The Relevance of Indigenous Knowledge Systems in Local Governance towards Environmental Management for Sustainable Development: A Case of Bulawayo City Council, Zimbabwe

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Abstract

Background: Inspired by Bertalanffy (1954)'s Systems Theory, this study sought to establish the relevance of Indigenous Knowledge Systems (IKS) in local governance. Regardless of the overwhelming research on IKS, less attention has been put on its relevance to modern service delivery and seems to have lost its impact in influencing decision making. It was at the centre of this study, therefore, to establish the relevance of IKS in local governance and establish the interconnectedness among local governance, IKS and environmental management for sustainable development. Predominantly, it focused on how IKS can be utilised as an integral system that contributes to the effective management of natural environment in urban cities, precisely Bulawayo.

Objective: The study strived towards contributing to the localisation of the Sustainable Development Goals within the Zimbabwean context in the best interest of the furtherance of sustainable cities for development with IKS at the centre of it all.

Methods: Informed by the ontological interpretivist approach, this study adopted mixed methods of collecting data from 90 randomly selected residents of Bulawayo, three Environmental Management Agency officers and three Bulawayo City Council employees.

Findings: One of the major findings was that IKS is silent in urban areas compared to the rural because of (although not limited to) a) lack of historical and sacred sites, b) ignorance of the existence of IKS and c) adoption of technology. Referring to how IKS has been effectively utilised in the rural set up, this paper strongly believes that IKS as a system has an important role to play in this development discourse.

Conclusions and Recommendations: Research should focus on the applicability of IKS in urban set up especial on its applicability to other environmental management aspects such as pollution and waste management.

Implications: There must also be adequate transmission of information using proper channels for affirmation of IKS especially to the young generation and stakeholders should work together for sustainable management of the environment.

Keywords: Indigenous Knowledge Systems, Environmental Management, Systems, Sustainable Development.

Originality: This paper is original and not sent anywhere else for the publication.

Paper Type: Research Paper

JEL Classification: I2, Q01, Q3, Q5

Introduction

Environmental degradation and biodiversity loss are some of the major challenges experienced worldwide with urban cities being the most affected places. The worst is feared if these challenge is not addressed with urgency. The assertion by Oliver et al (2014) substantiates that the environment should be used sparingly bearing in mind that the earth is fast reaching its carrying capacity. Ngara and Mangwizvo (2013) attribute this disaster to lack of 'self-imposed restrictions' on management of natural resources that are community specific. This assertion is akin to the argument by Fehling et al. (2013) that Millennium Development Goals (MDGs) failed because of lack of localisation in formulation and implementation because they were presented as a panacea to this diverse world. In as much as the whole world is experiencing the same challenge of environmental degradation, solutions should be crafted and implemented from grassroots level guided by enacted policies of the land. This means that the concerned local authorities will play an important role in advocating for sustainable use of the environment within their communities. To achieve this, Buckton (2014) notes, appropriate environmental behaviours need to be inculcated. Local governments should, therefore, work hand in glove with their people from policy making and implementation for sustainable use and management of the environment.

Perhaps it is important to unravel the concept of local governance in development discourse. Developing countries have been encouraged to practise good governance and this has trickled down to the local level where accountability and transparency have been underscored. Relevant to this paper is Godwin's (2014) view that local governance is the management of locals' affairs at local level. This places local authority and its people at a position which allows them to define their challenges and solve them at local level to the best of their ability with minimum, where possible, absolutely no interference from the outside force. At the centre of local governance is the advancement of political, economic and social objectives for the benefit of the locals (Wilson and Game, 2006). Tapping from this assertion, the importance of the contributions of the locals to informing decision making cannot be undermined.

According to Ndreu (2016), local government has an intermediary role between the people and their central government where the needs of the people are delivered to the government and likewise the government's policies are made known to the people through local governments. Put differently, the environmental management goal can be achieved if tackled at local level. It goes, without say, that local governments have and are still adopting modern systems for effective service delivery including in environmental management services for development (Berkes, 2012).

