THE USE OF INDIGENOUS KNOWLEDGE SYSTEMS PRACTICES TO BOOST FOOD SECURITY IN ASA LOCAL DISTRICT ILORIN, KWARA STATE, NIGERIA

[1]Atanda Saliu Sambo, [2]Habib Shehu &[3]Olawepo Saheed Adesina

[1]Department of Library and Information Science,
Kwara State University, Malete
atanda.sambo@kwasu.edu.ng; asiwajufupre@gmail.com
https://orcid.org/0000-0002-4675-7768
[2]Department of Information Technology and Systems
Kampala International University Uganda
http://orcid-0009-4464-7074
[3]Gani Bello Library,
Federal College of Education, Abeokuta
Olawepo7158@gmail.com

Abstract

This paper seeks to examine the use of indigenous knowledge systems IKS and practices to boost food security in Asa Local District, Ilorin, Kwara State, Nigeria. Its objectives were to: identify the IKS and practices used by farmers; assess the contribution of IKS and practices to food security; identify possible challenges faced in the use of IKS; and examine the strategies for promoting IKS into modern agriculture to boost food security. It adopted the survey research design since it is quantitative research. Its population was 144 farmers from twelve villages in Asa Local District. Owing to this manageable size of the population, total enumeration of the population formed the sample size. A structured interview, observation and focus group was used for data collection. The findings revealed that Asa Local farmers depend on the use indigenous knowledge practices to improve food security, most farmers apply manure in their farms, local mortars to pound and grind foodstuffs. The study revealed challenges which include limited access to market, insufficient modern tools. crop failures due to climate change, animals attack, limited access to loan facilities, rural poverty, inadequate support from the government, /non-governmental organisations (NGO), kidnapping, food insecurity and limited access to education and training, Therefore, it was recommended that policy makers should identify the worth of IKS and practices and encourage their usage in contemporary farming and efforts should be made to document and preserve IKS and practices through research, interviews and workshops, among others.

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Introduction

Indigenous Knowledge (IK) refer to the knowledge that is unique to a specific culture or society. It is the knowledge that has been conceded down from generation to generation and is frequently founded on the experiences of the people who have lived in a particular place for a long time. More so, IK is the traditional knowledge of the populaces of a given geographical area, for instance local language, farming, food, religion, rituals, local technology, norms and value, traditional health care, fashion, dances, storytelling, dressing etc. IK denotes a way of life, skills, experiences, culture, insight and values embrace by people in a community.

The unique, traditional knowledge and practices of indigenous cultures are referred to as indigenous knowledge (IKS). It encompasses a wide range of knowledge, including traditional medicine, agriculture, astronomy, and environmental management. Achieving food security is a

basic human right and is necessary for long-term progress. Asa district in Kwara State is not an exception to the serious food insecurity issues that plague many Nigerian communities, particularly those living in rural areas. Also, it is widely acknowledged that IKS and practices are essential tools for improving food security. As a result, these centuries-old systems and techniques provide distinctive viewpoints on sustainable agriculture, natural resource management, and food preservation; nonetheless, despite their promise, IKS and techniques are frequently disregarded in favour of contemporary agricultural approaches. Promoting the usage cvof IKS is mostly the responsibility of organizations tasked with knowledge preservation and dissemination. Many countries have previously made attempts to integrate IKS, especially traditional African civilisations (Eaton, 2024 & Boadu, 2022).

Indigenous knowledge system has been found to offer many advantages in the domains of environmental resource management, healthcare, agriculture, and technology development. As a result, there is increasing interest in obtaining its credit and conducting an academic study of its effects on local and national development. To preserve Nigeria's rich cultural legacy, Nigerian institutions might encourage the usage of IKS. The use of IKS in communities is hampered by several factors, particularly in the Asa district of Kwara State, Nigeria. This gap must be found, and the study's necessity is supported.

