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THE MANAGEMENT OF INDIGENOUS KNOWLEDGE (IK) IN MUSEUMS: A CASE STUDY OF PIETERMARITZBURG

By

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DECLARATION

I, Delisile Beatrice Mncube, declare that:

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2. This thesis has not been submitted for any degree or examination at any other university.
3. This thesis does not contain other person's data, picture, graphs or other information, unless specifically acknowledged as being sourced from other persons.
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Delisile Beatrice Mncube	Mrs. Fiona Bell
(Name of Student)	*(Name of Supervisor)*
DBMncube	FLBell .....
Date: 24-08-2018	Date: 24/08/2018

DEDICATION

This dissertation is dedicated to my child, Esonasipho Jobe, my late parents, Mrs. Ntombithini Kunene-Mncube and Mr. Langalakhe Mncube, and my late sisters, Nelisiwe Mncube and Deliwe Kunene. To my parents: Thank you for instilling the culture of education in me.

ABSTRACT

The purpose of the study was to examine the management of Indigenous Knowledge (IK) in museums: a case study of Pietermaritzburg. The study investigated the strategies used by museums in Pietermaritzburg to collect and preserve indigenous knowledge (IK) for future use. Indigenous knowledge is often seen as achievements of the past, to be conserved in the present because they are becoming extinct under the impact of modern knowledge. Without such management, knowledge is vulnerable to change or, worse still, it could be lost. Indigenous knowledge may be defined as body of knowledge belonging to communities or ethnic groups, shaped by their culture, traditions, and ways of life (Moahi, 2005:77).

An interpretivist approach was adopted for this study. The reason for this was that the researcher sought the perspectives of the participants on their management of IK within their institutions. The qualitative approach with which interpretivism is associated, therefore, was considered the appropriate approach to achieving this. The study population consisted of directors of the museums, managers, curators, researchers, collection officers, museums practitioners, information managers and the librarians. In this study observation and interviews were used as data-collection tools. Tables were created to interpret the data using Microsoft Word.

The analysis of the findings revealed that the four institutions have the effective management of IK as a priority, and that they understand its value and importance. It was revealed that the four institutions use tape recorders, video cameras, and digital cameras to record IK. The results also showed that they are faced with numerous challenges when collecting IK. These include the difficulties in knowing who the IK holders are, where they are located, together with poor recognition of IK in the communities concerned. Recommendations were made based on the findings of the study; and suggestions for further research were put forward.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACTAG	Arts and Culture Task Group
ARIPO	African Regional Intellectual Property Organization
AU	African Union
CBD	Convention on Biological Diversity
FAO	Food and Agriculture Organization of the United Nations
ICOM	International Council of Museums, Monuments and Cities
IFLA	International Federation of Library Associations and Institutions
IK	Indigenous Knowledge
IKS	Indigenous Knowledge Systems
IASG	Inter-Agency Support Group
ILO	International Labor Organization
IUCN	International Union for Conservation of Nature
IPRs	Intellectual Property Rights
OAU	Organization of African Union
SECI	Socialization Externalization Combination and Internalization
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDRIP	United Nations Declaration on the Rights of Indigenous People
UNEP	United Nations Environment Program
UNESCO	United Nations Educational Scientific and Cultural Organization
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

CHAPTER ONE: INTRODUCTION

1. INTRODUCTION

Indigenous knowledge (IK) systems are very important for the communities from which they come. Such knowledge dictates how people behave generally, how they relate with the land and other resources that they have, and how they make sense of the world around them. The importance of IK is seemingly being overshadowed by western knowledge which has the advantage that it is codified and is largely viewed as better, and more scientifically proved knowledge (Moahi, 2005: 75).

The traditions where the elders used to sit and work with the youth and pass on that knowledge are very fast being eroded. Globalization has an inundation of western values and culture beamed through satellite television and the internet, quickly captivating the youths' minds such that they deem their own cultures, rituals, and traditions as inferior, old fashioned, and barbaric. The dominance of westernized knowledge has also contributed to the demise of IK, which is viewed as untried, untested and unscientific knowledge. However, interest in IK and its potential has taken hold in the West (Moahi, 2005: 75). A direct result of this is that IK is being appropriated and the owners, that is, the communities, have nothing to show for it. The "intellectual property of IK is being claimed by individuals outside the communities that own the knowledge, simply because they have codified it" (Moahi, 2005: 75). All of this brings us to the point that, there is a need to manage IK in order to preserve it for posterity, and to be accessible for present and future generations. If not well managed, its abundance would be of no significance to potential users.

Makara (2002) states that, since knowledge is the cornerstone of development, a strategy is needed to promote IK and to make this knowledge more accessible to development enterprises. The fact that IK systems are at risk of becoming extinct, pose a very big challenge and for this reason, the KwaZulu-Natal Museum, the KwaZulu-Natal Provincial Museum, the Tatham Art Gallery Museum, and the Msunduzi Museum are the sites chosen for this study.

This study was conducted to investigate the strategies used by the four museums in Pietermaritzburg to collect and preserve IK for future use. The study adopted the qualitative research methodology, using an interpretivist paradigm. The study population consisted of Collection Officers, Researchers, Assistant Directors, Curator, Librarians and Museum Practioners. Semi-structured interviews and observation were used as data-collection tools. Information gathered through the interviews was analyzed using content analysis and then presented in the form of tables and graphs.

This chapter, under 'Background of the study', gives an overview of IK, including its characteristics and its importance. It then describes and discusses the four above-mentioned institutions which are the focus of the study. This is followed by the statement of the problem, the significance of the study, and definitions of terms used in the study. The chapter ends with a description of the structure of the remainder of the thesis; and, finally, a summary of the chapter is provided.

1.1 Background of the study

Indigenous knowledge, which has generally been passed on orally from one generation to another is, as Ngulube (2002: 99) puts it, an endangered species and unless information professionals enable its management, that is, its collection, documentation, organization, preservation and dissemination, it is vulnerable to change or worse still, it could be lost Ngulube (2002: 99).

Indigenous knowledge is often seen as achievements of the past, to be conserved in the present because they are becoming extinct under the impact of modern knowledge. IK has the same fascination as pre-industrial artifacts, in which conservation of what is left has become the focus, rather than seeing the IK as a dynamic resource."Indigenous Knowledge is therefore not a past achievement in need of conservation for the present, but living local knowledge is a present condition for having a future" (Prain, Fujisaka and Warren 1999: 147).

Previously, the conservation of IK has been through collections housed in depositories and libraries. Of recent times, attention has been paid to local knowledge and procedures involved in

using IK, rather than merely its storage (Mearns, 2006: 1). Wider use of IK requires that first, there be recognition of its existence and validity as a knowledge system. Secondly, indigenous people should be seen as equal partners in all matters concerning access, integration, and use of IK. All this must be conducted in an equitable manner, to guarantee protection and benefit sharing (IUCN, 1997). In the light of this statement, IK provides problem-solving strategies for local communities, especially the indigent.

Indigenous knowledge maybe defined as a body of knowledge belonging to communities or ethnic groups, shaped by their culture, traditions, and way of life (Moahi, 2005: 77). Indigenous knowledge may also be defined as "local community-based systems of knowledge, which are unique to a given culture or society and have developed as that culture has evolved over many generations of inhabiting particular ecosystems" (IUCN, 1997). It "is a general term which refers broadly to the collective knowledge of an indigenous people, about relationships between people, habitat and nature. It encompasses knowledge commonly known within a community or a people, as well as knowledge known only to a shaman, to tribal elders, a lineage group, or a gender group" (IUCN, 1997: 46).

According to the International Union for Conservation of Nature (IUCN, 1997: 46) "IK is based on experience, often tested over centuries of use, adapted to local culture and environment, and is dynamic and changing."As emphasized above, IK is seen as endangered, as it "is often transmitted by word of mouth, rather than in written form" (IUCN, 1997: 46). Indigenous knowledge is therefore vulnerable to rapid change such as takes place in times of famine, war, or even the changing lifestyles of the younger generation. Indigenous knowledge may also be lost naturally with changing tools and technology. However, rapid development and changes in populations over the past decade have accelerated the loss of IK to the extent of endangering its survival completely. "Changes in climate will gravely harm the health of indigenous people, traditional lands, waters, and many of plants and animals on which they depend for survival" (IASG, 2007).

"Indigenous knowledge is local know-how and cultural practices that belong to a community and are transmitted orally between generations" (Raseroka, 2002: 2). Raseroka (2002: 2) lists the following characteristics of IK:

- It is generated within communities.
- It is location and culture specific.
- It is the basis for decision making and survival strategies.
- It is not systematically documented.
- It covers critical issues: primary production, human and animal life, and natural resources management.
- It is dynamic and based on innovation, adaptation and experimentation.

Charyulu (n.d.) maintains that IK is stored in people's memories and activities and "it is expressed in the form of stories, songs, folklore, proverbs, dances, myths, cultural values, beliefs, rituals, community laws, local language and taxonomy, agricultural practices, equipment, materials, plant species, and animal breeds". Obamsawin (2002:29) concurs with Charyulu's observation when he says that IK is stored in people's memories and activities and is expressed and communicated orally. Mondo, Baryamureeba and Williams (2007:163) quote Obamsawin (2002:29) and Grenier (1998:4), who have said that, owing to the inadequacy of IK management and its sharing "most of it has been confined to tacit knowledge and hence it has not been codified, thereby limiting access, storage and retrieval" (Obamsawin, 2002:29).

For "IK to survive there has to be a dynamic knowledge system for capturing and codification of tacit knowledge that facilitates interchange between tacit and explicit knowledge and this will enhance collaborations, management and utilization of IK" (Mondo, Baryamureeba and Williams, 2007:164). Kaniki and Mphahlele (2002:21) also point to IK being mainly tacit knowledge because it is not generally recorded or written down. The authors also note that it is regarded as informal and unscientific, not easily codified; and it is transferred by word of mouth (Kaniki and Mphahlele, 2002: 21).

The World Bank Group (1998:1) identifies five reasons for IK being important, underlining ways in which it should be managed:

- IK provides problem-solving strategies for local communities, especially for the poor.
- IK represents an important contribution to global development knowledge.

- IK systems are at risk of becoming extinct.
- IK is relevant for the development process.
- IK is an under-utilized resource in the development process.

According to the World Bank Group (2012:1), four of the five reasons listed above for managing IK have to do with development. Indigenous knowledge is considered a tool for sustainable development. At the community level, IK is a vital platform on which to make decisions that pertain to food security, education, natural-resources management, human, animal and environmental health, and other important activities. Indigenous knowledge is therefore an integral part of the development process of any local community. Development strategies often utilize effective knowledge, whether it be indigenous or introduced. Grenier (1998: 8) discusses the importance of IK as the alternative when development planning has failed. The benefits of considering IK, according to Grenier (1998: 8), are as follows:

- Create mutual respect, encourage local participation, and build partnerships for joint problem resolution.
- Facilitate the design and implementation of culturally appropriate development programs, avoiding costly mistakes.
- Identify techniques that can be transferred to other regions.
- Help identify practices suitable for investigation, adaptation, and improvement.
- Help build a more sustainable future.

According to the International Institute of Rural Reconstruction (1996) "local people must come to appreciate and value their indigenous knowledge". When people disregard their own knowledge, traditional wisdom and practices are slowly lost. Kaniki and Mphahlele (2002) state that "IK and its related components can and do affect productivity and human development, whereas a lack of or inappropriate use of it can lead to poor decision making and generally impact negatively on productivity and development" (Kaniki and Mphahlele, 2002).

Given the above, an assumption underpinning this study is that, if IK is utilized appropriately, it is able to enhance productivity and development. A second assumption is that IK has been marginalized because there are no proper policies in place to safeguard it. This study focuses on

the management of IK in four museums in Pietermaritzburg. It also emphasizes the importance of IK, and therefore the need for its proper management. It is to museums that this chapter now turns.

1.2 Background of the museums

According to the Arts and Culture Task Group (1995), museums are community and educational centers which exist to interpret the cultural and natural world of the public through activities and the use of real objects. Conservation, research, and education are the central functions of museums.

"A museum is an institution which collects, documents, preserves and interprets material evidence and associated information for the public benefit" (Hou, 2009:15). "Museums as a part of the heritage industry, give meaning to present lives by interpreting the past" (Hou, 2009: 15). "Museums are hence dynamic and accountable public institutions which both shape and manifest the consciousness, identities and understanding of communities and individualism relation to their natural, historical and cultural environments, through collection, documentation, conservation, research and education programs that are responsive to the needs of society" (Hou, 2009: 15).

Museums aim to become permanent repositories in which significant cultural and scientific treasures and specimens are housed and cared for on behalf of the citizens. Through their collections and activities they aim to educate and provide facilities for the public, as well as to increase knowledge and understanding of the cultural and natural world (ACTAG: 1995).
"Museums play an important role as custodians of a cultural heritage" (Nyangila, 2006: 2). They, however, have an "added responsibility to assist national and civic governments as well as the civic society in responding to community and societal problems and developmental needs" (Nyangila, 2006:2).

Museums tell stories. They reflect the society in which they exist. "Museums do this with their powerful narrative displays and exhibitions. They "serve to present the past and the present" (Dlamuka, 2003). Hou (2009: 74) states that information provided by museums should be clear

and unique. “It should be easy to absorb and should stimulate visitors curiosity to learn something new” (Hou, 2009: 74).

Table 1 below depicts the roles played by museums.

Table 1: Roles played by museums

Functional	“Museums acquire, conserve and exhibit art for study and education”	Object-based
Purposive	“Museums are for people to enjoy and to learn from collections which are held in trust for society”	People-based

Source: Rentschler (2007: 13)

Many museums and “cultural institutions throughout the world hold large collections of objects that are of cultural or historical significance to indigenous communities. Because many of these objects were collected without the consent of the traditional owners, the custodial organizations are now facing the challenges of determining ownership, seeking direction from the traditional owners on the future of such objects and either repatriating them, storing them or exhibiting them appropriately as requested” (Hunter, 2005: 2).

“Museums keep information relating to the history of people and their institutions, customs and cultures” (Museums and the Web, 2005).These includes marriages, crafts, traditional medicines/ herbs, traditional dances, traditional foods, and cultural beliefs. The information kept is on a range of subjects and is in varying formats. Museums use manual finding aids: index cards, accession registers, and storage lists; and electronic formats; tapes, 3D scanners, digital voice recorders, compact cassettes or digital audio-tapes are used to record information on IK (Museums and the Web, 2005).

Museums acquire IK through donation, purchase, and transfer. Museums also borrow IK for the purposes of temporary display (Museum of Applied Arts and Sciences, 2016). Before any

collection of IK can take place, museums consider the following issues: what is to be collected, how it is to be collected, and for what purposes (Department of Arts and Culture, n.d). During the process of acquiring IK, "museums respect the rights of communities and are sensitive to the views of communities when researching and conducting fieldwork on IK" (ICOM Code of Ethics, 2001). Museums support the rights of indigenous peoples to be consulted on the use and acquisition of IK (Museums of Applied Arts and Sciences, 2016).

Thus museums are more than simply institutions that house collections: they also record and process huge amounts of data relating to the IK objects they store (Arts and Culture Task Group, 1995). All museums are bound by national laws and international conventions relevant to museums. The International Council of Museums Code of Ethics (2001) represents minimum standards for museums. The standards for museums are represented as a series of principles supported by guidelines for desirable professional outcomes. Table 2 below depicts the ethical code and underlying principles.

Table 2: Code of ethics for museums with underlying principles

CODE OF ETHICS FOR MUSEUMS	**PRINCIPLE**
Museums preserve, interpret and promote the natural and cultural inheritance of humanity.	Museums are responsible for the tangible and intangible natural and cultural heritage. Governing bodies and those concerned with the strategic direction and oversight of museums have a primary responsibility to protect and promote this

	heritage as well as the human, physical and financial resources made available for that purpose.
Museums that maintain collections hold them in trust for the benefit of society and its development.	Museums have the duty to acquire, preserve, and promote their collections as a contribution to safeguarding the natural, cultural and scientific heritage. Their collections are a significant public inheritance, have a special position in law, and are protected by international legislation. Inherent in this public trust is the notion of stewardship that includes rightful ownership, permanence, documentation, accessibility and responsible disposal.
Museums provide opportunities for the appreciation, understanding, and promotion of the natural and cultural heritage.	Museum have an important duty to develop their educational role and attract wider audiences from the community, locality, or group they serve. Interaction with the constituent community and promotion of their heritage is an integral part of the educational role of the museum.
Museums hold primary evidence for establishing and furthering knowledge.	Museums have particular responsibilities to all for the care, accessibility, and interpretation of primary evidence collected and held in their collections.
Museum resources provide opportunities for other public services and benefits.	Museums use a wide variety of specialism, skills, and physical resources, which have a far wider application than in the museum. This may lead to shared resources or the provision of services as an extension of the museum's activities. They should be

	organized in such a way that they do not compromise the museum's stated mission.
Museums work in close collaboration with the communities from which their collections originate, as well as those they serve.	Museum collections reflect the cultural and natural heritage of the communities from which they have been derived. As such they have a character beyond that of ordinary property which may include strong affinities with national, regional, local, ethnic, religious or political identity. It is important, therefore, that museum policy is responsive to this possibility.
Museums operate in a legal manner.	Museums must conform fully to international, regional, national, or local legislation and treaty obligations. In addition, the governing body should comply with any legally binding trusts or conditions relating to any aspect of the museum, its collections and operations.
Museums operate in a professional manner.	Members of the museum profession should observe accepted standards and laws and uphold the dignity and honour of their profession. They should safeguard the public against illegal or unethical professional conduct. Every opportunity should be used to inform and educate the public about the aims, purposes, and aspirations of the profession to develop a better public understanding of the contributions of museums to society.

Source: ICOM Code of Ethics for Museums (2001).

The four museums in Pietermaritzburg which were the focus of this study are now described.

The KwaZulu-Natal Museum

In 1882 the Natal-Museum planning committee received a letter of encouragement written by Roland Trimen (Trimen, n.d). "He was a British-South African entomologist best known for South African Butterflies (1887-1889), a collaborative work with Colonel James Henry Bowker, Trimen arrived at the Cape in 1859, taking up a post in the Auditor General's office in Cape Town and then transferred to the office of the Colonial Secretary" (Trimen, n.d). "In 1872 he became curator of the South African Museum in Cape Town. Failing health caused him to resign his position at the South African Museum in 1893" (Trimen, n.d).

"He suggested that they should found a Natal and not a Pietermaritzburg museum because he believed that the colonial government should recognize the museum's importance for a colony rich in natural resources" (Brookes, 1988:63). "The Natal Society was instrumental in establishing the museum, but it was administered and funded under colonial statutes and was a reflection of British imperial interests in the province's natural resources and cultural history" (Rodehn, 2008: 122).

The Natal Museum was established in 1903, Dr. Ernest Warren being appointed as the first director (Laband and Haswell, 1988:160). The KwaZulu-Natal Museum (formerly Natal Museum) is a Declared Cultural Institution established in terms of Section 3 of the Cultural Institutions Act,1998 (Act No. 119 of 1998). It is governed by a Council appointed by the Minister of Arts and Culture. The vision of the KwaZulu-Natal Museum is to "position the KwaZulu-Natal Museum as a leading heritage institution in South Africa" (KwaZulu-Natal Museum Annual Report, 2014-2015).

The mission of KwaZulu-Natal Museum is "dedicated to serving the people of South Africa by interpreting material evidence of the cultural and natural world, in order to increase knowledge, understanding and appreciation of the nation's wealth of history and biodiversity" (KwaZulu-Natal Museum Annual Report, 2014-2015).

The KwaZulu-Natal Museum core values are:

- To foster a culture of accountability learning and enlightenment for staff and stakeholders;
- To increase tolerance, understanding and mutual respect among staff and the diverse elements of South African society;
- To be honest and professional in understanding the duties and the execution of the Department's mandate;
- To be loyal to the mandate given to the museum by the Department, and in addressing the government imperatives;
- To promote a sense of cultural identity and worth by enabling people to attain knowledge and new perspectives regarding the history of humanity in general, and the historical and cultural record of their own communities, in particular;
- To continuously strive to be a center of excellence in our core duties and reputation (KwaZulu-Natal Museum Annual Report, 2014-2015).

The KwaZulu-Natal Museum is under the leadership of a Director and Deputy Director. It has the following departments:

- Education department;
- Technical department;
- Human Science department;
- Corporate Services department; and
- Exhibition department.

The KwaZulu-Natal Museum continues to exert major effort into the digitization of its collections, so as to comply with the Accounting Standard for Heritage Assets (KwaZulu-Natal Museum Annual Report, 2014-2015).

The KwaZulu-Natal Provincial Museum Service

The KwaZulu-Natal Provincial Museum Service was established in February 1974 with the purpose of establishing, controlling, and managing museums and art galleries in KwaZulu-Natal (Ridley, 1997:1).

Prior to 1995 the official name was the Natal Provincial Museum Service. Subsequent to the democratic elections which took place in 1994, the province was renamed KwaZulu-Natal, and the Natal Provincial Museum Service had a name change in April 1995 to the KwaZulu-Natal Provincial Museum Service (Ridley, 1997:2). The mission of the KwaZulu-Natal Provincial Museum Service is to provide world-class services in arts and culture for the people of KwaZulu-Natal by:

- Developing and promoting arts and culture in the province and mainstreaming its role in social development;
- Developing and promoting the previously marginalized languages, and enhancing the linguistic diversity of the province;
- Collecting, managing and preserving archival, museum, and other forms of information resources; and
- Integrating and providing seamless art and cultural services to the communities of the province (KwaZulu-Natal Department of Arts and Culture Budget Speech, 2016).

The chief aim of the KwaZulu-Natal Provincial Museum Service "is to promote the preservation of the country's rich and varied cultural heritage by assisting in the development of local museums in KwaZulu-Natal and by raising their standards" (KwaZulu-Natal Department of Arts and Culture Budget Speech, 2016).

The KwaZulu-Natal Provincial Museum Service is a directorate established in terms of the following legislative mandates:

- South African Constitution Act no. 108 of 1996, as amended;
- Public Finance Management Act, no. 1 of 1999, as amended;
- Public Service Act, no 103 of 1994, as amended;
- Labor Relations Act, 66 of 1995, as amended;
- Public Service Regulation, 2003;

- Ordinance 26 of 1973;
- World Heritage Convention Act, 1999;
- National Heritage Resource Act, 2000; and
- KwaZulu-Natal Heritage Act 10 of 1997 (KwaZulu-Natal Department of Arts and Culture Budget Speech, 2016).

The KwaZulu-Natal Provincial Museum Service provides "vital support services to 43 museums throughout the province, 25 of which are Municipal Museums, 16 Board of Trustee Museums and two provincial museums" (KwaZulu-Natal Museum Services Practical Training, 2013)."Subsidies are paid to affiliated museums annually, to assist with administration and capital development costs" (KwaZulu-Natal Museum Services Practical Training, 2013).

The KwaZulu-Natal Department of Arts and Culture is "currently busy with a process called "Provincialisation" which is taking over the mandate of Museums in terms of Schedule 5A of the Constitution and for museums to be able to uphold appropriate norms and standards"(KwaZulu-Natal Department of Arts and Culture Budget Speech, 2016).

The KwaZulu-Natal Provincial Museum Service's core function areas are:

- Research

The "Research unit is one of the most critical functions of the KwaZulu-Natal Provincial Museum Service. It involves identifying relevant research themes and conducting scholarly research based on those themes and various methodologies are used to gather historical knowledge" (KwaZulu-Natal Museum Services Practical Training, 2013). Whatever comes out of the research translates into exhibition panels and designs for exhibitions (KwaZulu-Natal Museum Services Practical training, 2013).

- Collection

An important function of any museum is the collection of cultural items that are unique, significant and which reflect cultural diversity" (KwaZulu-Natal Museum Services Practical Training,2013). The KwaZulu-Natal Provincial Museum Service "manages a collection centre which houses over 22000 artifacts which are kept in accordance with specialized norms and standards over the years a wide range of photographs has been collected, items from the collection are loaned to museums for their projects, and particular attention is paid to indigenous cultural items" (KwaZulu-Natal Museum Services Practical Training, 2013).

- Art Studio

Displays are established for affiliated museums. "Trained, experienced research and graphic art personnel research, design and manufacture displays, exhibition are presented in many ways using a variety of media" (KwaZulu-Natal Museum Services Practical Training, 2013).

- Conservation and restoration

The KwaZulu-Natal Provincial Museum Service provides a specialized function of preservation and restoration. Items are carefully preserved and restored in accordance with prescribed methods. Diverse materials are worked with, such as metal, wood, glass, textiles, paper, leather, ceramics, and artworks. Conservators are governed by an international conservation ethics policy (KwaZulu-Natal Department of Arts and Culture Budget Speech, 2016).

