

# Management and Use of Indigenous Knowledge in Selected Public Institutions in the Nairobi City County, Kenya

**Wamugi Samuel Maina**

The Technical University of Kenya

[wamugisamuel5@gmail.com](mailto:wamugisamuel5@gmail.com)

**Henry Nyabuto Kemoni**

The Technical University of Kenya

[kemoni@tukenya.ac.ke](mailto:kemoni@tukenya.ac.ke) / [hkemoni@yahoo.com](mailto:hkemoni@yahoo.com)

**Naomi Mwai**

The Technical University of Kenya

[mwainaomi@yahoo.com](mailto:mwainaomi@yahoo.com)

## Abstract

*Rationale of Study* – The aim of the study was to investigate how indigenous knowledge is managed and used in selected public institutions within Nairobi City County, Kenya. The specific objectives were to establish how indigenous knowledge is acquired from local communities; explore the forms of indigenous knowledge managed and used; examine the indigenous knowledge management and use processes; investigate the challenges and opportunities in the management and use of indigenous knowledge; and recommend how to improve the management and use of indigenous knowledge.

*Methodology* – The researcher adopted a qualitative research approach using a multiple case study design. Data was collected from 16 officers drawn from the National Museum of Kenya, Kenya National Library Service, Kenya National Archives and Documentation Service, and Kenya Medical Research Institute which deal with the management and use of indigenous knowledge in Nairobi City County.

*Findings* – The institutions lacked policies to guide the acquisition of indigenous knowledge from local communities. There were various forms of indigenous knowledge managed and used in the public institutions. However, there were no guidelines for their management and use. The study concluded that although indigenous knowledge plays a significant role, it was neither properly managed nor used. Therefore, there is need to properly harness and manage its use.

*Implications* – The study recommends the formulation of a proper legal framework to guide the management and use of indigenous knowledge. There is also need for adequate allocation of resources, publicity and setting up of more indigenous knowledge repositories.

*Originality* – This paper is based on a Master of Science in Information and Knowledge Management dissertation written at the Technical University of Kenya in 2018.

## Keywords

Indigenous knowledge, knowledge repositories, Nairobi City County, Kenya

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**Introduction**

Indigenous knowledge (IK) is the knowledge held by communities living in specific geographical and cultural settings. IK needs to be managed and preserved to avoid danger of it getting obsolete if suitable measures are not taken (Dlamini, 2017). Notably, much of IK is conserved in the recollections of seniors and the elderly. Therefore, it is progressively disappearing as a result of memory loss and death (Dlamini, 2017; Ngulube, 2002). Moreover, indigenous knowledge is mostly tacit and is driven in the experiential as well as native awareness of the community. It is usually exchanged through individual communication and illustration. It gets conveyed to apprentices by the manager; to children from other children; and to one neighbour from another (Dlamini, 2017; Ngulube, 2002).

IK is gradually disappearing in most countries because there are no tangible efforts to recognise or manage it (Lwoga, Ngulube & Stilwell, 2010). Ngulube (2002) argues that IK is diminishing because there are no proper mechanisms for taking, processing, packing, reclaiming and disseminating it to the coming generations. Due to colonisation and globalisation, some indigenous communities have lost their indigenous knowledge which was stored in non-traditional formats. Therefore,

there is need for IK repositories in which IK can be stored in usable formats.

**Characteristics of Indigenous Knowledge**

The features of indigenous knowledge can be revealed through numerous inter-twined aspects which are more precise to its nature. These aspects are summarised as (a) indigenous and bound locally to a specific region; (b) context and culture specific; (c) knowledge that is non-formal; (d) undocumented and generally oral; (e) adaptive and vibrant; and (f) related closely to the existence and nourishment of many people worldwide.

Mazur (1996) reiterated that IK is native knowledge; created in a society; founded through activities relating to invention, adaptation and research; adjusted to the native ethos and setting; and spoken in local dialects. Every society or culture has its own unique IK. Thus, it is ethos and location-specific. It influences decision making at the local level in the management of the natural resources, the environment, livestock, education, food preparation, healthcare, agriculture and a variety of other community activities. It is the foundation for the existence of policies and solution of problems for indigenous groups. Societies and peoples, rather than persons, communally hold IK which is communicated verbally and is not methodically written down.

