

## USE OF INDIGENOUS KNOWLEDGE SYSTEM BY FARMERS OF ISU LOCAL GOVERNMENT AREA OF IMO STATE, NIGERIA

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### ABSTRACT

*The study examined the adaptation of indigenous knowledge system (IKS) by farmers of Isu local Government Area of Imo state Nigeria. Data were collected with the aid of validated and structured questionnaire administered on randomly selected farmers using the multi-stage random sampling technique. They were analyzed using simple percentages, frequency tables and means. The results showed that majority of the respondents (30%) were farmers whose mean annual income was #340,800.00 with little formal education and large family sizes. The most patronized IKS were cooking and re-cooking of produce during processing, mixed cropping, shifting cultivation, selection of seeds for planting, smoking/roasting of food, spot burning to kill weeds and drying, with mean scores of 3.5, 3.3, 3.3, 3.1, 3.0, 2.7 and 2.5 respectively. Strong factors influencing the patronage of these IKS included, resources availability (85%), easy to use (85%) and expensive nature of modern methods (70%). The major constraints experienced in the usage included high intensive labour requirement (85%), much time consumption in the preparation (85%), custodians of IKS not willing to divulge information (75%), lack of resources (70%) amongst others. It is recommended for farmers to be trained on the use of Indigenous Knowledge and Extension agents should mix properly with the custodians of IKS, learn the rudiments and propagate same among the farmers.*

**Keywords:** Indigenous knowledge, Farmers, Adaptation, Use

### INTRODUCTION

Traditional agriculture is believed to have been sustainable. This stimulates conservationist to analyze, and if possible, benefit from the wisdom of indigenous knowledge. The adjectival word indigenous means belonging to a place, native Oxford English Dictionary. Thus indigenous knowledge system (IKS) can be defined as a corpus of knowledge belonging to a particular geographical area. Native knowledge, traditional knowledge, cultural knowledge and civilization knowledge are all synonymous terms to IKS (Bridges, 2006). He further stated that IKS is unique to a given culture, society or a country. It is seen to contrast with knowledge generated within the international system of universities, research institutes and private firms (Hosseini and Khorsand, 2010).

One of the salient features of IKS is that it is a knowledge developed by tribal or rural communities living in a particular geographic location. For a long time indigenous knowledge was ignored by modern science regarding it as primitive, superstitious and unscientific. Adekunle (1997) observed that despite the fact that Nigeria rural communities (which produce the greatest amount of food for the country and excess for export) have produced their own food, made their own farming implements, and conducted their own farming activities, have not been appreciated. Kolawole (2002) claimed that rural people to which almost all research development efforts are directed have their own body of knowledge that enables them to arrive at decisions which better their lots.

Indigenous knowledge is one of the important aspects of resource poor agriculture on which all local level learning processes exist. The IKS is vital in maintaining indigenous agriculture and indigenous agriculture is providing house- hold

level food security at local level, (Warren, et al, 1989). For most poor farmers, the crop diversity is their safety net. There are many different cultural scenes about which farmers are practicing resource poor agriculture, hence, culture is a source of IKS, and it is heavily disturbed by modernization.

On the other side, Alcorn (1991) stated that in spite of the benefits of IKS, its side effects included, not deliberately being planned for and organized, and is threatened by rapid socio-economic changes and planned interventions .IKS is deliberately limited by developed world through biotechnology and genetic engineering which is increasingly dominating global agriculture.

This study seeks to determine the use of Indigenous Knowledge System by farmers in Isu Local Government Area of Imo State Nigeria.

Specific objectives of the study include to;

- identify the socio economic characteristics of the farmers.
- determine the level of usage of Indigenous knowledge.
- ascertain reasons for usage of Indigenous Knowledge and
- Identify constraints to utilization of Indigenous Knowledge.

## MATERIALS AND METHOD

The study was carried out in Isu local government area (LGA) of Imo State. Isu LGA is within Orlu agricultural zone .Isu LGA experiences two seasons in a year; dry and rainy seasons, the rainy season begins around march and ends around October, while the dry season sets in about the month of October, and terminates around February.

The area is in the rainforest zone characterized by nine months of heavy, moderate and light rainfall and three dry months. The rainfall distribution is bimodal, with peaks in July and September and a break in August. The annual temperature is above 20<sup>oc</sup> and 75% relative humidity (Aniedu et al, 2007).The major occupation of the people are farming and petty trading with very few civil servants . Crops cultivated in the area included cassava, yam, cocoyam and vegetables (pumpkin and pepper). Animals predominantly reared are goats, sheep and poultry.

