The stigmatisation of indigenous knowledge in Kenya: Status and interventions

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Abstract

Rationale of Study – This paper investigates the current status of the stigmatisation of IK in Kenya while also examining the interventions to curb the stigma.

Methodology – A mixed methods research design was employed, encompassing both quantitative and qualitative methods. Seven counties were selected for the study, comprising Western (Kisii and Migori), Eastern (Machakos and Kitui) and Central (Meru, Nairobi and Nyeri). Primary data was collected through focus group discussions and key informant interviews. Secondary data was collected through content analysis of literature on IK in Kenya. The quantitative data from the key informant interviews was analysed using SPSS software, while data from the FGDs was analysed using qualitative data analysis software (NVivo).

Findings – The study found that most of the communities in Kenya have indigenous knowledge; most of the indigenous knowledge and practices are threatened by non-utilisation; preservation of indigenous knowledge has started in some areas, but a lot still needs to be done; and westernisation or modernisation poses a great threat to indigenous knowledge.

Implications – The study recommends implementing structures to protect and preserve indigenous knowledge.

Originality – This work presents new findings on IK in Kenya that have not been documented or presented anywhere else.

Keywords

Erosion of indigenous knowledge, local knowledge, traditional knowledge

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1 Introduction and rationale of study

Indigenous knowledge is the rare knowledge tied to a group practising a common culture and living together in a community (Senanayake, 2006). This knowledge is passed from generation to generation and commonly communicated by word of mouth. IK systems are traditionally applied to the natural and spiritual world (Ellen & Harris, 1996). Sharma (2014) outlined several benefits from the preservation and continued use of indigenous knowledge. These include the fact that it has long provided the basis for problem-solving strategies and has been essential to global knowledge on development issues. It has helped improve the understanding of local conditions, providing a productive context for activities designed to help the communities. IK has been used in agriculture, health care, food preparation, education, natural resource management, and a host of other activities in communities.

According to the SDG Resource Center, indigenous knowledge, often rooted in centuries of experiential learning, profound observations, and intimate relationships with local environments, plays a pivotal role in the quest for sustainable development (SDG Resource Center, 2023). The value of IK becomes exceptionally distinct when juxtaposed against the Sustainable Development Goals (SDG) established by the United Nations in 2015.

The SDG Resource Center further confirms that IK is central in realising some SDGs. For example, at the heart of indigenous knowledge lies an intricate understanding of local ecosystems cultivated through generations, which allows indigenous communities to maintain a harmonious relationship with nature, ensuring environmental sustainability (SDG 15). Their traditional agricultural methods, for instance, often prioritise ecological balance and biodiversity conservation over short-term gains, serving as valuable lessons in SDG 2 (Zero Hunger) and SDG 12 (Responsible Consumption and Production). Indigenous fisheries practices, meanwhile, can offer sustainable models that alleviate overfishing concerns, promoting life below water (SDG 14). Similarly, the communitycentric ethos of indigenous societies aligns well with SDG 11, which emphasises sustainable cities and communities. Their social structures, which often prioritise collective welfare over individualism, can provide insights into crafting urban policies that emphasise community well-being and cohesion. Moreover, indigenous practices often emphasise gender roles and responsibilities in a manner that underscores the importance of women in community decision-making processes, linking directly to SDG 5 on gender equality. Furthermore, indigenous knowledge holds profound significance in combating climate change (SDG 13). As firsthand witnesses to the adverse impacts of climate fluctuations, many indigenous communities possess adaptive strategies rooted in their deep understanding of their habitats. These strategies, whether it is the construction of resilient dwellings or the cultivation of drought-resistant crops, can inform broader adaptation and mitigation efforts in the face of climate change.

While the place of indigenous knowledge in the realisation of the sustainable development goals cannot be understated, most of the indigenous knowledge is disappearing due to the intrusion of technology, the transition from an agricultural society to an information society, and the growth in information literacy rate, among other emerging trends in the 21st century. In addition, Ocholla (2007) points out that for reasons largely associated with ignorance and arrogance, indigenous knowledge has unfortunately been "neglected, vindicated, stigmatised, legalised and suppressed among the majority of the world's communities". Another reason for its near-extinction is its tacit nature; less of it has been documented, yet most of those possessing it are old citizens living in rural areas (Sharma, 2014). These factors have contributed to IK being viewed by many as old and outdated and associated with cultural practices that are seen as backward, static, and a barrier to modernisation. It has also been associated with primitive and illiterate persons.