Asa is one of the oldest local governments in Kwara State, Nigeria. It was founded in 1976 and has its headquarters in Afon. The Local Government Area's twelve wards cross Osun State's borders in several locations. According to the 2006 population census, it has 1,26,435 persons and a total area of 1,286 km² (National Population Commission, 2006). The following groups of people inhabit in the rural sections of Kwara State's Asa Local Government Area: farmers, hunters, minor traders, teachers, cattle-rearers, local health workers, local government personnel, craftsmen, politicians, students, etc. Afon, Igbo-Nla, Igbo-Aran, Oguntoyinbo, Otte-Oja, Aboto-Oja, Okeso, Ballah, Alapa, Laduba, Ogbondoroko, Olowu Oko, Lasoju, Igbo Aran, Eiyenkorin, Budo Egba, Ilaji Garuba, Idiapa Sadadi, Ago Oja, Ila Oja, Faje, Budo Are, Aladera Magaji, Akunyun, and Elebute are among the rural communities in the Local Government Area. Iyana Alakuko, Gaa-Lamba, Okepete, Pampo, Apata Ajele, Ogiri, Onile Aro, Ajuwon, Efue, Gaa Abuyanrin, Berikodo Dongari, Gbaja, Ologbo, Agboyi, Ilaji Owode, Owode Alagbon, Oniyere, Ajagusi, Budo Adio, Onikeke, Yede, Oja Iya, Kupola, Awe, Agbonna, Jagun, and Agbolu are other names. The Local Government Area's residents speak Yoruba and Fulani as their primary languages.

Farming, trade, Garri processing, hunting, cattle rearing, and carving are the people's primary sources of income. Among the principal celebrations are the Egungun Festival and Alagbe Acrobat. (www.kwarastate.gov.ng; Asa/LGA, 2011). By offering useful and flexible farming techniques that are adapted to the local climate and environment, IKS may greatly improve food security in Asa Local District, Kwara State, Nigeria. By offering useful information on crop selection, water management, and insect control, these generations-old techniques assist farmers in maximizing yields and lowering risks.

Statement of the Problem

Food security remains a demanding trial in many parts of Nigeria, including Asa Local District in Ilorin, Kwara State. Despite government interventions and contemporary agricultural creativities, communities continue to face issues such as low crop yields, post-harvest losses, poor access to modern farming inputs, and susceptibility to climate change. Meanwhile, theses obstacles have contributed to tenacious food deficiencies, malnutrition, and economic instability among rural households. Clarification is required on issues pertaining to the recognition, protection, and appreciation of IKS. It is unknown what reasons might be responsible for this because there is a

dearth of empirical information about the implementation of IKS techniques to promote food security in Asa Local District Area, Ilorin, Kwara State, Nigeria in particular. This creates a research gap that needs to be addressed, which is why this study was carried out.

Objectives of the Study

The main objective of the study is to examine the use of indigenous knowledge system to boost food security in Asa Local District, Kwara State, Nigeria. The specific objectives are to:

1. identify the indigenous knowledge systems and practices used by farmers in Asa local district, Kwara State, Nigeria;
2. assess the contribution of indigenous knowledge system and practices to food security in Asa local district, Kwara State, Nigeria;
3. identify possible challenges faced in the use of indigenous knowledge system and practices; and
4. examine the strategies for promoting indigenous knowledge systems and practices into modern agriculture for boost food security in Asa local district, Kwara State, Nigeria.

Review of Related Literature

Indigenous Knowledge Systems and Practices Used by Farmers

The techniques used in IKS are essential to agricultural, particularly stallholder farming. These customs are highly ingrained in the local culture and are frequently passed down through the generations. For many generations, farmers have used IKS and techniques to manage natural resources, increase agricultural production, and adapt to climate change. Observations, tests, and experiences that have been passed down over the ages serve as the foundation for these customs.

Rainwater collection, agroforestry, and traditional seed systems are used by indigenous people in Asia and Africa (Gliessman, 2006; & Joshi, 2007; Kloppenburg, 2010). Manabete and Uma (2014) assert that indigenous West African and Nigerian technologies and practices, such as the casting of bronze, the smelting of iron and tin, and the making of implements, have existed for millennia.As a result, IKS provides the basis for the local knowledge that many rural and indigenous people use daily and that often influences their decisions. The development of IKS in relation to livelihoods and natural resources has allowed the indigenous people who created these systems to thrive (Admire & Tinashe, 2014). Storytelling, music, mythology, idiomatic expressions, festivals, cultural norms, beliefs, rites, social rules, local languages, farming techniques, plant species, and even the domestication of animals are all ways that IKS is represented, according to Jiri et al., (2016). Additionally, it is preserved in the memories and behaviors of communities.

