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Awareness of Sustainable Agricultural Land Management Practices Among Crop Farmers in Northern Part of Taraba State, Nigeria

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ABSTRACT

This study analyzed the Awareness of Sustainable Agricultural Land Management Practices among Crop Farmers in northern part of Taraba State, Nigeria. Respondents' socio-economic characteristics and awareness of sustainable agricultural land management practices were investigated. A multi-stage sampling technique was employed in selecting 230 crop farmers used in the study. Data were analyzed using mean, frequency counts and percentage. The findings of the study revealed that, majority (71.7%) of the respondents were male, 70.0% were married, and 70.0% had one form of formal education or another. The mean age, household size, farm size and years of farming experience were 43 years, nine persons, four hectares and 21 years respectively. Most of the respondents were aware of sustainable agricultural land management practices. There is therefore a need to implement more sustainable agricultural land management practices for food security and sustainability of the environment as most of the respondents were aware of these practices.

Keywords: *Awareness, Crop farmers, Land Management Practices and Sustainable Agriculture*

1. INTRODUCTION

Awareness is the knowledge of existence of a phenomenon. To create awareness on government policies and programmes, public enlightenment organs such as the mass media, National Orientation Agency (NOA), Ministry of Information and Agricultural Extension Service were formed, funded and charged with the responsibility of information dissemination. Without awareness campaigns, knowledge and ideas may hardly reach those in need of it.

The importance of awareness creation as a component of agricultural extension in introducing new ideas, technologies and practices has since been recognized and given premium. Awareness is the first step in the adoption process when considering new ideas or technology [3], [6]. At the level of awareness, mass media tools such as radio, newspaper, magazine, television, motion pictures, slide shows, exhibits and printed materials are used to introduce new ideas and practices and alert people on emergencies such as the urgent need for the use of sustainable agricultural land management practices by arable crop farmers in Taraba state of Nigeria.

Although the awareness stage gives little information about the idea it portrays, it serves as an appetizer, catalyst or stimulant that arouse clients' interest to seek additional information on the idea in the subsequent stages of the adoption process. The success or failure of the other stages of the adoption process which include interest, evaluation, and, trial depends on how the awareness stage is managed. Awareness creation is therefore a critical issue that needs to be considered before selling any idea to its consumers.

The study area had witnessed land degradation in terms of soil erosion, deforestation, ecological imbalance, and climate change as the result of unsustainable agricultural practices. Prager and Posthumus [9], reported, it was only in 1980s, and that awareness on the negative impacts of agricultural intensification on water and soil resources was incorporated into agricultural policies and soil conservation interventions. Prior to this period, attention was geared toward the productivity paradigm with little or no attention on its harmful effects.

To curtail the negative effects of harmful practices that endanger agricultural productivity, increase environmental hazard and endangers man and his future. It is against this background the study;

i. Described the socio-economic characteristics of the respondents
ii. Ascertained the awareness of sustainable agricultural land management practices among the respondents

2. METHODOLOGY

The study was conducted in northern part of Taraba State which is located in north-eastern Nigeria. It consist of six local government areas namely; Ardo Kola, Jalingo, Karim Lamido, Lau, Yorro and Zing local government areas,

The major occupation of the people in the study area is agriculture. Crops produced in the area include, groundnuts *Arachis hypogea*, maize *Zea mays* , rice

Oryza spp, sorghum *Sorghum bicolor*, millet *Pennisetum spp*, cassava *Manihot exculentus*, and yam *Dioscorea spp*. Beside crops the inhabitants also keep livestock such as cattle, sheep and goats in large numbers. Similarly, the people undertake other livestock production activities like poultry and pig farming. Communities living on the banks of River Benue engage in fishing all year round. Other occupational activities such as pottery, cloth-weaving, dyeing, mat-making, carving, embroidery and blacksmithing are also carried out in the area.

A multistage sampling technique was used in selecting respondents for the study.

Stage i: Three local government areas were randomly selected for the study. The selected local governments were Karim Lamido, Ardo Kola and Zing local government areas.

Stage ii: A proportionate random sampling technique was used to select total number of 16 villages for the sudy.