Reinstating local wisdom such as IKS is preferred because it is community specific. Applying IKS in local governance could successfully address this issue of environmental management in urban areas of Zimbabwe, particularly in Bulawayo. It is, therefore, at the centre of this research to establish the relevance of IKS in local governance in managing Bulawayo's environment for sustainable development. The assumption was that IKS can be manipulated and be used in local governance for the continuance of environmental management. Refer-

ring to Zimbabwe's environmental policy document *'Indigenous technical knowledge and traditional practices have a valuable contribution to make the management and sustainable use of natural resources'* (Government of Zimbabwe, 2009:16).

Indigenous Knowledge Systems (IKSs) seem to have lost their relevance in this global village where advanced technology has conquered the space. Literature appears to suggest that IKSs are associated with rural people who rely on these for their day to day decision making. IKSs are believed to be a fountain of knowledge to the locals where wisdom and relevant information is derived from (Dudley, et al., 2009; Jones et al., 2008; Ngara and Mangwizvo, 2013; Toledo, 2000). Mapira and Mazambara (2013) further state that colonial rulers found ascribing to the innovations of indigenous people as insulting to the western civilisation. It is in recent years that research has started appreciating the importance of indigenous knowledge in influencing decision making.

Albeit numerous studies on IKSs, it is noted that less attention has been put on the relevance of IKS in modern service delivery, particularly in local governance. IKSs seem to have lost their relevance in influencing decision making. It is because of this main problem that this paper sought to establish the relevance of IKSs in local governance and establish the interconnectedness among local governance, IKSs and environmental management for sustainable development. Thus, two main questions were asked to attain these objectives. Firstly, how relevant IKS is in local governance and what relationship exists among local governance, IKS and Environmental management. Findings from this study will greatly influence policy making in local governance.

This paper is organized as follows: Section 2 reviews relevant literature followed by research methods in Section 3. Section 4 outlines the results and discusses them in the light of relevant theories and, finally, Section 5 concludes the study with recommendations.

Review of Literature

Apart from ecosystem and biodiversity depletion, the entire environment world over, is under threat. Naome et al, (2012) argue that sustainable management of the environment go beyond just the physical surrounding to include land, water, air and animals. Pollution and solid waste management in urban areas have emerged as the major challenges requiring urgent attention. In support of this assertion, Mafume et al. (2016) state that waste management remains a great challenge in developing countries aggravated by limited resources. Morden technology has been adopted but proven to be of not much help due to inappropriate equipment and facilities. What remains unexplored is whether or not IKS will also be useful in managing waste in Zimbabwe.

With regards to animals, the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) program was established to conserve wildlife at community level, (Balint and Mashinya, 2008). However it yielded less or no results compared to expectations due to lack of community participation. Similarly, lack of indigenous people's participation has exposed water sources to more danger regardless of efforts made by local authorities to conserve them. In a research done on Pungwe river basin management, Nyikadzino (2014)

concludes that in as much as locals were part of the stakeholders responsible for the management of Pungwe River basin, not much engagement was done at lower level. All these examples reveal numerous fruitless efforts of including IKS in managing natural resources. Thus indigenous knowledge is always overridden by modern influence.

Theoretical Underpinnings

This paper will confine its arguments within the peripheries of Systems theory. This theory is said to have emanated in the early 1920s with the work of Bogdanov (1922) but was later popularized by von Bertalanffy's General systems theory (Mele et.al 2010). Borrowing the definition of von Bertalanffy (1965), a system is a complex of interacting elements. This can translate to the interrelations existing between various components for a common cause. This theory began in the natural science field and later spread to other disciplines which makes it richer because scholars add knowledge as they refine it to suit their fields of study (Meadows, 2008). Broadly speaking, these theorists postulate that the success of any system is a result of the systematic coordination of its components, thus Golinelli (2009) says system elements are rationally connected. The major argument raised is that people will never be able to understand a phenomenon by simply analyzing its components, rather a global or external perspective should also be incorporated in the equation (von Bertalanffy, 1968).

Applying systems theory in understanding the functionality of any organisation as an independent system, Barile and Polese (2010) state that it should be capable of preserving its functionality and determine its own boundaries be it internal or external. In simpler terms, this alludes to the fact that systems have clear boundaries where they can successfully operate on their own with minimum or no interference of other external forces. Assisted by this theory, this study established the flexibility and or rigidity of IKS, local governance and environmental management as either independent or dependent systems. In support of this argument, Christopher (2007) argues that systems can operate parallel to each other or hierarchically. This means that systems as standalone entities can successfully operate and in some cases hierarchical where the powerful system dominates the other.

