Farmers Participation in Agroforestry Practices in Ondo State, Nigeria

[1]L.A. Akinbile, [2]K.K. Salimonu and [1]O.T. Yekinni
[1]Deprtment of Agricculture Extensio, University of Ibdan, Nigeria
[2]Ladoke Akintola University of Technology (LAUTECH),
Ogbomoso, University of Ibadan, Ibadan, Nigeria

Abstract: The study focuses on the assessment of farmers' level of participation in agroforestry practices in Ondo State. A multi-stage random sampling was employed to select 120 respondents in some 5 local governments from the two administrative zones based on the operation of the state agricultural development programme. The selected respondents were administered questionnaires and information related to demographic characteristic, awareness, sources of awareness and participation level in agroforestry practices were sought. Analytical tools employed include frequency counts, chi-square, pearson product moment correlation coefficient and regression analysis. The result shows that there is no significant relationship between demographic characteristic and level of participation. However, significant relationship was discovered between level of participation and variables like awareness and constraints in agroforestry practices. It is recommended that education and enlightenment among the farmers be embarked upon in order to create more awareness towards participation. The government should also help in provision of soft loans, subsidy, incentives and other technical assistance towards reducing the constraints in participation in agroforestry practices.

Key words: Agroforestry, denographic characterestic, agriccultural development, chi-square, regression analysis

INTRODUCTION

The term Agroforestry is an aspect of farm forestry that encourages a deliberate integration of weedy perennials with agricultural crops and/or animals on the same land management unit, with the aim of enhancing soil fertility and increasing farmers' income through the use of economic trees. Thus Agroforestry has widely been recognized as a branch of agricultural science that is rapidly becoming a science in its own right (Sanchez, 1995). Nair (1993) recognized about 18 different Agroforestry practices, although each has an infinite number of variations. Some of the widely known exotic Agroforestry practices include following:

Agrosilviculture, silvopastoral, agro-silvopastoral, agro-pisciculture, aqua-Silvicultural, apiculture and sericulture. These Agroforestry practices involve various combinations of two or three of the following enterprises namely: Crops, woody plant, animal rearing, fish farming, bee-keeping, silkworm farming. However Taungya, Alley cropping and Homestead gardens are examples of indigenous practices.

Over population and poverty have been identified as threats to the environment. The poor rural household depends on soil, trees and water for their livelihood in order to survive they often destroy the natural resources that are of multiple benefits. The environment therefore becomes exposed to soil erosion, decreased biodiversity, which have biological, social and economic implications. Agroforestry has a way of instituting sustainable agricultural development in Nigeria was introduced a few years ago. This is to combat the various environmental problems observable with the purpose of assisting farmers to maintain the fertility of their soils, ensure diversification of crop, wood and timber species per unit area and to stabilize, improve and conserve farmers' environment. Participation of these farmers therefore becomes indispensable since it determines the success of the program.

Olawoye (1997) submitted that the participatory approach to any intervention programme designed for the development of an area of interest has widely been accepted as the best way to ensure meaningful and sustainable benefits (Abubakar 1997; Raintree and Hoskins, 1990). Farmers participation in Agroforestry practices is therefore, essentially important not only for the desired benefits but for the indigenous knowledge that could be tapped from farmers as well as experiencesof which the extension agent may be unaware.

Corresponding Author: L.A. Akinbile, Deprtment of Agricculture Extensio, University of Ibdan, Nigeria

The objective of this study is to assess the extent of involvement of farmers in Ondo state in Agroforestry practices.

- There is no significant relationship between farmers' demographic characteristics and their level of participation in Agroforestry activities.
- There is no significant relationship between constraints to participation and their level of participation in Agroforestry activity.
- There is no significant relationship between farmers' level of awareness of Agroforestry practices and their level of participation.

MATERIALS AND METHODS

The study area is Ondo State, Nigeria. The area was purposively selected because the agroforestry practice among the farmers has already been introduced by the State's Agricultural Development Programme (ODSADEP). The State ADP has done this with the general objective of combating many of the environmental problems facing the farmers in the state.

A multistage sampling process from the two administrative zones of the ODSADEP was carried out. Two of the eight local governments (30% representation) from zone one and three of the ten local governments (30% representation) from zone two were randomly selected. From the five selected local governments, two of the eight circles (i.e., 30% in each local government were also randomly selected. This gave a total of 10 circles. In the third stage a random selection of twelve farmers per circle gave a total of 120 farmers used in the study.

