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Maximising the socioeconomic value of indigenous knowledge through policies and legislation in Kenya

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Abstract

Purpose – Indigenous knowledge (IK) is the anchor of survival and stability for indigenous communities. The purpose of this study was to establish how the socioeconomic value of IK can be maximised in Kenya through effective enactment and implementation of relevant policies and legislation.

Design/methodology/approach – The study adopted a mixed methods research using a survey design. The target population comprised 104 top- and middle-level managers drawn from organisations implementing diverse IK policies and legislation. Primary data were collected from the target population using questionnaires. Additional data were collected using content analysis of IK policies and legislation. The collected data were analysed using descriptive and inferential statistics with the help of IBM's Statistical Package for Social Sciences (SPSS Version 22) software.

Findings – The findings revealed a low awareness of the IK policies and legislation by the stakeholders. It also became evident that the policies and legislation relevant to IK are not implemented effectively. The authors conclude that policies and legislation do not maximise the socioeconomic value of IK in Kenya.

Originality/value – This is an original study which has practical implications for the use of IK for socioeconomic purposes. The findings of the study may be used to influence policy formulation and implementation; theory on IK; and practices which mainstream IK in socioeconomic activities in Kenya and beyond.

Keywords Kenya, Knowledge management, Intellectual property, Indigenous knowledge,
Legal aspects, Policies and legislation

Paper type Research paper

1. Introduction

Indigenous knowledge (IK) is defined as the distinctive, local knowledge which is developed within and around the specific conditions of indigenous community of a given area (Kwanya, 2015). Other scholars have provided varied definitions of what constitutes IK. 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. Semali and Kincheloe (1999) argue that IK reflects the dynamic ways in which the residents of an area have come to understand themselves in relationship to their environment and how they organize that folk knowledge of flora and fauna, cultural beliefs and history to enhance their lives. According

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to Agrawal (1995), IK has become a new area of attraction in socioeconomic development as demonstrated by the growing interest in it from researchers, donors, writers and scholars. He further explains that although IK was earlier seen as inferior, inefficient and an obstacle to development, today's thinking has recognized the value it holds for sustainable development.

In the emerging global knowledge economy a country's ability to build and mobilize knowledge capital is equally essential for sustainable development as the availability of physical and financial capital (World Bank, 1997). The basic component of any country's knowledge system is its IK as it encompasses the skills, experiences and insights of people applied to maintain or improve their livelihoods. The World Bank (2004) explains that IK provides the basis for problem-solving strategies for local communities, especially the poor, and it represents an important component of global knowledge on development issues. Nonetheless, the World Bank (2004) also points out that IK is an underutilized resource in the development process suggests that learning from IK by investigating first what local communities know and have can improve the understanding of local conditions; provide a productive context for activities designed to help the communities; and increase responsiveness to issues. It further proposes that adapting international practices to the local setting can help improve the impact and sustainability of development assistance; sharing IK within and across communities can help enhance cross-cultural understanding and promote the cultural dimension of development; and most importantly, investing in the exchange of IK and its integration into the assistance programs of development partners can help to reduce poverty.

Access to relevant information has been documented to be crucial to the economic, political and social well-being of any community. The 1998-1999 World Development Report (World Bank, 1999) noted that knowledge, not capital, is the key to sustainable economic and social development. Mundy and Compton (1991) noted that indigenous technical knowledge is a new focus in development circles and that growing numbers of scientists and organizations recognize that it offers affordable and locally adaptable solutions to development problems. Gachanga (2005) argues, however, that despite the acknowledgement of the important role IK plays in sustainable development, many governments, donors and NGOs appear to make little use of this valuable resource. Their recognition of IK often amounts to little more than lip service seldom translating into action or funding.