- Outreach

The KwaZulu-Natal Provincial Museum Service "sees its role as one of forging partnerships with schools, municipalities and the corporate sector in order to create greater awareness of museums"(KwaZulu-Natal Department of Arts and Culture Budget Speech, 2016). The Service is "well positioned to be a documentation center for indigenous knowledge systems (IKS), in order to carry out its outreach program the KwaZulu-Natal Provincial Museum Service purchased two mobile museums and artifacts are taken into the rural areas in order to promote museums"(KwaZulu-Natal Department of Arts and Culture Budget Speech, 2016).

The Tatham Art Gallery

The "origins of the Tatham Art Gallery go back to the turn of the 20th century when interested citizens of Pietermaritzburg presented the City Council with a number of paintings" (Korber, 1990: 152). In "1903 a discussion relating to the formation of an art gallery was recorded in the City Council minutes" (Tatham Art Gallery, 2005).

A permanent home for the growing collection was not found for many years, however, and it was not until 1923 that space for the collection was allocated in the City Hall. "It took another 40 years for the City Council to accept responsibility for the running and the maintenance of the Art Gallery, and a fund for the purchase of art works was finally instituted" (Korber,1990: 152).

The collections at the Tatham Art Gallery are looked after, so that they will be available for study and enjoyment by future generations. New databases of the collections were implemented and they are currently being updated. All artworks are currently being digitally photographed with the assistance of the Pietermaritzburg newspaper publication, The Witness. Selections from the permanent collection are always on display for people to enjoy and study (Tatham Art Gallery, 2005).

"In 1990 the Tatham Art Gallery moved from the City Hall into its current premises, consisting of the old Supreme Court Building, completed in 1875, and the adjacent Old Presbyterian Church dating from 1852"(Korber, 1990:152).The Tatham Art Gallery forms part of the Msunduzi Municipality and is governed by a board of trustees (Korber, 1990: 152).

The Msunduzi Museum

The present–day Msunduzi Museum (incorporating the Voortrekker complex) was originally established to preserve and display memorabilia relating to the Boer immigrants who, in the late 1830s, arrived in what was later to become known as KwaZulu-Natal. It was only towards the end

of the twentieth century that it broadened its mission to embrace the history of all ethnic groups inhabiting the region (Guest, 2012: 1).

The Church of the Vow had its origins in the bitter conflict caused by the migration of Dutch-speaking farmers from the Cape Colony into the Zulu Kingdom in the 19th Century. The Voortrekker Museum was inaugurated in 1912 to commemorate the Great Trek and the Voortrekkers' quest for land and independence (Hopwood, 2014: 2).

The Msunduzi Museum is a national museum and is governed by a Museum Council appointed by the Minister of Arts and Culture every three years. The vision of the Msunduzi Museum is to "deliver an excellent cultural experience" (Msunduzi Museum Annual Report, 2014-2015). The mission of the Msunduzi Museum is to preserve, promote and present cultural heritage to benefit nation building and social cohesion (Msunduzi Museum Annual Report, 2014-2015).The Msunduzi Museum's strategic goals are:

- To promote multiculturalism and intangible heritage; and
- To improve accessibility to the rich and dynamic cultural heritage of South Africa (Msunduzi Museum Annual Report, 2014-2015).

The Msunduzi Museum, under the leadership of a director, has the following departments:

- Research, Information and Collection department;
- Exhibition department;
- Education department; and
- Administration department.

In 2012 the museum marked its 100thbirthday with a series of commemorative functions and exhibitions on the theme 'A Hundred Years On─A Reconciling Museum and an official history of the museum written by Prof William Guest was launched at a dinner at the Msunduzi Museum on the 15th of December 2012 (Msunduzi Museum Annual Report, 2014-2015).

1.3 Statement of the problem

Indigenous knowledge, as has been pointed to above, "is an extremely valuable resource, which is sadly diminishing at an alarming rate" (Dlamini, 2005: 2).There is an "urgent need to map it before it is irretrievably lost, because hardly a day goes by when an elderly person dies and his or her knowledge is then buried along with the person, beyond recovery" (Dlamini, 2005: 2). As Onyango (2002: 250) notes, "large quantities of knowledge and expertise are disappearing into oblivion, leaving humanity in danger of losing its past and perhaps jeopardizing its future as well".

Onyango (2002: 250) "further points out that this enormous trove of invaluable knowledge and wisdom is stored in the memories of elders, healers, midwives, farmers, and many more". This means that local knowledge was not recorded but kept in people's minds. Such knowledge has been passed on from generation to generation through story-telling, poems, songs, or through informal ways of teaching often conducted by groups. In the Zulu culture, women taught girls as they grew up, and men taught boys (Onyango, 2002: 250).

A problem with this form of knowledge is that the human mind has limitations: knowledge retained only as memory may be forgotten altogether. It may also be distorted in the process of sharing; or else it may even be lost by the death of a knowledge-owner (Hogan, 2007).
Despite its importance to sustainable and equitable development (Hogan, 2007), "IK has largely been marginalized, neglected, and suppressed due to ignorance and arrogance, politics and the dominant ideology of a particular historical period" (Dondolo, 2005: 120). Indigenous knowledge is threatened by socialization, education systems, and the influence of Western technology (Dube and Musi, 2002). In the past, the practices and customs of indigenous people were largely overlooked. Sithole (2006) states that there is an "urgent need to manage IK to enhance its availability for development activities before much of it is completely lost". Therefore it is the responsibility of the museums to implement programs for the collection and preservation of IK with the advent of Information Communication Technology (ICT).

Museums have an essential role in preserving past traditions and culture for future generations. They are community and educational centres which exist to interpret both the

cultural and natural world to the public, through activities, programs, and the use of real objects (Arts and Culture Task Group, 1995).

A museum is not an educational institution in the formal sense of the word. Museums provide a different learning environment and are sources of intellectual stimulation and entertainment. "Museum education is primarily concerned with meaningful interaction with objects, activities and knowledgeable people" (Lees, 1997:304).

There is nothing like "seeing an original work of art with your own eyes, touching an artifact with your own hands or engaging in activities with people of another culture to add meaning to an otherwise dry set of facts" (Singh, n.d). The foremost function of museums is, therefore, to utilize the objects of the past as tools to generate knowledge and enlighten the minds of the public (Singh, n.d.). In order to deal with IK, "museums must have an extensive, fully engaged, substantive dialogue and partnership with the people who hold the heritage" (Kurin, 2004).

"Communities and their members hold different types of knowledge, which may be accessible to all" (Kaniki and Mphahlele, 2002: 6). "However, in order for the knowledge contained in a community to be effective and applied, for the benefit of all, it must be shared and communities must have the major role in defining their own IK and how it is documented, preserved, recognized, transmitted and legally protected" (Kaniki and Mphahlele, 2002: 6).

In addition, the United Nations Environmental Programme (2008: 13) observes that IK is disappearing, and younger generations are unwilling to use it alongside modern knowledge. To avoid the problem of IK becoming extinct, there is an urgent need to find ways of documenting and storing it. According to Chikonzo (2006: 134), cultural continuity lies in the preservation of IK, as well as in transferring it to future generations.

Indigenous knowledge, since it has often been marginalized, and at times treated with suspicion or simply ignored, must have mechanisms in place for recognizing its usefulness. Davenport (1998), as quoted by Kaniki and Mphahlele (2002: 10), suggests that, in order to recognize the

"usefulness of anything in society and thus warranting the allocation of resources to it, one first needs to raise awareness about the issue".

This means that IK managers have a duty to raise awareness of the usefulness and importance of IK. This may then open doors for financial assistance and any other necessary assistance to support the management of IK (Dlamini, 2009: 37)

While it is evident that museums have a mandate to collect, preserve, and make available IK, the writer's reading of the relevant documentation did not make mention of the role that the museums targeted in this study are playing in this regard. Given the importance of IK, as stressed above, it was this knowledge gap and problem that the writer, through this study, attempted to address.

1.4 Purpose of the study and research questions

In the light of the above, the purpose of the study was to investigate the strategies used by museums in Pietermaritzburg to collect and preserve IK for future use. "Indigenous knowledge which has generally been passed on from generation to generation orally" is, as highlighted by Ngulube (2002: 99) above, "an endangered species" and " unless information professionals enable its management, that is, its collection, documentation ,organization, preservation and dissemination, it is vulnerable to change or worse still, it could be lost" (Ngulube, 2002: 99).

The study was underpinned by the following questions:

- Are there policies in place in museums specific to IK management?
- Are there set standards or specified guidelines for IK management in the museums?
- Which strategies exist for the preservation of IK by the museums?
- How do the museums determine from whom they collect IK?
- How do the museums deal with the issue of Intellectual Property Rights (IPRs) with respect to IK?
- In which format is IK stored by the museums?
- What do the museums to ensure that people gain the required information contained in the IK?

- Which challenges do the museums encounter in the management of IK?

1.5 Significance of the study

This study is important in that there has been little research on the management of IK in museums. As Dlamuka (2003) points out, "most people have little to say in the depiction of their own history in textbooks, libraries and research institutions including museums". Given this the researcher has seen the need for doing this study. The finding of this study will add to the existing literature on IK particular with regard to its management and the study may be used as a reference for management matters pertaining to IK in order to encourage its preservation and dissemination. The outcomes will also assist heritage practitioners and researchers to design new policies or legislations that will help the museums to improve the management and preservation of IK.

"Indigenous knowledge has in the past been suppressed or neglected by mainstream western science" (Britz and Lor, 2003: 169). Therefore, as a "result, it is a new subject, and consequently, very little has been written on the management of IK" (Britz and Lor, 2003). This study aims to reveal the strategies used by museums staff members in dealing with the management of IK; the challenges they are faced with whilst conducting their duties; finally, making recommendations on how the management of IK may, if necessary, be improved. This exposure would assist in encouraging its preservation and subsequent dissemination. As Steven (2008: 25) contends, "museums and information professionals can play an important role in assisting communities with the management and preservation of IK through providing resources and expertise in collection, organization, storage and retrieval".

1.6 Scope and delimitation of the study

The study was confined to the management of IK in the KwaZulu-Natal Museum, the KwaZulu-Natal Provincial Museum Services, the Tatham Art Gallery and the Msunduzi Museum. Although there are other museums in Pietermaritzburg, due to the limited timeframe and cost of travelling, only the four museums mentioned above were chosen. The study focused on the Curator,

Researchers, Collection Officers, Museum Practitioners, Librarians and Assistant Directors. This population was chosen in terms of their expertise to provide relevant information on the matter being investigated.

1.7 Definition of key terms relevant to the study

The term IK as adopted in the study will be defined. This will be followed by the definitions of other terms according to their usage in the study.

1.7.1 Indigenous knowledge

Kaniki and Mphahlele (2002: 3) "define IK as a cumulative body of knowledge generated and evolved over time, representing generations of creative thought and actions within individual societies in an ecosystem of continuous residence, in an effort to cope in an ever-changing agro-ecological and socio-economic environment".

Various researchers use the term IK interchangeably with terms such as local knowledge, traditional knowledge, ecological knowledge, community knowledge, rural people knowledge, folk knowledge, and so forth. For the purpose of this study, "IK was defined as local knowledge that is unique to a given society" (Boikhutso, 2012). "It is referred to as the systematic body of knowledge acquired by local people through the accumulation of formal and informal experiences; and intimate understanding of the environment in a given culture" (Hagar, 2004: 338). This knowledge could be disseminated and preserved through various family histories, symbols, rituals, dances, poetry, and by other means (Hagar, 2004: 338).

1.7.2 Knowledge

Davenport and Prusat (1998) define knowledge as a "fluid mix of experiences, values, contextual information and intuition that provides a structure to evaluate and incorporate new experiences".

1.7.3 Tacit knowledge

Tacit (intangible) knowledge is defined by Nonaka (1994) as personal knowledge created through individual experiences. It is tacit knowledge because it is typically stored within people's minds and cannot be explicitly recorded. It comprises the memories, mental maps, opinions, skills, and attitudes of individuals based on their personal experiences.

In tacit knowledge, a process takes place in which people have to show desire for sharing experiences and beliefs, and for spending time together. In terms of museums, staff members need to work together with IK holders, establishing a strong relationship through collaborative work experiences and socialization processes, which will allow for participation and teamwork (Hong, 2010).

1.7.4 Explicit knowledge

Explicit "tangible knowledge, on the other hand, is recorded, documented or codified knowledge, widely conveyed through formal language, i.e. textual, electronic or digital formats" (Desta, 2009). The manner in which this knowledge is presented has made its storage, conveyance, and sharing easier. Databases and paper-based files are full of explicit knowledge. Within organizations, such knowledge would include organizational charts, best practice instructions on how to carry out a particular task, and the records of sales and production (Desta, 2009).

1.7.5 Indigenous knowledge systems

According to Mosimege (2004:2) an "indigenous knowledge system (IKS) is an all-inclusive knowledge system that covers practices that have been and still are used by indigenous and local people for existence, survival and adaption in a variety of environments". Such knowledge is not "static but evolves and changes as it develops, influences and is influenced by both internal and external circumstances and interaction with other knowledge systems" (Mosimege, 2004:2). This knowledge covers "content and contexts such as agriculture,

architecture, engineering, mathematics, governance and other social systems and activities, medicinal and indigenous plant varieties, arts and culture" (Mosimege, 2004:2).

Nel (2005: 7; 2006: 99) suggests that "IKS is a systemic reference to the knowledge and practices of indigenous communities constitutive of their meaning and belief systems, as well as the substantive dimension of their practice and customs. An IKS is about the knowledge, practice, values, and ways of knowing and sharing in terms of which communities have survived for centuries". Grenier (1998), like Nel (2006), also stresses the idea that an "IKS is the knowledge of indigenous communities", however, he goes further in saying that IK systems are "cumulative, representing generations of experiences, careful observations, and trial-and-error experiments".

1.7.6 Preservation

The *Concise Oxford Dictionary* (2002: 923) defines the term preserve as, "to keep alive, to keep safe from harm or injury". Thus preserving IK through specific methods will help communities to continue their culture and traditions by keeping their knowledge alive (Mpofu and Miruka, 2009: 90).

1.7.7 Intellectual property rights (IPRs)

In terms of placing ownership in the right hands and ensuring equitable sharing, protection is associated with intellectual property rights (IPRs) (Boikhutso, 2012: 61). There is a need to understand what is meant by IPRs and how these rights are connected to IK. This is because most policies focus on the protection of IK (Boikhutso, 2012: 62). The South African Department of Science and Technology (2005: 28) has indicated that "IPRs are awarded by the society through governments and mandated international bodies to individuals or companies over their creative endeavors evidenced in their inventions, musical performances, symbols, names, images and designs used for commercials".

The World Bank (2002: 1) defines IPRs as a means of acquiring ownership over a particular resource that is intangible in nature. It involves the protection of some form of invention 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).

Berckmoes (2008) defines IPRs as the legal provision people have over their creative endeavours. The rightful owner is given an exclusive right for a certain length of time over the use of his or her creation or discovery (Boikhutso, 2012: 61). Intellectual property rights contain patents, copyrights, trademarks and trade secrets; they are codified at an international level through legally binding treaties (Boikhutso, 2012: 61).

The issue of IK and how it should be protected is important, and currently a concern throughout the world. The protection of "IK through the IPRs carries out the essential function of preventing third parties from exploiting this knowledge for profit" (Mpanza, 2014).

1.7.8 Museum

According to the International Council Of Museums (ICOM) (2007) a "museum is a non - profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment. One of the roles of the museum is to encourage and foster public awareness of indigenous systems" (Binnerman, 1991: 81).

1.7.9 Cultural heritage

UNESCO (1989) defines "cultural heritage as the entire corpus of material signs, either artistic or symbolic handed on by the past to each culture". Cultural heritage gives each "particular place its recognizable features and is the storehouse of human experience" (UNESCO,

1989). This includes “built heritage, archaeology, cultural landscapes and moveable heritage” (UNESCO, 1989).

The cultural heritage in the context of this thesis would be “ traditional stories, songs, dances and ceremonies that reflect beliefs related to spirituality, family, land and social justice” (UNESCO, 1989). It also includes potentially patentable knowledge about traditional medicines, food, handicrafts, artwork, and folk music (UNESCO, 1989).

1.7.10 Intangible heritage

The “intangible cultural heritage means the practices, representations, expressions, knowledge, skills as well as the instruments, objects, artifacts and cultural spaces associated therewith, that communities, groups, and, in some cases, individuals recognize as part of their cultural heritage” (UNESCO, 2003).

1.8 Division of chapters

This study has six chapters:

Chapter One comprises the background of the study, background of the museums, statement of the problem, purpose of the study and research questions, significance of the study and definitions of key terms relevant to the study.

Chapter Two discusses the theoretical and conceptual framework of the study. The former is served by postcolonial theory, while the latter is underpinned by the International Federation of Library Associations and Institutions (IFLA) standards for libraries. This is followed by the literature review in which IK is discussed in detail. This will include critiques of IK, the process of exchanging IK, and IK systems as tools for sustainable development. Also elaborated on will be

the characteristics of IK, the sources of IK, causes of the destruction of IK, the management of IK, and IK and IPRs.

Chapter Three, which describes and discusses the research methodology underpinning the study, will include the research design, population, sampling, data collection, data analysis, reliability, validity and research ethics.

Chapter Four presents the results of the study obtained from the survey of the identified staff working at the Msunduzi Museum, the KwaZulu-Natal Provincial Museum Service, the KwaZulu-Natal Museum, and the Tatham Art Gallery.

Chapter Five consists of a discussion of the findings as presented in the previous chapter, in the light of the relevant literature on IK and its management.

Chapter Six, the final chapter, will outline the major findings, conclusions reached, and recommendations made. Suggestions for further research will also be put forward.

1.9 Summary

This chapter presented the background to the study, the statement of the problem, the significance of the study, the research questions, definitions of key terms relevant to the study, and the background of the museums which formed the population of the study. The chapter concluded with a brief outline of the structure of the remainder of the dissertation. Chapter Two, which follows, provides the conceptual and theoretical framework underpinning the study, and the review of the literature.

CHAPTER TWO: CONCEPTUAL AND THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 INTRODUCTION

Indigenous knowledge (IK) is seen by many as a tool for the promotion of the development of rural communities in many parts of the world (World Bank,1998). In addition, IK plays an important role in the lives of indigent people, in being seen as a "main asset to invest in the struggle for survival, to produce food, to provide shelter or achieve control of their own lives" (World Bank, 1998).

This chapter provides both the conceptual and theoretical framework which underpinned the study. The bulk of the chapter will comprise a review of the literature relevant to the study and by so doing, expand on the issues related to IK as introduced in Chapter One.

2.2 Conceptual framework

This study was guided by the International Federation of Library Associations and Institutions (IFLA) which provides standards for libraries. The following are IFLA's declarations as they pertain to, and underscore, the importance of IK, as listed on the IFLA Statement on Indigenous Traditional Knowledge:

- IFLA has declared that human beings have the fundamental right of access to expressions of knowledge, creative thought and intellectual activity and to express their views publicly;
- IFLA acknowledges the intrinsic value and importance of indigenous traditional knowledge and local community knowledge, and the need to consider it historically; and
- IFLA furthermore notes the need to recognize the significance, relevance and value of integrating both indigenous traditional knowledge and local community knowledge in providing solutions to some of the most difficult modern issues. IFLA encourages its use in project planning and implementation.

IFLA then goes on to note the following:

- The need to implement effective mechanisms for technology transfer and capacity building; and
- The need to protect indigenous traditional knowledge and traditional knowledge for the benefit of the rest of the world.
- The need for protection against exploitation in accordance with the convention on Biological Diversity, the International Labor Organization (ILO) Convention 169 and other conventions relating to sustainable development and the interests of indigenous peoples (IFLA, 2004: 1).

This study was further guided by IFLA's recognition that the character of IK does not lend itself to print, electronic, or audio-visual means of recording. Therefore, in order to

ensure the continued preservation, access, and elaboration of this useful resource, it recommends that archives, libraries, and information centers:

- Publicize the value, contribution, and importance of IK and local traditional knowledge to both non-indigenous and indigenous peoples;
- Involve elders and communities in the production of resources, and teach children to understand and appreciate the traditional knowledge background and sense of identity that is associated with IK systems;
- Urge governments to ensure the exemption from value-added tax of books and other recording media on IK and local traditional knowledge;
- Encourage the recognition of principles of intellectual property to ensure the proper protection and use of IK products derived there from;
- Implement programs to collect, preserve, and disseminate IK and local knowledge resources;
- Make available and promote information resources which support research and learning about IK and traditional knowledge: its importance and use in modern society (IFLA, 2004: 1-2).

It is within this framework provided by IFLA that the study needs to be seen. In particular, it is the penultimate bulleted point above regarding the collection, preservation and dissemination of IK that provides the specific underpinning of the study.

2 .3 Theoretical framework

The study is supported by the Postcolonial Theory as the theory also includes the struggle indigenous people experienced in the suppression of their ways of knowing. Colonization introduced strict control over every aspect of indigenous life, including that of IK. Many of the cultural practices that were inherent in the indigenous lifestyle were banned, including language, song, and dance (Faulkhead, 2005). Indigenous life was disrupted by these bans; and much of indigenous traditional life was lost, including languages and oral traditions. This theory is applicable to the study, as it explains the marginalization of IK by Western knowledge (Faulkhead, 2005).The marginalization of IK can also be attributed to prejudices and stereotypes

brought by colonialism (Ocholla, 2007). Ocholla (2007:3) further states that IK continues to be marginalized, and that has resulted in its limited use in the development process and this form of marginalization produced a generation that for the most, does not understand, recognize, appreciate, value or use IK, producing people with an intellectually colonized mind-set.

A theoretical framework refers to a "general theoretical system with assumptions, concepts and specific social theories" (Neuman, 2006: 76). It guides research which determines what items it will measure, and the statistical relationships it should look for (Sekaran, 2003: 97). It is a "logically developed, described and elaborated network of association among the variables deemed relevant to the problem definition, situation and identified through such processes as interviews, observation and a literature survey. Experiences and intuition also guide in developing such a framework" (Sekaran, 2003: 97). Thus, the theoretical framework provides an orientation to the research study, and positions the research in the discipline or subject to reflect the research goals (Henning, van Rensburg and Smit 2004: 25).

Theory is defined as a "set of interrelated constructs (variables), statements, definitions and propositions that presents a systematic view of the phenomenon by specifying relations among variables, with the purpose of explaining a natural phenomenon" (Mitchell, 2005: 21). Embracing a wider sphere, theory is defined as a "well substantiated explanation of some aspect of the natural world; an organized system of accepted knowledge that applies in a variety of circumstances to explain a specific set of phenomena (Mitchell, 2005: 21). Theories can "incorporate facts, laws, and tested hypotheses"(Parker, 2007).Theories therefore gather together all items of empirical data into a coherent conceptual framework for a wider applicability (Lwoga, 2009: 93).

According to Deacon and Dondolo (2004), South Africa experienced colonialism and later, apartheid. These phenomena (colonialism and apartheid) demonized indigenous people's way of life. For example, new religious beliefs were brought in through missionaries. Indigenous people's belief in ancestor worship and staging of traditional ceremonies, began to slip away, and impressive ceremonies, like the Reed Dance (Umkhosi womhlanga), the First Fruit Ceremonies (Umkhosi Wokweshama), and many other ceremonies were no longer regarded as important (Mkhulisi and Hadebe, 2007).

The Postcolonial Theory is an area of cultural theory and critical theory which has been used in the study of literary texts. The theory focuses on the way in which literature by the colonizers distorts the experience and realities of the colonized, and inscribes the inferiority of the colonised, while at the same time promoting the superiority of the colonizer (Mapara, 2009: 139).

In Africa, the misguided colonizer wrongly perceived colonization as a process for and means of bringing modernity to societies considered to be "backward" and living in the "dark ages" (Shizha, 2006: 20-35). Fanon (2008) suggests that colonialism, because of its implicit promotion of white racial superiority over non-white colonial peoples, has created a sense of division and alienation in the self-identity of the colonized.

He argues that, under colonialism, the history, language, culture, customs, as well as belief systems of the white colonizer are to be considered as universal, as well as superior to the knowledge systems of the colonized, who are treated as the inferior other. Indigenous knowledge is seen as a neglected tool for development (Fanon, 2008). Therefore IK is more than simply the displaying of the knowledge and belief systems of the formerly colonized: it is one of the forms of response to the myth of Western superiority (Mampara, 2009: 139).

The predominant view held by many Europeans who first came to Africa was that the African had no history and culture to perpetuate; and that Africans never taught the young (Sifuna, 2008: 7). Partly, this mistaken belief reflected an ignorance of knowledge systems and helps to explain why the first European educationists never considered that the "formal" schools they were introducing had any relationship to the largely "informal "education African children were receiving in their communities (Sifuna, 2008: 12).

The basic assumption was that Europeans were introducing something totally new. This "naive way of looking at African indigenous learning presupposed that there was no social interaction or socialization, and that there was no deliberate effort by adults to bring up children to be the kind of men and women required by society" (Sifuna, 2008: 7). Other scholars assumed that, because Africans knew no reading and writing, they had no systems, contents, and methods of

education to pass on to the young. To such scholars, education in Africa meant Western civilization (Berman, 1975: 7).