The SDG Resource Center also affirms that for all its potential, the interface between indigenous knowledge and SDGs is not without challenges. The foremost among these is the vulnerability of indigenous communities to external pressures. Land grabs, deforestation, and the relentless march of industrialisation often displace these communities, eroding their traditional way of life and the knowledge it sustains. There is a pressing need to recognise, respect, and integrate indigenous perspectives into the broader developmental narrative, ensuring the achievement of SDGs and the preservation of the rich tapestry of wisdom that indigenous communities offer.

This misfortune of the extinction of IK, its stigmatisation and abandonment are most evident to the indigenous communities who have, over time, developed and made a living from it. Warren (1992) reveals that the abandonment of IK and adoption of outsider knowledge by communities in their socioeconomic development activities has had catastrophic consequences, yet communities are increasingly abandoning this knowledge. The desire for communities to abandon IK practices and embrace outsiders' knowledge has triggered the need to conduct this study to establish why, who and what is making communities stereotype their knowledge and adopt that knowledge that's not theirs.

The study was conducted in Kenya's seven counties: Machakos, Kitui, Migori, Kisii, Embu, Nyeri, and Nairobi. The main objective of this study was to investigate the extent to which IK is stigmatised in Kenya and the measures that could be put in place to mitigate the stigmatisation. The specific objectives of the study were to identify the types of indigenous knowledge in Kenya, investigate the existing value perceptions on indigenous knowledge in Kenya, establish the reasons for the stigmatisation of indigenous knowledge in Kenya, examine the implications of indigenous knowledge stigmatisation, investigate if there are initiatives in place to address the stigmatisation of indigenous knowledge by the government of Kenya, county governments and concerned state and private organisations; and to propose appropriate and relevant recommendations to improve acceptance and use of indigenous knowledge in Kenya while addressing stigmatisation.

2 Literature review

This section presents a collection of literature on the stigmatisation of indigenous knowledge in Kenya, specifically looking at its impact. The literature studied provides key insights into topical concepts. It is presented below.

2.1 Types of indigenous knowledge

Different communities in Kenya hold different types of indigenous knowledge (IK). This knowledge exists in beliefs, traditional medicine, traditional foods, farming practices, farming tools, food and pasture preservation, arts and crafts, cultural festivals, and food production. A study by Wane (2005) in Embu County found that 51.4% of older women used traditional herbs to treat ailments. These women had herbs for stomach aches, colds, coughs, herbs for cleansing the blood, malaria, relaxation, spacing of the birth of children, herbs for increasing milk for nursing mothers, cleaning the uterus after birth, removing the placenta, and birth control, among others.

Types of IK are best understood from how they are used. In a United Nations Environment Programme (UNEP) meeting report (2004), there are several examples of the uses of IK that are prevalent in Kenya, including use of fish-eagles to monitor breeding periods of fish and movement of tilapia in the lake regions, IK application in land use and conservation where shift cultivation is used to prevent land from overuse or repetitive cultivation throughout the season, enabling farmers to understand their seasons well enough to know when to expect long and short rains hence enabling them to plan their planting, and in biodiversity conservation. IK has also been found to enable people to appreciate and understand the importance and relationship of local birds, trees, and bushes, as well as the knowledge that destroying such natural elements would endanger the community by leaving them without ecological indicators of the natural environment. Last but not least, animal behaviour was also a source of knowledge of an impending calamity. For instance, a large swarm of butterflies was a sign of armyworm infestation and famine, and the migration of bees would mean an oncoming dry season.

In conclusion, the literature reviewed found that these types of IK are scattered and mostly held by the older generation, which puts them in danger of extinction. This older generation seems to hold back because of stigmatisation.

2.2 Perceptions of indigenous knowledge in Kenya

Kwanya (2015) explains that indigenous knowledge has value not only for the culture in which it develops but also for other stakeholders. IK has a role to play in the socioeconomic development of a country, but it continues to receive negative perceptions. The World Bank (2004) argues that indigenous knowledge provides the basis for problemsolving strategies for local communities, especially the poor. In a study by Lwoga et al. (2011), it was found that farmers perceived IK as an outdated knowledge system, and this is because most youths were not receptive to IK due to modernisation and a formal education system, which showed poor recognition of IK. Dei (2000), conversely, points out that this problem arises from dichotomising traditional and modern knowledge as though they have no relation or impact on each other. This stigmatises IK and enhances negative perception around it. There are no Kenyan studies on how such perceptions can be overcome, how indigenous knowledge can be tapped and used for the country's socioeconomic development, and how to empower those with indigenous knowledge so that they do not feel inferior because of the negative perceptions around IK. However, global studies have suggested that education is one way of overcoming this perception (Yip & Chakma, 2024).