A study sponsored by the United Nations Environment Programme (UNEP) in Kenya, Tanzania, Swaziland and South Africa and conducted between 2004 and 2006 concluded that the value of indigenous knowledge lies in its ability to deliver social and economic goods; [and] that certain traditional practices if popularized, and integrated with modern knowledge systems, can help to alleviate poverty (Steiner, 2008). The study also found that IK systems have enabled communities in those countries to live in harmony with their environments for generations as evidenced in agricultural production, food preservation and storage, healthcare, environmental conservation and natural disaster management. The rural poor depend on IK for specific skills essential for their survival. However, Sithole (2007) notes that very little IK has been captured and recorded yet it represents an immensely valuable database that provides humankind with insights on how numerous communities have interacted with their changing environments, including resources of flora and fauna and warned that IK is vulnerable to attrition if it is not recorded for storage and wider transmission. Indigenous communities used oral communication and hands-on experience (apprenticeships, ceremonies, practice) to preserve and transmit their knowledge (Battiste and Henderson, 2000). Preservation of IK is critical, because it ensures the

continuation of the community and its knowledge hence if IK is not recorded and preserved, the knowledge will be lost through the death of elders and traditional leaders and will remain inaccessible to other communities, scholars and development workers (Warren, 1991).

2. Statement of the research problem

IK plays an essential socioeconomic development role in indigenous communities (Kwanya, 2015). Therefore, the preservation, management and sharing of IK is crucial for social and economic development in Kenya. Nevertheless, many developing countries like Kenya do not maximize the socioeconomic value of IK in the enhancement of sustainable socioeconomic development. Consequently, the potential of IK in supporting socioeconomic development is lost because it has not been mainstreamed in development initiatives (Wole and Ayanbode, 2009).

One of the factors affecting the mainstreaming and application of IK in socioeconomic development is the presence and implementation of relevant policies and legislation to preserve, safeguard and promote it. Most developing countries take their IK for granted (Skikhule, 2007). In some cases, IK in traditional communities is stigmatized and disdained. The socioeconomic consequences of such treatment are grave. A good example to illustrate the socioeconomic loss indigenous communities experience due to inadequate protection and use of IK in Kenya is the *kiondo* (Kikuyu traditional basket) and *kikoi* (unique Kenyan shawl) debacle in the 1980s which resulted in the two products of Kenyan IK being patented by Japanese companies. Through this unfortunate incidence Kenyan communities lost the sentimental and cultural value associated with the two products. Kenyans also lost the economic value resulting from the production and sale of these products. These products could still be in Kenyan hands and benefitting the communities socially and economically if appropriate policies and legislation existed and had been applied to protect them.

The authors are of the view that the socioeconomic value of IK can be maximized through the formulation and implementation of relevant policies and legislation. Some studies on IK policies and legislation in Kenya exist. However, none has studied the link between policies/legislation and the socioeconomic value of IK. Therefore, the link remains unclear. This study seeks to bridge this gap by investigating how to maximise the socioeconomic value of IK through effective formulation and implementation of relevant policies and legislation.

3. Purpose and objectives of the study

The purpose of this study was to investigate how socioeconomic value of IK can be maximized in Kenya through effective implementation of relevant policies and legislation. The specific objectives were to:

- determine the level of awareness of IK policies and legislation practices in Kenya;
- assess the extent of implementation of IK policies and legislation in Kenya;
- examine the influence of IK policies and legislation in maximising the socioeconomic value of IK in Kenya; and
- analyse the challenges hindering effective implementation of IK policies and legislation in Kenya.

The authors were guided in this study by the following research questions:

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RQ1. What is the level of awareness of indigenous knowledge policies and legislation in Kenya?

RQ2. To what extent has indigenous knowledge policies and legislation been implemented in Kenya?

RQ3. What are the impacts of indigenous knowledge policies and legislation in maximising the socioeconomic value of indigenous knowledge in Kenya?

RQ4. What challenges hinder effective implementation of indigenous knowledge policies and legislation in Kenya?

4. Literature review

Implementation of policy involves the interpreting the objectives of the policy into a working programme. This process entails assigning of responsibilities to an agency to implement or change the policy goals into operational guidelines for development and moving of programmes and coordination of resources and personnel in the institution to achieve what the policy is intended for (UNESCO, 2009). Making people accept and implement policies is easier if they feel that they are part of the decision-making process. This is at the heart of change management. If the stakeholders are not brought along, no matter how good the ideas are, no matter how good a process is, the course will be lost. According to Sullivan (2005), strategic communication to stakeholders is not only important but crucial. Roseveare (2008), posits that designing good policies is not enough and that countries need to go beyond good policy designing to successful implementation. To effect successful implementation, policymakers need to build genuine consensus among all stakeholders so that they all work towards a common purpose as opposed to heading in different directions. To do this, all stakeholders have to be brought on board.