The colonizers neglected anything traditional because of their restricted view of the nature of education. Their failure to " integrate indigenous learning and Western education was partly a deliberate effort to eradicate African education, and the introduction of Western institutions by some colonial agencies was calculated to undermine many aspects of African social structures and pave the way for their replacement" (Berman, 1975). In the colonial setting, the Western school played a vital role as a colonial institution that systematically distorted the history of the colonized (Lee, 2001: 31).

The Postcolonial Theory examines and puts forward propositions on the political and cultural impact of European conquest and subsequent colonization (Aschroft, 2001:15). In other words, the Postcolonial Theory addresses the "legacy of colonialism imposed by the west in its attempts to dominate the world over the past centuries. Postcolonial Theory is concerned with the responses of the colonized, the struggle to control self-representation, through the appropriation of dominant languages, discourses and forms of narrative, the struggle over representation of place, history, race and ethnicity, and the struggle to present a local reality to a global audience" (Aschroft, 2001: 5).

Kelly and Altbach (1984) state that colonization stripped the colonized of their indigenous learning structures and knowledge constructs and forced them to use knowledge constructs and learning structures of the colonizer. All this was done in the name of modernity and enlightenment.

The Postcolonial Theory helps us to go beyond the mere description of events: it suggests that the colonization process was more complex than merely a simple encounter. It was not a one-way stream. For instance, Said and Bhabha (1992) have asserted that both the "colonizer" and the "colonized" were affected by the colonial process. Mukuka (2010: 16) stated that colonization has "enabled a radical re-conceptualization of the relationship between nation, culture, and ethnicity which has major cultural/political significance". The lived experience or the cultural origin plays

a vital role in informing the negotiation process between the colonizer and the colonized, between the Western legal precepts and the indigenous communities (Mukuka, 2010: 16).

In a similar vein, and in the context of intellectual property law, Mukuka (2010: 16)) asserts that the whole process of colonization affected both the colonizers and the indigenous communities in the same way. The colonizer did not only affect the colonized, the process was reciprocal: their encounters with each other meant that neither experience may be ignored. Eurocentric thought asserts that only Europeans can progress, and that indigenous peoples are frozen in time, guided by knowledge systems that reinforce the past and do not look towards the future (Blaut, 1993). Battiste (2000) said that indigenous peoples have been viewed as backward and passive recipients of European knowledge.

To early missionaries and the colonial masters, IK existed in a vacuum, and they believed that it never even belonged to the community (Ocitti, 1973). Indigenous knowledge was considered very rigid and unwritten, backward and superstitious. In a number of cases, IK has been considered absolutely incompatible with modern society and development and should, therefore, be relegated to the archives and museums (Banda, 2008: 71). As has been stressed in Chapter One and will be emphasized below, the researcher is of opinion that IK does have considerable value; and that archives and museums have an important role to play in its collection, organization, and dissemination.

2. 4 Literature review

A literature review puts one's research project into context by showing how it fits into a particular field. According to Terre Blanche, Durrheim and Painter (2006: 20), by conducting a literature review, a researcher closely examines the literature related to the selected topic, with the aim of better understanding a research problem, and setting parameters on a research question.

Given the above, relevant literature on IK was identified, with the intention of finding out what is already known about IK, including its management within an institutional setting. The remainder of the chapter reviews this literature. In doing so, it will discuss IK in detail. This will include the

critiques of IK, the process of utilizing IK, and IK systems as tools for sustainable development. Also elaborated on will be the characteristics of IK, the sources of IK, causes of the destruction of IK, the management of IK, and IK and IPRs.

It must be noted that a number of international organizations are involved in documenting IK. UNESCO is addressing IK in its activities in education, science, culture, and communication. Specifically, UNESCO is involved in the Local and Indigenous Knowledge Systems (LINKS) Project, which focuses on the interface between local and IK and the Millennium Development Goals of poverty eradication and environmental sustainability. The project addresses the various ways in which IK practices and world views are drawn into development and resource-management processes (Nakashima, 2010).

2.5 Indigenous knowledge in South Africa

Indigenous knowledge (IK) is unique to a given culture or society: it is dynamic and based on innovation and practical experimentation (Kaniki and Mphahlele, 2002: 3). People living in a particular locality determine their own IK that is unique and conducive to their continued existence and survival in their particular community (Maferetlhane, 2012: 30). The researcher of this study agreed that the IK of the Zulu people is different from that of the Xhosa people, for example, Umemulo, also known as the "coming of age ceremony" is an important Zulu ritual that depicts a girl's journey into womanhood (Ulwazi, 2017).

The ceremony reflects that the young girl has transitioned from a child to an adult woman who can be married. Traditionally, Umemulo was performed around the age of puberty, and awarded to young girls who had respected their bodies. However, with evolving times and the Western influence on African culture, the ceremony is now held when girls reach the age of 21 (Ulwazi, 2017). The ceremony is a way of showing appreciation to the young woman for respecting herself, her family, and community, along with following their teachings (Ulwazi, 2017).

Male circumcision (Ukusoka) is a ritual a boy has to go through before he is declared a man. This practice has been very popular in the Xhosa culture. During this ritual, young Xhosa males leave their homes and go to the hill (entabeni) where no females are allowed. Men who are mature enough to help the young men undergo the circumcision practice will be posted at the hill. The young men will also be given lessons on how to live life responsibly after being certified as men (Ulwazi, 2017).

Numerous definitions of IK have been put forward. Indigenous knowledge may refer to the "technical insight or wisdom gained and developed by people in a particular locality, through years of careful observation and experimentation with the natural phenomenon around them" (Kolawole, 2001: 13).

Indigenous knowledge is "local knowledge that is unique to every culture and society" (World Bank, 1998). Masango (2010) defined IK as "the totality of all knowledge and practices established on past experiences and observations that is held and used by people".

IK encompasses information and know-how on a variety of matters including resource management, traditional medicines, craft, artistic designs, cultural assets, including folk tales, indigenous poetry, dances, theatre, rituals that adopt the artistic forms, drawings, paintings, sculptures, textiles, and musical instruments (Kihwelo, 2006: 636)."IK is contrasted and differentiated from Western, scientific or modern knowledge, which may be developed by research institutions and universities" (Kaniki and Mphahlele, 2002: 3).

2.6 Limitations and integration of IK

The preceding discussions have so far pointed out the benefits of IK in the livelihoods of many indigenous communities. However, IK certainly has its limitations and weaknesses.

Authors such as Naidoo (2007:4) elaborate that not all indigenous ways of living have proved to be sustainable. Based on this, he argues that it is important to bear in mind that IK may not be a panacea for all environmental problems, as it too is characterized by specific restrictions. Despite

these impediments, Naidoo (2007) acknowledges that IK has an important role to play as a way of knowing and understanding the world. In order to resolve the identified limitations, Naidoo argues that IK and modern Western knowledge should be mixed.

The researcher of this study agrees with Naidoo (2007), that there is a need to integrate IK and Western knowledge in order to facilitate the design of sustainable agricultural systems. IK may be useful in resource management and in planning, as it also facilitates the participation of communities. Ulluwishewa (1993) points out that IK is the only advantage possessed by many indigent communities.

The integration of IK into development processes is an important way of exchanging information among communities. According to the World Bank, (1998: 7) the process of exchanging IK involves eight steps which are normally applied in developing countries. The steps are:

- IK needs to be recognized and identified. In some cases IK is blended with technologies or cultural values, only to find that it is difficult to recognize IK, in which case it requires an external observer to identify it;
- The validation of IK is vital. This involves the assessing of the significance, reliability, relevance, and effectiveness. As a result, it is essential to acknowledge IK;
- Documentation and recording are the most important challenges because IK is sticky by nature;
- IK is tacit knowledge that is exchanged through communication from one person to the other. It is essential to consider traditional methods; however, in some situations modern instruments must be applied, such as drawings, charts, and graphs;
- Documentation is another means of protecting IK from disappearing;
- It is necessary for the IK to be stored. Storage may be in the form of text documents, or per electronic format, or with tapes, videos, film and even in the form of storytelling;
- Transferring of IK involves moving it from one place to another. It is regarded as a test of seeing whether it will work in other environments; and
- The dissemination of IK to wider communities adds to the developmental process, which promotes IK globally.

Owing to the shift in development thinking and practices towards people and community centered programs, there is a need for the involvement of individuals and communities to make decisions that concern them (Hiwasaki, 2014; 290).The community must be involved from the beginning of the process. Indigenous community members need to be encouraged to participate in the observation and recording of IK practices, in the data analysis, as well as in the validation of the documented knowledge through focus groups (Hiwasaki, 2014: 29).

The researcher of this study agrees that scientists also need to be involved in the process. Scientists will review the data analysis and offer suggestions on how to deal with both knowledge systems: Western knowledge, and IK. Such scientists will be able to categorize IK into various groups. They will then be able to determine which IK may be integrated with science and further used to inform not only policy-makers, but also practitioners.

Hiwasaki (2014: 30) stated that categorization of IK will help to identify transferable IK that may be applied to other regions of the world or in other circumstances, for instance, by local farmers. It is essential to foster dialogue and create partnerships between indigenous populations, civil societies, governments, development partners, management agencies, as well as scholars from different disciplines, to promote the conservation of IK, as well as its integration in different initiatives (Krupnik and Ray, 2007: 30). In relation to this, it is important to point out that knowledge exchange has to happen in recognising that both knowledge systems have the same validity and value (Magni, 2016).

The next section describes the unique characteristics of IK.

2.7 Indigenous knowledge characteristics

Indigenous knowledge has the following characteristics:

- IK is developed based on experiences; it involves wisdom that is tacit, and constantly changing, produced from interface involving people and their environment (Kibirige and Van Rooyen, 2007);

- IK is a product of human interactions with nature over a considerable length of time; a product of human observation, inquiry, reflection, critical thinking, and creativity (Ogunniyi, 2013: 13);
- IK is developed based on experience, and gained by continuously observing nature; and
- IK privileges the community to validate it over many generations based on using the knowledge that includes aspects of spirituality and philosophy (Onwu and Mosimege, 2004).

2.7.1 Sub-forms of IK

Kaniki and Mphahlele (2002: 4) state that there are several sub-forms or sources from which IK is drawn. For example, the authors (2002: 4) quote Thakadu (1998: 90), who has concluded that IK systems and practices among the Sankuyo and Xai Xai communities of Botswana were expressed in taboos, totems, customary beliefs, environmental ethics, and values; and they were passed orally from generation to generation. The following are the sub-forms of IK as stated by Kaniki and Mphahlele (2002: 4):

2.7.1.1 Beliefs

Indigenous knowledge may be reflected in the form of the beliefs of a community based on its religion or culture, for example, ancestral worship, and the belief that the ancestors are the community's intermediaries with God, if not gods in their own right (Kaniki and Mphahlele 2002: 4). Many communities believe that ancestors can communicate with individuals. Hence, as part of a wedding ceremony, for example, an animal is slaughtered in the yard, rather than at an abattoir. Through this process ancestors are requested to pave the way for healthy marriage and partnership. Animals such as goats and cows are also slaughtered in many African communities as a form of cleansing, if any individual or community's life is not unfolding according to expectations and wishes (Kaniki and Mphahlele 2002:4).

2.7.1.2 Indigenous knowledge in medicine

Herbs collected in the wild are key sources of traditional African medicine. Both general and specific plants are taken for various health conditions. For example, the yellow star, which is commonly known as the African potato, is considered a tuber good for building the immune system and controlling high blood pressure. Herbs are used as a key or primary medicinal treatment and are accessible to rural communities and the urban indigent (Kaniki and Mphahlele, 2002: 4).

2.7.1.3 Human resources and indigenous knowledge

In many African communities, kinship determines who should play a decisive role in community development and leadership. Traditionally, communities worked together as a team, guided by the chief or village headman (Kaniki and Mphahlele, 2002: 4). The head of the community marshalled resources within the community to assist those who were not able to look after themselves. The chief or head of the community not only controlled the physical resources, but was also the custodian of the valuable knowledge resources available within the community (Kaniki and Mphahlele, 2002: 4).

2.7.1.4 Indigenous knowledge in the education process

The traditional methods of education were practiced through initiation schools. Here young community members learnt about traditions. They learnt about various beliefs and about having respect for oneself and others, particularly for elders (Kaniki and Mphahlele, 2002: 4). Many forms of IK exist and have been generated, passed on, shared, and practiced effectively for different purposes. As indicated above, IK is as important as other knowledge and can provide unique solutions for dealing with local and even non-local situations (Kaniki and Mphahlele, 2002: 4).

2.8 Marginalization and disappearance of IK

According to Maferetlhane (2012: 30), the lack of systematic documentation of IK makes it difficult to access, the result being that many people do not know about it. This, together with people not having proper access to this knowledge makes it susceptible to being lost. This may result in it becoming extinct when its holders die before they are able to pass it to the next generation.

The main challenge that is faced by IK is marginalization. According to Ocholla (2007: 56), severe marginalization of IK has occurred over the years. Ocholla (2007) states that marginalization refers to exclusion, a state of being left out. Marginalization is caused by the perception that IK is primitive and old -fashioned, and therefore has no value. This perception results in IK being sidelined, and this being so, Western knowledge is used, because it is thought more advanced and better suited to a third-world country (Maferetlhane, 2012: 40).

There are a number of factors contributing to the loss of IK, for example, development processes such as rural/urban migration, and changes to population structures as a result of famine, epidemics, displacement, or war (Mapara, 2009: 20). Nyumba (2009: 20) notes that IK is under threat from modern technology because the powers that push global or simply non-local content such as radio and television broadcasting and advertising among others, are much stronger than those pushing local content.

Mchombu (2002: 41) holds the view that IK is in danger of being destroyed. He 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 indigenous knowledge base and aimed at proving that external information is better than IK;
- The destruction of the homes of indigenous populations by urbanization, farming, and commercial activities such as logging and mining; and
- Propaganda from the "modernization-oriented" mass media and political elite that traditional ways of conducting one's life are never as good as external ways of doing so, therefore should be rejected (Mchombu, 2002: 41).

Mchombu (2002: 41) states that Western knowledge, with its powerful tools, was thought to have all the answers to humanity's problems. Marginalization of IK has occurred over the years and has retarded its development and integration. Mutula (2002: 130) states that the scientific community looked down upon IK and doubted its reliability, tending to dismiss traditional knowledge as subjective, anecdotal, and unscientific. Indigenous knowledge has largely been underutilized, neglected, and suppressed owing to ignorance and arrogance, politics, and the dominant ideology of a particular historical period (Dondolo, 2005: 120). Indigenous knowledge is threatened by socialization, education systems, and the influence of Western technology (Dube and Musi, 2002).

Chisenga (2002: 95) observed 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. Lwoga (2009) in her study, states that few educational policies have recognized the importance of IK issues, while the rest of the educational policies did not mention the importance of IK at all. Indigenous knowledge is not considered as important as other knowledge in formal education, with only few educational institutions having incorporated IK into their curricula (Hogan, 2007).

The researcher found, during her studies, that many of her fellow students were unfamiliar with the topic of IK. Therefore, more efforts are needed to develop and include IK in the school curriculum, to ensure that IK is preserved for future generations. Use of various cultural items, such as traditions, customs, folk stories, and folk drama in schools can be very effective in keeping IK alive for the students. Such devices would allow the students to become familiar with certain aspects of indigenous culture; students may find it interesting to learn more about IK through these cultural forms (UNESCO, 2010).

Kothari (1995:79) avers that IK is at risk of becoming extinct. Indigenous knowledge is threatened by modernization, urbanization and globalization. Traditional channels of oral communication have been disrupted; and people no longer live in a homogeneous community.

The youth of today are born in cities, hardly visiting the rural areas where their parents or grandparents might have lived. In addition, many of the youth in developing countries identify more with what they see on satellite television; and they look, dress, and talk no differently from their counterparts in the US or in Europe (Kothari, 1995: 79). This fact is supported by Maferetlhane (2012: 40), who concurs that the youth do not value IK, because some of the issues that it raises are not scientific. In addition, Ocholla (2007: 57) argues that marginalization has also occurred because families and communities are becoming increasingly disintegrated and globalized.

2.9 Reasons for IK needing to be preserved and managed

Indigenous knowledge which has generally been passed from generation to generation by word of mouth is in danger of being lost unless it is formally documented and preserved (Ngulube, 2002: 62). The loss of IK will impoverish society in that the world needs a diversity of knowledge systems for sustainable development (Ngulube, 2002:62). The influence of modern technology and education has caused younger generations to underestimate the utility of IKS. It is believed that some 80% of the world's population depends on IK to meet their medicinal needs, at least relying on IK and crops for food supplies. This, therefore, increases the need for the management and preservation of IK (Ngulube, 2002).

Indigenous knowledge plays an important role in helping to identify cost-effective and sustainable mechanisms for poverty alleviation that is locally manageable and meaningful. This is achieved through the identification of innovative pathways to sustainable human development that enhance local communities and their environments (Musingafi, 2013: 23). "Indigenous Knowledge can increase and enhance livelihood options, revitalise agriculture, increase food security, improve health and promote a sense of cultural pride within the community" (Musingafi, 2013: 23). Many plants currently growing wild in the ancestral domain, for example, produce natural dye, fibre, detergent, and oil (Musingafi, 2013: 23).

Indigenous communities have lived in harmony with the environment and have utilized resources without impairing nature's capacity to regenerate them, meaning that their way of living was sustainable. Indigenous knowledge shaped their values and attitudes towards the environment, and

it is these attitudes and values which have guided their actions and made them sustainable (UNESCO, 2010).

Therefore, IK can help to develop sensitive and caring values and attitudes. Indigenous knowledge promotes a vision of a sustainable future (UNESCO, 2010). Indigenous knowledge can play a significant role in education on a local area. In most societies, indigenous people have developed enormous volumes of knowledge over the centuries by interacting directly with the environment. These ready-made knowledge systems may easily be used in education if appropriate measures are taken to tap the IK which remains in the memory of local elderly people (UNESCO, 2010).

2.10 Management of IK

The need to document and manage IK has been the subject of many conferences, and a considerable number of articles have been written on the subject. Historically, IK has been downplayed in the management of information (Rapheshu, 2010: 3). However, the growing realization that IK has a role to play in national development as well as the knowledge-management environment has led to the growth of interest in preserving and managing this resource (Rapheshu, 2010: 3). As has been pointed out, IK has gained momentum as a strategic resource for socio-economic development, hence the need for its effective management (Biyela et al., 2016: 1).

According to Dlamini (2009: 29), IK management involves the identification, collection, codification, documentation, organization, preservation, transfer, linking, application, dissemination, and sharing of knowledge on indigenous community livelihoods and ecosystems, for sustainable development. When determining the preservation of IK of a community it is important to involve the communities in the formation and diffusion of their knowledge. Projects to preserve IK should be driven by indigenous communities and should serve as an immediate benefit to the communities (Stevens, 2008: 29). There is a need for indigenous systems to be preserved without alienating indigenous people from their knowledge. However, if IK is kept in databases without being renewed it may become static and redundant (Boikhutso, 2012: 89).

Before outlining and discussing the various tasks involved in the management of IK, the issue of using knowledge management (KM) principles in the management of IK will be briefly addressed. In this regard Mosia and Ngulube (2005) argue that IK may be managed through a knowledge-management approach and Kaniki and Mphahlele (2002: 34) also assert that most knowledge-management principles may be used in the management of IK.

Knowledge management (KM) model

It is important that the transfer of IK is conducted with care, because the tacit foundation might differ from culture to culture: KM relies heavily on the communication of tacit knowledge. Nonaka established the SECI model in 1991. He managed to think out of the box to create vibrant processes for the creation of knowledge, formulating a new product-development process (Ngulube and Lwoga, 2007). The model promotes tacit understanding and social interaction, which are embedded in cultural values of collectivism. It also involves interaction between the tacit and the explicit knowledge, which is known as the knowledge-creation spiral in the SECI model. The process entails four different dimensions of conversion.

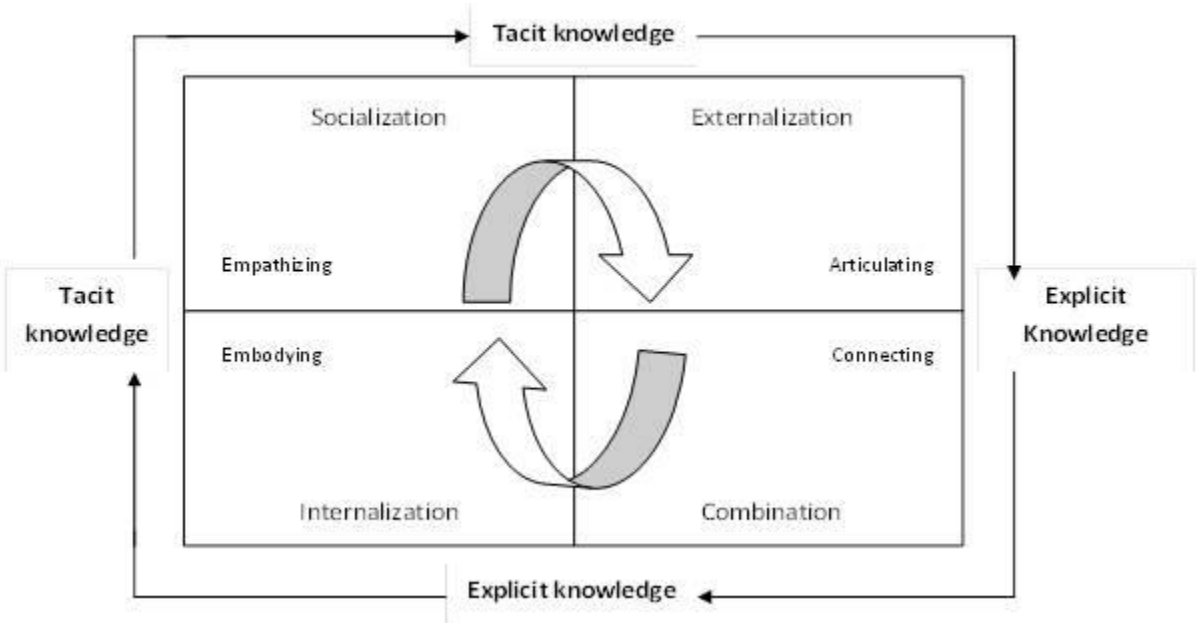

Figure 2.1: The conversion process: interaction between tacit and explicit knowledge (Nonaka and Takeuchi, 1995:62)

The first mode or dimension (see Figure 2.1 above), which is socialization, deals with converting tacit to explicit knowledge. The process takes place when people have shown a desire for sharing experiences and beliefs and for spending time together (Nonaka and Takeuchi, 1995:62). In terms of the museums, staff members need to work together with the IK holder. They should establish a mutual trust through the collaborative work experiences and socialization processes, which will allow for participation and teamwork (Hong, 2010).

The second mode or dimension, called externalization, deals with the conversion of tacit knowledge to explicit concepts (Nonaka and Takeuchi, 1995:62). According to Hong (2010:8), members of an organization and community can benefit from the explanatory power of metaphors and other symbolic devices to articulate their personal thoughts and implicit understanding.

The third process called combination is that in which members combine and process various explicit knowledge (Hong, 2010:8). The author further states that members are required to develop strong motivation for speaking and sharing what they know with others (Hong, 2010: 8).

The final mode or dimension is called internalization. This deals with converting explicit knowledge to tacit knowledge (Nonaka and Takeuchi, 1995: 62). For instance, external knowledge from documents, databases, and artifacts maybe used to create new technology for someone, thereafter being transferred to others. The process of internalization is fundamental to ensuring that explicit knowledge does not become obsolete and irrelevant (Ngulube, 2003a:22).

The SECI exemplar of Nonaka and Takeuchi (1995) encourages the managing of tacit IK by deploying this model. Ngulube (2003b: 22) suggests that knowledge workers could manage the processes of conversion and documentation as well as the communication of IK through exploiting some of the ways that indigenous societies use to preserve knowledge, such as music and dance, artifacts, technology, and storytelling.

The knowledge management of assets is guided by 'Ba'. This is a Japanese word, which means place or platform (Ngulube and Lwoga, 2007: 120). Knowledge management was developed together with the SECI model of knowledge creation. Ba creates energy, quality and place to create and convert tacit knowledge and explicit knowledge along the knowledge spiral. In this KM process, social relationships and structures are important.

