

Full Length Research

Influence of Demographic Factors and Constraints on Farmers' Participation in Agroforestry Practices in Taraba State, Nigeria

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The study examined the influence of demographic factors and constraints on farmers' participation in Agroforestry practices in Taraba State, Nigeria. A sample of 420 respondents drawn from 7 Local Government Areas (LGA) out of 16 LGA in all the agro-ecological zones in Taraba State was selected using multi-stage sampling techniques. The selected respondents were administered questionnaire and information related demographic factors, constraints and participation level in agroforestry practices were sought. Two research questions and two null hypotheses guided the study. Descriptive statistic of frequency count and percentage were used to explain the data while inferential statistics of chi-square and Pearson product moment correlation were the analytical tools used to test the null hypotheses. The study revealed that there is no significant relationship between demographic factors and farmers' level of participation in agroforestry practices. However, there is a significant relationship between constraints and farmers' level of participation in agroforestry practices. It was recommended among others that, Government should help farmers through provision of soft loans, subsidy, incentives and other technical assistance in order to actively participate in agroforestry practices. Farmers should be educated to have their own tree nurseries such that the seedlings can be accessed easily by them.

Key words: Agroforestry, demographic factors, constraints, farmers, participation.

Introduction

Agroforestry is the deliberate incorporation of tree and woody species of plants into other types of agricultural activities. It is a concept of combining crops, animals and trees on the same piece of land as maximum land use practice (Beetz, 2008). The technique offers solution to land shortage, poverty, food security and environmental degradation. King (2007) describes agroforestry as a sustainable land management system which constitutes the overall yield of the land combines the production of

crops (including tree crops) and forest plants and/or animals simultaneously or sequentially, on the same unit of land and applies management practices that are compatible with the cultural practices of the local population.

Nair (2008) describes agroforestry as a form of land use that successfully satisfies the needs of the crop farmer, forester and livestock farmer. Nair (2008) recognized about eighteen different Agroforestry practices although each has an infinite number of variations. Some of the widely known exotic Agroforestry practices include the following: Agrosilviculture, silvopastoral, agro-silvopastoral, agro-pisciculture, aqua-

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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 example of indigenous practices.

About 1.2 billion people of the world populace especially the poor rural household depends on agroforestry practices and services for their livelihood (Garrity, 2012). Population explosion, indiscriminate felling of trees for timber, over exploitation of firewood for fuel and charcoal, clearing of land for agricultural expansion and industrial development have exposed the land to rapid soil organic matter decomposition, accelerated water and wind erosion, flooding, land slide, desertification and threat of extinction of economic trees (Adedire, 2007). These hazards result in environmental degradation and make sustainable agriculture increasingly difficult.

Agroforestry as 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 cited in Akinbile et al (2007) submitted that the participatory approach to any intervention programmer designed for the development of an area of interest has widely been accepted as a best way to ensure meaningful and sustainable benefits.

Farmer participation in Agro forestry 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 experience of which the extension agent may be unaware. Farmers' participation in Agroforestry practices may be influence by a number of factors which may include demographic factors of farmers and constraints. Other factors that may influence farmers' participation may still exist which can either positively or negatively have impact on farmers' level of participation in agroforestry practices. However, research particularly in Nigeria context is being silent about them.

Although the people of Taraba State, Nigerian for years have been practicing agroforestry but the level of participation in various agroforestry activities by the farmers in the communities have not been examined. Therefore, the study examined if demographic factors such as age, gender, marital status, occupation and constraints such as water shortage, livestock grazing, high cost of labour, finance/capital and soon have any influence on farmers level of participation in Agro forestry practices in Taraba State as a study area.

The objective of this study is to examine the influence

of demographic factors and constraints on farmers' participation in Agro forestry practices in Taraba State, Nigeria.

1. There is no significant relationship between farmers' demographic factors and their level of participation in agroforestry practices.
2. There is no significant relationship between farmers' constraints and their level of participation in agroforestry practices.

Materials and Methods

The study area was Taraba State, Nigeria. The choice of this area was premised on the fact that Agroforestry practice among the farmers has already been introduced by the Taraba State Agricultural Development Programmer (TSADP). The state ADP has done this with the general objective of combating many of the environmental problems facing farmers in the state.

A multistage sampling technique was used in this study. The three agro-ecological zones of state ADP consist of sixteen local governments areas, In stage one, three out of the six local governments (50% representation) from Zone one (Zing Zone) and two out of the five local governments (40% representation) from zone two (Wukari Zone) and two out of the five local governments (40% representation) from zone three (Gembu Zone) were randomly selected. In the second stage, from the seven selected local governments, three out of the ten circles (30% representation) in each local government were also randomly selected. This gave a total of 21 circles. In the third stage, twenty farmers per circle were randomly selected which gives a total of 420 farmers used in this study.

The basic instrument used in the study was Farmer's Participation in Agroforestry Practices Questionnaire (FPAPQ) schedule. The Structured questionnaire was utilized to obtain primary data and secondary data from TSADP, Journals publications and internet materials. The primary data were information on farmer demographic factors, constraints to agroforestry practices and level of their participation in agroforestry practices and suggestions of possible ways of improving the situation. The instrument used for data collection was validated for content appropriateness and it was also subjected to pre-test which yielded a reliability of 0.76 using Pearson moment correlation coefficient. The interview schedules were through trained enumerators.

