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FARMERS' KNOWLEDGE OF PICTORIAL INFORMATION ON AGROFORESTRY PRACTICES IN OYO STATE, NIGERIA

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ABSTRACT

This study was carried out to determine the farmers' knowledge of pictorial information on agroforestry practices in Ido Local Government Area of Oyo State. A simple random sampling technique was used to select 120 farmers and data were gathered with the aid of interview guide alongside with pictures on agroforestry practices. Data analysis was done with SPSS 13 using frequency counts, percentages and Chi-square to test the relationship between personal characteristics and knowledge of pictorial presentation. The results show that 55.8% of the respondents had no formal education while 44.2% had formal education. About 39.2% are land owners while 60.8% got their land through borrowing and leasing. Also, 93.3% could identify and interpret pictures on Silvopasture, 90.8% could identify and interpret pictures on Agrisilvopasture, 84.2% could identify and interpret pictures on Silvoaquaculture, and 79.2% could identify and interpret pictures on Home Garden. Chi-square analysis showed significant relationship between personal characteristics and picture interpretation for all agroforestry practices except shelterbelts and windbreaks, silvipastoralism woodlots or plantations and live fences. It is therefore important that farmers' characteristics are considered in the preparation of audio-visual aids in order to improve their effectiveness in transferring information to farmers.

Key words: pictorial information, agroforestry practices, audio-visual aids, farmers, Nigeria

INTRODUCTION

Agroforestry is the deliberate integration, in space or time, of woody perennials with herbaceous crops and animals on the same land management unit (Nair, 1985). This can be simplified to the practice of growing trees with agricultural crops and/or livestock on the same piece of land (Anderson, *et al*., 1991). For agroforestry practices to be widely accepted and integrated into existing agricultural enterprises, farmers must be knowledgeable, able to accomplish them safely, efficiently, and with tools already available on the farm.
The practice of agroforestry can be referred to as a type of multiple land use that involve the selection of agronomic practices that can be used to check erosion, control weeds, improve soil structure, provide fuel, fruits and fodder (AFTA 2007). Agroforestry systems are classified as improved fallow in shifting cultivation integrated taungya, shelterbelt and windbreaks, social forestry, silvipastoralism, agrosilvipastoralism, live-fences and silvipasture (Okafor, 1992; Etukudu, 2000).

Agroforestry is one of the many areas that extension services cover in the provision of information to farmers. Agricultural extension, being a specialized form of adult education is an educational process that is mainly a communication process between extension agents and farming communities and such requires efficient communication process (Adeokun *et al*., 2006). The role of media in the dissemination of information especially in the agricultural sector has long been recognized as an important tool in educating the society on a given issue; hence sine qua non to agricultural development (Agumagu, 1988).Visual communication is reinforced in written or oral communication. Agbamu (2006) reports that audio-visuals are devices that transmit ideas and experiences through eyes and ears; they lay emphasis on the use of non-verbal experience in a learning process and are used to enhance the understanding of subject matters. Audio-visuals make learning relatively permanent, help to raise and maintain interest of the learner, encourage learners' involvement in the learning process; stimulate self-activity; widen the range of probable experience; and help to add depth and variety to learning.

Kress (2003), defined visual aids as natural or man made symbols or objects used creatively to educate or sensitize a target audience on visible actions that can be followed in getting things done appropriately. Kress, (2003) notes that as technology continue to develop at an unprecedented rate, visual aids/visual literacy become indispensable to life in the information age. Visual aids become more important where linguistic literacy is a barrier in the dissemination of innovation.

Escalada *et al* (1999) reported that the use of audio-visual aids led to change in behaviour towards pest management among rice farmers in Vietnam. Kaler and