There are four conversion processes for developing knowledge that take place in Ba. These processes correspond with the SECI model from Nonaka, Toyama, and Konno in 2000 (Ngulube and Lwoga, 2007: 120): They are:

- Originating Ba: This is a place in which individuals are able to share their experiences, beliefs, attitudes, feelings, and mental models amongst themselves and others. It is particularly described as a center in which you learn and understand new things, especially tacit knowledge which is difficult to share. Most importantly, trust is built (socialization);
- Dialoguing Ba: This is a space in which individual mental models and skills are shared, converted into common terms, and articulated as concepts through images, symbols, and language. It is a place in which tacit knowledge is made explicit (externalization);
- Systematizing Ba: This is a virtual space that facilitates the recombination of existing knowledge. It is also a stage on which a state-of-the art is created that is essential for growth and development; and
- Exercising Ba: a space in which explicit knowledge is converted to tacit knowledge.

According to Ngulube and Lwoga (2007: 120), the knowledge assets determine the inputs and the output of the knowledge-creation process. Nonaka (1995) states that an organization has to map its stock of knowledge assets to manage knowledge creation and exploitation in a more significant manner (Ngulube and Lwoga, 2007: 120). If the knowledge holders do not share their source of knowledge, this will have a negative effect on the development of knowledge, and a negative effect on the social cohesion of the communities (Boikhutso, 2012: 94).

In terms of the present study, it is important for museums to decide upon KM principles that will assist in leading their creation of knowledge. The principles will assist in guiding the implementation of KM processes. It may also help communities to create and institutionalize a knowledge culture based on values and practice.

As outlined above one of the initial tasks in the management of IK is its collection. It is to this and various other, arguably fundamental, management tasks that the discussion now turns.

Collection

In collecting IK, there is a need to develop the right relations with all key players in the IK projects. These include administrators and traditional leaders who need to be both informed and sensitized (Maundu, 1995).The first steps in many IK projects involve identifying the material to be preserved, before capturing it so that it may be systematically documented, shared, and reused by permitted groups or individuals (Hunter, 2005).

The IK holder has to be identified, together with the media to be used for documentation. The IK holder is the key figure in documenting IK. It is therefore important that she or he is not only knowledgeable, but is also seen as a reliable resource. This is to ensure that the IK collected is reliable and authentic. Having more than one IK holder would be an advantage, especially if there are divergent opinions (Mabawonku, 2002: 54). Some IK is best collected at specific times or seasons. An example would be IK from ceremonies, the ideal time to collect knowledge being at the time of the ceremony. Collection of IK should thus coincide with the most appropriate period so that the collection will be successful (Mabawonku, 2002: 54).

Organization

Organization of IK should include bibliographic description and subject classification of the content, just as is done with printed documents in the libraries (Mabawonku, 2002). The purpose of using descriptive bibliographies is to inform the readers of the relevance, accuracy, and quality of the IK held in various national information resource centers.

The tasks of the compiler of a bibliography should be to:

- Find out the materials which exist on a particular subject;
- Describe them item by item; and
- Assemble the resulting entries into useful arrangements for reference (Hendry, 2005).

It has been said that without bibliography, records would be unorganized and inapplicable to human needs (Ngulube, 2002: 98). Inventories and registers of traditional knowledge systems may serve as useful building blocks for compiling bibliographies (Ngulube, 2002: 98).Organization of IK is crucial in terms of its dissemination, as it allows for access and retrieval, without which there can be no dissemination.

Dissemination

Dissemination of IK is imperative in that it is a rich source of reading material in various sectors, including communities, government institutions and the private sector (Mabawonku, 2002: 58). Dissemination should begin by distributing the collected IK to the respective indigenous individuals or groups (IK holders) (Mabawonku, 2002: 58).

Multipurpose community centers are increasingly becoming the main venues for disseminating IK using digital technologies (Adam, 2007). Access to IK databases, audio and video footages may be made to members of communities through telecentres. Community centers that have radios may also serve as hubs for broadcasting and exchange of information among indigenous individuals or groups. Abstracts and indexes that could create awareness of the collected IK should be compiled and made available (Mabawonku, 2002: 58).

All catalogued documents should be fully indexed to provide comprehensive and appropriate access to their content (Warren and McKiernan, 1995: 5).The authors add that abstracts and annotation should be provided for each document to make IK material more easily accessible to all. Publication of bibliographies on IK and rural development would equally assist in creating

access to IK (Adeniyi, 2013: 5). Agrawal (1995: 419) states that newsletters and journals are the perfect formats for the documentation and the dissemination of IK.

The rapidly increasing use of social media and mobile technologies creates opportunities to form local and international partnerships that can facilitate the process of creating, managing preserving, and sharing of knowledge and skills that are unique to communities in Africa (Owiny, Mehta and Maretzki 2014). Social media technologies allow individuals to create and share user-generated content (Keitzmann and Hermkens, 2011).

Social media gives indigenous people the opportunity of presenting their indigenous identities to others, which helps them to define and affirm such identities (Rice, Royce and Thompson, 2016). The authors further infer that social media provides opportunities for young indigenous people to feel a sense of power and control over their own identities and communities. They may take this stance even in some communities where there is no mobile phone service, through using smartphones and mobile devices as multi-media devices before connecting to the Internet when in areas where it is available (Rice, Royce and Thompson, 2016).

In 2016, Internet penetration rates were estimated at 15.6% throughout the African continent continuing to grow (Internet World Stats, 2016). Social media such as YouTube, Facebook, Google Docs and Twitter may be used to create, access, and share information or skills within the social and geographical communities and among wider audiences. Most social media does not require specialized skills or training; however, some social media technologies require reading and writing abilities, so they are accessible only to literate individuals and are, therefore, limited to urban and educated populations (Owiny, Mehta and Maretzki 2014).

YouTube allows users to upload, share, and view videos. YouTube is multimedia-based and therefore may be enjoyed by illiterate as well as literate users. Recorded videos of IK (music, dance and agricultural practice) may be uploaded onto YouTube and viewed by local communities (Owiny, Mehta and Maretzki 2014). Facebook allows individuals to post videos, share interests, make connections, and join groups with similar interests.

Google Docs allows users to create documents, spreadsheets, forms, and presentations within the application itself or to import them through a Web interface. Google Docs is also a collaborative tool for editing among users and non-users in real time, and it may be shared, opened, and edited by multiple users simultaneously. Google allows people in countries across Africa to share knowledge with each other by asking questions and posting answers that may be of local or regional interest (Owiny, Mehta and Maretzki 2014).

Access to an Internet-capable cellphone enables people to employ social-media tools, thus connecting with others who share their interests, experiences, and circumstances. Cellphones can capture knowledge in the place where it is generated. Even the simplest cellphones provide a mechanism to make a call and report on knowledge being created. Cameras enable users to capture an image, which adds a visual dimension to knowledge. Having both audio and video capability enriches the knowledge-sharing experience (Owiny, Mehta and Maretzki 2014).

Libraries and other information centers could also post videos or sound recordings containing IK content to the social media and communication technologies available in particular communities. For example, most rural residents have radios, therefore recorded or live IK content might be featured on a radio program using the language of the area. Several preservation initiatives in Africa use Web 2.0 technologies. The UlwaziProgramme (2016) for example, is an initiative of the eThekwini Municipal Library for preserving the IK and local histories of communities in the greater Durban area, South Africa.

Collaboration involving museums, libraries, NGOs, and development organizations that offer newer technologies such as social media and Internet access, and older technologies such as fax, telephone, and video might be a cost-effective model for documenting, storing, and disseminating IK resources. Such a system would allow libraries and museums to provide digitized IK to communities and wider audiences using NGOs' telecentres at a reduced cost (Kaddu and Nyumba, 2006).

In addition to the preservation and protection of IK, museums, libraries, and other information centers have the responsibility, through their outreach programs, to provide accurate information,

not only about desirable cultural practices, but practices that may have negative consequences for people and environments in which they live. These organizations also have a role to play in continually engaging with and mobilizing communities through participation in cultural events, social functions, exhibitions, craft workshops, fairs, and other activities that contribute to successful documentation and preservation of IK (Owiny, Mehta and Maretzki 2014).

2.11 Challenges in the management of IK

The World Bank (1998) reports that special efforts are required to understand, document, and disseminate IK for preservation, transfer, or adaptation elsewhere. Indigenous knowledge is mostly tacit or embedded in practices and experiences of the people; and it is usually shared through personal communication and demonstration. To this point, recording tacit knowledge, transferring and disseminating it, are therefore challenges on their own. Moreover, documenting IK requires capacity in terms of skills, expertise, and financial resources (Kashweka and Akakandelwa, 2008).

Indigenous knowledge faces the critical challenge of scientific validation reports (Kashweka and Akakendelwa, 2008). Indigenous knowledge practitioners are expected to provide documented evidence in academic journals of the efficacy of their claims. However, much of IK is rooted in oral traditions and is not systematically documented in written form (Mabawonku, 2002). Adam (2007) states that not all aspects of living traditions of IK may be captured as artifacts, using technology.

Dlamini (2009: 33) believes that the main challenges to the management of IK include the methods of identifying and accessing it, the intellectual property rights associated with it and the media and format in which it is preserved. Another challenge concerns the debate about whether or not to use the Western paradigm for preserving IK. Since IK is essential to development, it must be gathered, organized and disseminated, in the same vein as Western knowledge (Agrawal, 1995). Some scholars, such as Ulluwishewa (1999) and Warren (1999) recommend *ex situ* conservation strategies, for example, isolation, documentation, and storage in international, regional, and national archives.

Moahi (2005: 82) argued that for many developing countries documenting IK has not been seen as a priority, and is still not being seen as such, despite the great demand for IK by Western scientists and corporations. Activities of documenting IK are largely carried out by interested researchers with assistance from international funding bodies. However, such projects fail through lack of support as donors withdraw funding (Moahi, 2005: 82). Governments themselves have not taken the lead in advancing the management of IK. Therefore, there is a need to have individuals with the expertise to conduct research on IK. Such individuals should have the ability to work within communities in a non-threatening, and non-demeaning way that would encourage communities and IK gatekeepers to give freely of their knowledge (Moahi, 2005: 83).

2.12 Strategies that may be used for IK management

The success of humankind is going to depend largely on gathering, analyzing, storing, sharing, and harnessing the knowledge of other members of society, as well as drawing upon codified and documented knowledge (Ngulube, 2002: 1).The process of organizing and leveraging knowledge embedded in people's experiences, competencies, talents, ideas, practices, institutions, skills, wisdom, and capabilities, in addition to document and codified sources, has been characterized as knowledge management (Todd, 1999: 11). Therefore there is an urgent need to document IK to avoid the loss of vital information as the elderly custodians of knowledge disappear from the scene.

The researcher agrees that effort should be made to convert IK into electronic formats which may then be stored, to increase the lifespan of such knowledge. Information professionals can play an important role in assisting indigenous communities with the management and preservation of traditional knowledge through providing resources and expertise in collection, organization, storage, and retrieval. The storage of IK is not limited to text documents but could include cassette tapes, films, storytelling, CDs, DVDs, videos and other formats (Ngulube, 2002: 67).

Managing and preserving IK will help to reduce poverty, enhance equity, reduce environmental degradation, and lead to sustainable development, as well as increased local participation in the development process (Warren and McKiernan, 1995: 426). Ngulube (2002) asserts that information professionals should be proactive in their approach to managing society's knowledge

resources. He further says that IK, although based on orality and oral traditions, should be managed and preserved in the same way as other documentary materials that are grounded in Western codified knowledge.

Some strategies of IK management have been put forward as follows:

2.12.1 IK management strategy 1

Many countries have developed intellectual property rights (IPRs) to prevent the abuse of IK. However, some countries focus more on the protection of IK through IPRs rather than on its preservation (Boikhutso, 2012: 60). The first strategy is that, since IK is unique to certain individuals, IPRs should be upheld, so that indigenous communities may 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: 65).

The issue of IK and IPRs is further discussed under 2.13 below.

2.12.2 IK management strategy 2

Another strategy that would help to ensure the management and preservation of IK is the application of marketing principles to IK. The use of IK is largely dependent on, and is accelerated by knowledge of its existence and access to it. Information professionals have a responsibility to create awareness through adopting marketing strategies. People will only utilize IK services and products if they are aware of their existence. Therefore the application of marketing principles to IK would facilitate the utilization of the society's cultural heritage, and facilitate the production of user-oriented, rather than producer-oriented services (Ngulube, 2002: 66).

2.12.3 IK management strategy 3

Library and information professionals should play a leading role in the compilation of annotated bibliographies that are descriptive and evaluative, in order to inform readers of the relevance, accuracy, and quality of the IK held in various national information resource centers (Ngulube, 2002: 66). It has been said that, without bibliography, the records of civilization would be an uncharted chaos of miscellaneous contributions to knowledge, unorganized, and inapplicable to human needs. Inventories and registers of traditional knowledge systems can serve as useful building blocks for compiling bibliographies (Ngulube, 2002: 66).

2.12.4 IK management strategy 4

IK is not limited to text documents or digital formats; it may include cassette tapes, films, storytelling, and other formats. Therefore, information professionals should ensure the longevity of the documented IK by devising preservation and storage strategies for the various modes. A discouraging factor in the management and preservation of IK is that its collectors are usually more concerned about its immediate utility. This 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 (Ngulube, 2002: 67).

2.12.5 IK management strategy 5

Information professionals should be proactive in their approach to managing society's knowledge resources. They need to ensure that IK, although based on orality and oral traditions, is managed and preserved in the same way as other documentary materials that are grounded in Western codified schemes (Ngulube, 2002: 67).

2.12.6 IK management strategy 6

The use of the community language should be central to the management and preservation of IK (Dlamini, 2009: 38). Abbot (2002: 227) 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. Abbot (2002: 227) says that language as culture is the collective memory bank of a people's experience in history. Suggestions in terms of languages are that:

- The local language should be used as the working language in all management of IK processes. Interpretation may then be conducted to disseminate it to those who do not know the language. This means that records should also be kept in the community's own language;
- Orthography for the recording of IK must be made available;
- Reading matter which is culturally familiar and suitable, such as folk-tales and practical advice on food storage and hygiene should be produced (Dlamini, 2009: 38); and
- IK managers should operate in the community language (Abbot, 2002: 227).

2.12.7 IK management strategy 7

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: 10), suggests that in order to recognize the usefulness of anything in society and thus warranting the allocation of resources to it, one first needs to raise awareness about the issue. This means IK managers have a duty to raise awareness about the usefulness and importance of IK. This can then 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 (Dlamini, 2009).

2.12.8 IK management strategy 8

Knowledge managers dealing with IK have to identify and use effective motivators and motivating techniques to facilitate knowledge sharing. Kaniki and Mphahlele (2002:9) suggest that holders and generators of all types of information including IK must be assured that they will be appropriately compensated, rewarded or recognized for their knowledge. Kaniki and Mphahlele (2002: 9) state that information and knowledge in themselves are not useful unless they are applied to specific situations. They continue to say that access to knowledge must be applied. The IK managers may have access to IK holders, but if the person with the IK does not share it, the knowledge is, in effect, irrelevant (Kaniki and Mphahlele, 2009: 9).

2.12.9 IK management strategy 9

Indigenous knowledge may only be managed and preserved by being continually attended to. 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: 3) suggest that continuous management of knowledge is necessary because new problems and situations arise which require new solutions. This means that there is no stage when knowledge is fully managed.

2.12.10 IK management strategy 10

Although tacit IK is largely experiential and contextual, it may be managed. Ngulube (2003b: 21) asserts that, although all knowledge is tacit, it may be articulated both tacitly and explicitly through artifacts produced by the indigenous people (traditional technologies), music, story-telling, and the use of the SECI knowledge-management mode. Traditional knowledge encompasses the beliefs, knowledge, practices, innovations, arts, spirituality, and other forms of cultural experiences and expression that belong to indigenous communities worldwide, therefore intellectual property rights are seen as a tool for protecting IK. It is to this issue that the discussion now turns.

2.13 Indigenous knowledge and Intellectual Property Rights (IPRs)

Indigenous knowledge is communally owned and transferred from one generation to the other. It is difficult to protect it by using the tools of IPRs as required by the Trade Related Aspects of Intellectual Property Rights (HSRC, 2011). Indigenous knowledge has been exploited for decades. Indigenous people around the world have stated that their arts, craft, sciences, literature, medicines, music and heritage are the subject of research and eventual commercial exploitation by others, while they are not given financial benefit, respect, and official recognition (Berckmoes, 2008).

Ngetich (2005: 7) asserts that as IK becomes more significant, fears have grown that populations who have been responsible for developing and preserving the knowledge will lose it to unscrupulous "outside operators". The rights of IK holders to their knowledge, to the use of their knowledge and to the products arising from such use must also be recognized (Dlamini, 2009: 39). 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. 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: 15-16).

There is an emerging debate on how to protect the intellectual property rights of IK practices. The United Nations Draft Declaration on the Rights of Indigenous People underscores the fact that indigenous people have the right to own and control the cultural and intellectual property pertaining to their sciences, technologies, seeds, medicines, knowledge of flora and fauna, oral traditions, designs, art, and performances (UN, n.d.: 6).

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" (UN, 2001: 2). Although most IK is held in the minds and practices of people, and is commonly held by communities rather than individuals, IPRs that are intended to protect the ownership of the intellectual content of the works of an individual, may be applied (Ngulube, 2002: 65).

Intellectual Property Rights should be upheld so that indigenous communities may benefit from the commercial use of their traditional knowledge. Once the information professionals have organized the indigenous information, they can invoke their knowledge of and skills in enforcing copyright matters to protect the IPRs of indigenous people (Ngulube, 2002: 65).

According to Dlamini (2009: 40), 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 generic resources. As a result, there was an increase in the commercial use of the knowledge and biological resources of indigenous peoples (Dlamini, 2009: 40).

Correa (2001: 150) states that copyright vests the right of authorship in the creator of a work and enables him to prevent the misuse of his work. For instance, the United Nations Educational Scientific and Cultural Organization (UNESCO) and the World Intellectual Property Organization (WIPO), may be used to protect the artistic work of the local communities. UNESCO, in coordination with WIPO, has long been involved in the protection of traditional knowledge, in particular, the component relating to folklore. The UNESCO/ WIPO Model Provisions for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and other Prejudicial Actions has certain provisions pertaining to the protection of what it refers to as traditional knowledge. These are listed below:

- The rights of traditional knowledge holders to the effective protection of their knowledge against misuse and misappropriation should be recognized;
- National authorities should make available appropriate enforcement procedures that permit effective action against misappropriation of traditional knowledge and violation of the principle of prior informed consent;
- Protection should respect the diversity of traditional knowledge held by different peoples and communities in the various sectors, and should acknowledge differences in national circumstances, together with the legal context and heritage of national jurisdictions;
- Protection may combine proprietary and non-proprietary measures, and use existing IP rights (including measures to improve the application and practical

accessibility of such rights), *sui generis* extensions, or adaptations of IP rights, and specific *sui generis* laws;

- Holders of traditional knowledge should be entitled to fair and equitable sharing of benefits arising from the use of their traditional knowledge. Where traditional knowledge is associated with genetic resources, the distribution of benefits should be consistent with the measures, established in accordance with the Convention on Biological Diversity, providing for sharing of benefits arising from the utilization of the genetic resources;
- Traditional knowledge protection should be consistent with, and supportive of, existing IP systems, and should enhance the applicability of relevant intellectual property systems to traditional knowledge subject matter in the interests of holders of traditional knowledge, and consistently with the broader public interest;
- Traditional knowledge should be protected in a way that is consistent with the objectives of other relevant international and regional instruments and processes, and without prejudice to specific rights and obligations already established under binding legal instruments;
- Customary use, practices and norms should be respected and given due account in the protection of traditional knowledge, as far as possible, and as appropriate and subject to national law and policy; and
- Those using traditional knowledge beyond traditional context should make every reasonable endeavor to identify the source and origin of the knowledge, to acknowledge its holders as the source of the traditional knowledge, and to use and refer to the knowledge in a manner that respects and acknowledges the cultural values of its holders (World Intellectual Property Organization, 2011)

2.14 International initiatives to protect IK

The importance of protecting and preserving IK has been recognized in several international initiatives. Apart from the IPR instruments, there are a number of international conventions

and treaties which deal with the protection of IK, such as plant genetic resources and knowledge. However, the treatment of IK within these international initiatives is still inadequate (Correa, 2001: 150).

2.14.1 The Convention on Biological Diversity

The Convention on Biological Diversity (CBD) was formally opened for signature at the 1992 Earth Summit. The CBD was seen as the first decisive step taken by the global community to ensure conservation and sustainable use of the world's biological resources, in particular, the resource-rich countries, the majority of which are developing countries.
For instance, while the 1992 CBD which was negotiated under the auspices of the United Nations Environment Program (UNEP) also recognizes the value of IK on biological diversity (UNEP, 1992) it inadequately protects agricultural IK. The UNEP does this by asserting the national sovereignty and control over genetic resources without recognizing the rights of indigenous communities to such resources. The CBD also addresses IK separately from genetic resources and traditional territories (Swiderska and Argumedo, 2006: 2).

2.14.2 The Food and Agriculture Organization of the United Nations (FAO)

Another international initiative includes the Food and Agriculture Organization (FAO) Treaty on Plant Genetic Resources (ITPGR) for Food and Agriculture, which was enforced in 2004. The treaty aims at ensuring food security through conservation, exchange, and sustainable use of the world's plants and genetic resources, as well as fair use and equitable benefit-sharing in harmony with the CBD (FAO, 2004).The ITPGR prohibits intellectual property rights over material obtained through the multilateral exchange, although it does not necessarily prohibit intellectual property protection over derivatives thereof (Collier, 2006).

2.14.3 The United Nations Declaration on the Rights of Indigenous People (UNDRIP)

The UNDRIP declares that indigenous peoples have the right to the full enjoyment, as a collective or as individuals, of all human rights and fundamental freedoms as recognized

in the Charter of the United Nations. The Declaration goes on to guarantee the rights of indigenous peoples to enjoy and practice their cultures, customs, religions, languages, and to develop their social and political institutions. Indigenous peoples have the right to be free from discrimination, and the right to a nationality. It does not elaborate on comprehensive provisions to protect IK (Swiderska and Argumedo, 2006: 9).

2.14.4 The World Trade Organization (WTO)

Other frameworks such as the World Trade Organization's (WTO) Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) make no explicit mention of the protection of IK and also make no mention of the CBD (Daya and Vink, 2006: 325).

2.14.5 The International Labor Organization (ILO)

The International Labor Organization (ILO) was the first UN organization to address issues of traditional knowledge. A committee of experts established in 1926 examined and developed international standards for the protection of indigenous workers. This Committee generated the basis for the adoption, in 1957, of the Convention Concerning the Protection and Integration of Indigenous and other Tribal and Semi-Tribal Populations in Independent Countries. This convention is commonly referred to as Convention 107. It aimed essentially to integrate indigenous people into the modern production system. Convention 107 was revised in June 1989 as Convention 169 Concerning Indigenous and Tribal Peoples in Independent Countries. The revised Convention outlines the approach of promoting the assimilation of indigenous and tribal peoples. It promotes the protection of indigenous peoples as distinct and separate people. It is important to stress that ILO Convention 169 is the only United Nations Convention that specifically deals with indigenous people. Although the Convention does not specify IPRs, its language is conducive to the promotion of these rights (Kihwelo, 2009: 105).

2.14.6 The Rio Principles on Indigenous Knowledge

One of the Principles of the Rio Declaration on Environment and Development (1992) which emerged from the United Nations Conference on Environment and Development (UNCED),

popularly known as the "Earth Summit" in Rio de Janeiro in 1992, was that local institutions through which indigenous and local communities socialize and conduct their economic activities, should be strengthened. Although it did not explicitly address the question of intellectual property protection of traditional knowledge, it created a political framework for addressing these issues within the environmental circles.

The Earth Summit addresses issues of IPRs in traditional knowledge and innovation. The Earth Summit contains a chapter on indigenous people's concerns, and makes a wide range of recommendations on ways in which these people's rights should be protected. Chapter 26 of Agenda 21 begins by noting that indigenous peoples and their communities, which represent a significant percentage of the global population, have developed a holistic relationship with the natural environment. Over many generations, they have developed a holistic, traditional, scientific knowledge of their lands, natural resources, and environment. It is also recommended that governments adopt policies or instruments that will protect intellectual and cultural property of indigenous peoples (Kihwelo, 2009: 99).

2. 15 Regional initiatives

Despite the above international initiatives, there have been a number of efforts taking place at various regional levels relating to traditional knowledge protection. Among these have been efforts by the Organization of African Unity (OAU), and the African Regional Intellectual Property Organization (ARIPO) Legal Instrument on the Protection of Traditional Knowledge and Expression of Folklore. These are briefly outlined below.

2.15.1 Organization of African Unity (OAU)

The Organization of African Unity (OAU), now known as the African Union (AU) also developed a model for IK law in 1998 which recognized the community's rights over their knowledge

(OAU, 2000). The OAU aimed at conserving, sustaining the use of, and sharing the benefits accruing from biological resources and community knowledge and technologies in order to sustain all life-support systems (Egziabher, 1991).