Indigenous Knowledge System and Practices to Food Security

Africa's complicated food security problem is caused by several reasons, including population expansion, economic instability, and climate change. To maintain agricultural practices, protect biodiversity, and guarantee nutritional resilience, IKS that are firmly ingrained in local communities are crucial. It has been acknowledged that IKS and practices are crucial to ensuring food security, especially for vulnerable and rural populations. These age-old methods, which have been honed over many years, offer special perspectives on resource management, food preservation, and sustainable agriculture. According to Altier (2004), IKS and practices promote sustainable agriculture by emphasizing biodiversity, soil protection, and efficient water use.

Furthermore, IKS and practices offer efficient ways to preserve food, which lowers food waste and increases food supply (Brush, 2004). In a similar vein, IKS and practices help communities develop resilient food systems by providing insightful information on climate change adaptation (Gliessman, 2006). Communities across the world have used IKS to assist achieve food security. Food security is defined by the Food and Agricultural Organization (FAO) as the availability of nutritious, diverse, high-quality, and culturally acceptable food (FAO 2016). Climate change's negative effects on rural subsistence farmers' ability to achieve food security are a recurring issue, and many of them are depending increasingly on various IKS to achieve their goals.

According to research by Agboola and Bolanle (2013) on the availability and use of community-based library and information services: an assessment of Asa Local Government Area, the majority of the community's inhabitants were farmers (44.8%) and government workers (22.4%). Furthermore, Kom, Nicolau, and Nenwiini, (2024) thought that local farmers used traditional knowledge practices to improve household food security. Most farmers spread manure on their farms using animal dumping. It shows that 87.8% of families used local mortars to grind and pound foods like peanuts and maize and used sun-drying techniques to preserve their food. To improve soil fertility, reduce insect pest outbreaks on crops, and offset climate change, crop rotation, mixed cropping, and intercropping were used to promote agricultural yield. For everything from food and water to their livelihoods and culture, many indigenous people rely on their natural surroundings. For example, indigenous peoples in the Asa Local District, Ilorin exploited their traditional knowledge to improve their fishing methods by taking advantage of the rainy seasons that generate flooding along river systems. The increased size of the flood is now burying the people and their crops higher upriver, who were unprepared for the surge of water, because of climate change and fossil fuel-based economic expansion. Indigenous peoples have increased food insecurity because of these floods' impact on agriculture (Gliessman, 2006).

Challenges Faced in the Use of Indigenous Knowledge System and Practices

According to studies, IKS is extensively used in Nigerian communities and is crucial to the organization and sustainability of natural resources (Kosoe, et al., 2020). Indigenous knowledge system that have been effectively applied to preserve biological resources include taboos, traditional political systems, and totems. These systems are essential to Nigeria's sustainable development and biodiversity conservation. Formal schooling, modernity, and religious influences are some of the issues that threaten these institutions' viability and efficacy. The Asa Local district's IKS faces several obstacles. According to Prempeh (2022), one significant issue is that national policy frameworks do not give priority to or recognize indigenous knowledge. Amponsah (2023) and Prempeh (2022) found a lack of intentional policies, inadequate knowledge, and a lack of government commitment to IKS and practices. Nigeria may accomplish the Sustainable Development Goals (SDGs) by 2030 with consistent work and involvement from all stakeholders, according to Oyeniran's (2021) research, despite the obstacles. The sustainability of indigenous food systems is threatened by the loss of traditional knowledge and practices, which is one of the difficulties local farmers encounter in getting IKS. In a similar vein, Roncoil (2006) claimed that climate change impacts indigenous food systems through changing weather patterns and environmental factors. Hollaus et al., (2022) also detailed the difficulties experienced by indigenous farmers. These difficulties included a lack of suitable land, poor soil quality, insufficient water, poor access roads, the need for financial resources or access to buy tools, the difficulty of paying for and obtaining paid labour, farm inputs, tools, or irrigation infrastructure, and agricultural disturbance. Indigenous knowledge system in the Asa Local district faces similar difficulties, one of which is that indigenous knowledge is not valued or acknowledged by national policy frameworks.