Green (2008) noted that 23 percent of English sheep farmers were able to name and recognize six foot lesions presented to them using pictorial information. Also, Waichman *et al* (2007) reported that majority of farmers in the Brazilian Amazon did not read pesticides product labels, their long years of use of pesticide notwithstanding. Ofuoku and Agumagu (2008) stated that farmers rated the use of audio visual aids as complements to extension agents visit as very effective for information dissemination in Delta State, Nigeria. Oladele (2008) reported that rice farmers in Ogun state, Nigeria indicated that video as medium of information dissemination was preferred to the traditional extension agent method and that video-taught farmers gained higher knowledge than agent-taught farmers. AFTA (2007) maintains that, farmers may not recognize and understand agroforestry practices even though some make use of the components ignorantly. The use of audio-visual aids can help overcome the problem of language barriers, because most peasant farmers are not educated though they combine different practices together solely for the purpose of meeting their household needs. With shortage of extension personnel, the inaccessibility of large numbers of farmers living in rural areas and poor communication infrastructure, farmers' access to information has been limited. Poor extension services due to low contact with farmers had been reported. Agbamu (1998) noted that poor performance of extension services was due to low extension agent farmers ratio; which is 1:2100 in Edo state, 1: 2131in Ogun state, 1:16917 in Oyo state, 1: 1496 in Lagos state (Adebowale *et al*., 2006). The objective of the study is to assess farmers' knowledge of pictorial information on agroforestry practices.

METHODOLOGY

The study was carried out in Ido Local Government Area of Oyo state. Oyo state is is an inland state in south-western Nigeria, with its capital at Ibadan. It is bounded in the north by Kwara State, in the east by Osun State, in the south by Ogun State and in the west partly by Ogun State and partly by the Republic of Benin. The coordinates are 8°00′N 4°00′E8°N 4°E. Ido Local Government is surrounded by forest reserves such as Osho forest reserve and Ijaye Forest Reserve. It has an area of 986 km² and a population of 103,261 at the 2006 census. Both cash and food crops grown in this area include cocoa, kolanut, oil-palm, oranges, cassava, maize and banana. The major occupation of the inhabitants is farming while the main non-farming activities vary from trading, fabrication of local implements, food processing, vocational jobs and civil servants. The people residing in this area are predominantly Yoruba's while the non-indigenes are from other tribes such as Igbo and Igede. The population of the study consists of all farmers living around Osho Forest Reserve of Ido Local Government. Simple random sampling technique (table of random numbers) was used to select 120 farmers from six communities in the study area. Primary data was collected with the use of structured interview guide on personal characteristics while pictures of different agro forestry practices were presented and farmers asked to interpret them. Right interpretation was scored 1 and wrong interpretation scored as 0. Descriptive method was employed to summarize the socio-economic characteristics of the respondents and Chi-square analysis was used to determine significant relationships between personal characteristics and interpretation of pictorial information.

RESULTS AND DISCUSSION

As shown in Figure 1 more than half of the respondent (55.8%) are within economic active age range of 31-50 years, 85.0% are married, while 15.0% are single. On gender, the result shows that 69.2% of the respondents were males while 30.8 % of them were females. This implies that farming is still a male dominated occupation in the study area. Oladele and Wakatsuki, (2008) noted that there were more males in farming than females in Nigeria. In terms of the educational level of the respondents, 55.8% of the respondents had no formal education, 29.2 of them had primary education and the remaining 15% of them had secondary education. Low level of education has been reported among farmers as a factor inhibiting communication flows between extension agents, other information sources and farmers. Eniola and Fawole (2007) noted that educational level among farmers was very low in Oyo state Nigeria.

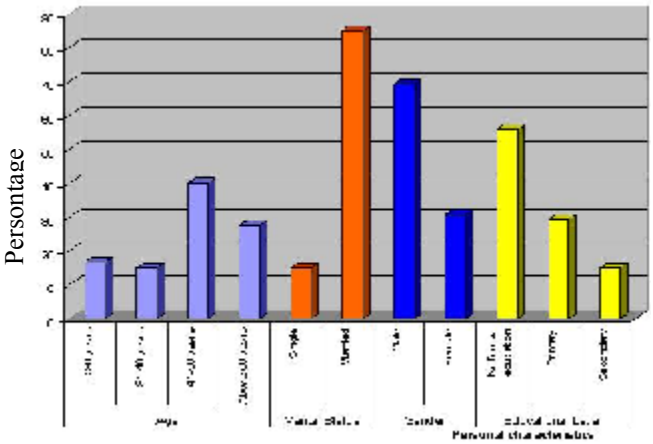

Figure 1: Personal characteristics of farmers

As shown in Table 1 the proportion of farmers based on the interpretation of the agroforestry pictures. Most of the farmers (93.3%) could give correct interpretation of the pictures on silvopastoral practices,

90.8% could give correct interpretation of the pictures on agrisilvopastoral, 84.2% could interpret pictures on silvoaquaculture, 79.2% could interpret pictures on home garden. A plausible reason for the trend of this result may be due to the fact that agro-forestry practices adopted in the study area included those ones that were prominent in the right interpretation by respondents. However, other practices that have been disseminated through audio-visual aids but not widely adopted in the study area were not interpreted correctly by the respondents. This result agrees with the findings of Ofouku and Agumagu, (2008) that the use of audio-visual aids and pictorial representations help in information dissemination and they are highly preferred among farmers. Similarly, Adeokun *et al* (2007) reported that the use of video-playback encouraged smooth and easy dissemination of innovation to farmers in south western Nigeria.