Since the 1970s, studies on policy implementation have been plenty and have, to a large extent, tried to explain policy implementation gaps. Though the issue of policy failure has been of great interest to social scientists, it has not been so to policymakers who often equate proposing a policy to its effective disposal (Dunsire, 1978). Barret and Fudge (1981) noted that policy implementation challenge, failure or gaps in implementation can occur when policy is imposed from the top with no thought given to how it might be perceived or received at the local level. They argue that it is not a case of bottom-up approach to policy and action being preferred to top-down but that balance between the two is necessary. Policy failure can occur as a result of bad execution or as a result of the policy being bad. Ineffective implementation or barriers that make it difficult for a policy to be implemented are seen by policymakers as bad execution. The other reason that is commonly advanced to explain policy implementation failure is when the policy itself is defective in the sense of its being based on inadequate information, poor reasoning or unrealistic assumptions (Pfeffer, 1992).

Numerous countries on the American continent have in recent decades reformed their constitutions or enacted legislation related to indigenous peoples. Argentina, Bolivia (1994, 2010), Brazil (1989), Colombia (1991), Ecuador (2008), Guatemala (1984), Mexico (2001), Nicaragua, Panama, Paraguay, Peru (1993) and Venezuela (1999) have all carried out constitutional reforms in which some rights of indigenous peoples are recognized for the

first time. In Canada, the Constitution Act of 1982 also recognizes aboriginal and treaty rights, but other countries in the region have not done so. Chile adopted a law on indigenous peoples in 1993, but two attempts to modify the constitution (in 2001 and 2005) failed to pass in the national congress. The Peace Accord on Indigenous Rights and Culture that was signed in Guatemala in 1995 did not become entrenched in the country's constitution, as was expected, because a popular referendum on this issue did not obtain the required majority. Ole Kanga (2006) observes that this has accelerated rapid loss of traditional structure and, as a consequence, disrupted their social economic, cultural and political rights. Indigenous or traditional communities own the intellectual rights to their IK even if much of this has yet to be written down. No one has the rights to document or use IK without permission.

Several policies and legislation enacted in Kenya are relevant to information. Chepchirchir and Kwanya (2017) identified these to include Forests Act, National Museums and Heritage Act, Wildlife Conservation and Management Act, Plant Protection Act, Fisheries Protection Act, Witchcraft Act, as well as Protection of Traditional Knowledge, Genetic Resources and Folklore (draft). They explain that the policies and legislation deal with the identification of what constitutes IK; recognition of both IK and their holders (both local and foreign); collection and/or acquisition of IK from individual, corporate or community holders; preservation and perpetuation of existing tangible and intangible IK; conservation of various expressions or manifestations of IK to enhance their longevity; promotion of the commercial, sentimental and other forms of use of IK for the benefit of their individual holders, indigenous communities and the society at large; promotion and popularisation of IK as an acceptable and usable knowledge which is beneficial to society; promotion of the participation of the affected indigenous communities in the management and exploitation of their IK; definition of crimes relating to IK in Kenya and stipulation of the punishment for these; and provision of frameworks for collaboration between holders and stakeholders of IK in Kenya and beyond.

According to the national policy on traditional knowledge, genetic resources and traditional cultural expression, (2009), Kenya's people are diverse with very rich cultural heritage. These include, but are not limited to, traditional literature, traditional arts and crafts, music, visual arts, ceremonies, traditional beliefs, traditional architecture associated with particular sites, as well as forms of traditional knowledge related to traditional-medicines and traditional-medical practices, agriculture, forest management and conservation and sustainable use of biological diversity. Therefore, traditional knowledge and traditional cultural expressions are a body of knowledge vital to the day-to-day life of local communities derived through generations of living in close contact with nature. According to Lawas and Luning (1996), the collection of indigenous information is laborious, time-consuming and costly. Thus, proper storage and management must be ensured if the information is to be made available and accessible for the benefit of humankind. For instance, as a result of inadequate management, most of the indigenous information accumulated by colonial district officers and early missionaries cannot be located in many archival institutions in Africa. Chisenga (2002) observes that Africa produces a lot of information and knowledge that is relevant and useful for its environment. Therefore, there is need for the information to be harnessed, repackaged and added to the information infrastructure. Lwoga et al. (2011) observes that lack of a cohesive approach for managing knowledge suppresses the efforts of the poor to take advantage of their innovations and skills to improve their activities.