With this brief background, it is deemed relevant to use this theory to understand the relevance of IKS in local governance in Zimbabwe, precisely Bulawayo City Council, in a bid to manage the environment for sustainable development. Treating local governance, IKS and environmental management as standalone systems, this study sought to establish overlapping possibilities of their boundaries.

Summarising Lai (2017), this paper relied on the following four tenets of systems theory:

- Systems theory examines linkages and interactions between components;
- A successful system is established by patterns of relationships emerging from interactions among components;
- Systems have clear external   (closed boundaries) or linkages (open boundaries) and open is more realistic;
- Systems can operate along each other or in a hierarchy.

Conceptual Framework

This section details two of the main concepts of the study — indigenous knowledge systems and sustainable development. It is important to note that local governance is discussed in the introductory section and systems theory is covered under the theoretical section.

Indigenous Knowledge Systems

Noyoo (2007) defines IKS as a complex set of knowledge, skills and technologies existing and developed around specific conditions of populations and communities indigenous to a particular geographic area. Echoing the same sentiments, Matsika (2012) argues that IKS encompasses the traditional and local knowledge of a local community that originated and developed incorporating the experiences of the community in managing the everyday life of individuals. Both scholars seem to agree that IKS is centred on local skills that are community specific. It, then, can be argued that the convergence of different knowledge systems can result in the battle for recognition where the superior system stands a greater chance of conquering. In most cases, IKSs suffer the risk of being treated as primitive.

From the above definitions, this study, therefore summarises the above and expresses IKS as a body of native knowledge and information for natives by the native that informs their daily decisions and way of living. IKS in Zimbabwe, dates way back to the precolonial era where indigenous people were informed by their norms and cultural beliefs. It manifests through various aspects of life inclusive of health, agriculture, nutrition and predicting climate among other disciplines. Of late, IKS has been adopted in environmental management discourse where it has been believed to be relevant in mitigating biodiversity loss for development. Matsika (cited in Mapira and Mazambara,2013) identifies six main characteristics peculiar to IKS as follows:

- A home grown form of knowledge, which is derived from the solution of everyday life problems;
- It is part and parcel of community's cultural practices and ways of life;
- Often it is not documented but has passed from one generation to another through oral history;
- It is used in solving the immediate problems that confront the community;
- As a dynamic form of knowledge, it changes in line with events that may be taking place in a society;
- It is always under scrutiny since it is valued for its ability to solve prevailing problems.

Sustainable Development

Preceding research reveal that there is a debate on conceptualising sustainable development in isolation of sustainability. Some scholars believe that there is no difference between the two. According to Salaz-Zapata (2011), sustainability is an individual's ability to resist or adapt to change in a given environment. Its main concern is meeting the present needs with less concern about the future. Ayres (2008) further explains that sustainability alludes to the availability of ecological and necessary mechanisms that support people's life.

Parker (2008) takes a different dimension and views sustainability as meeting the needs of the present generation without infringing those of the future. This matches UN's definition of sustainable development. From this definition, one can deduce that economic development is inevitable, what is crucial is to strive towards enhancing sustainable development, (Barker, 2006; Haase, 2013; Stoddart, 2011). In this case, information, through IKS, plays a vital role in promoting environmental management, a key indicator for sustainable development. The overall success of sustainable development, Morelli (2011) notes, is measured by the long term stability of the economy, thus sustainability is a result of sustainable development.

Regardless of the above stated debate on differentiating sustainable development from sustainability, Bland and Fenn (2012) make a strong argument that the two are useful in appreciating the importance of responding to environmental and biodiversity concerns. This study, therefore, summarises sustainable development as a cautious consumption of the environment sparing some for the future. With that in mind, information derived from IKS was proven to be a necessary catalyst for managing the environment for sustainable development in Bulawayo.