2.15.2 ARIPO Legal Instrument on the Protection of Traditional Knowledge and Expressions of Folklore

The African Regional Intellectual Property Organization (ARIPO) is another regional initiative for the protection of traditional knowledge within the ARIPO member states. The ARIPO Legal Instrument was adopted at the Thirtieth Session of the Administrative Council of ARIPO which took place in Maputo, Mozambique, from November 20 to 24, 2006. This came as a result of member states recognizing the intrinsic value of traditional knowledge, including medicinal knowledge. The member states thought that there needed to be a legal instrument for the protection of traditional knowledge which must be tailored to the specific characteristics of traditional knowledge, including the community context, the intergenerational nature of their development, preservation of their link to community's cultural and social identity, integrity, beliefs, spirituality, and values, and their constantly evolving character within the community concerned (ARIPO, 2006).

The purpose of the ARIPO Instrument is to protect traditional knowledge holders against any infringement of their rights as recognized by the Instrument. The Instrument provides that for the traditional knowledge to be protected it shall not require any formality (ARIPO, 2006).

The literature review ends with a brief critique of organizations' management of IK.

2.16 Critique of organizations' management of IK/handling IK

Although the World Bank, UNESCO, the WHO, and other multilateral organizations have created databases, websites, and documents to raise awareness and mainstream or integrate IK, their initiatives are still critiqued by many scholars. These scholars, such as Agrawal (2002),

Wangoola (2000), Briggs and Sharp (2004) and Bricker and Sillitoe (2004) mainly argue that international development organizations are not appropriately institutionalizing IK and acknowledging its dynamic characteristics. Some of the main critiques include:

- Institutionalizing IK simply to create global commodities;
- Inappropriately up-scaling IK for international development; and
- Representation of IK in international development

Institutionalizing IK simply to create global commodities

Agrawal (2002: 292) attacks mainly databases, in which most forms of IK are stored at an international level. He argues that knowledge is organized into databases and institutionalized solely based on the biases of the development practitioner or database manager. He believes that these practitioners or database managers simply use their positions of power to authorize and validate which IK should be institutionalized (Agrawal, 2002: 292).

Wangoola (2000) state that the institutionalization of IK meets only the goals and objectives of the multilateral institution without acknowledging IK dynamic nature and rootedness to the community in which this knowledge is practiced. Therefore she believes that these international institutions are not appropriate places for the storage of IK.

Inappropriately up-scaling IK for international development

Bricker and Sillitoe (2004) state that IK is not effective at an international and believe that development results (using IK) are seen mainly in small-scale NGO's or work conducted at a grassroots level. They further state that successful small-scale effort should not be used to inform or develop international development practices or polices because IK becomes contextualized and ineffective when separated from its environment. In addition, they note that it can take several years to understand how IK can inform development projects in one local area.

Representation of IK in international development

Bricker and Sillitoe (2004) state that IK is often presented as inferior and backward in comparison to conventional knowledge. They further note that because of this impression advocates of IK may appear as incompetent and lacking scientific knowledge (that is based on conventional knowledge paradigm). Indigenous Knowledge needs to break away from this stereotype and better establish themselves in conventional scientific field at the international level (Bricker and Sillitoe, 2004).

The IK-gathering practices take no more nor less effort than any other scientific pursuit. By creating databases of IK, IK submits to the power and superiority of science; science focusing on knowledge and epistemological status rather than on interests (Agrawal, 2002).

2.17 Summary

This chapter began with the provisions of the IFLA Statement on Indigenous Traditional Knowledge which provided the conceptual framework for the study. This was followed by a discussion of Post-Colonial Theory, the theory underpinning the study. Following this was the literature review comprising a discussion of various aspects relating to IK, including its characteristics, sources, management, and destruction. The chapter ended with a discussion of IK and Intellectual Property Rights (IPRs), an outline of international and regional initiatives to protect IK, and, finally, a critique of organizations' IK management.

The research methodology adopted for the study is described in the next chapter

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology consists of the "methods, techniques and procedures that are employed in the process of implementing the research design or research plan, as well as the principles and assumptions that underlie their use" (Babbie and Mouton, 2007: 647). Research methodology focuses on the research process and the kind of tools and procedures to be used, the point of departure and specific tasks (data collection or sampling) at hand (Babbie and Mouton 2007: 75). According to Terre Blanche, Durrheim and Painter (2006: 6), the methodology specifies the ways in which researchers may go about practically studying whatever they believe can be known. Sarantakos (1998:34) mentions that research methodology is the "science of methods and principles employed to guide the choice, structure, process and the use of methods, as directed by the underlying paradigm".

This chapter describes and discusses the research methodology used in the study. In doing so, the broad research approach adopted will be discussed. This will be followed by the research design adopted, namely the survey. The population and sampling approach will be described, as well the data-collection methods or techniques employed, namely, the semi-structured interview and observation. Reliability and validity of the research is then discussed, followed by a description of the data-analysis procedures. Finally, ethical considerations relating to the study are raised.

3.2 Research paradigm

The term "paradigm", according to Bailey (1982), is an old one in social science research. Bogdan and Biklen (1998: 22) state that the term paradigm may be defined as a "loose collection of logically related assumptions, concepts and propositions that orient thinking and research".

Hughes (2001: 31) describes the paradigm as a way of "seeing the world that frames a research topic and influences the way that we think about the topic". Similarly, Fraser and Robinson (2004: 59) defined a paradigm as a "set of beliefs about the way in which particular problems exist and a set of agreements on how such problems can be investigated."

From this, it is clear that choice of paradigm is important in influencing the chosen methodology. There are various types of paradigm. Kumar (2011) suggested that there are two main paradigms

that form the basis of research in social science namely, positivism and interpretivism. Each is discussed below.

3.2.1 Positivist paradigm

The positivist paradigm is one that has its roots in the physical sciences. It uses a scientific approach to research (Mukherji and Albon, 2010). Positivism holds the view that human beings behave in the same manner as matter, in that they react to external stimuli mechanically and that their behavior may be explained in terms of their reaction (Erickson, 1986). According to Henning, Van Rensburg and Smith (2004: 17), "positivism is concerned with uncovering truth and presenting it by empirical means". Haralambos (1985) states that in "positivism only directly observable and measurable behaviors are considered as worthwhile of study and unobservable phenomena such as meanings and intentions are not important".

Positivism tends to use quantitative methodology that aims to produce information, or data in numerical form, that may be analyzed by using statistics (Hughes, 2001: 32). As will be outlined below, while this study was based on the interpretivist paradigm, it was also necessary at times for the researcher to present the findings in a quantitative format.

3.2.2 Interpretivist paradigm

The interpretivists take the view that the model of human beings carries with it the notion of choice, free will, and individualism. Human beings are seen as active agents capable of monitoring their own behavior; and they are able to use their speech to comment on their performances and plan ahead (Cohen, Manion and Morrison 2011). The authors go on to say that

"with interpretivism human beings are purposive, active and involved with life experiences" (Cohen, Manion and Morrison 2011).

According to Haralambos (1985), "Interpretivists contend that human beings are not like matter". He further states that "Human beings have consciousness which enables them to think and feel, and give them a sense of awareness" and that "human beings are seen to be actively constructing their own world" (Haralambos, 1985). Gephart (1999) is of the view that subjective meaning is at the heart of interpretivism. Interpretivists approach research differently from positivists. The interpretivist approach commonly uses methods such as ethnography, grounded theory, participant observation, documentary methods, fieldwork, and the use of an unstructured interview for data collection (Denzin and Lincoln, 2005: 12).

The qualitative approach is used in interpretivism as it is concerned with the way in which ordinary people observe and describe their lives (Leedy and Ormrod, 2010). Questions such as "Why?"and "How?" in the interpretive approach give the researcher greater scope for addressing the questions (Deetz, 1996).

The research paradigm adopted for this study was interpretivism. The reason for this was that the researcher required the perspectives of the participants regarding the management of IK in their institutions; therefore the qualitative approach (see below) with which interpretivism is associated was considered appropriate. A second reason was that the approach allowed for observation of the participants in their natural setting, that is, their places of work.

3.3 Research approach

Research methodology involves three broad, fundamental categories, namely, quantitative research, qualitative and mixed method research (Leedy and Ormrod 2014:76). These are discussed below.

3.3.1 Qualitative approach

The purpose of the qualitative approach is "to understand social life and the meaning that people attached to everyday life" (Poggenpoel, Myburg and Van der Linde, 2001: 409). According to Leedy and Ormrod (2014), "Qualitative research is a more creative and emotional approach than quantitative research, owing to its concern with social aspects of human beings such as interpersonal relationships, values, meanings, beliefs, thoughts and feelings". The qualitative approach is defined as "a multi-perspective approach to social interaction, aimed at describing, making sense of, interpreting or reconstructing this interaction in terms of the meanings that the subjects attach to it" (De Vos, 1998: 240).

Nel (2015: 75) states that qualitative data are not expressed in numbers, but include other forms of information, such as words, music, pictures, inter alia. Qualitative research aims to explore and to discover issues about the problem, on the premise that very little is known about the particular problem (Domegan and Fleming, 2007).

The aim of this study was to investigate the management of IK by museums in Pietermaritzburg. Given that little is known of such management in these institutions, the qualitative approach adopted allowed for the initial exploration of the issues involved from perspectives of both the participants (through interviews) and the researcher herself.

3.3.2 Quantitative approach

The quantitative approach is a structured research method, which involves fairly structured data -collection procedures, as well as the quantification and measurement of concepts (Connaway and Powell, 2010: 3). According to Nel (2015:75), with the quantitative approach "collected data are usually quantified in numbers and analyzed and communicated as aggregated data and

statistical representations". Leedy and Ormrod (2014) state that "the purpose of the quantitative approach is to explain, predict and control human behavior or to validate or test a hypothesis." Experimental studies, quasi-experimental studies and statistical-analytical studies are examples of quantitative approaches (Leedy and Ormrod, 2014).

3.3.3 Mixed methods research

Gorman and Clayton (2005:12-13) refer to a mixed methods approach as a study where multiple methodologies are used and suggest that both "qualitative (perhaps both observation and interviews) and quantitative (perhaps descriptive statistics related to specific activities and work performances)" are used in combination to address the same research question. Several other authors, including Creswell (2014), Leedy and Ormrod (2014), also suggest the use of a mixed methods approach to address more complicated research questions, or where different aspects of a case are under investigation.

Table 3 below summarizes the differences between the two approaches.

Table 3: Differences between qualitative and quantitative approaches

Qualitative approach	**Quantitative approach**
Focus heavily on validity	Focus heavily on reliability

Purpose is to describe and understand phenomena from the perspective of the participants	Purpose is to explain, predict or control phenomena
Allows the researcher to study selected issues in depth, in detail and with openness	Embodied in standardized quantitative measures to make broad and general comparisons
Collects data in the form of written and spoken language and observation	Collects data in the form of numbers
Analyses data by identifying and categorizing themes	Uses statistical types of data analysis

(Leedy and Ormrod, 2014; Connaway and Powell, 2010; Poggenpoel et al., 2001; Nel, 2015).

One of the essential differences between the quantitative and qualitative approach is that quantitative research does not allow the researcher to study issues such as human behavior in depth and in much detail. The, qualitative approach, on the other hand, allows the researcher to study selected issues in depth and with openness (Terre Blanche and Durrheim, 1999: 43).

3.4 Research design

De Vos (1998: 99) states that the research design "provides a clear statement of the research methodology and the rationale behind it." This includes the methodology, data collection, data analysis and sampling used in a particular study. Leedy and Ormrod (2014: 76) define research design as a "general strategy for solving a research problem" and explain that the distinct purpose of the research design is to "ensure that the initial problem is unambiguously addressed and comprehensively answered." According to Nel (2015:74), "research design shapes and guides decisions on all aspects of the research study."

This study adopted the survey design to gather information on the management of IK by the museums. The aim of a survey is to "obtain information by interviewing participants who are either representative of the study population or the entire study population which can then be analyzed and patterns extracted and comparisons made" (Bell, 2003: 13). According

to Check and Schutt (2012: 160) survey data may be collected from many people at relatively low cost.

3.5 Population of the study

According to Bless and Higson-Smith (2000: 84), the population refers to a total of all individuals who have certain characteristics and are of interest to a researcher. Babbie (2002) refers to the study population "as the specified aggregation of elements in the study". In this study, the population was the staff of the Voortrekker Museum, the KwaZulu-Natal Museum, the Tatham Art Gallery and the KwaZulu-Natal Museum Services. The basis for selection was that all these museums were involved in the management of IK to a greater or lesser degree.

Ten staff members from the four institutions were identified using purposive sampling (see 3.5.1 below). They are described as follows: Curator (1 KwaZulu-Natal Museum), Researchers (1 KwaZulu-Natal Museum and 2 Msunduzi Museum), Collection Officers (1 Msunduzi Museum and 1 Tatham Art Gallery), Museum Practitioners (1 KwaZulu-Natal Museum Services), Assistant Directors (1KwaZulu-Natal Museum and 1KwaZulu-Natal Museum Services) Librarians (1 KwaZulu-Natal Museum).

3.5.1 Sampling

Sampling refers to the process of drawing a part, group, or subset of a population, to use as representative of the population in the study (Struwig and Stead, 2008). There are two types of sampling approaches: probability and non-probability sampling. Probability sampling means that every individual in a population stands an equal chance of being selected. Because probability sampling involves random selection, it assures that different subsets of the population

have an equal chance of being represented in the sample (Nicholas, 2008).This makes probability samples more representative, and researchers are better able to generalize their results to the group as a whole (Nicholas, 2008).

Non-probability sampling on the other hand, involves selecting participants using methods that do not give every individual in a population an equal chance of being chosen (Goodwin, 2010). One problem with this type of sample is that volunteers might be different on certain variables than non-volunteers, which might make it difficult to generalize the results to the entire population (Nicholas, 2008). For this study the approach used was purposive sampling. It involves seeking out individuals that meet certain criteria and the respondents are selected based on their knowledge about the study (Goodwin, 2010). It is least costly to the researcher in terms of time and money (Goodwin, 2010).

Thus in terms of the present study the criterion used to select staff members was that their daily work involved some aspect of the management of IK. These staff members were identified through discussions held with various members of staff of the museums. As pointed out in 3.5 above, 10 staff members from the four institutions meeting the criterion were identified and they formed the sample for the study.

3.6 Data collection

The most common methods employed when collecting data include observation, individual interviews, focus-group interviews, and analysis of documents and questionnaires (Leedy and Ormrod, 2014). As outlined above, this study used a qualitative approach from the interpretivist point of view in order to investigate the collection and preservation of IK by the museums in Pietermaritzburg. Data was collected in the study through the use of interviews and observation. As Myers (2009) points out, such methods are commonly used in qualitative research. Each data-collection method used in the study is described and discussed below.

3.6.1 Interviews

According to McNamara (1999), an "interview is the verbal conversation between two people with the object of collecting relevant information for the purpose of research." Interviews are particularly useful for gaining the background to a participant's experiences. The interviewer can pursue in-depth information around the topic. This may be useful as a follow-up with certain respondents once questionnaires have been completed (McNamara, 1999).

Cohen, Manion and Morrison (2000) state that "interviews used for research purposes can be sub-divided into many categories". At the one extreme is the unstructured interview, in which questions are not predetermined. This, of course, allows for greater flexibility and freedom on the part of the interviewer (Cohen, Manion and Morrison, 2002). At the other extreme is the structured interview. In such an interview the interviewer uses a set of predetermined questions which are short and clearly worded (Cohen, Manion and Morrison, 2002). The advantages of the structured interview include that it allows the interview to remain focused; and that all interviewees are asked exactly the same questions (Cohen, Manion and Morrison, 2002). This type of interviewing is easy to conduct, and may easily be standardized, the same questions being asked to all participants (Guba and Lincoln, 2005). For these reasons, a structured interview was used in the present study (see Appendix 3 for the interview schedule).All the interviews were conducted at the respondents' places of work. Each interview was tape -recorded after permission to do so was obtained from the interviewee.

3.6.2 Observation

Observation refers to a way of gathering data by watching behavior, or events, or by noting physical characteristics in their natural setting (Evaluation Briefs, 2008). Observation may be covert (no one knows they are being observed) or overt (everyone knows they are being observed) (Evaluation Briefs, 2008).

The benefit of covert observation is that people are more likely to behave naturally if they do not know they are being observed (Evaluation Briefs, 2008). For this study it was important to conduct overt observation because of the ethical problems associated with covert observation (Evaluation Brief, 2008). The researcher of this study was able to observe the process of managing IK as conducted in each of the four institutions. A checklist was used in order to collect the observation data (see Appendix 4 for the observation checklist).

3.7 Data analysis

According to Ellsberg and Heise (2005: 203), "qualitative data analysis encompasses organizing data according to specific criteria, reducing it to a more manageable form, and displaying it in a form to aid analysis, and interpreting it." In qualitative data analysis the researcher organizes the data, reads through it, codes the data, generates themes and sub-themes from the codes, eventually presenting and interpreting the data (Creswell, 2014: 196). This was the procedure adopted in the present study. However, before any of the above steps were conducted, the recorded interviews were transcribed, and the transcripts used to provide for the above procedures.

According to Weitzman (2000), "in qualitative data analysis the researcher is the main tool for analyzing the data". Weitzman (2000) expresses that, where necessary, computer software may provide tools to assist. In the present study, Microsoft Excel was used to assist in creating tables which were, at times, used to present the data. The collected data was thoroughly read at first to obtain an overall comprehensive impression of the content and context before the abstraction process of coding began where units of meaning are identified or labeled. The repeated readings of data were useful to the researcher in "identifying emerging themes, possible relationships among themes and unusual or contradictory responses" (Ellsberg and Heise, 2005: 204).

Codes are names or labels assigned to specific unit segments of related meaning identified within the field notes and transcripts (Neuman, 2011: 510). Content analysis was used to analyze the open questions in this study. Maree (2007) states that content analysis is the "process of

looking at data from different angles with a view to identifying keys in the text that will help understand and interpret the raw data." Content analysis is used to analyze answers to open questions in surveys, interviews or focus groups (Maree, 2007). In terms of this analysis, categories were created and later coded for computer input.

3.8 Reliability and validity

Reliability and validity are important requirements and concerns for any research project (Connaway and Powell, 2010: 43). In order for a research project to meet its initial aim and to provide credible answers to the research questions and sub-questions, it is imperative to ensure that the measuring instruments are consistent (reliability) and that they measure or examine what they claim to measure (validity). Reliability and validity therefore have implications for both the design and the measurement of research (Struwig and Stead 2007: 98).

Reliability refers to the accuracy, precision, consistency, and reproducibility of a measuring instrument (De Vos 1998: 85; Pickard 2012: 22). Reliability therefore implies that when other researchers repeat the research under the same conditions, they should be able to make the same findings. This is referred to as the quality of consistency involved in a research project over a period of time.

There are a number of ways to ensure more reliable results. Struwig and Stead (2007: 131) suggest the following: pretest reliability, parallel forms reliability, split-half reliability, and internal consistency reliability. Drost (2011: 139) comments that a test may be made more reliable by "writing items clearly, making test instructions easily understood, and training the raters effectively by making the rules for scoring as explicit as possible." In the present study, an effort was made to ensure that questions asked were clear and understood.

Validity refers to the soundness or effectiveness of the measuring instrument, thus the level at which it meets the initial construction purpose, "doing what it is intended to do" (De Vos 1998: 85). One of the most common ways to ensure validity is to conduct a pretest of

the instrument. Prior to the pretest, the researcher's two supervisors were asked to examine the interview schedule and provide feedback on possible improvements to the format and questions.

One person from each of the four museums was asked to sit the pretest. These candidates were chosen because they were all professionals who work at museums. Two researchers and two collection officers were chosen because they were identified with the population under study. While interviews per se were not conducted with the pretest participants, each participant was asked to carefully peruse the questions asked and to indicate any area in which clarity was required. Prior to doing this, the purpose of, and background to, the study was explained. Few problems were encountered. Those that were, concerned the precise meaning of terms such as "digital "and "analogue". The feedback received from the pretest helped the researcher to adjust the interview schedule. In so doing, the reliability and validity of the instrument and the study as a whole were improved.

3.9 Ethical considerations

The University of KwaZulu-Natal provides strict ethical guidelines for the conducting of research. Such guidelines were adhered to in conducting the study. This included obtaining permission to conduct the research from the institutions involved; and obtaining the informed consent from the various participants who were approached to take part in the study (see Appendix 2 for the informed consent form). The consent form underscored the importance of participation in the study being voluntary. Respondents were free to withdraw from the study at any time. Confidentiality was also emphasized ─ no names would be used in the study.

3.10 Summary

In this chapter the research methodology and methods used to gather the data were described and discussed. The interpretivist approach was adopted for the study. Issues elaborated on included the research design, study population, data-collection methods, the analysis of data, and validity and reliability. Finally, ethical considerations were briefly outlined. The research findings are presented in the following chapter.

CHAPTER FOUR: PRESENTATION OF RESULTS

4.1 INTRODUCTION

The aim of this chapter is to report the outcome of the data analysis which transformed the raw data obtained from the study. The study was conducted to determine how IK was being managed by the four museums in Pietermaritzburg, these being the Voortrekker Museum,

the KwaZulu-Natal Museum, the KwaZulu-Natal Provincial Museum Services, and the Tatham Art Gallery. The data presented in this chapter was obtained from observation and semi-structured interviews with the staff dealing with the management of IK in their institutions. There were 10 staff members involved in management of IK in the four institutions; all were interviewed, giving a 100% response rate.

The fact that all staff participated may be attributed to the personal approach adopted plus the recognition by the participants of the importance of the topic. All interviews took place in respondents' offices and were conducted by the researcher herself. The results of the interviews are presented below.

4.2 SECTION A: PERSONAL INFORMATION

The first section presents personal information for all staff dealing with the management of IK in the four institutions.

4.2.1 Gender

The findings of the study show that, in terms of gender, there was an equal split between males and females, each comprising 50%.

4.2.2 Age of respondents

Table 4 below reflects the age of the respondents. As may be seen, the age group with the highest number of respondents was in the 31 to 40-year category, with four respondents. Also, as reflected in the table, there was no respondent over the age of 50.

Table 4: Age of respondents N=10

Age	Frequency	Percentage
20-30	3	30%
31-40	4	40%
41-50	3	30%
51 and above	0	0%
Total	10	100%

4.2.3 Highest Qualification

As may be seen in Table 5 below, all the staff had tertiary qualifications, with more than half (60%) of those being at the postgraduate level. The highest qualification held by two respondents was a Master's degree (MA) in History. The disciplines in which the three Honors degrees were held were Sociology, Anthropology, and Heritage studies. Of the respondents with a Bachelor's degree, two were in History, and one in Museum Studies. The Diploma was in Library and Information Studies, and the Postgraduate Diploma in Archives and Records Management.

Table 5: Highest qualification N=10

Qualification	Frequency	Percentage
Masters	2	20%
Honors	3	30%
Bachelor of Arts	3	30%
Postgraduate Diploma	1	10%
Diploma	1	10%
Total	10	100%

4.2.4 Position held

Positions held by the 10 staff members deployed in management of IK (See Table 3 below) were as follows: two collection officers (20%), three researchers (30%), two assistant directors (20%), one curator (10%), one librarian (10%) and one museum practitioner (10%). Thus, while the positions varied, all had the common goal of managing IK in their respective institutions.

Table 6: Staff positions N=10

Position held	**Frequency**	**Percentage**
Collection Officer	2	20%
Researcher	3	30%
Assistant Director	2	20%
Curator	1	10%
Librarian	1	10%
Museum Practitioner	1	10%
Total	10	100%

4.2.5 Duties performed when managing IK

The researcher asked the respondents about the duties they performed in their positions when managing IK. A variety of duties was mentioned; some respondents mentioned more than one. The duties are listed below and as can be seen are not always mutually exclusive and there is thus overlap in a number of instances. The number of respondents (including percentages) performing a particular duty are also given.

- Conduct research dealing with IK, interviewing people who had knowledge of IK, collecting IK, storing it thereafter in audio-visual diskettes such as DVD and video cassettes as part of the museum collection: five (50%);
- Label collected IK objects: six (60%);
- Document oral history: four (40%);
- Manage the museums and the art gallery: two (20%);
- Library management: two (20%);
- Supervise staff in the field, when collecting IK: four (40%);
- Take photographs in the field apropos of the collecting of IK: four (40%);
- Research IK: five (50%);
- Educate visitors on the importance of IK: five (50%);
- Record IK: five (50%);
- Exhibit IK: five (50%); and
- Market IK: four (40%).

4.3 SECTION B: INDIGENOUS KNOWLEDGE (IK) MANAGEMENT

Section B of the interviews focused on various aspects concerning the management of IK. The findings are listed below:

4.3.1 Specific policies which govern the management of IK

In question 4.3.1 the respondents were asked whether there were specific policies in place which govern the management of IK. All 10 (100%) respondents replied that there were policies in place in their institutions.