According to Lwoga et al. (2010), "poor attitudes, knowledge culture and personal characteristics (age, gender, status, wealth, political influence and so on) also affect

perceptions, actions and access to knowledge in the local communities". Meyer (2009) adds, "information flow in an oral context is controlled by attitudes, perceptions, norms, values and belief systems inherent to indigenous people". For example, when people experience an information need, they will approach a knowledgeable person whom they trust. They are hesitant to make individual decisions unless they have been sanctioned by the group or the headman of the community (Nwonwu, 2008).

Nevertheless, some of the policy implementation barriers in Kenya include intersecting and or conflicting policies. National policies are often done in broad and general language that is not always supported by operational or local policies guideline. Programmes envisaged by the national policies are often vertical and do not coordinate with other relevant programmes. Spratt points at reproductive health, maternal and immunization are some of the traditional health programme which are often vertically implemented and without coordination with other relevant programmes such an HIV, tuberculosis, child health and immunization and have unresolved policy conflict or inconsistency that can be resolved easily (Spratt, 2009). Lack of policy clarity and consistency of policy objectives are among the major challenges or barriers to policy implementation. Policy objectives are often broad and tend to be expressed in relatively vague terms, encompassing ill-defined attitudinal and behavioural targets. Because of their vagueness, policies as well as their objectives exhibit a surface consistency since they are not sufficiently detailed to point where inconsistencies might exist. The more general the language used to express the policy objective, the easier it is for groups with diverse and conflicting interest to support it. This raises major challenge to achieving policy objectives (Mazmanian and Sabatier, 1989).

Policy implementation cuts across the functional and sector divisions of many African ministry systems which is a factor that further complicates institutional placement of policy. Where institutional placement of policies is the case, ministries and departments share and compete for responsibilities and authority on the implementation, with the result of this being duplication of effort, bureaucratic infighting, insufficient technical expertise in any single agency and over-burdening of clients trying to access to services. Falloux and Rechegude, (1988) therefore argue for a policy implementation process that capitalizes upon the strength of existing institutional arrangement where various actors can act in a guided manner to achieve results. Weaver (2010) argues that where duplication of effort and bureaucratic infighting exists, the desire of the existing agencies and their political patrons is to protect their "turf", jobs and constituencies. He notes that this sometimes leads to allocation of responsibilities for programme implementation that reflects realities of the distribution of political power more than what is required for efficient and effective administration. Weaver further observes that programme structures that require multiple approvals by agencies with very different objectives may lead to stalemate and inaction while poor coordination mechanisms between multiple implementing agencies may lead to breakdowns and or delay in programme delivery, bureaucratic "runarounds", poor services delivery and cost overruns (Weaver, 2010).

Policies and legislations have influenced on IKIK positively and negatively. The positive ones include commercial revenues through sales or tourist visits; contribution to the development of national values and ethos which ensure peace and coexistence; promotion of the identity of Kenya as a society and sovereign nation; conservation of natural habitats and ecosystems. Nonetheless, mitigation and adaptation of the consequences of change of climate and IK value recognition by popularisation through application of IK, documentation, preservation, conservation and perpetuation of IK. The negative impacts include stigmatisation of aspects of IK; division of Kenyans along the lines of traditional

practices and ethno-based IK; and stagnated socioeconomic growth where societies have
remained conservative and closed to civilisation and development.