Establishing farmer field institutes to encourage IKS and practices among farmers, integrating IKS and practices with contemporary agricultural techniques to generate a more resilient and maintainable food system, setting up centres to encourage and reservation IKS and practices, training and capacity building, including programs for farmers, extension agents, and other stakeholders on IKS and practices, and working with research institutions to develop new technologies and practices that incorporate IKS and practices are some short-term strategies (Cruz, 2017). According to Mwinzi (2015), relevant educational practices that prioritize the global community while attending to local issues require an understanding of how disciplines like history, sociology, and psychology affect educational ideals. In conclusion, because IKS and practices result in resilient and sustainable food production and preservation results, they are essential to food security. Therefore, efforts to preserve and advance these traditional customs are sustainable, particularly for rural and underprivileged communities.

Methodology

The study adopted mixed method research design. The targeted population of the study is made up of subsistence farmers from twelve villages in Asa Local District, Afon such as Aboto-Oja, Ballah, Alapa, Laduba, Ogbondoroko, Olowu Oko, Lasoju, Igbo Aran, Gaa-Lambe, Pampo and Elebute. A total of 144 subsistence farmers from the twelve villages constituted the population of this study. The sampling technique that was adopted for this is the total enumerative sampling technique. This was chosen owing to the small population of the study. Therefore, a survey of 12 households was conducted per village. Before choosing the participants of the study, some consultation was done with key informants, such as agricultural extension agents, local leaders and local indigenous knowledge holders and practitioners. Vital informants were chosen because they could offer in-depth and pertinent knowledge regarding indigenous foods and IKS as well as their role in ensuring household food security. The interview, observation, and focus group was the only instrument used for data collection and was administered personally by the researchers with the help of three research assistants. All participants who took part in the study did so willingly, and they were made aware that they may opt out at any time. The existence of households was used as a representative unit of the investigation. The selection of households was based on their aptitude to deliver full and pertinent details concerning indigenous food protection and IKS, as well as their part in promoting food security to the community. There were 144 households surveyed in all (12 households in every village). Twelve villages were chosen methodically. According to the houses the researchers visited, these are communities where small-scale agriculture is flourishing, and the people can apply their traditional knowledge to improve food security and forecast weather patterns. The villages were also selected by employing a grid that was completed beforehand with input from stakeholders for the selection of study villages engaged with IKS and food security in Asa Local District.

Results and discussion

Demographic characteristics of participants

Table 1: ***Gender, Age group in year and Marital status of the Participants***

One hundred and Forty-four (144) Participants from Afon, Aboto-oja, Ballah, Alapa, Laduba, Ogbondoroko, Olowu oko, Lasoju, Igbo Aran, Gaa-Lambe, Pampo and Elebute. Twelve Villages in Asa Local District, Ilorin, Kwara State, Nigeria.

Gender	Frequency	Percentage
Male	86	59.7%
Female	58	40.2%
Total	**144**	**1$_{0\ 0}$**
Age	**Frequency**	**Percentage**
20-30	23	15.9%
31-40	30	20.8%
41-50	71	49.3%
51 and above	20	13.8%
Total	**144**	**1$_{0\ 0}$**
Marital Status	**Frequency**	**Percentage**
Married	67	46.5%
Widows	**77**	53.4%
Total	**144**	**1$_{0\ 0}$**
Size of Households	**Number of Participants**	**Percentage**
1-4	51	35.4%
5-8	59	40.9%
9-12	34	23.6%
Total	**144**	**1$_{0\ 0}$ %**

Source: Field Work Survey, (2$_0$ 25).