4.3.2 Set standards or specified guidelines for IK management

The respondents were asked whether there were set standards or specified guidelines for IK management in their institutions. Three respondents (30%) said there was a collection policy in their institutions. Four respondents (40%) stated that they use the policies of the institution to which they are affiliated. For example, the Voortrekker Museum, KwaZulu-Natal Museum and KwaZulu-Natal Museum Services are members of the International Council of Museums (ICOM):

their collection policy is guided by ICOM Guidelines. Various other guidelines were mentioned by respondents:

- The Heritage Resources Act, no 25 of 1999: nine (90%);
- Museums Ordinance No. 08 of 1975: five (50%);
- Constitution of the RSA Act, No 108 of 1996: four (40%);
- White Paper on Arts and Culture and Heritage 1996: five (50%); and
- National Heritage Resources Act of 1999: four (40%).

The Tatham Art Gallery is guided by the KwaZulu-Natal Heritage Act 10 of 1997.
Three respondents (30%) stated that the ICOM has a collection conservation policy which provides them with ethical guidelines regarding colleting, preserving, interpreting and promoting the natural and cultural inheritance of humanity.

4.3.3 Intellectual Property Rights (IPRs) when dealing with IK

The respondents were asked whether their institutions considered the issue of Intellectual Property Rights (IPRs) when dealing with IK. All 10 (100%) respondents replied that IPRs were considered by their institutions.

4.3.4 How respondents are alerted to the availability of IK

In question 5.3.4 staff members were asked how they knew where they could obtain IK. The responses indicated that respondents were alerted to the availability of IK through different means. Three respondents (30%) indicated that their line supervisors asked them to collect the IK which was not available in the collection. Two respondents (20%) stated that they asked fellow workers to communicate with the people who have IK in their communities. When visiting the communities, staff members are offered suggestions by the community members as to whom has IK within their community.

Two respondents (20%) revealed that members of the community sometimes volunteer to bring in IK objects with their history "attached" to them. Two respondents (20%) stated that researchers go out into the field to actively look for IK. Finally, one respondent (10%) indicated that they attended cultural events such as the Reed Dance and other events associated with Africa Day and Heritage Day.

4.3.5 Recording mechanisms used when collecting IK

The staff members dealing with the IK were asked what recording mechanisms were used when collecting IK. The findings revealed that all four institutions use tape recorders, video cameras, and digital cameras to record IK. It was also pointed out that staff members sometimes take notes when speaking to IK holders. Responses included the following:

- Transport is provided to them, when they are going out in the field to collect IK;
- They have advanced digital cameras, tape recorders, audio and video tapes; and
- Some staff members dealing with the management of IK are provided with laptops, so that it will be easier for them to capture the data in the field.

From the observations (see observation check list in Appendix 4) conducted on the recording mechanism of IK under study, the researcher concurred with the findings that all four institutions use tape recorders, video cameras, and digital cameras to record IK.The researcher observed that laptops were provided to staff members dealing with the management of IK. This made it easier for the capturing of data in the field.

4.3.6 Challenges encountered when collecting IK

Respondents were asked whether there were any challenges faced by staff members when collecting IK. All respondents (100%) revealed that there were indeed challenges. All respondents (100%) pointed to the poor recognition of IK and resistance to change (negative attitudes towards IK by the communities) as the most common challenges in the acquisition of IK from

the communities. Five respondents (50%) mentioned the lack of IK records, noting that most IK was preserved in human minds through, for example, folklore, and thus it was not documented.

The results indicate that IK was perceived as an outdated knowledge system in the communities, and that most youth were not receptive to IK, owing to modernization and formal education systems both of which poorly recognized IK. All respondents (100%) stated that they experienced difficulties in identifying IK holders, and they also pointed to the lack of established structures for identifying such IK holders. For example, village meetings were not frequently organized by the local authorities as there were no community-based resource centers which could disseminate information to other indigenous communities. This shows that there is indeed a gap which divides a society into two groups. Four respondents (40%) mentioned language problems in which, because of language differences, interviews with some elderly people had to be conducted with the aid of a translator.

Two (20%) respondents mentioned that occurrence of conflict within families inhibited the sharing of knowledge. All respondents (100%) in the four institutions revealed that in some cases IK holders were traditionalists who believed that they should not allow anyone to record their voices on tape. They therefore only allowed the staff members to write down whatever they were saying. Five (50%) respondents stated that staff members were sometimes not allowed to visit certain sacred places in the country if they held certain beliefs. Only specific people were allowed such visits. In certain instances special permission had to be obtained. Two (20%) respondents were of the opinion that there was a great deal of IK collected; however, classifying such knowledge was time-consuming and needed much attention, particularly when computer systems were involved.

Five (50%) respondents indicated that some IK holders are living in remote areas which are difficult to reach by motor transport. The respondents further mentioned that, should the destinations be reached, some IK holders are old and therefore sometimes forget that an interview had been scheduled. In this regard, two (20%) respondents reported a situation in which the IK holder they had arranged an interview with had left for an *Imbizo* meeting

at the time the interview had been arranged. The respondents had to thus return without doing the interview.

Six (60%) respondents added that some IK holders feel that once the knowledge is shared they can no longer claim to have it as their own, and as a result they required payment for sharing their knowledge. This has to be seen in the context in which all four institutions were faced with the problem of limited funds to support IK management. A final challenge highlighted by respondents from all four of the institutions was the issue of staff shortages which impacted on IK collection.

4.3.7 Handling of IK objects

It was stated by respondents that IK objects should only be handled when wearing clean cotton or vinyl gloves to prevent sweat from passing through to the object. Four (40%) respondents mentioned that if IK objects are handled with bare skin, they should be carefully cleaned before storage or display to remove deposits and to prevent corrosion from skin acids and oils. All respondents (100%) agreed that careless handling of IK objects can lead to their denting, bending, and breaking. All respondents confirmed that extra caution in handling IK objects was needed as this could prevent serious damage that may be expensive to repair. It was observed that IK objects were indeed handled with clean cotton gloves or vinyl gloves to prevent sweat from passing through to the object. Objects were placed in containers, on support trays or in carrying baskets, especially when staff were going up or down the stairs or using elevators. The staff dealing with IK used both hands to pick up large objects and it was evident that in all four of the institutions IK objects were handled with particular care.

4.3.8 Organizing of collected IK

The results revealed that the four institutions use an accession register as a fundamental part of the process of organizing the collected items of IK. Eight (80%) respondents stated that an accession register is a record of all historical objects, artifacts, specimens, and works of art which are

incorporated into the museum on a permanent basis. All respondents stated that the accession register should be made from strong archival quality paper in a firmly bound book with a number of entries including date of acquisition, name of object, type of acquisition, transfer, purchase, permanent or on loan, and condition of object. Five (50%) respondents mentioned that the purpose of the accession register is to facilitate collection management by providing a reliable, formal, and unalterable inventory or stock list of the collection to be held by the museum.

The results also show that accession numbers are used to classify IK. All respondents mentioned that the accession numbers are unique numbers allocated to every object that is incorporated into the collection in the process of registering the IK objects. The majority of the respondents (70%) said that once the accession number is allocated to the object it becomes permanently associated with that object and cannot then be altered. Should that object be lost or stolen its accession number must not be re-allocated to another object, even if another similar object replaces that which was lost or stolen.

The results revealed that there are similarities between the four institutions in their classifying of the IK. The KwaZulu-Natal Museum uses the description name of the object, and includes the material, the color, and the age or period. The Voortrekker Museum uses the description features of the object, the title, material, date, and place where it was acquired. The Tatham Art Gallery organizes IK according to the form of objects, by wood, ceramic, skin beads and clay. The KwaZulu-Natal Provincial Museum Services classifies IK by subject, textile, metal, and painting. From the observations conducted on the organizing of IK, the researcher observed that every object that enters either of the four institutions is given a unique accession number. This number is recorded in the accession register along with information about the provenance of the object. The process of accessioning was conducted with accuracy and consistency. However, it was of concern to observe that the accession registers were not kept or locked in a fireproof cabinet, and were thus susceptible to fire or burglary. As much as the security is very tight in the collection rooms, the researcher of this study is of the view that at least one copy of the accession register should be secured off-site.

4.3.9 Challenges faced when organizing IK

The question was asked whether there were any challenges faced by the staff when organizing IK. The results revealed that, while there were no challenges as such, all respondents stated that more training was needed on using technology for the organization of IK.

4.3.10 Staff development with regard to the management of IK

The results of the study revealed that there are various initiatives to ensure that the staff members who deal with the management of IK have the skills to do so, and to enable them to excel in their duties.

The Voortrekker Museum trained its staff members in the various skills needed to manage IK, such as the preservation and conservation of IK. It also provided staff with the required resources to accomplish the task. The institution also encouraged staff members to further their studies on IK management. The KwaZulu-Natal Museum encouraged their staff to attend workshops and meetings on IK management.

The KwaZulu-Natal Provincial Museums Services have organized workshops and training sessions on IK management. (In this regard, the researcher has attended many such workshops and training sessions, which have been organized by the Service). The Tatham Art Gallery also trained staff members dealing with IK management by sending them on workshops related to the collecting, accessing, and documentation of IK objects.

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Finally, the results revealed that in all four institutions regular planning meetings involving the staff managing IK are held. Issues covered include updating of staff on IK initiatives as well as ensuring that the required resources to provide the necessary support for IK management are available.

4.3.11 Storing and preserving IK

The results revealed that the four institutions had special rooms in which the various formats "holding" IK or the IK artifacts or objects themselves are kept. The museums used steel cabinets which are designed for IK storage, and these cabinets are lockable. They also used audio and video cassettes to store IK.

In terms of the storage and preservation of the IK, the results revealed that all necessary equipment for storage and preservation of IK is provided by the institutions. All four institutions had special rooms in which the IK is kept. In addition, lockable display cabinets, which allow the viewing of objects, are provided. Some of the institutions have installed surveillance cameras to further assist in ensuring the safety of the objects.

4.3.12 Special precautions taken when storing IK

All 10 respondents (100%) revealed that precautions are taken when storing IK. Five (50%) respondents stated that the rooms in which the IK are kept are fumigated. Two (20%) respondents revealed that a replica of collected IK is made available to avoid damaging the original artifact. All respondents pointed to a certain temperature being maintained in the rooms in which the IK is being kept. One of the items on the observation checklist was to observe the precautions taken when storing IK. The researcher noted that this injunction was respected. Environmental agents (e.g. light, relative humidity, temperature, and air pollution are monitored every day in the rooms in which the IK objects are kept. Dehumidifiers are also used to limit the amount of moisture in the air. Integrated pest management – an intensive programme that monitors pests, such as insects and rodents, which may harm collections – is also in place. The researcher of this study also observed that collections of artefacts are stored in suitable containers, such as acid-free boxes. Tissue, foam, folders, and hangers are also used to store artifacts. Artefacts in storage are inspected periodically, to check for any signs of deterioration. Access to collections rooms is very restricted and limited. Storage areas are locked at all times and only key staff have access to collections in storage. Visitors are not allowed to enter the storage rooms.

In addition to the above, the following was also mentioned by respondents:

- Materials used to make storage boxes should be acid free;
- The storage area must be as dust free as possible;
- Ultra-violet filters should be placed over windows and fluorescent lighting;
- Installation of an air-conditioner unit which filters out sulphur dioxide is necessary;
- Temperature should be kept between, 13deg C and 18deg C;
- Relative humidity should be between 50% and 65%;
- Surface dirt on IK objects may be removed with various speciality brushes (for example, a Japanese sheep hairbrush) or with a museum vacuum cleaner; and
- Powder may also be used to remove surface dirt, melinex or blotter shields may be used in several ways to protect the object.

4.3.13 Marketing and dissemination of IK

A question was asked to find out whether the institutions make any effort to market the IK which they have in their collection. It emerged that the Voortrekker Museum, the KwaZulu-Natal Museum and the Tatham Art Gallery had a number of projects in marketing the IK. They used various types of media, such as local radio stations, local magazines, billboards, talk shows, and flyers to market the collection to both the public and schools. The institutions' websites are also used to disseminate IK; and social media are also being used to attract a wider audience.

The displaying of IK objects in the institutions was mentioned as another way of marketing IK. Furthermore, these institutions conduct outreach programs to communities and schools at special events such as Heritage Day, Africa Month, Reconciliation Day, Women's Day, Museum Day, and Freedom Day. The KwaZulu-Natal Provincial Museum Service uses print and electronic media, public and school programs, community-based projects, and travelling exhibitions to market their IK.

4.3.14 Main users and usage of IK

A question concerning the main users of the IK services was asked in the interview. Similar responses were received from respondents. Users were the general public, international and local researchers, students, school children, and tourists. Responses to the question on

the usage of the IK, revealed varying usage. Three (30%) respondents stated that the usage of IK was average, five (50%) said that it was good, and the remaining two (20%) said they did not know.

4.4 Summary

The aim of Chapter Four was to present the results obtained from the interviews with 10 respondents from the four institutions taking part in the study and who were involved in the management of IK. Results were presented, in the main, in text form and at times tables were also used. The research questions underpinning the study provided the basis for the presentation.

The following chapter, Chapter Five, comprises a discussion of the results presented here in light of the relevant literature. .

CHAPTER FIVE: INTERPRETATION OF RESULTS OF THE STUDY

5.1 INTRODUCTION

Chapter Five provides an interpretation of the research findings presented in the previous chapter. The interpretation is offered in terms of the literature reviewed in Chapter Two and the research questions stated in Chapter One. This study was conducted to discover the ways in which IK was being managed by the four museums in Pietermaritzburg, these being the Voortrekker Museum, the KwaZulu-Natal Museum, the KwaZulu-Natal Provincial Museum Services, and the Tatham Art Gallery. The data was obtained from observation and semi-structured interviews with the staff involved in the management of IK at their institutions.

5.2 SECTION A: PERSONAL INFORMATION

Section A of the interviews was focused on personal information including gender, age, highest qualification, tertiary qualification, and the duties performed by the respondents.

5.2.1 Age of respondents

The ages of the respondents were between 20 and 30 years for three respondents (30%). A further three respondents were between 41 and 50 years of age (30%). The highest number of respondents was between 31 and 40 years old, with four respondents (40%). There was no respondent over the age of 50. This result shows that all age groups under 50 years of age were represented, and that all respondents could be considered relatively young.

5.2.2 Gender

In terms of gender, respondents were equally split. The results suggest that gender is particularly important in the four institutions and arguably, both males and females offer unique perspectives when it comes to the management of IK. (Responses, however, were not categorized by gender.).

5.2.3 Highest Qualification

The study revealed that all respondents in the four institutions had tertiary qualifications – two respondents (20%) had a Master's degree (MA) in History, three respondents (30%) had an

Honors degree in Sociology, in Heritage Studies and in Anthropology, three respondents (30%) had a Bachelor of Arts (BA) in History and Museum Studies. Two respondents (20%) had a Diploma in Archives Management and in Library and Information Studies. The study findings further indicated that all the respondents had relevant qualifications in terms of the management of IK.

5.2.4 Duties performed by the respondents

According to Dlamini (2009:29), the concept of IK management involves the identification, collection, codification, documentation, organization, preservation, transfer, linking, application, dissemination and sharing of knowledge on indigenous community livelihoods and ecosystems, for sustainable development. The findings showed that duties performed by the staff members dealing with the management of IK in the four institutions include: five (50%) researching with IK, four (40%) documenting of IK, six (60%) labeling of IK, eight (80%) collecting IK, five (50%) exhibiting IK, five (50%) educating about the importance of IK, and seven (70%) marketing the IK. Respondents performed these duties in order to preserve and make available the IK in their collections. The study further revealed that the duties performed by the staff members managing IK in the four institutions were in line with those mentioned by Dlamini (2009: 29).

5.3 SECTION B: INDIGENOUS KNOWLEDGE (IK) MANAGEMENT.

Section B discusses the various aspects of management of IK.

5.3.1 Specific policies which govern the management of IK

The study findings revealed that all 10 (100%) responded stated that there are policies in place which govern the management of IK. According to ICOM (1986), it is the responsibility of

each museum to ensure that all the collections in their care are adequately housed, conserved, and well documented.

5.3.2 Set standards or specified guidelines for IK management

The results of this study revealed that there are guidelines for IK management in the four institutions. The findings show that three respondents (30%) revealed that in their institutions there is a collection management policy. A collection policy is a vital document in the management of IK (Dlamini 2009:87). Four respondents stated that they use the policies of the institutions to which they are affiliated. For example, the Voortrekker Museum, the KwaZulu-Natal Museum, and the KwaZulu-Natal Provincial Museum Services are members of the International Council of Museums (ICOM). Their collection policies are guided by the ICOM Code of Conduct. According to ICOM (1986), it is the responsibility of each museum to ensure that all the collections in their care are adequately housed, conserved, and well documented. The study further revealed that the Tatham Art Gallery is guided by the KwaZulu-Natal Heritage Act 10 of 1997.

5.3.3 Intellectual Property Rights (IPRs) when dealing with IK

The study findings revealed that all respondents (100%) stated that IPRs are considered by their institutions when managing IK. The United Nations Draft Declaration on the Rights of Indigenous People underscores the fact that indigenous people 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 (UN, n.d: 6).

In agreement with this, Lwoga (2009: 94) states that IPRs are a significant legal instrument by which IK may be protected from misappropriation in developing countries. The results revealed that the Voortrekker Museum, the KwaZulu-Natal Museum, the KwaZulu-Natal Provincial Museum Services and Tatham Art Gallery acknowledge the rightful owner of the IK by recording his or her name, the type of artifact, where each was found and its history – thus recording the IK for posterity. Should a donor be involved, his or her name and address

would also be recorded. The donor will be asked for a signature and, if the object is not on loan, also to sign an agreement that the object will be placed in the permanent care of the museum.

5.3.4 Ways in which respondents are alerted to the availability of IK

The results indicated that staff members managing IK are alerted to the availability of IK by various means. Two respondents (20%) stated that they asked their fellow workers to communicate with the people who have IK in their communities. When visiting the communities, staff members are given suggestions by the community members as to whom has IK in their community. Two respondents (20%) indicated that members of the community sometimes volunteer to bring in IK objects with the history attached to them. One respondent (10%) indicated that cultural events such as the Reed Dance, Africa Day, and Heritage Day are attended in order to collect the IK. It was agreed with Mabawonku (2002: 54) that some IK is best collected at the time of the ceremonies.

5.3.5 Recording mechanism

The results revealed that all the institutions use tape recorders, video cameras, and digital cameras to record IK. Staff members sometimes take notes when speaking to IK holders. The four institutions agreed with Ngulube (2002) that IK could be recorded on cassette tape, CDs, DVDs, videos and per other formats. The researcher of this study has observed that all necessary recording tools to record collected IK are in place in all the four institutions.

5.3.6 Challenges encountered when collecting IK

The major problems faced by staff members when collecting IK were poor recognition of IK and resistance to change. In this regard some community members had negative attitudes towards, and a lack of awareness of, IK – they still believed in the old way of doing things, as stated by the ten respondents (100%). The results showed that IK was perceived as an outdated

knowledge system in the communities. Most youth were not receptive to IK owing to modernization and the formal education system poorly recognizing IK. Similar observations were made in other studies. Mutula (2002: 130) stated that the scientific community looked down on IK and doubted its reliability: scientists tended to dismiss traditional knowledge as subjective, anecdotal, and unscientific. Indigenous knowledge has largely been marginalized, neglected and suppressed through ignorance and arrogance, politics and the dominant ideology of a particular historical period (Dondolo, 2005: 82). Indigenous knowledge is threatened by socialization, education systems, and the influence of Western technology (Dube and Musi, 2002).

Other major problems identified from the findings were a lack of IK records, as stated by five respondents (50%). Moahi (2005: 82) commented that, for many developing countries, documenting IK has not been seen as a priority. Other problems were associated with the difficulties in knowing who IK holders were and where they were located. There was no established structure by which to identify them. These findings were in line with Dlamini (2009: 33)'s pronouncement regarding the challenges to the management of IK, including the methods of identifying it and accessing it. It is thus important for communities to map IK holders for effective identification and integration of IK into development processes.

All respondents in the four institutions (100%) revealed that, in some cases, IK holders are traditionalists. These subjects believe that they should not allow anyone to record their voices on tape, therefore only allowing the staff members to write down whatever they are saying. It was also pointed out by five (50%) respondents that staff members are not always allowed to visit certain sacred places within the country, depending on their beliefs. All four institutions (100%) were faced with the problem of limited funds to support IK management.

Given the above, it is evident that there are numerous challenges faced by the four institutions in collecting IK in communities. A recommendation apropos of this will be made in the following chapter.

5.3.7 Handling of IK

Four (40%) respondents mentioned that if IK objects are handled with bare skin, they should be carefully cleaned before storage or display to remove deposits and prevent corrosion from skin acids and oil. Respondents stated that IK objects should only be handled when wearing clean cotton gloves, or vinyl gloves, to prevent sweat passing through to the objects. The study did reveal that respondents were aware that careless handling of IK objects can lead to their denting, bending, and breaking. Extra caution in handling IK objects can prevent serious damage that may be expensive to repair. In agreement with aspects mentioned by respondents have mentioned, the Texas Historical Commission (n.d: 3), mentioned that the artifacts should be handled with care and that when a person is touching or taking the artifacts away for storage, clean cotton or latex gloves should be worn. It is evident that all artifacts should be treated as if they are extremely fragile, even if they do not appear so. The observation results revealed that, in all the four institutions, IK objects are treated with extra care to ensure that they survive for future generations to learn from.

5.3.8 Organizing of collected IK

In all four institutions, an accession register is used as a fundamental part of the process of organizing the collected IK. The majority of the respondents stated that the accession register is a record of all historical objects, artifacts, specimens, and works of art which are incorporated into the museum on a permanent basis. The respondents agree with Ambo Roué'(2010) that the accession register is a unique and irreplaceable official administrative document that establishes the museum's legal right of ownership. The above-mentioned researcher stated that it contains key information about the museum's objects, and serves as the basis for setting up its entire documentation system. He further indicated that it should be kept in a safe place, where it cannot be stolen or damaged by water or fire (Ambo Roué, 2010).

In terms of the findings of the present study, the purpose of an accession register was to facilitate collection management by providing a reliable, formal, and unalterable inventory or stock list of the collection held by the museum. The majority of the respondents said that, once the accession number has been allocated to the object, it becomes permanently associated

with that object and cannot then be altered. The observation results revealed that, although all four institutions used accession registers to organize the collected items of IK, it was disheartening to observe that accession registers were not kept in locked cabinets, nor were copies of such stored offsite.

The results revealed that there are similarities between the four institutions in their classification of the IK. The KwaZulu-Natal Museum uses the description name of the object, and includes the material, the color, and the age or period. The Voortrekker Museum uses the description features of the object, the title, material, date, and place where it was acquired. The Tatham Art Gallery organizes IK according to the form of objects, by wood, ceramic, skin, beads and clay. The KwaZulu-Natal Provincial Museum Services classifies IK by subject, textile, metal, and painting.

5.3.9 Challenges faced when organizing IK

The results revealed that, while there were no challenges as such, all respondents stated that more training was needed on using technology in the organizing of IK. The training of IK collectors must be organized regularly, especially with regard to using digital technology. Aligned with the oral tradition of IK the IK collector uses an audiovisual digital recording device such as a digital video camera and audio recorder for capturing techniques. These may be practices, stories, language, songs, and dances (Hunter, 2005). Sometimes, however, the collector did not know how to operate these devices.

New technology is being developed all the time; it is not sufficient to run a one-off training session. Regular training must take place to ensure that staff are using all the latest technology comfortably and to its full potential. This may be achieved through implementing a customized staff IT training program, and by integrating employee training with IT support (Gill, 2014).

5.3.10 Staff development with regard to the management of IK

The results of the study revealed that there are various projects to ensure that the staff members who deal with the management of IK have the skill and knowledge to conduct their work properly. All four institutions, (100%) have various initiatives to ensure that all staff members managing IK excel in their duties. The results revealed that the Voortrekker Museum trained their staff in various skills. Staff members are supported with the required resources needed for IK management. The KwaZulu-Natal Museum encouraged their staff members to attend workshops and meetings on IK management. The KwaZulu-Natal Provincial Museum Services organized workshops or training on IK management. The Tatham Art Gallery also provides training to staff members.

All necessary equipment that needed to be in place to preserve, disseminate, and organize IK is provided by the four institutions. Transport is provided to the staff members when they are going out into the field to collect IK. They are given the requisite recording devices, including advanced digital cameras and audio recorders. Some staff members dealing with IK are provided with laptops, making it easier for them to capture the data while in the field.

5.3.11 Storage and preservation of IK

The results indicated that the four institutions had special rooms in which the various formats holding IK or objects themselves are kept. They used steel cabinets which are designed for IK storage: such cabinets are lockable. In terms of the storage and preservation of the IK, the results revealed that the equipment necessary for storing and preserving IK is provided by the institutions. Acid-free boxes are used to store artifacts.