5. Research methodology
This study used a mixed methods research approach involving the collection of both
quantitative and qualitative data. The population of the study comprised of 104 top- and
middle-level managers from the organizations implementing the IK policies and legislation
identified earlier. These are the people who are mandated to implement the IK policies and
legislation. Given the relatively small population size, the authors did not sample
respondents from the population. Therefore, all the 104 top- and middle-level managers in
the identified organisations were considered as respondents in the study. Primary data were
collected using semi-structured self-administered questionnaires. The authors dropped the
questionnaires to the respondents' offices and picked them after one week. Table I shows the
distribution of the population according to the organisations. The authors conducted a pilot
study to test the reliability of the instruments using two similar organisations but which
were not participating in the study. The organisations were the Kenya National Archives
and Documentation Service (KNADS) and the National Environment Management
Authority (NEMA). The results of the pilot test were used to improve the structure and
content of data collection tool.

Secondary data were collected through documentary analysis. The documents analysed
consisted of the policies identified earlier and relevant scholarly and grey literature. The
qualitative data collected were analysed thematically, while the quantitative data were
analysed using SPSS.

6. Findings and discussions
Of the 104 questionnaires distributed, 93 were filled and collected by the authors. This
yielded a response rate of 89.4 per cent. Recognising the fact that the target population
consisted of busy officers, this response rate was considered adequate for the purposes of
the study. The findings are presented and discussed hereunder according to the objectives of
the study.

6.1 Level of awareness of indigenous knowledge policies and legislation
The first objective of the study was to determine the level to which the policy implementers
and stakeholders (such as local communities and relevant private sector organisations,
among others) were aware of the policies and legislation relevant to IK in Kenya. When the
policy implementers were asked to indicate whether they were aware of the policies and

S/no.	Institutions of respondents	Target population
1.	Kenya Industrial Property Institute (KIPI)	25
2.	Kenya Copyright Board (KECOBO)	30
3.	Kenya Forestry Research Institute (KEFRI)	5
4.	Kenya Plant Health Inspectorate Service (KEPHIS)	5
5.	National Museums of Kenya (NMK)	15
6	Kenya Forest Service (KFS)	9
8.	Ministry of Agriculture (MoA)	7
9.	Kenya National Council for Science and Technology (KNCST)	8
Total		*104*

Table I.
Distribution of target
population

legislation, 64 (68.8 per cent) answered in the affirmative, while 29 (31.2 per cent) answered in the negative. When asked to indicate whether the staff working under them are aware of the policies and legislation, 69 (74.2 per cent) affirmed, while 24 (25.8 per cent) denied. When asked to report on the level of awareness of the IK policies and legislation by their stakeholders, 55 (59.1 per cent) of the respondents were positive, while 38 (40.8 per cent) answered in the negative. It is evident from these findings that awareness of policies and legislation relevant to indigenous in Kenya is above average amongst the implementers and stakeholders.

The respondents also explained that they create awareness of the policies and legislation on IK through consultation with stakeholders, establishment of resource centres to share information on the policies and legislation and public lectures. The awareness creation programmes enable the organizations sensitise the staff and other stakeholders about IK, thereby leading to a greater appreciation. The findings of the current study concur with Mollo (2011) who suggested that numerous efforts have been made to promote and legitimize IK globally as a means of enhancing healthy living. As a result of the different experiences and lifestyles of indigenous communities, indigenous groups across the world have adopted different approaches towards the concept of well-being, which differ slightly among each other, despite sharing some common principles and values. In spite of these efforts, the respondents identified the factors which affect the levels of awareness of policies and legislation on IK. Some of these are reported verbatim hereunder:

> Policies and legislation regarding indigenous knowledge are hardly embraced in organizations and institutions as expected. Thus, organizational staff are not aware of the practices and initiatives that support indigenous knowledge.

> The core function of indigenous knowledge is not felt in organizations. Therefore, indigenous knowledge management practices are not optimally supported.