2.3 Reasons for stigmatisation of indigenous knowledge in Kenya

Ocholla (2007) asserts that IK has been neglected, vindicated, stigmatised, illegalised and suppressed among most communities worldwide. One of the reasons why IK is marginalised is because of its tacit nature. IK resides in people's memories and is largely transmitted through word-of-mouth, which means that it is in many senses endangered as

its custodians (who are elderly) die and those that remain do not have the whole story or look down upon IK as backward.

IK is also stigmatised because it is anchored in specific environments. IK is embedded in a particular community's culture/traditions/ideology/language, and religion and is, therefore, not universal and challenging to globalise. Furthermore, it is primarily rural, commonly practised among poor communities, and therefore unsuitable for multicultural, urban, and economically provided communities. IK is also stigmatised because of stereotypes. IK is considered knowledge of the poor, illiterate or rural communities. However, Njiraine *et al.* (2010) correctly argue that IK is not confined to tribal groups or the original inhabitants of an area, nor is it confined to rural people."

Another factor that hurts IK is colonialism. The colonised were encouraged to take up formal education and abandon their traditional ways and instead integrate the Western ways that relied on science to explain phenomena where they could and invoked religion where they could not. Kaniki and Mphahlele (2002) also note that colonialism discouraged the total integrity of other forms of knowledge, particularly IK. Despite Kenya attaining her independence in 1963, the impact of colonialism is still felt today, especially in the use of IK. For example, if a community or a person recognises and utilises IK more, that community or person is supposedly inferior to those that practise the opposite.

The lack of integration between Western education and IK has also led to its stigmatisation. Dei (2000) observes that IK is marginalised in the conventional processes of knowledge production and that many of today's leaders and "educated" people went through an education system that looked down on and downplayed the achievements of African people and their contribution to knowledge in general.

2.4 Implications of indigenous knowledge stigmatisation

Stigmatisation has a role in Kenya's underutilisation of IK. Chepchirchir et al. (2018) explain that many developing countries like Kenya do not maximise the socioeconomic value of IK in enhancing sustainable socioeconomic development. Consequently, the potential of IK to support socioeconomic development is lost because it has not been mainstreamed in development initiatives.

Warren (1992) argues that IK has value not only for the culture in which it evolves but also for scientists and planners outside that culture. For example, in the case of agriculture, a study by Agea et al. (2008) shows that the failure to maintain adequate records and preserve IK meant that much of it was lost, thus undermining food security in some regions in Uganda. This is further observed by Dinucci and Fre (2003), who warn that a real danger exists if IK is not preserved, as it may disappear altogether, leaving farmers with neither traditional nor conventional agricultural abilities.

However, a study conducted on a particular indigenous practice among the Luo Community in Migori and Homabay County found that night running has real implications for stigmatising this practice. The study found that the stigmatisation of night running leads to stereotypes, discrimination, and sometimes even death. Kwanya (2020) noted that older adults suspected to be night-runners have been lynched in Kisii and Nyamira counties, which border Homa Bay County. Those who escape are forced to live in isolation from their families and friends. Night-running is also causing divisions at the national level. Wendo (2016) explains that during the 2013 general elections in Kenya, members of the Luo ethnic group were stereotyped by being branded as night-runners. This stereotyping was meant to isolate them from the rest of the country and affected their acceptance and participation in nation-building. Night runners fear being identified because this can lead to grave consequences, including lynching, divorce, or alienation.

No studies show the consequences of stigmatising Kenya's indigenous knowledge, yet other countries, such as Japan and the UK, have gone as far as patenting Kenya's indigenous objects such as *kikoy, kondo*, and *Maasai shuka*. The need to explore the consequences of stigmatising Indigenous knowledge is urgent to create awareness and also ensure IK is protected from opportunists and intellectual property thieves.