Multistage random sampling technique was used to select the respondents for the study .Four out of

thirteen communities were selected. They included Isu-Obishi ,Isunjaba ,Amurie , and Ekwe .Twenty farmers were randomly selected from each community to give a total of eighty (80) farmers for the study.

Data were collected through the administration of pre-tested and validated structured interview schedule .Trained enumerators administered the questionnaire under the supervision of the researchers. Indigenous knowledge utilization scores were procured for each respondent and this was measured as the number of IKS utilized by each respondent.

Frequency, percentage and mean score were used in presenting the results.

## RESULTS AND DISCUSSION

The socio-economic characteristics of gender, marital status, age, educational level, occupation, house hold size, income and social organization were analyzed in Table 1. The results revealed that majority of the respondents (70%) were males, and most of them (80%) married with up to 16-20 years farming experience and fall within the ages of 41-50 years (42.5%). A good number of them (45%) were ADP contact farmers with house hold size of 7-9 persons per house hold. Majority of them (30%) were farmers and civil servants respectively whose annual income fell within #312,000.00 - #360,000.00. Their mean monthly income, age, number of years spent at school and house hold size were #340,800.00, 41 years, 11years, and 7 persons respectively. The results showed respondents were low income, aged farmers who had little formal education with large family sizes. These results are consistent with gender role pattern of people where fathers play dual roles of household and family heads (Onoh and Peter Onoh, 2012), married respondents are more likely to have taken advantages of family labour in their farming enterprises. The low earnings of majority of the farmers would not enable their household to live well and it is well known that education plays a very vital role as it influences the ability to properly comprehend new techniques and method required to bring about positive changes to the knowledge, attitude, skill and aspiration of respondents (Onuekwusi and Hon, 2012).Kuponiya and Bamigboye (2008) noted that there was a significant relationship between IKS utilization and age ,income and farm size of rice farmers in Ekiti State.

**Table 1: Socio-economic Characteristics of Farmers**

<b>Gender</b>	<b>Frequency</b>	<b>percentage</b>
Male	56	70
Female	20	30
<b>Total</b>	<b>76</b>	<b>100</b>
<b>Marital status</b>		
Single	12	15
Married	64	80
Divorced	0	0
Widowed	4	5
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Age (mean 41)</b>		
21-30	8	10
31-40	30	37.5
41-50	34	42.5
51 and above	8	10
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Years in school (mean= 11years)</b>		
No formal education (0)	6	7.5
1-6	14	17.5
7-12	16	20
13-18	44	55
19 and above	0	0
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Occupation</b>		
Farming	24	30
Artisan	12	15
Civil servant	24	30
Trading	16	20
Transporter	0	0
Others	4	5
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Household size (mean=7)</b>		
1-3	4	5
4-6	32	40
7-9	32	40
10-12	12	15
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Annual income (mean=</b>		
10,000-100,000	15	18.75
100,000-200,000	45	56.25
200,000-300,000	12	15.00
300,000	8	10.00
<b>Total</b>	<b>80</b>	<b>100</b>
<b>Social organization</b>		
Farmers council	36	45
ADP contact farming	28	35
Church organization	10	12.5
Age grade	6	7.5
<b>Total</b>	<b>80</b>	<b>100</b>

Source: Field survey 2012

Table 2 shows the distribution of farmers by the types of IKS utilized. Twenty categories of IKS were presented to the respondents and were asked to supply information based on the intensity of usage of the IKS. Mean utilization scores of IKS revealed that the following have high intensive usage; application of farmyard manure ( $x=2.9$ ), spot burning to kill weeds ( $x=2.7$ ), mixed cropping ( $x=3.3$ ), shifting cultivation ( $x=3.3$ ), selecting seeds for planting ( $x=3.1$ ), smoking/roasting of food ( $x=3.0$ ), sun drying ( $x=2.5$ ) and cooking and re-cooking ( $x=3.5$ ). The results also revealed that only 45% of the 20 IKS presented to the respondents were intensively utilized, while 55% were low intensively utilized.