5.3.12 Precautions when storing IK

The results of the study show that there are precautions taken when storing IK, with all respondents indicating this. The rooms in which IK is kept are fumigated, and all collected IK which can be backed up is processed in this way. The researcher of this study agreed with the results mentioned above. She observed that artifacts in storage were inspected periodically, and access to collection rooms was very restricted. All respondents agreed on the need to maintain a constant temperature in the rooms in which the IK is being kept. The Texas Historical Commission (n.d: 4) indicated that the major environmental factors that affect the long-term preservation of artifacts are light, temperature, relative humidity, air pollution, and pests. The Commission has stated that museums must take proper action to mitigate the possible damage by these factors.

5.3.13 Marketing and dissemination of IK

A question was asked to find out whether there was any effort made by the institutions to market the IK which they have in their collections. It emerged that the Voortrekker Museum, the KwaZulu-Natal Museum and the Tatham Art Gallery had a number of projects in terms of marketing the IK. The three museums used different types of media, such as local radio stations, local magazines, billboards, talk shows, and flyers, to market the collection to both the public and school. The institutions' websites are also used to disseminate IK. In addition, social media is being used to attract a wider audience. It is evident that the rapidly increasing use of social media and mobile technologies creates opportunities to form local and international partnerships that can facilitate the process of creating, managing, preserving, and sharing of knowledge and skills that are unique to communities in Africa (Owiny, Mehta and Maretzki 2014).

5.3.14 Main users of IK

The findings of the study revealed that the main users of IK at the Voortrekker Museum, the KwaZulu-Natal Museum and the Tatham Art Gallery are the general public, international and

local researchers, students, school children and tourists. The KwaZulu-Natal Provincial Museum Services supports affiliated museums with IK.

5.4 Summary

The aim of this chapter was to interpret the results of the study in relation to the relevant literature as identified in Chapter Two; and the research questions underpinning the study as outlined in Chapter One. It is evident that, while the four institutions have the effective management of IK as a priority and they understand its value and importance, they faced numerous challenges. These include difficulties in knowing who IK holders are, and where they are located; and poor recognition of IK in the communities concerned.

The next and final chapter, Chapter Six, will present the conclusions emerging from the findings of the study. Recommendations will be made.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter provides a summary of the research findings, the conclusions, and recommendations. It ends with suggestions for further research. However, following this brief introduction, a review of the study, by chapter, is given.

6.2 Review of the study

The study investigated the management of IK in Pietermaritzburg by four institutions, namely, the KwaZulu-Natal Museum, the KwaZulu-Natal Provincial Museum Services, the Tatham Art Gallery, and the Msunduzi Museum.

The study was guided by the following research questions:

- Are there policies in place in museums specific to IK management?
- Are there set standards or specified guidelines for IK management in the museums?
- Which strategies exist for the preservation of IK by the museums?
- How do the museums determine from whom they collect IK?
- How do the museums deal with the issue of Intellectual Property Rights with respect to IK?
- In which format is IK stored by the museums?
- What do the museums to ensure that people gain the required information contained in the IK?
- Which challenges do the museums encounter in the management of IK?

As mentioned in the first chapter, IK systems are very important for the communities from which they come. Such knowledge dictates how people behave generally, how they relate to the land and their other resources, and how they make sense of the world around them. The importance of IK is seemingly being overshadowed by Western knowledge. Western knowledge has the advantage that it is codified, and is largely viewed as better, and more scientifically proved knowledge (Moahi, 2005: 75).

The traditions, in which the elders used to sit and work with the youth, passing on that knowledge, are fast being eroded. Globalization has resulted in an inundation of Western values and culture beamed through satellite television and the Internet, quickly captivating the minds of youth such that they deem their own cultures, rituals, and traditions as inferior, old fashioned, and even barbaric. However, interest in IK and its potential has taken hold in the West. A direct result of this is that IK is being appropriated; however, the owners, that is the

communities, have nothing to show for it. The intellectual property of IK is being claimed by individuals outside the communities that own the knowledge, simply because they have codified it (Moahi, 2005: 75).

All of this brings one to the important point that IK must be managed in order to preserve it for posterity, and for it to be accessible for present and future generations. If not well managed its future existence could well be jeopardized.

The purpose of Chapter One was to discuss the background to the study, the background of the museums, the statement of the problem, the significance of the study, the research questions, definitions of key terms relevant to the study, and a description of ways in which the chapters of the thesis were arranged.

Chapter Two provided both the conceptual and theoretical framework which underpinned the study. The former is provided by the International Federation of Library Associations and Institutions (IFLA) standards for libraries. The Postcolonial Theory provided the theoretical framework for the study. Furthermore, the chapter presented the literature relevant to the study. Areas of discussion included IK and its characteristics, sources of IK, causes of the destruction of IK, the management of IK, reasons for IK needing to be managed, challenges to the management of IK, management strategies that may be used for IK, IK and Intellectual Property Rights (IPRs), international initiatives to protect IK, and critiques of IK.

Chapter Three described and discussed the research methodology used in the study. In doing so, the broad research approach adopted was outlined. This was followed by the research design used, namely, the survey. The population and sampling approach was also described, as well the data-collection methods or techniques employed, which were the semi-structured interviews and observation. Reliability and validity of the research was then discussed, followed by a description of the data-analysis procedures. Finally, ethical considerations relating to the study were raised.

Chapter Four presented the results of the study obtained from the survey of the identified staff working at the Voortrekker Museum, the KwaZulu-Natal Museum, the KwaZulu-Natal Provincial Museum Services and the Tatham Art Gallery. The results were presented in the form of tables, but largely in text.

Chapter Five provided an interpretation of the research findings. The interpretation took into account the literature reviewed in Chapter Two, and the research questions underpinning the study, as stated in Chapter One.

6.3 Summary of findings

Listed below are the main findings of the study as per the research questions:

6.3.1 Are there policies in place in museums specific to IK management?

The findings revealed that there are policies in place which govern the management of IK in the four institutions.

6.3.2 Are there set standards or specified guidelines for IK management in the museums?

The findings revealed that IK management within the four institutions was guided by collection-development policies, the International Council of Museums (ICOM) and various legislative acts, ordinances, and White Papers.

6.3.3 Which strategies exist for the preservation of IK by the museums?

There are precautions taken when storing IK with all respondents doing so. In terms of the collection, dissemination, and preservation of the IK, the study established that all the necessary equipment that is needed to store and preserve IK is provided by the institutions. All four institutions had special rooms in which the various formats holding IK or objects themselves, are kept. Transport is provided to staff members when they are going into the field to collect IK. The institutions' websites are used to disseminate IK. Social media is also being used to attract wider audiences. In order to ensure that the staff members who manage IK

have the potential to do their work properly and excel in their duties, training and workshops were provided to them by their institutions.

6.3.4 How do the museums determine from whom they collect IK?

Two (20%) respondents, indicated that they asked their fellow workers to communicate with the people who have IK in their communities. Sometimes members of the communities volunteer to bring their IK to these institutions.

6.3.5 How do the museums deal with the issue of Intellectual Property Rights with respect to IK?

All respondents recognized the importance of IPRs in relation to the management of IK and thus respected, through their practices, the rights of the IK holders.

6.3.6 In which format is IK stored by the museums?

The study established that lockable cabinets are used to store the IK. Print documents, electronic format and tape cassette, are also used by the institutions to store the IK.

6.3.7 What do the museums to ensure that people gain the required information contained in the IK?

There are similarities between the four institutions in their classification of the IK. The KwaZulu-Natal Museum uses the descriptive name of the object, and includes the material, the color, and the age or period. The Voortrekker Museum uses the descriptive features of the object, the title, material, date, and place from where it was acquired. The Tatham Art Gallery organizes IK according to the form of objects, by wood, ceramic, skin, beads and clay. The KwaZulu-Natal Provincial Museum Services classifies IK by subject, textile, metal, and painting. It was revealed that all four institutions use an accession register as a fundamental part of the process of organizing the collected IK. In this way people gain the required information contained in the IK.

6.3.8 Which challenges do the museums encounter in the management of IK?

Despite what may be perceived as positive findings listed above, it is evident that IK management in each of the four museums is not without its challenges. The major problems experienced are listed below:

- The major problems faced by staff members when collecting IK were poor recognition of IK and resistance to change. The results of the study found that IK was perceived as an outdated knowledge system in the communities. Most youth were not receptive to IK , thanks to modernization and the formal education system which barely recognizes IK;
- All the respondents indicated that they experienced difficulties in identifying IK holders and their location through lack of established structures to identify them;
- Two respondents (20%) stated that occurrence of conflict within families inhibited the sharing of knowledge;
- All the respondents revealed that in some cases IK holders are traditionalists who believe that no one should be allowed to record their voices on tape. Therefore, they would only allow staff members to write down whatever they were saying;
- Five respondents (50%) stated that staff members are not usually allowed to visit certain sacred places in the country because of their particular beliefs: only selected people may visit such places, or special permission must be granted by certain people;
- Half the respondents pointed to some IK holders believing that once the knowledge is shared, the holder is no longer able to claim it as his or her own; and
- Finally, some IK holders require payment for sharing their knowledge. This was also pointed to by respondents.

Given the above findings, the following conclusions are made.

6.4 Conclusions

- The four institutions have the effective management of IK as a priority, and they understand its value and importance. It may be concluded that IK management

within the four institutions was guided by collection development policies, the International Council of Museums (ICOM), and various legislative acts, ordinances, and White Papers. These four institutions must continue to be guided by various legislations, in order to ensure that their collections are properly managed and are available. This would apply not only for current use: IK should be passed on to future generations in a good and safe condition;

- The importance of IPRs in relation to the management of IK is recognized by the four institutions. The institutions respect the rights of communities, and are sensitive to the views of the communities when researching collections and conducting fieldwork, as well as in the way in which they depict cultures;

- Appropriate facilities to ensure the conservation of their collections are provided by the four institutions. Such institutions disseminate information on their roles and knowledge derived from their collections through publications, exhibitions, and education programs. Their communications strategies also include print and electronic communication that distribute information about the collections and objects they contain;

- It may be concluded that the staff of the four institutions have access to training and professional development opportunities related to the preservation and management of IK;

- As may clearly be observed from the data and the main findings above, IK management in each of the four museums is not without its challenges. Respondents maintained that IK within the communities was generally perceived as an outdated knowledge system; and

- It is evident from the literature reviewed and from the respondents that there is a need to manage IK in order to preserve it for posterity, and for it to be

accessible for present and future generations. If not well managed, its abundance would be of no significance to potential users.

6.5 Recommendations

The recommendations are made based on the findings of the study:

- Given the problems associated with the collection of IK it is recommended that pre-visits to the indigenous communities are conducted before starting the process of collecting IK. In this way the IK collectors will be able to build mutual trust with the indigenous communities.

- In order that efficient and effective management of IK is achieved, it is recommended that, because of increasing use of technology in modern times, special training for staff dealing with the management of IK. Digital technology is set to play an increasing role in the management of IK. While the institutions surveyed were all making use of technology in the management of IK, more could be done in this regard. For example, and in particular, networking and/or collaboration allows for a more effective pooling of resources and sharing of experiences and information on IK both among various individuals and between organizations (Dlamini, 2009: 106).

- It is recommended that the four institutions should act as custodians and moderators of the IK database, training community members on methods of collecting and documenting oral and visual material based on community needs. In addition, members could also be trained on ways in which to upload information to social media. This would assist in reaching broader audiences, which in turn will help with the recognition of IK.

- It is recommended that more attention be given to identifying KM holders. Knowledge maps should be used for this purpose. Such knowledge maps may enable communities to identify where and how particular IK is stored within

and outside their communities. According to Mind Manager (2016), knowledge maps are a visual aid showing where knowledge may be found within a group or organization, and how to find those with the most expertise.

6.6 Suggestions for further research

Two suggestions for further study are put forward:

Firstly, an area of study could be to determine whether there is a clear understanding of the importance of IK and IK management among those within the KwaZulu-Natal Provincial Government. It could be argued that there is a probable lack of awareness of the importance of IK and its preservation and dissemination. This may well be negatively impacting on the financial assistance being provided to the heritage institutions in the province.

Secondly, a study similar to the present one should be conducted targeting the museums of KwaZulu-Natal (and possibly even outside of the province) which were not included in this study. In this way it may be determined in which ways these other museums are approaching the management of IK.

REFERENCES

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

Adam, L. 2007. *Information and communication technologies, knowledge management and indigenous knowledge: implications to livelihood of communities in Ethiopia.* Available at: http://www.researchgate.net/publication/2228759316.Information-and. Accessed 05-05-2014.

Adeniyi, I. A. 2013. *Accessing indigenous knowledge resources in libraries and the problems encounters by librarians managing IK in Oyo State.* Available at: http://digitalcommons.unl.edu-libphilprac/988. Accessed 01-09-2013.

African Regional Intellectual Property Organization (ARIPO), 2006. Legal instrument on the protection of traditional knowledge and expression of folklore. Available at: http://www.aripo-org. Accessed 10-09-2016

Agrawal, A.1995. Indigenous and scientific knowledge: some critical comments. *Indigenous knowledge and development monitor* 3(3): 230.

Agrawal, A. 2002. Indigenous knowledge and politics of classification. *International Social Science Journal* 54 (173): 287-297.

Aisian, P.W. and Gay, L.R. 2014. *Introduction to educational research.* 10th ed. Harlow: Pearson International.

Ambo Roué, A. 2010. The accession registers. Available at http: www.epa-prema.net/documents

/resources/1-A. Accessed 27-05-2016.

Arts and Culture Task Group, 1995. Draft proposal for heritage. Pretoria.

Aschroft, B. 2001. *Edward Said*. London: Routledge.

Babbie, E. 2002. *The basics of social research.* 2nded. Belmont, CA: Thomson Wad worth.

Babbie, E. and Mouton, J. 2007. *The practice of social research: South African edition*. Oxford University Press.

Bailey, K.D. 1982. *Methods of social research.* New York: Free Press.

Banda, D. 2008. *Education for all and African indigenous knowledge systems: the case of the Chewa people of Zambia*. Saarbrucken: Lambert Academic Publishing.

Battiste, M. 2000. *Protecting indigenous knowledge and heritage: a global challenge.* Saskatoon: Purich.

Bell, J. 2003. *Doing your research project: a guide for first time researchers in education and social science. 3rd ed.* Maidenhead: Open University Press.

Berckmoes, L.H. 2008. Protecting indigenous knowledge in South Africa. *Education and Research.* The Hague: Ministry of Foreign Affairs.

Berman, E.H. 1975. *African reactions to missionary education*. New York: Teachers College

Binnerman, J. 1991. Mummified human remains from the Kouga Mountains, Eastern Cape. *The digging stick* 16 (2):1-12.

Biyela, N., Oyelude, A. and Haumba, E. 2016. Digital preservation of indigenous knowledge by cultural heritage institutions: a comparative study of Nigeria, South Africa and Uganda. *Paper* presented *at the SCESCAL Conference, 25-29 April, Ezulwini: Swaziland.* Available at: http://repository.hsrc.ac.za/handle/20.500.11910/10196. Accessed 25-05-2017.

Blaut, J. 1993. *The colonizer's model of the world: geography diffusionism and Eurocentric history*. New York: Guilford Press.

Bless C. and Higson-Smith, C. 2000. *Fundamentals of social research*. Kenwyn: Juta.

Bogdan, R.C. and Biklen, S.K. 1998. *Qualitative research for education: an introduction to theory and methods.* Boston: Allyn and Bacon.

Boikhutso, D.N. 2012. Methods of indigenous knowledge preservation in South Africa. MIS Thesis. Tshwane: Tshwane University of Technology.

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

Brookes, S. 1988. The Natal Society Museum (1851-1904) potentialities and problems. *Natalia* 8: 59-69.

Charyulu, A.S. n.d. Dissemination of indigenous knowledge: a way to sustainable agriculture. Available at: http://www.manage.gov.in/managelib/faculty/chary.htm. Accessed 01-01-2014.

Check, J.N. and Schutt, R. K. 2012. *Research methods in education*. Harvard: Sage publication.

Chikonzo, A. 2006. The potential of information and communication technologies in collecting, preserving and disseminating indigenous knowledge in Africa. *International information and library review* 38: 132-138.

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

Cohen, L., Manion, L. and Morrison, K. 2000. *Research methods in education*. 5th ed. London: Routledge Falmer.

Cohen, L., Manion, L. and Morrison, K. 2002. *Research methods in education*. London: Routledge Falmer.

Cohen, L., Manion, L. and Morrison, K. 2011. *Research methods in education*. 7th ed. London: Routlege Falmer.

Collier, D. 2006. Access to and control over plant genetic resources for food and agriculture in south and southern Africa: how many wrongs before a right. *Journal of law, science and technology* 7(2).

Connaway, L.S. and Powell, R.R. 2010. *Basic research methods for librarians'* 5th ed. Westport: Libraries Unlimited.

Concise Oxford Dictionary. 2006. South Africa: Cape Town: Oxford University Press.

Correa, C.M. 2001. Methodologies for evaluating the economic importance of copyright and neighbouring rights in Latin America. *Copyright bulletin* 34(2): 5-24.

Creswell, J.W. 2014. *Research design: qualitative, quantitative, and mixed methods approach 3rd ed*. Thousand Oaks: Sage publication.

Dana, L.P., Korot, L. and Tovstiga, G. 2005. A cross-national comparison of knowledge management practices. *International journal of manpower* 26 (1) 10-22.

Davenport, T.H. and Prusak, L. 1998. *Working knowledge: how organisations manage what they know*. Boston: Harvard Business School Press.

Daya, Y. and Vink, N. 2006. Protecting traditional ethno botanical knowledge in South Africa through the intellectual property regime. *Agrekon* 45(3): 38-319.

Deacon, H. and Dondolo, L. 2004. *The subtle of power of intangible-heritage illegal and financial instruments for safeguarding intangible heritage*. Cape Town: HSRC.

Deetz, S. 1996. Crossroads-Describing differences in approaches to organization science: rethinking Burell and Morgan and their legacy. *Organization science* 7 (2): 199-207.

Denzin, N.K. and Lincoln, Y.S. 2005. *Introduction: the discipline and practice of qualitative research.* Thousand Oaks, CA: Sage.

Department of Arts and Culture, n.d. Draft national museums policy. Available at: https//www.westerncape.gov.za/assets/department/cultural.affairs.sport/draft-nationalmuseum policy.pdf. Accessed 18-09-2017.

Department of Science and Technology, 2005. Indigenous knowledge system. Republic of South Africa: Policy Document.

Desta, A. 2009. Comprehending indigenous knowledge: an ethnographic study of knowledge processes within natural resource management. PhD dissertation. London: Pro Quest LLC. Available at: http://etheses.lse.ac.uk/2345/1/u615293.pdf. Accessed 11-04-2015.

De Vos, A.S. 1998. *Research at grassroots: a primer for the caring professions.* Pretoria: J.L Van Schaik.

Dlamini, R.T. 2009. The management of indigenous knowledge initiatives in Swaziland. M.I.S. Thesis. Pietermaritzburg: University of KwaZulu-Natal.

Dlamini, D.N.B. 2005. The management of indigenous knowledge in Swaziland, with specific reference to the Swaziland National Library Service. M.I.S.Thesis. Cape Town: University of the Western Cape.

Dlamuka, M.C. 2003. Identities, memories, histories and representation: the role of museums in Twentieth century KwaZulu-Natal. MA Thesis. Durban: University of KwaZulu-Natal.

Domegan, C. and Fleming, D. 2007. *Marketing research in Ireland, theory and practice*. U.C: Gill and MacMillan.

Dondolo, L. 2005. Intangible heritage: the production of indigenous knowledge in various aspects of social life. *INDILINGA: African journal of indigenous knowledge systems* 4 (1): 110-126.

Drost, E. 2011. Validity and Reliability in social science research. *Education Research and Perspectives 38 (1).* Available at: http://www3.nd.edu>Drost2011 Accessed 07-01-2017.

Dube, M.A. and Musi, P.J. 2002. Analysis of indigenous knowledge in Swaziland: implication for sustainable agricultural development. Available at: http://www.atpsnet.org/content/files/documents/working%series2034.pdf. Accessed 01-12-2013.

Egziabher, T.B.G. 2002. The African model law for the protection of the rights of local communities' farmers and breeders and for the regulation of access to biological resource in relation to international law and institutions. *Paper read at the Ethio-Forum Conference.*

Ellsberg, M. and Heise, L. 2005. *Researching violence against women: a practical guide for researchers and activists*. Washington: World Health Organisation Path.

Erickson, F.D. 1986. *Qualitative methods in research on teaching*. New York: McMillan.

Evaluation Briefs, 2008. Data collection methods for program evaluation: questionnaires. Available at: http ://www.cde.gov/healthyyouth/evaluation/pdf. Accessed 20-07-2016.

Fanon, F. 2008. *Black Skin White Masks*. New York: Groove.

Faulkhead, S. 2005. Is technology enough? developing archival information system in community environments. *In XVII Bi Annual ESARBICA General Conference on Archives and Records in the Information Society: The African Agenda,* 25-29 July, Botswana: Gaborone.

Food and Agriculture Organisation. 2004. The international treaty on plant genetic resources for food and agriculture. Available at: http://www.fao.org./ag/cgrfa/itpgr.htm. Accessed 05-12-2013.

Fraser, S. and Robinson, C. 2004. *Paradigms and philosophy: doing research with children and young people*. London: Sage Publication.

Gephart, R. 1999. *Paradigms and research methods*. Available at: http://divisionaomonline.org/Rm/1999-RMDForumParadigms-and-Researchmethods.html. Accessed 24-05-2016.

Gill, A. 2014.Top ten benefits of ongoing staff training development. Available at: http://www.saxonsgroup.com.au/blog/human-resource/top-10-benefits-of-ongoing-staff-tr. Accessed 10-01-2016.

Gorman, G. E. and Clayton, P. 2005. *Qualitative research for the information professional: a practical handbook*. London: Facet Publishing.

Goodwin, C.J. 2010. *Research in psychology: methods and design.* USA: John Wiley and Sons.

Grenier, L. 1998. *Working with indigenous knowledge: a guide for researchers.* Ottawa: International for Development Research Centre.

Guba, E.G., and Lincoln, Y.S. *2005. Paradigmatic controversies, contradictions, and emerging confluences.* In N.K. Denzin and Y.S. Lincoln (Eds.), the sage handbook of qualitativeresearch.3rd ed. Thousand Oak, CA: Sage.

Guest, B. 2012. *Trek and Transition: a history of the Msunduzi and Ncome Museums (incorporating the Voortrekker complex) 1912-2012*. Pietermaritzburg: Msunduzi Museum.

Hagar, C. 2004. Sharing indigenous knowledge: to share or not to share? Available at: http://www.researchgate.net/…260591416-sharing-the benefits of commercialization.

Haralambos, M. 1985. *Sociology: themes and perspectives.* London: Bell and Hyman.

Hendry, D.G. 2005. *Collaborative bibliography.* Seattle, WA: University of Washington.

Henning, E., Van Rensburg, W. and Smit, B. 2004. *Finding your way in qualitative research.* Pretoria: Van Schaik Publisher.

Hiwasaki, L. 2014. Local and indigenous knowledge for community resilience: hydro-meteorological disaster risk reduction and climate change adaptation in coastal and small island

communities. *International Journal of Disaster Risk Reduction, (10): 15-27.*Available at: http:// www.elsevier.com/locate/ijdrr. Accessed 24-05-2017.

Hogan, A.R. 2007. Education in the wetlands and wetlands in the education: a case of contextualizing primary basic education in Tanzania. M.A. Thesis. Grahamstown: Rhodes University.

Available at: http://www.eprints.ru.ac.za./1251/01/Thesis HoganFinaIMarch2608.pdf. Accessed 01-10-2013.

Hong, J.J. 2010. Cultural aspects of globalizing University industry knowledge interaction in China. PhD. Thesis. Finland: University of Technology Lappeenranta.

Hopwood, B. 2014. History and heritage. *A Journal of the Msunduzi (Incorporating the Voortrekker Complex and Ncome Museums)* 4: 2-4.

Hou, Y. 2009. An investigation into visitor's satisfaction with Port Elizabeth's Heritage Museum. MA Thesis. Port Elizabeth: Nelson Mandela Metropolitan University.

Hughes, P. 2001. *Paradigm, methods and knowledge: doing early childhood research*. Buckingham: Open University Press.

Human Science Research Council (HSRC), 2011. Indigenous knowledge to preserve and to protect. HSRC Reviews, 9 (2). Available at: http://www.hsrc.ac.za/HSRCReview Article-249.phtml. Accessed 20-08-2014.

Hunter, J. 2005. The role of information technologies in indigenous knowledge management. *Austrian academic and Research Libraries*. 36 (2): 109-124. Available at:

http://www.tandfonline.com/page/terms-and-conditions. Accessed 08-07-2013.

Inter-Agency Support Group, 2007. Indigenous peoples issues and climate change. *Permanent forum on indigenous issues.* 70th Session, 21 April-22 May, New York.