Research Method

Study Area

The study was carried out in Bulawayo, the second largest city of Zimbabwe with an estimated population of one million (Gumbo, et al., 2003). The city is governed by a council of 29 members led by the Mayor and his Deputy for decision making. Twice has it won the United Nations Urban Housing Merit for its housing programme and was also one of the twelve world finalists in the special global competition to honour local initiatives for addressing environmental and development challenges of the 21st Century at a Conference in Rio de Janeiro in 1992, (City of Bulawayo Profile, 2018).

FIG 1: Map of Zimbabwe and Bulawayo
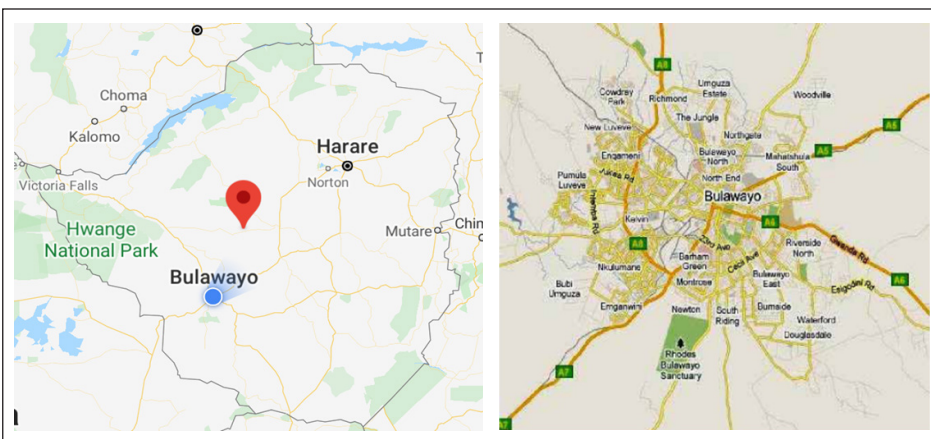
Source: Google Maps

This paper implored an interpretivist's approach, which, according to Saunders (2009), entails that realities are constructed through human interactions and meaningful actions. Simply put, reality is contextually based and is largely defined by people's behaviour, attitude and reaction to both internal and external forces. This study was both quantitative and qualitative in collecting data which gave participants an opportunity to present their views on the current use of IKS in local governance and policy formulation.

Data Collection Techniques

Data was collected through structured interviews and questionnaires which was later analysed using ATLAS.Ti and SPSS. Interviews were most preferred because they captured the respondent's emotions and non-verbal cues which assisted in reaching a conclusion on findings. Content validity of these instruments was ensured through an exhaustive literature review to attain relevant items. The researcher managed to screen and eliminate undesirable content to achieve polished instruments that guaranteed valid data through an intense literature review and assistance from environment management experts. The Likert's 5 point scale was used to measure participants' knowledge of and attitude toward IKS in Bulawayo assisted by Cronbach Alpha's formula for reliability. Participants expressed their responses in any of the five, Strongly Disagree (1), Disagree (2), Not Sure (3), Agree (4) and Strongly agree (5).

The employees of Bulawayo City Council (BCC) and Environmental Management Agency (EMA) as well as the entire citizens constituted the study population for the sole reason that BCC is the relevant local government in Bulawayo Metropolitan while EMA is the custodian of the environment. On the other hand, citizens are part of the originators of IKS in this respective society. The assumption was that these three groups give a holistic picture of the relevance of IKS in this current period where globalisation and technology have overtaken the space.

Sekeran (2003) states that a sample should be representative of the total population, as such, it is the microcosm of the macrocosm. Data was collected from a sample size of three individuals representing BCC workers, three EMA employees as well as 90 Bulawayo citizens. Regardless of the claim by Showktat and Parveen (2017) that results gathered using non-probability sampling fall short in generalisability, this research adopted purposive sampling which is a branch on non-probability sampling. Purposive sampling was used in selecting the BCC and the EMA participants based on the researcher's judgement that these participants had professional contributions to the current research and that is vital. The BCC, being the local government and planners of development was responsible for giving its views on how IKSs, if any, are incorporated in their planning and utilised for the management of the environment. The same applied to EMA. As for the citizens, they were randomly selected around town and grouped into three strata according to age.