This is unspoken knowledge (sometimes hard to classify), which is entrenched in public and societal practices, organisations, associations, rites and ceremonies.

Indigenous knowledge is varied and includes a number of fields. Sarkhel (2016) categorises these to include information, practices and technologies, disease treatment, beliefs, nourishment, assessment of native food resources, design of cyclical food recipes, health, veterinary care, human resources, education, communication, agriculture and fisheries, weather forecasting, food and technology, tools, handcrafts, performing arts and religion and astrology.

### **Statement of the Research Problem**

Despite emerging interests in IK, little is known about how it is managed, particularly in developing countries like Kenya. For example, issues relating to indigenous knowledge policies and legislation, structures, research, literacy, education, training, diffusion and use that reflect on IK recognition, appreciation and protection, are not readily known (or available) (Sihanya, 2016). Part of the problem stems from the realities of living in a developing country; most indigenous people live in rural and marginalised areas where modern forms of communication are relatively unavailable. This problem is compounded by high levels of ignorance and illiteracy (Mbeva, 2000). Issues

pertaining to the recognition, protection and appreciation of IK, therefore, need to be clarified.

The Government of Kenya recognises the economic, social and cultural value of IK. Consequently, it has created several institutions to facilitate the management and use of IK. As part of their mandate, these institutions keep legal deposits of IK materials as a means of preserving and providing ready access to IK. Most of these institutions have a presence in Nairobi City County. They include Kenya National Archives and Documentation Service (KNADS), National Museums of Kenya (NMK), Kenya National Library Service (KNLS), and the Kenya Medical Research Institute (KEMRI). That these institutions preserve and promote the use of IK is obvious. However, how they manage and promote the use of IK is unclear. The aim of this study was to investigate how the IK held by these institutions is managed and used within Nairobi City County. The study also explored the need to establish a dynamic IK management system which facilitates the capture and codification of tacit knowledge as a means of enhancing the interchange between tacit and explicit knowledge.

### **Research Objectives and Questions**

The study was guided by the following objectives:

- a) To establish how IK is acquired from local communities by the selected IK repositories within Nairobi City County;
  - b) To explore the forms of indigenous knowledge managed and used by selected IK repositories within Nairobi City County;
  - c) To examine the processes applied in the management and use of IK in the selected repositories within Nairobi City County;
  - d) To investigate the challenges and opportunities in the management and use of IK by selected repositories within Nairobi City County; and
  - e) To propose strategies to enhance the management and use of IK by selected IK repositories within Nairobi City County.
- d) What challenges and opportunities exist in the selected institutions in terms of the management and use of IK?
  - e) What strategies can be used to collect, preserve and disseminate IK by the selected institutions in the Nairobi City County?

### **Methodology**

The authors adopted a qualitative research approach using a multiple case study design. Four institutions dealing with the management of IK in the Nairobi City County provided the context of the study in terms of case studies. The organisations were the National Museums of Kenya, Kenya National Archives and Documentation Centre, Kenya National Library Service, and Kenya Medical Research Institute. The authors applied constructivism to understand how the four institutions were managing and using IK. The authors collected data through interviews and documentary analysis.

A total of 16 respondents participated in the study. They consisted of directors, IK procurement or acquisition officers, librarians, archivists, research scientists and heads of departments dealing with the management of IK in the institutions. There were four directors, four IK procurement or acquisition officers, four information management heads, and four heads of departments. The authors held the

The study sought answers to the following research questions:

- a) How is IK gathered from local communities within the Nairobi City County?
- b) Which forms of IK are managed and used in the four selected institutions in the Nairobi City County?
- c) What processes are applied in IK management and use in selected institutions in the Nairobi City County?

view that the above respondents were be able to provide a clear picture concerning IK management and use in the four institutions. The collected data was analysed thematically.