International Council of Museums, 1986-2016. The ICOM code of ethics for museums. Available at: http//icom.museum/news/article/the-icom-c. Accessed 10-05-2016.

International Council of Museums, 2001. The ICOM code of ethics for museums. Available at: http//icom.museum/news/article/the-icom-c. Accessed 10-05-2016.

International Council of Museums, 2007. What is a museum*?* 21st*General Conference*. Vienna: Austria. Available at:

http://www.sama.za.net/index.php?option=com-coccocontent&view=article&id=47&Itemi. Accessed 20-12-2013.

International Federation of Library Association (IFLA). 2004. IFLA *statement on indigenous traditional knowledge.* Available at: http://www.ifla.org/III/eb/sitk03.html Accessed 22-03-2014.

International Institute of Rural Reconstruction (IIRR). 1996. Recording and using indigenous knowledge: a manual. Available at: http://www.panasia.org.sg/irr/irkmanual/index.htm. Accessed 18-09-2013.

International Union for the Conservation of Nature, 1997. *Indigenous peoples and sustainability: cases and actions.* Utrecht: International Books.

Internet World Stats, 2016. *Usage and population statistics.* Available at: http://www.internetworldstats.com>stats. Accessed 08-05-2017.

Kaddu, S. and Nyumba, J.B. 2006. Telecentres as a strategy for knowledge management in the SCECSAL region; a case of Uganda. *Proceedings of the 17th Standing Conference of Eastern, Central and Southern Africa Library and Information Associations, 10-14 July,* Dar-es-Salaam: Tazania. Available at: http://docs.mak.ac.ug/sites.default/files/SCECSAL%20XVII. Accessed 13-06-2015.

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.

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,* 15-18 July, Lusaka: Zambia.

Kelly, G. P. and Altbach, P. G.1984. *Introduction: the face of colonialism, education and the colonial experience*. New Brunswick: Transaction.

Keitzmann, J. and Hermkeuns, K. 2011. Social media? Get serious! Understanding the functional building blocks of social media. *Business horizons* 54 (1) 260-268.

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

Kibirige, I. and Van Rooyen, H. 2007. Enriching science teaching through the inclusion of indigenous knowledge. In Van Rooyen, H. and de Beer, J. (eds.) *Teaching science in the OBE classroom*. Pretoria.
Available at: http://repository.up.ac.za/bitstream/handle/2263/52979.Accessed 25-05-2016.

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.

Kihwelo, P.F. 2009. Traditional intellectual property protection in Tanzania: the case of traditional medicinal knowledge. PhD dissertation. Tanzania: University of Tanzania.

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

Korber, R. 1990. A new home for the Pietermaritzburg Tatham Art Gallery.*Vlieende Springbok.*

Kothari, B. 1995. From oral to written: the documentation of knowledge in Ecuador. *Indigenous knowledge and development monitor* 3(2).

Krupnik, I. and Ray, G.C. 2007. Pacific walruses, indigenous hunter, and climate change: bridging scientific and indigenous knowledge. Available at:
http://www.citeseenx.ist.psu.ed/viewdoc/dowlod?doi=10. Accessed 12-05-2015.

Kumar, R. 2011. *Research methodology: a step-by-step-guide for beginners.* London: Sage Publishers.

Kurin, R. 2004. Museum and intangible heritage: culture dead or alive. *ICOM News, 57 (4):7-9.* Available at: http://www.intercom.museum/documents/3-Suchy.P. Accessed 24-05-2016.

KwaZulu-Natal Department of Arts and Culture, 2016-2017. *Budget Speech delivered by MEC for Arts, Culture, Sport and Recreation, Hon. Ntombikayise Sibhidla-Saphetha at the Natal Legislature, 21 April,* Pietermaritzburg. Available at: http://www.kzndac.gov.za/blog/wp-content/uploads/2. Accessed 01-08-2016

KwaZulu-Natal Museum, 2014-2015. Annual Reports. Pietermaritzburg. Available at: social-services-KwaZulu-Natal-museum-annual-report.pdf-AdobeReader. Accessed 01-08-2016.

KwaZulu-Natal Museum Services Practical Training, 2013. *Back to basics*. Pietermaritzburg.

Laband, J. and Haswell, R. 1988. *Pietermaritzburg: 1838-1988 a portrait of an African city*. Pietermaritzburg: University of Natal Press.

Lee, S. 2001. Ngugi Wathoing'o and third world post colonialism. PhD dissertation. Cape Town: University of Cape Town.

Leedy, P.D. and Ormrod, J. E. 2014. *Practical research: planning and design.* 10th ed. New Jersey: Pearson Education, Inc.

Lees, D. 1997. Museums. In: *International encyclopedia of information and library science*. London: Routledge.

Lwoga, E.T. 2009. Application of knowledge management approaches and information and communication technologies to manage indigenous knowledge in the agricultural sector in selected district of Tanzania. PhD dissertation. Pietermaritzburg: University of KwaZulu-Natal.

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 globalisation of indigenous of indigenous knowledge systems:* Pretoria: LIASA pp. 49-60.

Magni, G. 2016. Indigenous knowledge and implications for the sustainable development agenda. *Paper commissioned for the Global Education Monitoring Report 2016, Education for people and planet: creating sustainable futures for all.* Available at: http://unesdoc.unesco.org/-images/002456/245623e.pdf. Accessed 01-08-2017

Maferetlhane, O.T. 2012. The role of indigenous knowledge in disaster risk reduction: a critical analysis. MA Thesis. Potchefstroom: North West University.

Makara, M. 2002. Management of indigenous knowledge in Lesotho: prospects and challenges for information professionals. In Snyman, R.(ed.) *SCECSAL* 2002: *from African to the world-the globalization of indigenous knowledge systems*. Pretoria: LIASA pp.37-47.

Mampara, J.2009. Indigenous knowledge system in Zimbabwe: juxtaposing postcolonial theory. *Journal of Pan African studies* 1 (3): 139-148.

Maree, K. 2007. *First steps in research.* Pretoria: Van Schaik.

Masango, C.A. 2010. Indigenous knowledge protection: prospects in South Africa's intellectual property framework. *South African journal of libraries and information science* 76 (1): 74-80.

Maundu, P. 1995. Methodology for collecting and sharing indigenous knowledge: a case study. Available at: http://www.nuffic.nl/ciran/ikdm/3-2/articles/maundu.html.Accessed 17-09-2013.

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

McNamara, C. 1999. General guidelines for conducting interviews. Available at: http://www.mapnp.org/library/evaluation/intrview.htm. Accessed 10-11-2015.

Mearns, M. A. 2006. Conservation of indigenous knowledge at cultural villages: an exploratory study. *Mousaion* 24 (1): 23-50.

Mind Manager, 2016. What are knowledge maps? Available at: https://www.mindjet.com/ Features/knowledge/knowledge maps. Accessed 20-11- 2017

Mitchell, B. 2005. *Research methods.* 3rded. Cape Town: Oxford University Press.

Mkhulisi, M. and Hadebe, E. 2008. Consultation: an important element in the preservation of sacred heritage. *In Sama/Icoms Conference 2008*. Cape Town.

Moahi, K.G. 2005. Documenting indigenous knowledge systems in Africa: prospects and challenges. *Esarbica journal* 24: 75-85.

Mondo, T.W., Baryamureeba, V. and William, D. 2007. Collaborative framework for supporting indigenous knowledge management. Available at: http//www.delivery.acm.org/10.1145/1320000/1316900/p-Mwembesa.pdf. Accessed 18-12-2014.

Mosimege, M. 2004. Indigenous knowledge systems in South Africa: perspective from the Department of Science and Technology. *INDILINGA: African journal of indigenous knowledge systems* 3 (1).

Mpanza, X. 2014. Protecting traditional knowledge. *DE REBUS: South Africa attorneys' journal* 542: 23-24.

Mpofu, D. and Miruka, C.O. 2009. Indigenous knowledge management transfer systems across generations in Zimbabwe. *INDILINGA: African journal of indigenous knowledge systems* 8 (1): 85-94.

Msunduzi Museum (Incorporating the Voortrekker Complex), 2014-2015. Annual Report. Pietermaritzburg. Available at: social-services-msunduzi-voortrekker-museum-annual-report-pdf-AdobeReader. Accessed 01-08-2016.

Mukherji, P. and Albon, D. 2010. *Research methods in early childhood: an introductory guide*. London: Sage Publication.

Mukuka, G. S. 2010. Indigenous Knowledge systems and intellectual property laws in South Africa. PhD. dissertation. Johannesburg: University of Witwatersrand. Accessed 02-03-2016.

Museums and the Web, 2005. *Reports and analyses from around the world are presented at MW*. Toronto. Available at: http://www.museums and the web.com/mw2005/paper.

Musingafi, M. 2013. Challenges in preserving indigenous knowledge systems: learning from past experiences. *Information and knowledge management* 3 (2): 19-25.

Mutula, S.M. 2002. The digital divide in Sub-Saharan Africa: implications for the revitalisation and preservation of indigenous knowledge systems. In Snyman, R. (ed.) *SCECSAL 2002: From Africa to the world -the globalisation of indigenous knowledge systems. Proceedings of the 15th Standing Conference of Eastern, Central and Southern African Library and Information Associations, 15-19 April, Caesars Gauteng Conference Centre*, South Africa. Pretoria: LIASA pp. 119-141.

Myers, M.D. 2009. *Qualitative research in business and management*. London: Sage.

Naidoo, N. 2007. Indigenous knowledge in the national curriculum-from policy to practice for environmental education. MSc. Thesis. Johannesburg: University of Witwatersrand.

Nakashima, D. 2010. Indigenous knowledge people and sustainable practice. *Journal of social and economic dimensions of global environmental change* 5: 312-324.

Ndlovu, N. 2015. Living heritage versus heritage legislation: exploring the preservation of living heritage in the post-apartheid South Africa. *Paper presented at the Human Science Research Council Seminar, 21 September*, South Africa. Pretoria.

Nel, P.J. 2005. Indigenous knowledge systems: contestation, rhetoric's and space. *INDILINGA*, 4 (1): 2-14.

Nel, P. J. 2006. Indigenous knowledge systems: local community and community in making. *INDILINGA, African journal of indigenous knowledge systems* 5 (2): 99-107.

Nel, M.A. 2015. Information needs, information seeking behaviour and information use behaviour of researchers at the faculty of Veterinary Science University of Pretoria and how these are being met by the information support delivered by the Jetello F. Soga Library. M.I.S Thesis. Pretoria: University of Pretoria.

Neuman, L.W. 2006. *Social research methods: qualitative and quantitative approach.* Boston: Allyn and Bacon.

Neuman, L.W. 2011. *Social research methods: qualitative and quantitative approach.* Boston: Allyn and Bacon.

Ngetich, K. 2005. Indigenous knowledge, alternative medicine and intellectual property rights concern in Kenya. Available at: https//www.codesria.org/Links/Conference/generalassemblpaper/ngetich.pdf. Accessed 20-09-2014.

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

Ngulube, P. 2003a. Preservation and access to public records and archives in South Africa. Phd. dissertation. Pietermaritzburg: University of Natal. Available at: http://www.hs.unp.ac.za/infs/Thesispn.pdf. Accessed 17-08-2014.

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

Ngulube, P. and Lwoga, E. 2007. Knowledge management models and their utility to the effective management and the integration of indigenous knowledge with other knowledge systems. *INDILINGA, African journal of indigenous knowledge systems* 6 (2): 117-131.

Nicholas, L. 2008. *Introduction to psychology.* Cape Town: UCT Press.

Nonaka, I.1994. A dynamic theory of organizational knowledge creation. *Journal of organization science* 5 (1): 14-35.

Nonaka, I. and Takeuchi, H. 1995. *The knowledge -creating company: how Japanese companies create the dynamics of innovation*. New York: Oxford University Press.

Nyangila, J. 2006. Museums and community involvement. Available at: http//www.intercom.m-museums/documents/-3MhamboPdf. Accessed 11-10-2015.

Nyumba, J. B. 2009. The role of the library in promoting the application of indigenous knowledge in development projects. *Proceedings of the 72nd International Federation of Library Association Conference*,20-24 August, Seoul.

Obomasawin, R. 2002. Indigenous knowledge and sustainable development. Available at: http://www.acidi-cida.gcca./cidaind.nsf. Accessed 15 -08- 2015.

Ocholla, D.N. 2007. Marginalized knowledge: an agenda for indigenous knowledge development and integration with other forms of knowledge. *International review of information ethics 7*: 1-10.

Ocitti, J.P. 1973. *African indigenous education*. Nairobi: East African literature bureau.

Ogunniyi, M. B. 2013. Harnessing indigenous knowledge systems in fostering quality education in Africa. *Journal of African culture and international understanding* (5): 13-23.

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

Onwu, G.O. and Mosimege, M. 2004. Indigenous knowledge systems and science and technology education: a dialogue. *African journal of research in mathematics, science and technology education* (8): 1-20.

Organization of African Unity (OAU), 2000. OAU model legislation for the protection of the rights of local communities, farmers and breeders and for the regulation of access to biological resources (OAU Model Law). Algeria: OAU. Available at: http://www.wipo.int/edocs/ Iexdocs/laws/en/oau/oauoolen.pdf. Accessed 26-04-214.

Owiny, S.A., Mehta, K. and Maretzki, A.N. 2014.The use of social media technologies to create preserve and disseminate indigenous knowledge and skills development to communities in East Africa. Available at: http://ijoc.org/index.php/ijoc/article/viewFile/1667/1067. Accessed 01-06-2016.

Parker, P.M. 2007. Webster's online dictionary. Available at:http://Websters-online-dictionary-Com/definition/theory. Accessed 20-03-2014.

Pickard, A.J. 2012. *Research methods in information.* London: Facet Publishing.

Poggenpoel, M., Myburg, C.P. H. and Van der Linde, C. H. 2001.Qualitative research strategies as prerequisite for quantitative strategies. *Education Indianapolis* 122 (2): 408-413.

Prain, G., Fujisaka, S. and Warren, D. 1999. *Biological and cultural diversity: the role of indigenous agricultural experimentation in development.* London: IT Publications.

Rapheshu, M. 2010. *Vulnerability of indigenous knowledge systems initiatives in South Africa* Available at: https//www.counselling and dwellness.co.za…vunerability%of20indigenous%20s-systems. Accessed: 13-10-2013.

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, Caesars Gauteng Conference Centre, South Africa. Pretoria: LIASA pp. 1-12.

Rentschler, R. 2007. Museums and performing arts marketing: the age of discovery. *Journal of arts, management, law and society* 32 (1): 7-15.

Rice, E.S., Royce, P. and Thompson, S.C. 2006. Social media and digital technology use among indigenous young people in Australia: a literature review. *International journal for equity in health* 15 (1):81-85. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC488. Accessed 10-10-2016.

Ridley, H. 1997. The KwaZulu-Natal Provincial Museum Services, 1974-1995: a brief history. MIS Thesis. Pietermaritzburg: University of Natal.

Rodehn, C. 2008. Lost in transformation: a critical study of two South African museums. PhD dissertation. Pietermaritzburg: University of KwaZulu-Natal.

Said, E. and Bhabha, H. 1992. *Postcolonial criticism: redrawing the boundaries: the transformation of English and American studies*. New York: MLA.

Sekaran, U. 2003. *Research methods for business: a skill- building approach*. 4thed. New York: John Willey and Sons.

Serantakos, S. 1998. *Social research.* Basingstoke: MacMillan.

Shizha, E. 2006. Legitimizing indigenous knowledge in Zimbabwe: a theoretical analysis of postcolonial school knowledge and its colonial legacy. *Journal of contemporary issues in education* 1 (1): 20-35.

Sifuna, D. N. 2008. Africa and Europe: historical and cultural dilemmas and challenges for nationhood and development. *Journal of African indigenous knowledge* 1 (17): 1-19.

Singh, P.K. n.d. Museum and education. Bhubaneswa: Orissa State Museum. Available at: http://odisha.gov.in-magazine. Accessed 21-05-2016.

Sithole, J.2007. The challenges faced by African libraries and information centres in documenting and preserving indigenous knowledge. *IFLA journal* 33 (2): 117-123.

Steven, A. 2008. A different way of knowing: tools and strategies for managing indigenous knowledge. *Libri* 58: 25-33.

Struwig, F.W. and Stead, G.B. 2007. *Planning designing and reporting research*. Cape Town: Pearson Education.

Struwig, F.W. and Stead, G.B. 2008. *Planning designing and reporting research*. Cape Town: Pearson Education.

Swiderska, K. and Argumedo, A. 2006. Towards a holistic approach to indigenous knowledge protection: UN activities, collective bio-cultural heritage and the UNPFII. *Paper read at the Fifth Session of the UN Permanent Forum on Indigenous Issues*, New York, 15-26 May. Available at: http://www.earthcall.org/files/2006/COEside event UNPFII 2006.PDF Accessed 10 -10- 2013.

Tatham Art Gallery, 2005.Serving Msunduzi through visual arts. Available at: http://www.tatham.org.za/collection.html. Accessed 07-07-2016.

Terre Blanche, M., and Durrheim, K. 1999. *Research in practice: applied methods for the social sciences*. Cape Town: University of Cape Town Press.

Terre Blanche, M., Durrheim, K. and Painter, D. (eds). 2006. *Research in practice: applied methods for the social sciences*. 2nd ed. Cape Town: University of Cape Town Press.

Texas Historical Commission, n.d. Basic guidelines for the preservation of historic artifacts. Available at: https//:www.thc.texas.gov/public/upload/publication/E. Accessed 10-09-2016.

Trimen, R. n.d. South Africa butterflies. Available at: http://www.remembered.co.za/roland-trimen: Accessed 02-04-2015.

Todd, R.J. 1999. Knowledge management: utilizing the knowledge capital of the learning community. *Journal of knowledge management* 13 (3): 11-14.

Ulluwishewa, R. 1993. Indigenous knowledge, national resource centres and sustainable development. *Indigenous knowledge and development monitor* 1 (3): 11-13.

Ulluwishewa, R. 1999. National knowledge, national indigenous knowledge resource centres and sustainable development. *Development administration and management*, Guinea: University of USAID.

Ulwazi.2016. Sharing indigenous knowledge. Available at: http://www.ulwaziprogramme.org.U-lwaziProgramme. Accessed 07-09-2016.

Ulwazi. 2017. Sharing indigenous knowledge. Available at: http://www.ulwaziprogramme.org/2017/04/Zulu-men-and-circumcision-in-south-Africa. Accessed 07-08-2017

United Nations Educational, Scientific and Cultural Organizational, 1989. Recommendation on the Safeguarding of Traditional Culture and Folklore. Paris: UNESCO. Available at: http://www.unesco.org/culture/laws/paris/html-eng1.shtml. Accessed 19-09-2015.

United Nations Educational, Scientific and Cultural Organizational, 2003. International Convention for the Safeguarding of the Intangible Cultural Heritage. Paris: UNESCO. Available at: http://www.unesdoc.unesco.org/images/0013/001325/132540e.pdf. Accessed 19-09-2015.

United Nations Educational, Scientific and Cultural Organizational, 2010. Indigenous people: development with culture in the light of the UN Declaration on the Rights of Indigenous People. Available at: http://www.en.unesco.org/indigenous-people/undrip.Accessed19-09-2015.

United Nations, n.d., Draft Declaration on the rights of indigenous people. Available at: http://www.un.org/esa/socdev/unpfii/documents/DRIPS- Accessed 10-10-2014.

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: Ethiopia 4-7.

United Nations Environment Programme (UNEP), 1992. Convention on biological diversity. Available at http://www.unep.org/documents.multilingual/default.asp?documentid=78&articleid-1163. Accessed 10-10-2013.

United Nations Environment Programme (UNEP) 2008. Convention on biological diversity. Available at http://www.unep.org/documents.multilingual/default.asp?documentid=78&articleid-1163. Accessed 10-10-2013.

Warren, D.M. and McKiernan, G. 1995. CIKARD: a global approach to documenting indigenous knowledge for development. In Warren, D.M., and L.J. Slikkerveerand D. Brokensha (eds.) *the cultural dimension of development: indigenous knowledge systems*: London: Intermediate Technology Publication pp.426-434.

Weitzman, E.A. 2000. *Software and qualitative research. In* N. Denzin and Y. Lincoln (eds). *Handbook of qualitative research*. Thousand Oak, CA: Sage.

World Group Bank (2012), Indigenous knowledge. Available at: http://www.worldbank.org/afri-ik/ikrept.pdf. Accessed 20-01-2014.

World Group Bank, 2008. Indigenous knowledge. Available at: http://www.worldbank.org/afri/-ikrept.pdf. Accessed 20-01-2014.

World Group Bank, 2002. Indigenous knowledge and intellectual property rights. Available at: http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2002/01/25/000094046-02011504020266//Rendered/PDF/multi0Page.pdf. Accessed 10-02-2015

World Intellectual Property Organization (WIPO) 2011. Traditional knowledge and traditional cultural expressions Available at: https://www.wipo.int/edocs/pubdocs/en/wipopubtk9.Pdf. Accessed 24-02-2016.

APPENDICES

Appendix 1: Cover letter to the respondents

Dear Respondent,

I am Delisile Mncube, Information Studies candidate at the University of KwaZulu-Natal, Pietermaritzburg Campus, South Africa. I am conducting this study as part of the requirement for the Master's degree. I am conducting a study on the management of indigenous knowledge by museums: a case study of Pietermaritzburg. I request your permission to allow me to conduct an interview with you as a staff member in an institution that is dealing with the management of indigenous knowledge (collecting, storing/preservation and disseminating)

The study is aimed at finding out how indigenous knowledge is being managed and what strategies are being used to manage it by various museums in Pietermaritzburg, namely, the Msunduzi Museum, the KwaZulu-Natal Museum, the KwaZulu-Natal Museum Services and the Tatham Art Gallery. Any information that is obtained in connection with this study will remain confidential and will be disclosed only with your permission. Please note that your name will not be included

in the report and your confidentiality will be maintained throughout the study. Your participation in answering the questions is completely voluntary. You have the right to withdraw at any time during the study. I appreciate the time and effort it would take to participate in this study.

You are kindly asked to answer all questions to the best of your ability.

Yours sincerely

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Appendix 2: Informed consent form

Title of the study:

The management of indigenous knowledge by museums: a case study of Pietermaritzburg.

I, ……., hereby consent to participate in the study as outlined in the document about the study/ as explained to me by the researcher.

I acknowledge that I have been informed about why the questionnaire/interview is being administered to me. I am aware that participation in this study is voluntary and I may refuse to participate or withdraw from the study at any stage and for any reason without any form of disadvantage.

I…….acknowledge that I understand the contents of this form and freely consent to participating in the study.

Participant

Signed:

Date……..….

Researcher

Signed…….

Date……

Appendix 3: Questionnaire

The management of indigenous knowledge by museums: a case study of Pietermaritzburg.

PROVISIONAL INTERVIEW SCHEDULES

SECTION A: PERSONAL INFORMATION ABOUT RESPONDENT

1. Gender

Male [ ] Female [ ]

2. Age:

20-30 [ ] 31-40 [ ] 41-50 [ ] 51 and above [ ]

3. What is your highest qualification?

……
……

4. What position do you hold in your institutions?

……
……

5. Please explain your duties in this position with regard to indigenous knowledge and its management.

……
……
……
……

SECTION B: INDIGENOUS KNOWLEDGE (IK) MANAGEMENT

6. Are there set standards or specified guidelines for IK management in your institution?

Yes [ ] No [ ] Do not know [ ]

If yes, please elaborate.

……
……
……
……

7. Does your institution consider the issue of Intellectual Property Rights (IPR) when managing IK?

Yes [ ] No [ ]

8. As someone managing IK, how do you handle the issue of IPRs?

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9. How are you alerted to the availability of IK?

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10. What recording mechanism do you use when collecting IK?

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11. When collecting IK are there any challenges you encounter? If yes, please elaborate

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12. How do you organize the collected IK, such as classifying it to ensure easy accessibility when needed?

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13. Are there challenges you face when organizing/classifying the collected IK?

If yes, please elaborate.

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14. Are there any challenges you face when disseminating IK?

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15. Are there any special precautions taken when storing IK?

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16. Are there any challenges you face when storing/preserving IK? If yes, please elaborate.

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17. Where in the museum is IK stored?

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18. How do you make the IK which is in your collection known to the users? Do you use any of the following methods? (Please tick)

Printed lists	Newsletter	Displays

19. Do you have any strategies in place to market and disseminate the IK to your users?

Yes. [ ] No [ ]

If yes, please elaborate.

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20.Who is your user population for the IK that is collected and organized?

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21. Who would you describe as the main users of your IK collection?

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22. How would you describe the usage of the IK collection?

Very good [ ] Good [ ] Average [ ] Poor [ ]

23. Is there anything else that you would like to say about IK and its management in your institution?

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Thank you very much for your time

Appendix 4: Observation check list

List of activities to observe

1. Precautions when storing IK
2. Organizing of IK
3. Handling of IK objects
4. Recording of IK