**Table 2: Distribution of Respondents According to Level of Use of Recommended Indigenous Knowledge**

Indigenous practice	High intensive Usage Frequency	Intensive Usage frequency	low intensive Usage frequency	not using frequency	mean X
Application of wood ash to farms	0	4(5) **	42(52.5) **	34(42.5) **	1.6
Application of farmyard manure	8(10) **	60(75)	8(10)	4(5)	2.9
Cover-cropping	8(10)	22(27.5)	42(52.5)	8(10)	2.4
Fastening livestock with rope	4(5)	20(25)	14(17.5)	42(52.5)	1.8
Allowing livestock to roam	4(5)	4(5)	18(22.5)	54(67.5)	1.5
Keeping livestock in Pens (huts)	14(17.5)	14(17.5)	34(42.5)	18(22.5)	2.3
Bush Fallowing	14(17.5)	12(15)	40(50)	14(17.5)	2.3
Contour ridging	16(20)	10(12.5)	30(37.5)	24(30)	2.2
Mulching	10(12.5)	14(17.5)	36(45)	20(25)	2.2
Spot burning to kill weeds	10(12.5)	42(52.5)	24(30)	4(5)	2.7
Mixed cropping	44(55)	24(30)	8(10)	4(5)	3.3
Shifting cultivation	30(37.5)	32(40)	14(17.5)	4(5)	3.1
Selection of seeds	24(30)	48(60)	4(5)	4(5)	3.1
Smoking/ roasting of food	14(17.5)	54(67.5)	10(12.5)	2(2.5)	3.0
Sun-drying	10(12.5)	28(35)	32(40)	10(12.5)	2.5
Salting	6(7.5)	10(12.5)	40(50)	24(30)	2.0
Use of air-tight bags	10(12.5)	54(67.5)	6(7.5)	10(12.5)	2.8
Grinding	8(10)	20(25)	48(60)	4(5)	2.4
Fermentation of food	4(5)	28(35)	44(55)	4(5)	2.4
Cooking/ re-cooking	50(62.5)	22(27.5)	4(5)	4(5)	3.5

Source: Field Survey 2012

**Table 3** shows the reasons why the respondents made use of indigenous knowledge system (IKS). Majority (85%) made use of IKS because it was readily available while the same number (85%) made use of it due to its easy usage. Another group (75%) made use of it because it had the support of extension service, while 80% of them were familiar with it, so they had no problem using it. Dove (2000), supporting the use of IKS observed that they were cost effective and posed less production risks and environmental degradation. Kuponiyi and Bamigboye (2009), observed that there was a high patronage of IKS among rice farmers in Ekiti State.

**Table 3: Distribution of Respondents by Reason of Utilizing IKS.**

Reasons	Frequency	Percentages
Resource of IKS readily available	68	85
Modern Methods are expensive	56	70
IKS is not hazardous	48	60
IKS is easy to use	68	85
Familiar with IKS	64	80
IKS is supported by Extension service	60	75

Source: Field Survey 2012

Multiple Responses

**Table 4** shows that majority of the respondents (85%) saw intensive labour utilization as their major constraints to the use of IKS. Seventy five percent of them agreed that their major constraint was custodians of IKS who were not willing to divulge information, while 70% of them saw time consumption in the preparation of IKS as their major constraints. Other constraints included; Lack of resources (65%), Financial constraints (60%), Land tenure arrangement (55%), Lack of institutional support (50%) amongst others. Since major custodians to IKS were not

willing to extend known knowledge to others .Kuponiyi and Bamigboye (2009) noted that custodians of IKS among rice farmers in Ekiti State were not willing to divulge information to younger farmers.

**Table 4 : Distribution of Respondents by possible Constraints to Utilization of IKS**

Constraints	Frequents	Percentages
Labour Intensive	68	85
Much Time Consumed in preparation of IKS	56	70
Lack of Resources	52	65
Unproductive Land	44	55
Lack of Institutional Support	36	45
Land Tenure Arrangement	40	50
Custodians of IKS Unwilling to divulge information	60	75
Climate Constraints	44	55

Source: Field Survey 2012

Multiple Responses

## CONCLUSION

The study which examined the use of indigenous knowledge system by farmers of Isu Local Government Area of Imo State found out that the most patronized IKS were cooking and re-cooking of produce during processing, mixed cropping, shifting cultivation, and selection of seed for planting, spot burning to kill weeds amongst others. Major factors influencing usage included resource availability, easy to use and expensive nature of modern methods. The major constraints included high intensive labour requirement .It is recommended for farmers to be trained on the use of indigenous knowledge and Extension agents should mix properly with the custodians of IKS, learn the rudiments and propagate same among the farmers.

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