2.5 Initiatives to address the stigmatisation of indigenous knowledge

Several steps are being taken to address the stigmatisation of indigenous knowledge in Kenya. Mbeva (2000) observes that despite emerging interests in IK, little is known about how IK is managed, particularly in developing countries like Kenya. For example, issues relating to IK policies and legislation, structures, research, literacy, education and training, and diffusion and use (information centres and media) that reflect on IK recognition, appreciation and protection are not readily known (or available) (Kwanya & Kiplang'at, 2016).

Kenya does not have a national policy dedicated to IK, but some institutions have initiated initiatives to pass legislation and policies within which IK can be documented and preserved. Chepchirchir et al. (2018) identify some of the policies that lay the foundation for the implementation of programmes that touch on IK, such as the Forests Act, National Museums and Heritage Act, Wildlife Conservation and Management Act, Plant Protection

Act, Fisheries Protection Act, Witchcraft Act, and Protection of Traditional Knowledge Act.

Despite these policies, there is still a gap between their implementation and the creation of awareness of the importance of IK in Kenya. Lwoga et al. (2011) warn that a lack of a cohesive approach to managing knowledge suppresses the efforts of people with low incomes to take advantage of their innovations and skills to improve their activities.

3 Methodology

To attain the objectives of this study, the researchers used mixed methods research design to collect data. Primary data was collected through focus group discussions and key informant interviews. Secondary data was collected through content analysis of literature on IK in Kenya. Seven counties were selected for the study, comprising the following parts of Kenya: Western (Kisii and Migori), Eastern (Machakos and Kitui) and Central (Meru, Nairobi and Nyeri). These counties were chosen since they comprise communities that practise indigenous knowledge in health, agriculture and other sectors. Nairobi was chosen because it is a commercial centre and a metropolitan. Therefore, it has a mix of all the ethnic groups in Kenya, representing the population well. Seven focus group discussions were conducted in seven counties, each comprising 15 participants (five men, five women, and five youths). A critical case sampling technique was used to purposively sample the sub-counties to select a sub-county from each county. The purposive sampling criteria used was critical case sampling.

Thereafter, purposive and snowballing sampling techniques were employed to get 15 participants for the Focus Group Discussions (FGDs). The FDGs were complemented with key informant interviews for follow-up information and to acquire information from the experts and agencies mandated to gather, preserve or promote IK in the counties and national government. In addition, secondary data on indigenous knowledge in Kenya was collected through literature reviews. The data was analysed using content analysis. The qualitative data from the key informant interviews was analysed using SPSS software, while data from the FGDs was analysed using qualitative data analysis software (NVivo).

4 Findings and discussions

This section presents the findings from the 7 FDGs and the key informant interviews, which are presented and discussed according to the study's objectives.

4.1 The Types of indigenous knowledge in Kenya

The study's first objective was to determine the different types of indigenous knowledge that exist in the seven counties where the research was conducted.

All the respondents in all 7 FGDs agreed that different types of IK exist in their communities. IK is used and applied in various community sectors, including health and medicine, traditional foods, music and dance, weather prediction, agriculture, food preservation, and folklore. In some communities, IK is used for different reasons and is preferred to other modern or scientific methods.

4.1.1 Traditional food preparation and preservation

The study found that in all counties, there were still indigenous food preparation and preservation methods, though most were still stigmatised, especially by young people. There was also a lack of knowledge among the young on seed preparation, planting, preservation, cooking and the nutritional values of these foods. Despite this, traditional food preparation and preservation methods were recognised and appreciated across the various types of indigenous knowledge.

In Kisii County, the respondents acknowledged that indigenous foods were the most popular IK in the community. Some foods prepared with indigenous methods identified by the respondents included *Chinsaga*, *Rikunenni*, *Enderema*, *Omotere*, *Egesare*, *Rinagu Chintuga*, and *amabere amaruranu*. The respondents indicated that indigenous vegetables were eaten with *ugali*, a mixture of maise flour and sometimes accompanied with *amabere amaruranu* (sour milk). Sometimes, *ugali* was prepared using *ground millet and cassava*. Though the indigenous vegetables were now being appreciated, some respondents pointed out that that was not the case a few years ago.

Most of the young people in the FGDs preferred only *rinagu* of all the traditional foods. *Managu* was also popular among the Meru, and 58% of the respondents in Meru County indicated that they grow *managu on their farms*. In Kisii County, 28% of the respondents grew all the vegetables listed above, while 50% grew some of the vegetables, while 22% grew none of the vegetables listed above. They also noted that indigenous vegetables were now appreciated because they are healthier.