### **Findings and Discussions**

The findings of the study are presented and discussed in this section based on the objectives and research questions.

#### *Acquisition of Indigenous Knowledge from Local Communities*

It was necessary to establish how the four institutions were acquiring the IK from local communities. Respondents attested to the use of different ways of collecting indigenous knowledge from local communities. These include legal deposit, donations or gifts, individual researches, talks/reading of books, documentation, literature survey, and interaction with traditional herbalists, borrowings, and direct purchase. The authors found that three institutions - KNADS, NMK and KNLS - had almost similar ways of acquiring IK from local community. KEMRI, on the other hand, acquired IK largely through interaction with traditional herbalists as affirmed by a senior research scientist.

#### *Forms of Indigenous Knowledge*

The findings of the study show that there are different forms of indigenous knowledge in the four institutions studied. These include the tangible forms of indigenous knowledge such as photographs, published books or papers, traditional foods, ritual sites, monuments, gazetted historical sacred sites, crafts and objects, buildings, home crafts, weapons (such as traditional spears, guns, arrows, and swords), traditional garments, shrines, drawings, daily calendars, medicinal plants and traditional medicine. Others included audio-visual forms such as films, videos, audio cassettes, drama, stories, and songs.

The intangible forms of indigenous knowledge included traditional customs, traditional belief systems, skills/practices (such as initiation, hunting, harvesting, planting and so on), knowledge on the care for the environment, maintenance of the food systems and dressing codes. Others were descriptive manuscripts such as reports, classifications, and lists. Examples include lists of plant kinds, tables listing cures and their arrangements), cyclical pattern charts, maps, matrices, decision trees. Table 1 shows the forms of knowledge held by each of the four institutions studied.

**Table 1: Forms of Indigenous Knowledge**

INSTITUTION	FORMS OF INDIGENOUS KNOWLEDGE
Kenya National Archives and Documentation Service	Historical and cultural books, audio-visual materials, films, artefacts, documentations, digitised records, paintings, photographs, weapons, spears, paintings and arrows.
Kenya National Library Service	Historical and cultural books, traditional maps, artefacts and physical structure of the KNLS building (pot-shape).
Kenya Medical Research Institute	Medicinal plants and traditional medicine.
National Museums of Kenya	Artefacts, specimens, publications, sites and monuments, botanic gardens, photographs, traditional foods, ritual sites, monuments, gazetted historical sacred sites, crafts and objects, buildings, home crafts, weapons (such as traditional spears, guns, arrows, and swords), traditional garments, shrines, medicinal plants, traditional medicine, traditional customs, traditional belief systems, skills/practices (such as initiation, hunting practices, harvesting practices, planting practices and so on), knowledge on the care for the environment, maintenance of the food systems, and dressing codes. Others are descriptive texts such as reports, taxonomies, inventories (for example, lists of plant species, tables listing remedies and their preparations), seasonal pattern charts, maps, matrices, decision trees, audio-visual forms (such as films, videos, or audio cassettes, dramas, stories, and songs), drawings, daily calendars.

### *Processes of Managing and Using Indigenous Knowledge*

The authors identified the different processes applied in the management and use of indigenous knowledge in the selected institutions. These included preservation strategies, and use of technologies. In terms of the storage of indigenous knowledge, the responses revealed that at NMK and the KNADS, there were special rooms and cultural heritage sections which house the IK. The NMK has storage cabinets made out of steel for the indigenous knowledge related audio and video tapes in their cultural heritage section. KEMRI also stored its IK in magazine files at its cultural heritage section. The NMK's repository keeps IK

that is written down in booklets in steel cabinets in the education department. This is thereafter also transferred to computers. The IK objects and their history are kept in the museum archives for safety, if not on display. The KNADS still keeps the IK stored in audio and video cassettes in the archivists' office and also in acid-free boxes.

The authors established from the four institutions that similar processes are used to manage indigenous knowledge. The processes included identification, collection, codification, recording, organising, conservation, transmission, linking, application, distribution and sharing of diverse forms of indigenous knowledge.