Duration of the study

The study was carried out in three months. In the process of data collection, the researcher stayed in the study site for extended period of time and there were no complicated ethical considerations and procedures to be followed thereby making the whole process smooth.

Data Analysis and Results

This sections presents and discusses, at length, the results obtained by analysing the data gathrered for this study. Inferences are drawn and aligned with the tenets of systems theory to reach a conclusion on the main objectives of the study. The findings presented below differ from other research in that they give a picture of the importance of IKS in urban set up unlike other studies which focused on rural areas. For clear presentation, findings are analysed in sections according to the research questions.

The Relevance of IKS at Bulawayo City Council

Results drawn from the analysis of the data indicate that IKS are silent in urban setup compared to rural areas. Local governance in Bulawayo acknowledges the existence and importance of IKS, however, their relevance in the day-to-day planning remains a contentious issue. In as much as they are an important tool in managing the environment, they remain irrelevant and insignificant in urban local governance because of the following findings.

a) Lack of Traditional and Natural Sites

From the interviews with the EMA officers, it was noted that urban areas have few, or rather lack, known traditional sites to facilitate the continuous use of IKS compared to the rural set up. It is believed that knowledge is derived from constant interaction with those natural sites making IKS inherent and unique to each particular area (Dutse et al. 2015). An example was given that in rural areas one would find sacred features such as Chamagona Mountain (Zvishavane), Umguza forest (Matebeleland North) and Lake Kariba (Zambezi River) and tree species among plenty of natural resources which are forbidden to be tampered with (Mapira and Mazambara, 2013). Because of myths and spiritual fulfilment associated with these sacred places, information has been transferred from generation to generation for continuity in safeguarding these areas resulting in sustainable use of the environment. However, the case is different in urban areas where such sacred sites are absent, resulting in minimum, if not, no use of IKS at all.

> *It is very difficult to apply IKS in towns, for example, here in Bulawayo we do not have a single wet land, only the water swamps and streams that are polluted with sewer. No one has any spiritual attachment to those swamps, rather people identify them as a perfect place for their small gardens. In Harare wetlands are there, unfortunately they are fast disappearing because people are constructing buildings on them. You go to Matopo, it is a different story with plenty of unexplored wetlands and getting water from them is a taboo that attracts bad luck. (EMA interview: 24 May 2019).*

From the above response, it can be deduced that application of IKS is a prerequisite for the contact of people with their environment and it is from such contact that people generate ways of living in harmony with nature. This assertion resonates with the definition of Maw-

ere (2015) that IKSs are ideas, beliefs and practices of a community that its members use in interacting with the environment.

Although information gathered from BCC reveals that indeed there are some historical sites in Bulawayo that are preserved, the relevance of IKS in Bulawayo remains very minute. An example was given of an open space at corner Masotsha Ndlovu and JM Nkomo Street where Inxwala (ceremony done by the Ndebele people thanking gods for a good harvest) used to be held. The place is kept as it is and there are no tall trees but only few shrubs and grass, nevertheless, no one still hold Inxwala ceremonies there and hardly, if any, you find people at that open space for spiritual fulfilment. Rather, such sites are turned into tourist attractions such as the "Old Bulawayo" which was King Lobengula's first capital in the 1870s.

b) Lack of Knowledge on the Existence of IKS

The irrelevance of IKS in local governance is further aggravated by ignorance of their existence by the majority of the citizens. Regardless of the fact that the BCC and the EMA appreciate the importance of IKS, the majority of the interviewed young citizens professed ignorance, and the few that have knowledge despise them. With regards to the Inxwala centre mentioned above, 89% of the sample interviewed never knew such a place existed, rather they thought it was just an unutilised piece of land which is the reason why some young boys in the city use it as their soccer pitch. The remaining 11% agreed that they once heard there was such a place, however, they do not have whatsoever connection or interest in the place. In other words, it can be argued that even if they are to enforce some knowledge system to manage the area, only a few if not none will abide because of lack of knowledge and interest.

Inserted below is a chart displaying statistics on the participants' knowledge of IKS. To solicit for this information, the researcher asked three main questions. Firstly, it established a number of those who knew IKS; secondly those who believed in the importance of IKS; and, lastly, those willing to apply / abide by such IKS.