Stage iii: Involved systematic sampling of 15 respondents from each of the 16 villages. In all a total of 240 respondents were sampled for the study and 230 copies of questionnaire were returned and used for the study.

The population of the study was crop farmers in the study area. Descriptive statistics such as mean, frequency counts and percentage were used to analyze the data.

3. RESULTS AND DISCUSSION

Table 1 reveals the socio-economic characteristics of the respondents. Age of the respondents revealed that, majority (34.3%) of the respondents was within the age of 36 – 45 years and the mean age was 43 years. This shows that, majority of the respondents were within their productive age. This finding corroborates Ofuaku [8] who reported that, most crop farmers were within their prime age. Respondents' sex reveals that, 71.7% of the respondents were male. This shows that, male were more involved in crop production in the study area than their female counterparts as the result of their access to land and other production inputs. This agrees with the findings of Edeoghon *et al*, [4] that, majority of the arable crop famers in Ikpoba Okha local government area of Edo State, Nigeria were male.

Marital status revealed, majority (70%) of the respondents were married, this may be attributed to the belief that getting married will help to reduce the cost of hired labour on the farm as family members will also help. Marriage is also regarded as mark of honour and dignity which is held in high esteem in the study area. 13% of the respondents were single while widows and widowers constituted 12.6% of the respondent. Educational attainment reveals that only 30% of the respondents had no formal educational while the remaining 70% had one form of formal education or another. This agrees with the findings of Adesoji and Farinde [1] who reported that most of the arable crop farmers in Osun State of Nigeria were literate. This high literacy rate was expected to influence farmers' awareness of sustainable agricultural land management practices. This finding is also an advantage for extension in which more respondents could read and interpret instructions and labels on chemical, fertilizers and seeds, among other information delivery activities that will enhance diffusion and adoption of agricultural innovations.

Household size shows that, majority (37.4%) of the respondents had household size within the range of 6 - 10 persons while 10% of the respondents had household with more than fifteen persons with the mean household size of nine persons. This has implication for the fact that household size determines the availability of cheap family labour compared to hired labour. Based on the result, there may be great opportunity and need for hired labour since household size is small thereby creating demand for labour. Primary occupation reveals that, majority (64.4%) of the respondents had farming as their primary occupation as is common in most parts of rural Nigeria. Also 27.4% of the respondents were civil servants, while artisans, traders and students, collectively constituted 8.3% of the respondents. Secondary occupation reveals that, majority (35.7%) of the respondents were engaged in farming as their secondary occupation, 21.9% had no secondary occupation, 17.4% were engaged in trading as their secondary occupation, 10.4% were artisans while 0.9% were students. This reveals that the entire respondents were engaged in farming. The fact that all the respondents were farmers brings to bare the need for awareness creation on use of sustainable agricultural land management practices.

Farm size indicates that, majority (72.2%) of the respondents had farm size of 1 – 4 hectares, between 5 – 6 hectares were cultivated by 16.1% and only 11.7% had farm size more than 6 hectares with mean farm size of four hectares. This concur with findings of Ephraim [5], and Kadafa [7], who reported that, majority of farmers in Karim Lamido local government area of Taraba State, Nigeria and Hong local government area of Adamawa State, Nigeria ,had farm sizes of 0.5- 5 hectares and less than 2 hectares respectively. This shows that majority of the crop farmers in the study area were operating at subsistence level.

Farming experience indicates that, most (34.3%) of the respondents had farming experience between 11 – 20 years, 25.3% had farming experience between 1 – 10 years, 24.3% had between 21 – 30 years of farming experience, 10% of the respondents had between 31 – 40 years of farming experience, 4.4% had 41 – 50 years of farming experience and only 1.8% had more than 50 years

of farming experience with the mean farming experience of 21 years. This shows that, most of the respondents were experienced farmers.