6.2 Extent of implementation of indigenous knowledge policies and legislation
This second objective was to establish the extent of implementation of IK policies and legislation in Kenya. The respondents stated that the extent of implementation of the policies and legislation is not clear. Although they were unable to accurately estimate it, they were all of the view that the level of implementation was low. They explained that this situation is caused largely by inadequate identification and stipulation of the roles of the implementers. They stated that the role of the various stakeholders in the implementation of the statutes is ambiguous and does not give clear direction. They said that the roles they currently play include providing support for implementation, participation in the policy formulation, continuous improvement in service delivery, providing platforms for knowledge sharing, acting as the natural depository for the knowledge, management of intellectual property rights and creation of databases for IK. The respondents also reported that there was stakeholder participation in the implementation of the legislation. The implementers need to embrace the participatory framework for integrating IK with scientific knowledge developed by Mercer et al. (2010). The framework consists of the combination of four specific steps:

(1) community engagement;
(2) identification of vulnerability factors within the community;

(3) identification of both indigenous and scientific strategies to cope with factors affecting the vulnerability of indigenous peoples; and

(4) development of an integrated strategy.

The respondents also explained that effective policy implementation requires robust online registration of corporate work; regional offices for devolved implementation; qualified and competent staff to manage the digital library and registry; operationalisation of research and training divisions in the concerned institutions; capacity-building on administration and protection of IK as intellectual property; and a clear mandate of the implementers in the relevant policies and legislation. Also there is need for an adequate physical infrastructure such as offices, equipment and storage facilities with a clear and well formulated organisational structure.

6.3 Influence of indigenous knowledge and socioeconomic value

The third objective was to establish the influence of IK policies and legislation on maximising the socioeconomic value of IK in Kenya. In total, 55.9 per cent of the respondents held the view that IK has socioeconomic value; 29 per cent agreed that IK policies and legislation influence socioeconomic values in Kenya; 33.3 per cent were of the view that it generates income, while 31.2 per cent stated that the practice promotes awareness and creativity. However, 44.1 per cent do not believe that IK policies and legislation bear any socioeconomic value due to inadequacy in storage and dissemination of the knowledge. In terms of socioeconomic value, the respondents were of the view that the IK generates income through tourist attraction and that IK created a physical environment such as forests and herbal plants which support socioeconomic activities. In terms of income generation, the respondents explained that IK rights holders are entitled to royalty and commercialisation of their products thereby providing income which contributes to Kenya's GDP. They also held the view that protection of cultural expressions enriches the national heritage and promotes tourism as a socioeconomic activity.

These findings concur with previous studies. For instance, Kwanya (2015) argued that IK improves the livelihoods of indigenous communities and other stakeholders; provides the basis for solving their problems; and promotes a global knowledge on development issues. However, (Njiraine, 2012) posited that by and large, the recognition of IK at policy and institutional levels in Kenya is highly inadequate. Consequently, the potential of IK in supporting socioeconomic development is lost because it has not been mainstreamed in development initiatives (Nnadi *et al.*, 2013). This is unfortunate because indigenous populations have been favouring and strengthening sustainable agricultural practices as far back as thousands of years ago (Gonzáles *et al.*, 2010). In the case of the Andes, these practices go back as far as 8,000 to 10,000 years. Among the activities recognised by indigenous peoples as viable and sustainable economic practices there are rotational farming, shifting cultivation (sometimes called swidden agriculture), pastoralism, fishing, agroforestry, hunting and gathering (Kimberly Declaration, 2002). Through the centuries, in fact, indigenous populations have developed specific techniques and technologies to carry out their activities in environmentally friendly and cost-effective ways that "ensure food security while conserving the diversity of wild and domestic plant" (Nakashima *et al.*, 2012, p. 57).

Indigenous peoples have always found ways to resist and adapt to environmental changes, mainly due to their deep knowledge of and relationship with the environment (Nakashima *et al.*, 2012). The practice of sustainable traditional livelihood is a testimony of the resilience of indigenous peoples and their contribution to mitigate the impact of climate

change (UNPFII, 2008). For instance, in India, Adivasi women's knowledge is very important for forest conservation, as the women know exactly which type of product to collect depending on the season and the time of the day in order not to over-exploit the forest (Pradhan *et al.*, 2011). Similarly, the knowledge of women from the Bhotiya tribal community is essential for the making of natural dyes as they are in charge of a great share of the production which goes from the plant collection to the preparation of woollen products and their marketing (Kala, 2002).