FIGURE 2: People's Knowledge on IKS
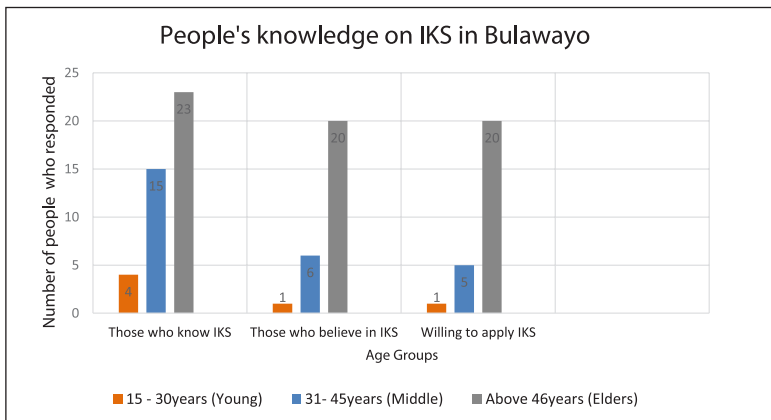
Source: Survey

Table 1: Summary Table

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	42	46.7	46.7	46.7
	No	48	53.3	53.3	100.0
	Total	90	100.0	100.0	

Reading the chart above, it can be noted that the young generation aged between 15- 30 have no knowledge at all about the existence of IKS, out of the 30 young people interviewed, only (4 people) 13% professed idea of IKS. On the other hand, the middle group had a 50% positive response while the elders scored 67% (23 people). The main factor cited was that information is hardly shared with the young generation. In contrary the middle and elders groups had fair understanding of IKS because during their childhood IKS was the immediate referral point for wisdom. A closer look at these results speaks to a natural death that IKS is succumbing to as the young generation is showing no future continuity of IKS. With such a response from the citizens, one would want to believe that even if the local governance was to enforce IKS in their planning, the implementation would be a challenge as no one will be ready to adopt it. The BCC should be tapping IKS from its people and apply it to their planning not the other way round. In this case, there is very little information and knowledge to be tapped from citizens by the local government.

c) Adoption of Modern Technology /Ways

Technology has overtaken the space and people are adjusting accordingly in manipulating it to satisfy their daily needs and expectations. Local governance is no exception and this study has revealed that modern technology is being used to manage the environment. According to EMA- Zimbabwe, the ongoing project in retrospect operating under the theme "Greening our cities" is making use of modern ways of managing the environment such as growing of exotic ornamental trees such as star magnolia and more jacaranda trees. The main reason being that exotic and ornamental trees grow faster than the indigenous and they beautify cities. This shows an acute departure from the use of IKS in urban places facilitated by technology and modernity at large. When asked on what they preferred to use in conserving their environment, participants responded as below.

TABLE 2: Statistics on the Preferred System for Managing the Environment

Group	Total Participants	Technology/ Modern ways	IKS
Young	30	30	0
Middle	30	30	0
Elders	30	22	8

TABLE 3: Willingness to Apply IKS

|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	28.9	28.9	28.9
	No	64	71.1	71.1	100.0
	Total	90	100.0	100.0	

Results above show that all age groups preferred modern ways of managing the environment with only eight of the 90 interviewed opting for IKS. It was further explained that technology is faster and effective compared to IKS. Furthermore, participants indicated that myths and taboos, associated with IKS are now obsolete hence the need to move with time, while the extremists associated them with primitivism. With these above explained reasons, it was established that in as much as IKS have been successful in rural areas, they are irrelevant, to say the least, in the urban local governance.

To Establish the Interconnectedness among Local Governance, IKS and Environmental Management for Sustainable Development

Informed by systems theory, the study established that IKS, local governance and environmental management are systems that have linkages which enable them to work together for a common cause. In as much as the research discovered that IKS are insignificant in urban setup, a total dismissal of them will be unjust considering the fact that the BCC, the EMA and other citizens, at times employ these ideas in making their decisions pertaining to their surrounding environment. It is the interaction of these components that informs, as alluded to by Abebe (2017), the localisation of sustainable development goals for a positive result.

