es-Salaam: Library Association of Tanzania: 2-39.

Ngulube, P. (2002). Strategies for managing and preserving indigenous knowledge in the knowledge management era. In *SCECSAL 2002: from Africa to the world-the globalization of indigenous knowledge systems.* Pretoria: LIASA: 61-69.

Ngulube, P. (2003). Preservation and access to public records and archives in South Africa. PhD dissertation. Pietermaritzburg: University of Natal. At http://www.hs.unp.ac.za/infs/thesispn.pdf Accessed 01/05/07.

Ngulube, P. (2003). Using SECI knowledge management model and other tools to communicate and knowledge management tacit indigenous knowledge. *Innovation* 27: 21-28.

Surinder, K. V. (2004). Protecting Indigenous Knowledge, Is a Sui Generis System an Answer? *The Journal of World Intellectual Property*, Vol. 7. No. 6. Nov. 2004, pp. 769 70.

Terri, J., & Maiko, S. (2017). Indigenous Knowledge: Issues for protection and management. Terri Janke and Company Pty Ltd, Sydney

UNCTAD, (2000). Systems and National Experiences for Protecting Indigenous Knowledge, Innovations and Practices, TD/ B/ COM.1/ EM.13/2, Geneva.

WIPO (2001). Report on Fact finding Missions on Intellectual Property and Indigenous Knowledge Intellectual Property Needs and Expectations of Indigenous Knowledge Holders, (1998-1999), Geneva, Switzerland, p. 214-15.

World Bank (2004) *Indigenous knowledge: local pathways to global development*, Africa Regional Office, World Bank.