IK also improves health as exemplified in Panama where the Ngobe people use the expression *ti nûle kûin*, which means be happy, live well with good health, free from concerns and in harmony with nature (Mollo, 2011). Similarly, in Chile, the Mapuche indigenous group uses the expression *küme mongen*, which refers to a good life resulting from a balanced relationship among a person, the environment and the supernatural (Cortez-López *et al.*, 2012). The Guarani people use the term *ñande reko* among others to refer to the harmonious living that is maintained since the grandparents' time; *teko kavi* to refer to good life, which implies a respect for life; and *ivi maraei* to indicate the land without evil (Mollo, 2011). In Nicaragua, the Miskitu group uses the concept *laman laka*, defined as common good, to refer to the set of norms that regulate aspects of the communal living, such as use of the land, interaction and exchange among people, and that are created to maintain harmony within the family and the community regardless of gender or age (Cunningham, 2010a, 2010b). Outside Latin America, other indigenous groups also use concepts referring to well-being. In the Philippines, the Kankanaey Igorot, from the Cordillera region talk about *gawis ay biag*, which means good life and refers to the systems or rules and taboos that are part of the concept of *innayan*, which means "do not do it" (UNPFII, 2010).

6.4 Challenges facing indigenous knowledge policies and legislation and solutions

The fourth objective was to establish the challenges hindering the effective implementation of IK policies and legislation in Kenya. Essentially, this involved the assessment of the challenges affecting the implementation of indigenous policies and legislation by the concerned institutions. The challenges identified by the respondents include limited policy awareness; lack of clarity of roles in policy implementation process; scarce funding; inadequate capacity development; weak policy implementation committees; insufficient amenities and infrastructure; inadequate human resource; short timeframe for policy implementation; unease relations and uncoordinated organisational approach; as well as inadequate participation in policy development by the stakeholders.

These findings concur with those of other studies. For instance, a study among the Xhosa people in the Eastern Cape Province in South Africa found that because of the association of traditional vegetables with poverty and primitiveness, younger generations have stopped learning about these vegetables and using them in their diet as they do not want to be associated with a lower social status or backwardness more generally. These types of choices made by indigenous youth have brought the loss of important resources, such as traditional vegetables in this specific case, which are a very important source of nutrition especially in poor rural communities (Dweba and Mearns, 2011). As Ford *et al.* (2010) explain, the loss of IK has severe consequences for younger generations, as it weakens their social capital which may reduce their ability to respond to ecological and socioeconomic challenges. Sullivan (2005) argues that thoughtful communication to stakeholders which includes being open to feedback is not only important but crucial. Roseveare (2008) notes that designing good policies is not enough and that countries need to go beyond good policy designing to successful implementation. Fernández *et al.* (2014) argue that in Bolivia, there is a more widespread, better understanding of the concept but still a

failure in the real implementation of the ideas related to it at a country level and among the whole population.

7. Conclusion
From the foregoing, the authors conclude as follows: the organization level of awareness on indigenous knowledge (IK) in Kenya is extremely low although there is consultation with stakeholders and resource centres for information sharing; development and review of the necessary policies and legislation to support IK is on-going; IK policies and legislation create socioeconomic value through generation of income, promotion of awareness and creativity, as well as food production and security. In spite of their potential in facilitating the maximisation of socioeconomic value of IK, there are systemic challenges that hinder IK policies and legislation. Although appropriate mitigating strategies have been put in place to support and promote the practice, more needs to be done. Recruitment of competent and qualified human resource, increased budget allocation, as well as technological adoption and change are likely to play a fundamental role towards the successful implementation of IK policies and legislation in Kenya.

8. Recommendations
Based on the findings of the study, the authors recommend the following:

- Organisations should champion the development of IK policies and legislation through the use of modern technologies such as social media and mobile phone platforms to reach both the old and the young stakeholders.

- Collaboration and partnership support from all stakeholders is crucial in achieving effective implementation of indigenous policies and legislation in organisations and the society at large. Citizens, government, politicians and organisations must all support IK practices and initiatives. The implementing organisations should employ appropriate strategies to solicit and mainstream the participation of users in the development and implementation of policies and legislation on IK in Kenya.

- Organisations implementing IK policies and legislation in Kenya need to support policies and legislation that promote the power and culture of IK in the society. IK being the pillar of social, economic, political aspects of humanity in indigenous communities needs to be nurtured and protected.

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