The three systems have proven to be independent entities that can operate on their own without much influence from the other. Referring to the findings given by EMA that they are now opting for ornamental trees and modern ways of managing the environment translates to a shift from reliance on IKS. However, the end result of such action still has a bearing on the local governance in that they still have to work hand in glove with the city council for the successful 'greening' of Bulawayo. With that in mind, it is clear therefore that irrespective of the clear external boundaries these systems have, open boundaries are more ideal because the three systems complement each other.

Figure 4: The Interconnectedness of the Three Systems for Sustainable Development
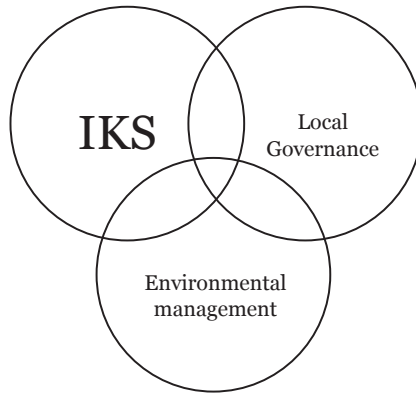
Referring to Roger's (2006) indigenous knowledge provides a basis for understanding local environmental issues and can be collectively integrated with modern ideas. Take for instance the point stated by the EMA that it is no longer permissible for BCC to allocate infill stands so as to maintain flora within the few bare spaces left in the city, shows the importance of the overlapping boundaries of these three stated systems. Each system is an important support system in contributing towards sustainable development, hence divorcing them from each other defeats the purpose. In simpler terms, therefore, for successful sustainable development, local governance, environmental management and IKS have to be merged.

This research has also established that IKS, local governance and environmental management as independent systems, can operate in a hierarchy where local governance occupies the top position. In an interview with the EMA officer, it was gathered that procedurally before any construction takes place, they carry out an Environmental Impact Assessment and results determine the direction of that project, however, these results are, at times, overlooked by the local governance. This is evident in Bulawayo where residential stands are allocated in Cowdray Park, an area with soil that is perceived unconducive for construction. The supremacy of local governance as a system is also highlighted by Sithole and Goredema (2013) where wetlands in Harare are consumed by construction to meet the housing demand.

Conclusion and Recommendations

IKS is a very important tool in managing the environment if manipulated well. However, their relevance in local governance in an urban set-up is trivial because of modernisation taking place. Concern and efforts are on expanding cities through construction and most of the land (including sacred places and trees) is consumed by that construction. This study, therefore concludes that, reinstating IKS in local governance in Bulawayo is sailing on a sinking ship because technology and modernity have conquered the space. Yes, it can be incorporated in their planning and policy making but fails to be adopted and implemented by citizens because of lack of knowledge of and value towards IKS. Secondly, IKS has proven to

be successful if there is a nexus between an individual's inner person and the physical world but with this generation the case is different. The nexus is dissolved so much that IKS and sacred places have turned out to be tourist attractions than bringing intrinsic fulfilment that it ought to. In aggravation people profess ignorance of and despise the existence of such IKS in their area. Therefore, IKS, local governance and environmental management are systems operating in a hierarchy where governance for development is at the top of the list in urban areas. Regardless of the findings, this paper concludes that if manipulated well, IKS can be an integral part of managing the environment for sustainable development considering that research has proven it to be successful in rural areas.

This paper recommends that future research should focus on the applicability of IKS in urban set up since a lot has been done in rural areas. Most importantly, focus has to be on the applicability of IKS to other environmental management aspects such as pollution and waste management as research shows that these areas are under explored yet they are very crucial. It is believed that such studies will positively contribute to conscientising urbanites on the importance of IKS in this development discourse. There must also be adequate transmission of information using proper channels, especially to the young generation on the importance of IKS in managing the environment for sustainability. It is also recommended that the BCC and the EMA continue working together as a whole in applying relevant IKS in planning for successful environmental management strategies towards achieving sustainable development goals. Above all, local authorities should be given autonomy to plan and implement strategies without interference from political circles for successful goal achievement.

Conflict of Interest
There is no conflict of interest while preparing this paper.

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