Table 1: Distribution of respondents based on interpretation of the agro-forestry pictures

Pictures	Correct Interpretation	Percentage	Wrong Interpretation	Percentage
Agrisilviculture	78	65	42	35
Silvopasturalism	112	93.3	8	6.7
Agrosilvipastoralism	109	90.8	11	9.2
Silvoaquaculture	101	84.2	19	15.8
Home garden	95	79.2	25	20.8
Integrated taungya	100	83.3	20	16.7
Shelterbelts and windbreaks	25	20.8	95	79.2
Social forestry	65	54.2	55	45.8
Silvipastoralism woodlots or plantations	70	58.3	50	41.7
Live –fences	42	35	78	65
Alley cropping	82	68.3	38	31.7

Table 2:Chi-square analysis showing the relationship between personal characteristics and picture interpretation

Agro-forestry practices	Age (df =4)	Marital Status (df = 1)	Gender (df = 1)	Educational Level (df =2)
Agrisilviculture	11.22*	7.21*	5.99*	6.22*
Silvopasturalism	13.41*	8.11*	9.92*	12.09*
Agrosilvipastoralism	12.22*	9.01*	8.29*	11.90*
Silvoaquaculture	17.49*	13.01*	19.75*	29.42*
Home garden	15.98*	7.58*	4.91*	10.54*
Integrated Taungya	12.89*	5.88*	9.41*	17.45*
Shelterbelt and Windbreaks	7.42*	2.27	1.37	3.37
Social Forestry	10.12*	5.11*	6.24*	4.12
Silvipastoralism woodlots or plantations	5.90	1.12	2.22	4.41
Live Fences	6.22	4.51*	3.41	6.02*
Alley cropping	10.51	7.8*	8.83*	11.91*

*Significant at 0.05 for the degree of freedom indicated

The results of the Chi-square analysis showing the relationship between personal characteristics and picture interpretation have been presented in Table 2. Age is significantly related to the knowledge of agroforestry picture except shelterbelt and windbreaks, silvipastoralism woodlots or plantations and live fences. This may be due to the fact that these are not common practices in the study area. Similarly marital status is significantly related to interpretation of agroforestry pictures except for shelterbelt and windbreaks and silvipastoralism woodlots or plantations. The significance of marital status may be due to the fact that women reinforce the knowledge of their husbands on these agroforestry practices. With respect to gender, significant relationships exist in the knowledge of agroforestry pictures except shelterbelts and windbreaks, silvipastoralism woodlots or plantations and live fences. However with the educational level of the respondents, interpretation of all agroforestry practices area significant except shelterbelt and windbreaks, social forestry and silvipastoralism woodlots or plantations. It is therefore important that farmers' characteristics are considered in the preparation of these audio-visual aids in order to maximize their impact on the intended audience. Ofoku and Agumagu (2008) recorded significant relationships between the use of audio-visual aids and personal

characteristics of farmers. Escalada *et al* (1999) reported that farmers' personal characteristics influenced the use of audio-visual aids and led to a change in communication and behaviour among rice farmers pest management in Vietnam. Kaler and Green (2008) indicated that personal characteristics of sheep farmers predispose them to be able to name and recognize foot lesions presented as pictorial information.

Conclusion: The study revealed that audio-visual aids can be used in the dissemination of agroforestry practices to farmers and that they will complement the process especially in the current situation whereby there is low extension agent farmers ratio. It has also highlighted that despite the low educational level among farmers, interpretation of agrforestry pictures do not constitute a hindrance to especially on those that are widely adopted in the study area. The ability of farmers to interpret agroforestry practices correctly was also influenced by their personal characteristics. It is therefore important that farmers characteristics are considered in the preparation of these audio-visual aids in order to maximize their impact on the intended audience.

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