In Meru County, 78% of the respondents said the most popular indigenous food was *ukie*, a fermented porridge made from sorghum, millet and maise floor made from grinding maise on a grinding stone. The other 12% indicated *irio*, *made from mashing potatoes with pumpkin leaves and boiled maise*, as the most popular indigenous food. In Migori, the most

preferred indigenous food was vegetables and porridge called *nyuka*, which is a mixture of maise flour and water... 70% of the respondents indicated *osuga* as the most popular preference of the indigenous vegetables, while 24% picked *susa*, and 6% thought neither of the indigenous vegetable was popular. Other indigenous vegetables found in the community include; apoth, boo, dek and mtoo.

The study also established that vegetables were popular in specific communities but not in other communities. For example, in Migori County, *apoth* is popular as an indigenous vegetable. However, it was not eaten in other communities established in Kisii County, Meru and Nyeri, Machakos and Kitui County. The study found that there was stigmatisation of traditional foods of other communities. Foods that were not eaten in certain communities were looked down upon. This was mostly due to a lack of information about the foods from other communities. Therefore, stigmatisation was not only practised by the young people but also even those who practised indigenous knowledge looked down upon IK of other communities. The study also established indigenous foods that existed and were popular in all communities, such as fermented porridge, *managu*, *sagaa*, and *ugali*.

4.1.2 medicine and healthcare

Mahmood et al. (2011) define traditional medicines as a sum of knowledge, skills and practices based on theories, beliefs and experiences indigenous to different cultures in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical or mental illness.

The study found that indigenous knowledge was practised in healthcare and medicine in all the counties under study. Traditional healthcare included using indigenous plants as medicine, using indigenous practices in healing, handling health emergencies and other medical-related issues. The most prevalent use of IK in all the regions under study was treating diseases that mainly affected children and stomach-related diseases. In Migori County, mothers in the FGDs pointed out that they use traditional medicinal plants to treat labour pains, constipation, and breathing problems, especially congested nose, swelling, deworming and false teeth in children. The majority of the young mothers got recommendations on these drugs from older women who were knowledgeable about traditional medicine. Many young people did not know most of the traditional medicine, and all preferred going to hospitals and believed modern medicine was far superior to traditional herbs and other medicinal practices. Most of the participants lacked knowledge of traditional medicine. This is despite the many species used in healing in all the counties. The majority of the participants could not name more than 23 plants. Younger participants could not name more than 5 plants. For example, in a study that was done by Njoroge et al. (2004), they noted that in Central Kenya, there are 75 plant species from 34 families which are used to cure 59 ailments, yet in Nyeri and Meru County participants combined, named 21 species only. This shows a lack of knowledge and information on traditional medicinal plants in their communities.

From the respondents and analysis of literature, the following are some of the indigenous plants and herbs used in Kisii County for medicine; *Omwarubaini, omonyasese, omonyangateti, ekenagwa ekiegarori, omonyamabi, omonyankene, omotembe, omonyagesagane, enguranguria, omotiokia, omonyabogundo, omonyasore, omobono, omosabakwa, omonyakerundu, ebiribiri, omoroka, omonyansuri, omogaka, omokene.* The most well-known of the indigenous medicines were *omwarubaini and omotende.* This again shows a lack of knowledge and, especially for the young, a lack of interest.

All the focus groups established that different parts of the plants were used. These included the barks, leaves and roots. These parts were either boiled and the water swallowed, or the leaves were crushed, applied, or burnt, and the ash was used as medicine. This knowledge is key when using traditional medicine to avoid the wrong usage, including overdose. Only a few participants knew how to use this medicine. The study found this was another reason indigenous knowledge was rarely used, as some people found it complicated to administer compared to modern medicine, which they argued was more straightforward and easier to use than traditional medicine.

Some traditional medicines were used to treat more than one disease. For example, in Kisii County, *Ekenagwa* and *Omonyangateti* were used to treat stomach upset, headache and venereal diseases; *the* roots were boiled and swallowed to treat stomach upsets, headaches, and venereal diseases. Traditional medicines were also used in other medical-related issues. For example, in Kisii County, *Omotiokia* was used to stop oozing blood. Leaves were plucked and crashed and applied where one was bleeding to stop oozing blood. In Migori County, snake bites are treated using *rabwond otenga and Obolo*, while in Machakos and Kitui County, an indigenous plant called *mwaitha* is also used to treat the snake bites.