### *Challenges Encountered when Managing and Using IK*

The respondents were asked to state the challenges they faced when managing and/or using IK in their institutions. Table 2 presents the findings:

**Table 2: Summary of the Challenges Faced When Managing and Using IK in the Institutions**

<b>INSTITUTION</b>	<b>ENCOUNTERS FACED WHEN MANAGING AND/OR USING IK</b>
Kenya National Archives and Documentation Service	Inadequate qualified professionals, inadequate storage space, low level of funding, inadequate facilities and equipment, technological obsolescence/un-updated software, mishandling of resources, poor infrastructure, lack of powers to prosecute, poor legal frame work, and inadequate resources.
Kenya National Library Service	Lack of powers to enforce legal requirements, poor handling of materials, inadequate funding, staff shortage, inadequate resources, poor reading culture, and inadequate space.
Kenya Medical Research Institute	Insufficient funding, insufficient space, inadequate qualified personnel, poor legal framework, technological obsolescence, lack of adequate support from the government, and intellectual property rights issues.
National Museums of Kenya	Inadequate staff, insufficient funding, inadequate space, language barriers, inadequate facilities, insufficient trained personnel, inadequate technology, disappearance of the sources of IK, intellectual property rights issues, modernisation, and lack of cooperation by knowledge holders.

### *How the Institutions Cope With IK Management Challenges*

When asked what had been done to alleviate the challenges identified above, the study revealed that the four institutions had taken it upon themselves to find solutions. The respondents from the KNLS claimed to have presented the concerns to the senior management team. The concerns were being looked into and those that could be attended to quickly have already been identified and were being worked on. An action plan which included costs (for example, that of multi-media equipment) had been presented to the management for consideration. A meeting had also been held with the minister responsible to present the concerns and challenges.

To address the issue of lack of resources, one respondent indicated that they are sourcing donor funding from various organisations to buy equipment, such as computers; to analyse and store the collected IK. The KNADS is in the process of requesting financial assistance from various organisations to enable it to purchase state-of-the-art equipment. Similarly, a request for more posts for IK managers has already been forwarded to the Government of Kenya. The KNLS explained that to alleviate problems of untrained personnel, their staff members who are currently studying have been encouraged to select courses in IK management. The institutions have also embraced marketing of IK services to facilitate the potential users to understand the

importance of keeping the IK material where everyone can have access to it instead of

campaigning to take it home and lose it in the process. Table 3 summarises the findings.

**Table 3: Coping Mechanisms**

INSTITUTION	HOW THE FOUR INSTITUTION COPE WITH THOSE CHALLENGES
Kenya National Archives and Documentation Service	Trying to update software, getting modern equipment, introducing security personnel, maximum utilisation and prioritisation of the available space and equipment, making use of volunteers and casual workers, digitising the resources, having backups, microfilming the resources, developing marketing programmes.
Kenya National Library Service	Visiting relevant institutions, looking for donors, training users, creating user needs registers, maximum utilisation of available resources, safeguarding the resources.
Kenya Medical Research Institute	Maximum utilisation of available equipment and facilities, looking for more resources, training personnel, looking for grants from donors, and using informed consent from practitioners.
National Museums of Kenya	Looking for donors, working with communities and creating a healthy relationship, securing of storage spaces, using improved ICT infrastructure, improving capacity building of personnel, providing current awareness services (CAS) to the public, writing proposals and having MOUs with IK holders.

#### *Opportunities Derived From Management and Use of Indigenous Knowledge*

When asked about the opportunities of the administration and use of home-grown knowledge, most respondents from the four institutions gave similar responses such as international recognition, better public awareness, more donations, educating the public on the lifestyle and proper management of IK, participation in international forums, understanding of other communities and cultures, partnerships and funding, networking with local and international stakeholders, academic and career advancement, and preservation of the nation's memory.