Table 1: Socio-economic characteristics of the respondents

Variables	Frequency	Percentages
Age(years)		
≤25	16	7.0
26-35	48	20.9
36-45	79	34.3
46-55	49	21.3
>55	38	16.5
Total	**230**	**100**
Mean age	**43**	
Sex		
Male	165	71.7
Female	65	28.3
Total	230	100
Marital status		
Single	30	13.0
Married	161	70.0
Widows/widowers	29	12.6
Divorced	10	4.3
Total	**230**	**100**
Educational attainment		
No formal education	69	30.0
Primary education	32	13.9
SSCE	46	20.0
NCE/Diploma	62	27.0
B.Sc./HND	21	9.1
Total	**230**	**100**
Household size(persons)		
1-5	76	33.1
6-10	86	37.4
11-15	45	19.5
>15	23	10.0
Total	**230**	100
Primary occupation		
Farming	148	64.4
Civil servant	63	27.4
Trading	12	5.2
Artisan	22	9.6
Student	2	0.8
Total	**230**	**100**
Secondary occupation		
Farming	82	35.7
Civil service	15	6.5
Trading	40	17.4
Artisan	24	10.4
Students	2	0.9
No secondary occupation	69	21.1
Total	**230**	**100**
Farm size		
1-2	83	36.1
3-4	83	36.1
5-6	37	16.1
7-6	27	11.1
Total	**230**	**100.0**
Farming experience		
1-10	58	25.2
11-20	79	34.3
21-30	56	24.3
31-40	23	10.3
41-50	10	4.4
>50	4	1.8
Total	**230**	**100**

Source: Field survey, 2012

Table 2 reveals that all the respondents (100%) were aware of use of crop residue, 95.7% were aware of intercropping and bush fallow, 94.3% were aware of planting of legume crops as sustainable agricultural land management practices. conversely, 59.6%, 57.8% and 50% of the respondents were not aware of alley cropping, liming and green manuring as sustainable agricultural land management practices .The level of awareness was measured on two point rating scale of Aware A (1) and Not Aware NA (0) and the cut off mean was calculated to be 0.5 and was compared with the mean score for each practice. The analysis revealed that the mean scores for all the practices except liming (mean = 0.42) and alley cropping (mean = 0.40) fall below the cut off mean of 0.5.

This implies that, there is high level of awareness of sustainable agricultural land management practices in the study area. This high level of awareness is an added advantage to agricultural extension, as awareness of a practice is the first step in learning how to use it, followed by interest stage which urges the clientele to seek more information about the practice. This leads to the evaluation. When the client is convinced of the value of the practice in his own situation, he tries it on a small scale. If the trial is successful, he adopts the practice or uses it until a better innovation is discovered. However, Ani [2], added that the relative advantage of an innovation, its complexity, trialability, and observability also enhances the diffusion of an innovation from one place to another leading to its adoption or rejection.

Table 2: Awareness of sustainable agricultural of sustainable agricultural land management practices.

Practice	Aware (F)	%	Not aware (F) %		Mean scores
Crop rotation	193	83.9	37	16.1	0.84
Inter cropping	220	95.7	10	4.3	0.96
Organic Manuring	219	95.2	11	4.8	0.95
Mulching	180	78.3	50	21.7	0.78
Minimum tillage	191	83.0	39	17.0	0.83
Green manuring	115	50.0	115	50.0	0.50
Terracing	131	57.0	99	43.0	0.57
Contour bounding	169	73.5	61	26.5	0.74
A forestation	200	87.0	30	13.0	0.87
Use of compost manure	153	66.5	77	33.5	0.67
Liming	97	42.2	133	57.8	0.42
Bush fallow	220	95.7	10	4.3	0.96
Planting of cover crops	214	93.0	16	7.0	0.93
Planting of legume crops	217	94.3	13	5.7	0.94
Use of crop resistant varieties	190	82.6	40	17.4	0.83
Alley cropping	93	40.4	137	59.6	0.40
Use of crop residues	230	100.0	0	0	1.0

Source: Field survey, 2012.
Cut - off mean = 0.5

4. CONCLUSION AND RECOMMENDATION

Based on the study, the following conclusions were made: Majority of the crop farmers in the study area were male in their prime ages that had attained one level of education or another, married with small family sizes and had farming as their primary occupation. There was high level of awareness of use of sustainable agricultural land management practices among the respondents. It is recommended that, agricultural extension in the study area should build on the existing level of awareness to implement more sustainable agricultural land management practices for food security and sustainability of the environment.

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