Traditional medicine was also used in veterinary medicine. For example, in Kisii County, *Ebiribiri* was mixed with onions to treat sick chicks or hens. The study found that other

uses of Indigenous plants included bathing, such as in Kisii County, where Omoroka leaves were used for bathing, killing mosquitoes, family planning, and surgery.

In all the counties, all the respondents pointed out that they knew at least one knowledgeable about indigenous medical practices. The indigenous healthcare practitioners included medicine men and women, midwives, and herbalists.

4.1.3 Weather forecasting and monitoring

The study also found that traditional weather monitoring and forecasting were practised in all the counties under study. These were mostly based on observing and monitoring the behaviour and movement of birds, animals, plants, and insects.

For instance, in Migori, Kisii, Embu and Nyeri, the study found that the appearance of various species of frogs indicates the onset of rainfall. In Kitui County, the study complimented a study by Kayi (2016), where the onset of the rainy season was predicted by observing ground swells, especially around September. During that period, a type of plant, locally known as *Itaamwaka*, sprouts. As found out from the focus group discussion, this plant only grew during the rainy period and withered just before the rains seized. As such, the farmers started preparing their farms when they spotted the plant sprouting.

Also, in Kitui and Machakos County, the community observed the behaviour of *mkwaju* to determine the onset and cessation of rainfall. FGD results showed that the tree shed its leaves during the dry season, but the leaves started to sprout as the rainy season approached.

The study also found that insects and their behaviours were used to predict the weather in some communities in the study counties. In Kitui and Machakos Counties, participants indicated that they observed the behaviour of the dragonfly to determine when to plant.

In Kisii, Embu and Nyeri County, most of the indicators relating to drought or rainfall events came from observing the behaviour of domestic animals, especially cows and goats. In the three counties, the respondents narrated how slaughtering goats and examining their intestines was used to predict weather conditions, especially drought. In Nyeri and Kitui County, respondents believed that when cows urinated while lying on the ground, it was a sign of impending drought. The study concluded that indigenous knowledge was mostly used to predict the weather so the various communities could make necessary adjustments.

4.1.4 Environmental conservation

The conservation of biodiversity is of vital importance for environmental sustainability. In recent years, indigenous knowledge has been shown to contribute to the conservation of biodiversity and the general use of sustainable resources (Gadgil et al., 1993; Berkes et al., 2000; Ruddle, 2000). In this study, one-way indigenous knowledge was used in the conservation of biodiversity is the proper conservation of indigenous trees and forests, which are regarded sacred.

The study found that indigenous trees are essential for environmental conservation because they help protect water sources and manage wetlands and water catchment areas as they take up less water. In Nyeri County, Karima Forest is considered a natural site. It is located between Mount Kenya and Aberdares. Karima Forest has two shrines: Kamwangi and Gakina. Despite its positive environmental impact, this forest faces the danger of illegal logging, contributing immensely to the shrinking of the Gakina sacred river. All these shrines have indigenous trees and are gazette by the National Museums of Kenya.

4.2 Existing value perceptions on indigenous knowledge in Kenya

The study's findings revealed that indigenous knowledge is stigmatised in Kenya. This is evidenced by 60% of the respondents indicating that only a small part of the IK is stigmatised as it is perceived as not helpful or could lead to harm, discrimination and suffering of some groups and individuals within the communities, by 20%, especially the youths (18-35 years) stating that IK is not in use as most people prefer scientific knowledge while 20% of respondents stated that communities and individuals are actively using IK. The indicators of stigmatisation of IK from the study were the underutilisation, marginalisation, and abandonment of traditional or cultural practices. With underutilisation leading, followed by marginalisation, and then finally abandonment. From the study, it is clear that even though individuals are proud of their background, they do not want to associate with the cultural practices attached to their communities as they do not want to be seen as backward, marginalised, and local.

"With the technology coming in, we sometimes shy away from sharing our experiences with the young people. For example, we dry the meat in the open sun and make a nice stew afterwards. Nowadays, the young people prefer storing meat in fridges, and when we tell them about sun-drying meat, some of them think we are backward," said a respondent from Migori County.

On the issue of passing knowledge from one generation to another or individual to another, a larger group said it had not been passed on. The systems of passing on IK in some areas were broken down during colonialism, as was the demonisation of many things that were not Western- including indigenous agriculture and traditional medicine. To others, indigenous knowledge could not grow and move on due to many negative aspects attached to it. Therefore, it is perceived that people do not have IK, so they cannot utilise or appreciate it in totality.