Demographic profile of households' head to understand the rudimentary socioeconomic status of the households that molded part of the sample for this research, it was important to examine the demographic profiles of the participants. The information used was collected from the head of the household and the analysis included aspects related to gender, age group, marital status and household size. A total of 144 subsistence farmers' households were administered in all twelve villages, that is 12 sample sizes from each village. The result of the study revealed that 86 households are headed by males which make up 59.7%, while the remaining 58 participants were females and consisted of 40.2%, the latter thus reflecting the majority. This analysis is typical of the circumstances within the Asa Local District rural communities, where semi-migration is a dominant phenomenon as the economically active male member of the rural household works (and lives) in larger urban areas but retains their continued connection with their households in the rural area.

Discussion of the Findings

The findings of the study are presented and discussed in this section based on the objectives of the studies.The findings with regards to IKS and practices used by farmers**.** The participants were asked to identify IKS, and practices used by farmers in Asa local district, in Ilorin, Nigeria.

The participants revealed that they used organic manures, such as compost and animal waste to improve soil fertility, sun-drying processes for food preservation and used local mortars to pound and grind foodstuffs such as peanuts and maize.The participants stressed crop rotations, mixed cropping and intercropping were employed to improve soil fertility and climate change. Virtually, all participants affirmed that they used rainwater to supplement irrigation, reduce water scarcity, and improve crop harvests.

The finding aligns with the position of Admire and Tinashe (2014), stated that the development of IKS within the context of livelihoods and natural resources has supported the survival of the indigenous people who have created these systems.

The findings regarding IKS and practices to food security in Asa local district,

The participants revealed that IKS and practices used in Asa local district by accenting soil conservation, biodiversity, and well-organized water use. Meanwhile, majority of the participants affirmed that climate change adaptation is one of ways in which farmers secure their food and food preservation.

This is in line with the assertion of Kom, Nicolau, & Nenwiini, (2024) observed that local farmers depend on the use of indigenous knowledge practices to improve household food security. Supported by Altier (2004), asserted that IKS and practices promote sustainable agriculture by emphasising soil conservation, biodiversity, and efficient water use. Supported by Gliessman (2006) vowed that IKS and practices provide important insights into adapting to climate change, all.

The findings regarding challenges faced in the use of IKS and practices. *The participants revealed that indigenous farmers in Asa local district area face numerous challenges that influence their livelihoods and food security such challenges include, limited access to market, insufficient modern tools. crop failures due to climate change, animals attack, limited access to loan facilities, rural poverty, lack of income or inadequate of support from the government or non-governmental organisations (NGO), kidnapping, food insecurity and limited access to education and training.*

This finding corroborated those of Hollaus et al. (2022) outlined the difficulties faced by indigenous farmers which include financial resources or access to acquire tools, the difficulty of paying for and gaining access to paid labour, farm inputs, tools, or irrigation infrastructure, poor access roads, a lack of suitable land, poor soil quality, inadequate water, and human disturbance.

The findings with regards to strategies for promoting IKS and practice into modern agriculture for boost food security. *The participants revealed that, establish farmer field schools to promote IKS and practices, develop policies that support and promote the use of IKS and practices in modern agriculture, provision of loan facilities for indigenous farmers, good access road, provision of security, develop markets that promote and support indigenous food products and practices.*These findings agreed with those of Cruz (2017), which highlighted the subsequent strategies to increase food security, such as creating markets that support and promote indigenous food products and practices; integrating IKS and practices into national agricultural policies to ensure their promotion and preservation; establishing seed banks controlled by indigenous people to preserve and promote indigenous crop varieties

Conclusion

To improve food security in Asa District, Kwara State, Nigeria, the study indicates that IKS and practices are an essential tactic. According to the study, IKS and practices can increase agricultural productivity, support viable agriculture, and improve food supply. Farmers face numerous issues that require immediate attention, such as limited market access and a lack of modern gear. food insecurity, agricultural failures brought on by climate change, animal attacks, restricted loan availability, rural poverty, lack of income or assistance from the government or non-governmental organizations (NGOs), and abduction.

Recommendations

Arising from the participants and the conclusion drawn, the following recommendations are put forward:

1. Policymakers should identify the worth of IKS and practices and encourage their usage in contemporary farming.
2. Efforts should be made by authority in the community to document and preserve IKS and practices through research, interviews and workshops.
3. Training and capacity building programs should be established by government or district held of the community to encourage IKS and practices among agriculturalists, and others participants.

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