The basic instrument used in the study was questionnaire schedule. Structured questionnaires were utilized to obtain primary data from farmers and secondary data from ODSADEP. The primary data were information on farmers' demographic characteristics (e.g. age, sex etc) awareness and participation in Agroforestry practices, constraints to farmers' participation in Agroforestry and suggestions of possible ways of improving the situation. While the instrument used in data collection was subjected to pre-test and content appropriateness, the interview schedules were through trained enumerators.

Frequency counts were used to explain the data while chi-square, pearson product moment correlation and regression analysis were the analytical tools for hypothesis testing.

RESULTS AND DISCUSSION

Table 1 shows that the largest age group is 50-59 years which accounts for 38.30% while the least age

Table 1: Respondents' Demographic characteristics (n = 120)

	Characteristics	Frequency	Percentage
A	**Age group (yrs)**	2	1.7
	No response	4	3.3
	40-49	26	21.7
	50-59	46	38.3
	60-69	35	29.2
	70-79	7	5.8
B.	Gender		
	Male	113	94.2
	Female	7	5.8
C	**Educational status**		
	No formal Education	50	41.6
	Adult education	20	16.7
	Primary education	35	29.2
	Secondary education	10	8.3
	Above secondary	5	4.2
D	**Marital status**		
	Single	4	3.3
	Married	116	96.7
	Divorced	0	0
	Widowed	0	0
	Separated	0	0
E	**Occupation**		
	Farming only	99	82.5
	Farming and trading	19	15.8
	Farming and other jobs	2	1.7

group is 30-39, 33%. This confirms the report that younger men are massively withdrawing from agriculture. This is almost in line with the findings of Anyanwu (1992) that the active participants in farming activities were between 40 and 50 years.

The table also shows that 94.20% are male while only 5.80% are female; an indication of low population of women in agricultural practices in the area of study. Those that have one form of education or the other constitute 58.40% while those with no formal education are 41.60%. The respondents are either single or married. 96.70% are married while only 3.3% are single. This is probably due to high percentage of marriageable ages. While those who engage in farming only are 82.50%, other engaged in trading and other forms of job, these represent 15.80 and 1.70%, respectively.

Table 2 shows the respondents' awareness and their level of participation in Agroforestry practices. The findings indicate that Agrosilviculture (interplanting of woody plants and agricultural crops) has the greatest awareness (100%) among the respondents, while sericulture (Silkworm farming) has the least awareness (29.20%). Generally an average 67.85% are aware and an average 15.27% are not aware of at least one of Agroforestry activities. However, an average of 16.88% of the respondents did not respond to question on awareness of the practices.

The table also gives an outlook of the participation levels. Of the 100% that have awareness for agrosilviculture, only 93.4% do participate in it at different levels of rarely, often and always, while 6.7% did not respond; sericulture has the least participation (3.3%). In general, an average of 46.72%

Table 2: Percentage distribution of respondents' awareness and level of participation in each agroforestry practices

Agroforestry Practices	Awareness (N = 120)			Level of Participation (N = 120)				
	No Response	Yes	No	No Response	Never	Rarely	Often	Always
Agrosilviculture	-	100	-	6.7	-	1.7	10	81.7
Silvipastoral	18.3	78.3	3.3	20	4.2	5	14.2	56.7
Agro pastoral	10	87.5	2.5	19.2	5.8	10	19.2	45.8
Aquasilviculture	19.2	78.3	2.5	26.7	29.2	10.8	25.8	7.5
Sericulture	20.8	29.2	50	27.5	69.2	3.3	0	0
Apiculture	20.8	35	44.2	26.7	65.8	5.8	0.8	0.8
Community Forestry	20	55.8	24.2	25	32.5	58.3	15	9.2
Taungya Farming	17.5	76.7	5.8	25.8	24.2	15.8	13.3	20.8
Shelterbelt Management	21.7	52.5	25.8	29.2	30.81	8.3	11.7	20
Homestead Garden	15	84.2	0.8	28.3	2.5	8.3	21.7	29.

Table 3: Respondents' sources of awareness of agroforestry practices.