4.3 Reasons for stigmatisation of indigenous knowledge in Kenya

The study's findings showed that scientific knowledge led to individuals and communities stigmatising IK as it can address most issues that IK addressed more accurately and timely, such as weather prediction, diagnosis of diseases, and pest control. The study's findings showed that the holders of this knowledge appreciate and value it. However, young, educated, modernised individuals have abandoned IK and embraced scientific knowledge, which is perceived as driving the economy regarding agriculture, animal breeding, or even health.

Further, the findings revealed that about 75% of the individuals within the communities studied have indigenous knowledge but cannot come out in broad daylight and proclaim that, because of fears that they are going to be discriminated against, they are going to be looked down upon as backward and such things. An example was that of a good traditional medicine-men who can cure some diseases with no scientific medicine. However, when they come out clearly to do that, people criticise them, so they shy away. 15% of the population is proud of the knowledge and practices it openly, especially for economic benefits, while the rest have no knowledge of the indigenous knowledge and therefore do not practice it.

This leads to the need for sensitisation and awareness creation by those with the knowledge and the government. Respondents who linked indigenous knowledge with cultural practices said that the practices can have a stigma. For example, traditional medicine that may not necessarily heal someone physically but may help psychology may be looked down upon by other third-party individuals. This includes anything that does not involve the administration of herbal medicine but rather other rituals. Respondents also mentioned matters related to myths.

Respondents also mentioned that indigenous knowledge is getting lost in communities adopting modern lifestyles, especially in cases where there is a lot of outside influence, urbanisation, exposure to modern knowledge, and religion. In such cases, we can say that such people transition from indigenous ways of living to something in between, combining the two: modernity and traditional way of life, and then, of course, transit to a completely modern way of life.

4.4 The implications of indigenous knowledge stigmatisation

The study found that the stigmatisation of indigenous knowledge has several implications. First, stigmatization of IK leads to under-utilisation. In Kenya, similar to other jurisdictions, stigmatisation of IK has led to under-utilisation of IK. This is because many IK owners are afraid to come out for fear of being victimised, thus losing many opportunities where the various types of IK would be utilised for the benefit of the community. Consequently, the potential of IK to support socioeconomic development is lost because it has not been mainstreamed in development initiatives. These thoughts were concurred with by a respondent from Nairobi who said that stigmatisation has led many IK owners to hide, and thus, even when they can contribute to societal issues, they instead do not. This finding is consistent with what Wole & Ayanbode, 2009 found out on the underutilisation of indigenous knowledge.

Second, stigmatisation also leads to loss of or erosion of IK. The stigmatisation of IK has meant that the transfer is not done in some cases but in others not done appropriately. This has led to and continues to lead to erosion of IK and degradation of the quality of the IK. According to one of the respondents from Kitui County, IK owners fear for their lives due to being targeted by those who think they are witch doctors. This has led to the loss of some IK. This finding concurs with what Warren (1992) argued that despite IK having value not only for the culture in which it evolves but also for scientists and planners outside that culture, there is a very real danger if IK is not preserved as it may disappear altogether leaving farmers with neither traditional nor conventional agricultural abilities.

Third, stigmatisation of IK can also be harmful and may lead to harm to IK bearers and, at times, death. This is the case with stigmatising indigenous knowledge such as traditional medicine or night runners, as is the case in Eastern Kenya and Western Kenya, respectively. This finding is consistent with what Kwanya found about the case of night runners in Migori County (Kwanya, 2020).

4.5 Initiatives to address the stigmatisation of indigenous knowledge in Kenya

Njiraine (2012) noted that Kenya does not have a national policy dedicated to IK. However, she further noted that some institutions have had various initiatives to highlight the status quo of IK. This study embarked on exploring further attempts that have been made to have IK regulated, protected, and preserved, as well as put it in black and white for future generations or as part of including it in the country's knowledge system. To achieve this, the study conducted key informant interviews with those directly or indirectly charged with protecting, preserving, and encouraging the use of IK. These included directors at Kenya Resource Centre for Indigenous Knowledge at the National Museums of Kenya, ministries of Culture and Tourism in Kisii County, Migori County, Nyeri County, Embu County, Machakos, Nairobi County and Kitui County.