#### *Benefits of IK Management Opportunities in the Institutions*

When asked to identify the benefits of IK management opportunities, the respondents

gave the following answers: expansion of networks; creation of opportunities for research projects, income generation; learning opportunities, scholarly communication; increased visibility and citation; increased funding, training of staff; improved infrastructure, dissemination and support of academic research, and exchange programmes.

#### *Recommendations by the Respondents*

The respondents were asked if they had recommendations on how to enhance the management and use of IK in their institutions. The responses obtained were almost similar. They said that it is difficult to collect IK especially from outside the country. They added that even when collected, it is difficult to store/preserve because of special qualities of IK requiring special storage. They suggested that a lot of IK can be collected with increased staffing



with relevant qualifications. In addition, they suggested that there is a need for dedicated transport and the purchase of relevant equipment which would greatly enhance the collection and dissemination of IK. Other recommendations were that more training on the management of IK was needed in order for the institutions to manage IK professionally and successfully. They also asserted that IK is an important sector for development for any nation, more especially in the African countries which have lost so much of their IK. They felt that there was still a lot to do to ensure better documentation of IK.

### **Conclusion**

The study concludes that IK is acquired from local communities through legal deposit, donations or gifts, and individual researches, talks/reading of books, documentation, literature survey, and interaction with traditional herbalists, borrowings, and direct purchase. There were both tangible and intangible forms of IK available in the institutions. The tangible forms of IK included photographs, published books or papers, traditional foods, ritual sites, monuments, gazetted historical sacred sites, crafts and objects, buildings, home crafts, and weapons (such as traditional spears, guns, arrows, and swords). The intangible forms of IK included traditional customs, traditional belief systems,

skills or practices (such as initiation, hunting, harvesting, planting and so on), knowledge on the care for the environment, maintenance of the food systems and dressing codes. The authors established from the four institutions that there was a similar process of managing and using indigenous knowledge. The process included identification, collection, codification, recording, organising, conservation, transmission, linking, application, distribution and sharing of diverse forms of indigenous knowledge. The challenges hampering the effective management and use of IK include inadequate qualified professionals, inadequate storage space, low level of funding, inadequate facilities and equipment, technological obsolescence or un-updated software, mishandling of resources, poor infrastructure, lack of powers to prosecute, poor legal framework, and inadequate resources.

### **Recommendations**

The study revealed a lot of gaps in the management and use of IK and therefore makes the following recommendations:

#### *Formulate Indigenous Knowledge Management Policies*

It was clear from the research findings that the majority of the institutions did not have specific IK acquisition policies. The authors recommend the formulation of standardised IK acquisition policy laying down a legal framework to govern

the acquisition of indigenous knowledge from local communities. The authors also recommend the mainstreaming of the IK management to the national agenda and policies.

#### *Implementation of Indigenous Knowledge Managements Systems*

It emerged from the study that there were inadequate IK management systems in the public institutions. Therefore, the study recommends that institutions should implement more IK management systems using emerging technologies such as social networking platforms. The study also recommends the setting up of more structures to cater for all forms of IK. It also recommends more documentation structures for the different forms of IK.

#### *Setting up of More Indigenous Knowledge Institutions*

The study also recommends the setting-up of more indigenous knowledge public institutions and departments which will enable a wider collection and storage of indigenous knowledge thereby encouraging innovation in the public institutions anchored on various forms of IK.

#### *Increased Staffing*

It was clear that there was shortage of the personnel in all the institutions studied. Therefore, the study recommends that the

number of IK professionals be increased. This will ensure a smooth flow of services. The study also recommends special training of the personnel dealing with the management and use of IK in the institutions.

#### *Setting up Procedures for Indigenous Knowledge Management*

The study found that most institutions did not have standardised procedures for the management and use of IK. Therefore, the study recommends the development of standardised procedures and approaches to IK management and use.

#### *Enforcing Intellectual Property Rights*

The issue of intellectual property right must be recognised at all times when dealing with IK management. The authors recommend that all institutions should ensure that all the rights of the IK holders are always catered for and that no breach of the rights is experienced.

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