Variable source of awareness	Frequency	Percentage
Through ADP	105	87.5
Through forestry department	37	30.8
Through fellow farmers	12	10
Through publication	1	0.8
Total	120	100

Table 4: Respondents' constraints to participation in agroforestry practice

Constraints	Frequency	Percentage
Water shortage	14	11.7
Insufficiency of land	20	16.7
High cost of labour	60	50
Finance/Capital	31	8.25
Pest/diseases attack	21	17.5
Long gestation period	10	8.3
Climate	11	9.2
Lack of chemicals	2	1.7
Species	22	18.3
Multiple response	16	13.3

Table 5: Relationship between demographic characteristic and participation in agroforestry practices

Variables	df	X^2 Value	p value	Decision
Gender	2	4.383	0.112	Not significant
Educational status	8	7.766	0.457	Not significant
Marital status	2	3.23	0.851	Not significant
Occupation	4	6.789	0.141	Not significant

Table 6: Relationship between respondents level of participation and 3 independent variables; constraints, awareness and age

Variable	r	p. value
Constraints	0.181*	0.048
Awareness	0.726*	0.000
Age	-0.307*	0.001

*Singnificant at $p<0.05$

Table 6 shows that individually, constraints for participating in Agroforestry practices, age and awareness have significant relationship at 0.05 level of significance with level of participation. This implies that the more aware respondents are, the more they participate. Thus Null hypothesis three in therefore rejected. Similarly, the constraint affects farmers' participation in Agroforestry practices. Thus, Null hypothesis two is also rejected.

$R^2 = 0.527$

Standard error = 3.02

Regression equation: $Y = a + b1X1 + b2X2 + b3X3$
$= 2.997 + 0.726X1 - 0.010X2 + 0.32X3$

Where R2 = Coefficient of determination

Y = Level of Participation (dependent variable

The regression result shows that about 52.70% of the variation in the level of participation of the farmers in Agroforestry practices is being explained by the independent variables Table 7. The result also indicates that the variables are all significant. This implies that when awareness is increased or constraints are reduced, then the farmers will most likely participate

of the respondents does participate in one Agroforestry practice or the other, while 28.13% never participated. However an average of 25.15% of the respondents did not respond.

From Table 3, while the findings show that a larger%age of 87.50% of the farmers became aware of the practice(s) through ADP, 30.80% and 10.00% respectively sourced their awareness through Forestry Department and fellow farmers: This probably justifies the effort of ADP in creating Agroforestry awareness in the state.

The major constraint faced by respondents as shown in Table 4 above include high cost of labour (50.00%), finance/capital (25.80%) and insufficiency of planting species (18.30%).

Table 5 shows there are no significant relationship between the farmers' demographic characteristics and their level of participation in Agroforestry activities. This explains that participation in the programme is not a function of the identified characteristics among the respondents. Thus null hypothesis 1 is hereby accepted.

Table 7: Regression results showing the effects of independent variables (constraints, age and awareness on the dependent variable (participation of farmers in agroforestry practices

Variable	Coefficients, bi	T-values	Significance
Awareness, X1	0.726	11.361	0.000
Age, X2	-0.010	-0.146	0.884
Constraints, X3	0.30	0.493	0.623

more in Agroforestry. Younger ones are also likely to participate if engage in farming. However, of all the variables, the significance of awareness stands outstanding. This tells more about the importance of awareness towards effective participation.

CONCLUSION

The result of the study shows that though the awareness about the Agroforestry practice in the state exists already; there is need for more awareness campaign as this would have a direct implication on participation in the practice especially at reduced constraints.
It is therefore recommended that:

- Farmers must be educated and enlightened about the importance and benefits of Agroforestry. This could be achieved through proper extension programmes, media communication, among others.
- Government should help farmers through the provision of soft loans, subsidy, incentives and other technical assistance.

- Farmers should be involved in the research process as this will lay a good foundation and a sense of belonging would be instilled in the farmers.

REFERENCES

Abubakar, B.Z., 1997. Assessment of Participation in Social Forestry Activities in Kebbi state. Unpublished M.Sc. Thesis, Department of Agricultural Extension services, University of Ibadan, Ibadan, pp: 16-20.

Anyanwu, C.N., 1992. Community Development: The Nigeria Perspective, Gabesther Edu. Pub. Ibadan, pp: 2-200.

Nair, P.K.R., 1993. An Introduction to Agroforestry, Dordrecht, Netherlands: Khiver Acad. Pub., pp: 12.

Olawoye, J.E., 1997. An approach to community Forestry development and resolution of Gender issues in Tree and Land Tenure Ghana J. Forestry, pp: 4-10.

Raintree, J.B. and M.W. Hoskins, 1990. Appropriate R and D support for forestry extension, ICRAF reprint No. 65, reprinted from planning forestry extension programme: Report of a regional expert consultation; FAO, Bangkok 1988, pp: 48.

Sanchez, P.A., 1995. Science in agroforestry, agroforestry system, 30: 5-55.