The study revealed that despite the lack of proper national policy, as Njiraine (2012) pointed out, there have been policies, conventions and laws since the 1970s that have impacted the attempts to preserve and/or document indigenous knowledge in Kenya. Some of these regulatory frameworks are developed by international bodies of which Kenya is a member. Some of these conventions and bodies include the Union for the Protection of Plant Variety (UPOV), which was formed in 1978&1991 and to which Kenya is a member, The Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region of 1985, Convention on Biological Diversity of 1992, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the International Treaty on Plant Genetic Resources for Food and Agriculture, the Convention on Wetlands or Ramsar Convention for the Protection of World Cultural and Natural Heritage of 1972, the Convention on the Conservation of Migratory Species of Wild Animals of 1979 among others.

At the national level, the study found that a major initiative on documentation and preservation of IK took place through the Global Network for IK, which also led to the establishment of the Kenya Resource Centre for Indigenous Knowledge (KENRIK) at the Kenya National Museums in Nairobi. There are only 38 such centres globally. The key objectives of KENRIK are to mainstream IK into national development policies and enhance community development. According to a key informant at the resource centre, this initiative took place in 1998 when an audit was taken in collaboration with several stakeholders, including the Centre for Indigenous Knowledge Systems and By-Products (CIKSAP), Indigenous Information Network (IIN), and the National Museums of Kenya (NMK). They formed the Kenya Indigenous Knowledge Working Group (KIK-WG) and proposed a strategy for mainstreaming IK into development policy. On enquiring whether

this policy was completed and implemented, it was found that it was never implemented due to a lack of government support.

The study revealed that other initiatives touch on indigenous knowledge, including the KEMRI study on traditional medicine and the Ministry of Agriculture policy on "Emerging Crops Policy". Other scholars (Njiraine, 2012; Chepchirchir et al., 2019) have also highlighted other initiatives that have made attempts in legislation and documentation of IK, such as National Policy on National Heritage and Culture; Traditional Medicine and Medicinal Plants by the Ministry of Planning and National Development; Legislation on IK folklore, Genetic Resources by the Attorney General (AG) Chambers; and The NEMA Act, Sections 43, 50f and 51f.

At the county level, the study revealed that no county has implemented any policy or legislation focusing on collecting, documenting, or preserving IK. The study also found that the counties did not have databases, catalogues, or documented information on indigenous medicine, food, vegetables, herbalists, and indigenous medical practitioners except for music, dance, traditional wear, and sacred sites.

5 Conclusion and recommendations

This study concludes that IK in Kenya has indeed been stigmatised. The stigmatisation has limited the acceptance and use of IK to support socioeconomic development in the country. Therefore, interventions are required to remedy the situation and mainstream IK in the national body of knowledge assets. Hereunder are some of the strategies which can be employed for this:

- Establish or sustain systems of passing on IK One issue that leads to stigmatisation and underutilisation of indigenous knowledge is the lack of a system.
 "The systems of passing on in some areas were broken down, and therefore, people do not have it so that they can utilise or appreciate it in totality," said a respondent from Kenric.
- Document the existing indigenous knowledge for standardisation IK has been stigmatised because some people have applied the practice and knowledge in inappropriate ways. This has led to the failure of the specific IK to achieve its intended aims, thus leading to its stigmatisation. "And of course, during colonialism, there was the demonisation of many things that were not Western including in agriculture, medicine, and others - so that knowledge could not grow

and move on," said the respondent. Ensuring that existing IK is in properly accessible formats for users and future holders sanitises the whole process and not only limits stigmatisation but also enhances usage and maximisation of the benefits of IK.

Initiatives should be implemented to eradicate stigmatisation - IK needs to be preserved as much as possible through policies and legislation. Further, there is a need to initiate or establish IK centres in communities where IK exists and at national and sub-national levels. This will ensure that the documented IK is stored well and provide opportunities for users and holders to learn how to apply the existing IK. This aligns with Mbeva (2000) who observed that despite emerging interests in IK, little is known about how IK is managed, particularly in developing countries like Kenya. For example, issues relating to IK policies and legislation, structures, research, literacy, education and training, and diffusion and use (such as information centres and media) that reflect on IK recognition, appreciation and protection are not readily known (or available). Even though there are some policies in Kenya, as identified by Chepchirchir et al. (2018), that lay the foundation for the implementation of programmes that touch on IK, such as the 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 the application and operationalisation of these policies are still not well done. Such centres would enable policy formulation and interpretation, thus enhancing their use.

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