Descriptive statistic of frequency count and percentage were used to explain the data while inferential statistics of chi-square and Pearson product moment correlation were the analytical tools used for hypotheses testing.

Results and Discussion

The result on demographic factors of respondents is

Table 1: Frequency Count and Percentage of Respondents' Demographic Factors in Taraba State, Nigeria.

Factors	Frequency (n=420)	Percentage
Age group (years)		
No response	2	0.48
31-40	20	4.76
41-50	113	26.90
51-60	162	38.57
61-70	95	22.62
71-Above	28	6.67
Gender		
Male	394	93.81
Female	26	6.19
Educational Status		
No Formal Education	142	33.81
Adult Education	89	21.19
Primary Education	109	25.95
Secondary Education	64	15.24
Tertiary Education	16	3.81
Marital Status		
Single	12	2.86
Married	402	95.71
Divorced	1	0.24
Widowed	2	0.48
Separated	3	0.71
Occupation		
Farming Only	379	90.24
Farming and Trading	28	6.66
Farming and other Jobs	13	3.10

presented in Table 1. The demographic factors of respondents studied were age, gender, educational status, marital status, and occupation. The finding indicates that the largest age group is 51-60 years which account for 38.57% while the least age group is 31-40 years which account for 4.76%. This confirm the reports that young men are massively withdrawing from agriculture. This is almost in line with the finding of Anyanwu (2006) and Akinbile, et al (2007) that the active participants in farming activities were between 51-55 years and 56-65 respectively. The finding also reveals that 93.81% are male while only 6.19% are female; an indication of low participation of women in agricultural practices in Taraba state. Those that have one form of education or the other constitute 66.19% while those with no formal education are 33.81%. The finding as well reveals that almost all of respondents are married. This is

probably due to high percentage of marriageable age in agricultural practices. While those who engage in farming only and other forms of job, these represent 6.66 and 3.10 respectively.

The result in Table 2 revealed that the major constraints faced by respondents include high cost of labour (25.95%), finance/capital (24.52%), livestock grazing (21.43%) and insufficiency of planting species (11.67%) while, the least constraint faced by respondents is lack of chemical (1.20%).

The result in Table 3 reveals that, $p > 0.05$, therefore, the null hypothesis of no significant relationship between demographic factors and farmers' level of participation in agroforestry practice is not rejected. This implies that demographic factors had no significant influence on farmer participation in Agroforestry practices. This finding agrees with Ayuba, et al (2012) who found that

Table 2: Frequency Count and Percentage of Respondents' Constraints to Participate in Agroforestry Practices in Taraba State, Nigeria.

Constraints	Frequency (n=420)	Percentage
Water Shortage	15	3.57
Livestock grazing	90	21.43
High Cost of Labour	109	25.95
Finance/ Capital	103	24.52
Pest/disease Attack	19	4.52
Long gestation Period	10	2.38
Lack of Chemicals	5	1.20
Climate	9	2.14
Insufficiency of Plant Species	49	11.67
Multiple response	11	2.62

Table 3: Relationship between Respondents' Demographic Factors and Participation in Agroforestry Practices in Taraba State, Nigeria.

Variable	df	X ² Value	P Value	Decision
Age	5	3.922	0.212	NS
Gender	2	3.312	0.128	NS
Educational Status	4	6.897	0.324	NS
Marital Status	4	2.930	0.278	NS
Occupation	2	5.628	0.309	NS

Significant at P<0.05

S = Significant, NS= Not Significant

Table 4: Relationship between Farmers Constraints and Participation in Agroforestry Practices in Taraba State, Nigeria.

Variable	N	r	PValue	Decision
Constraints & Farmers' Participation	420	0.810*	0.000	S

*Significant at P< 0.05

S = Significant, NS= Not Significant

there was no significant statistical relationship between demographic characteristic and farm participation in afforestation and also the finding contradicts Aliu (2011) who found that demographic characteristic such as education level has effect on farmer adoption of a forestation.

The result in Table 4 reveals that $r = 0.810$, $P = 0.001$. Since, $p < 0.05$, this implies, the null hypothesis that says, there is no significant relationship between constraints and farmers' participation in agroforestry practice is rejected. This implies that, constraints have a strong positive correlation with farmer level of participation in Agroforestry practices. That is, 65.61% (0.810^2) of the variation in farmers' participation is explained by constraints. The finding is agrees with the finding of Sangeetha, et al (2015) who found that lack of seedlings was the most critical constraint faced by famers in adoption of agroforestry species with 3.62 mean rank value. Figure 1

Conclusion

It is evident from the findings of this study that demographic factors such as age, gender, educational status, marital status, and occupation had no influence on farmer participation in Agroforestry practices. However, constraints such as high cost of labor, finance/capital, livestock grazing and insufficiency of planting species are the major constraints faced by farmers in the study area.

Recommendations

- i Government should help farmers through provision of soft loans, subsidy, incentives and other technical assistance in order to actively participate in agroforestry practices.
- ii Female farmers should be encouraged to be involved in agroforestry practices to reduce male dominance. This

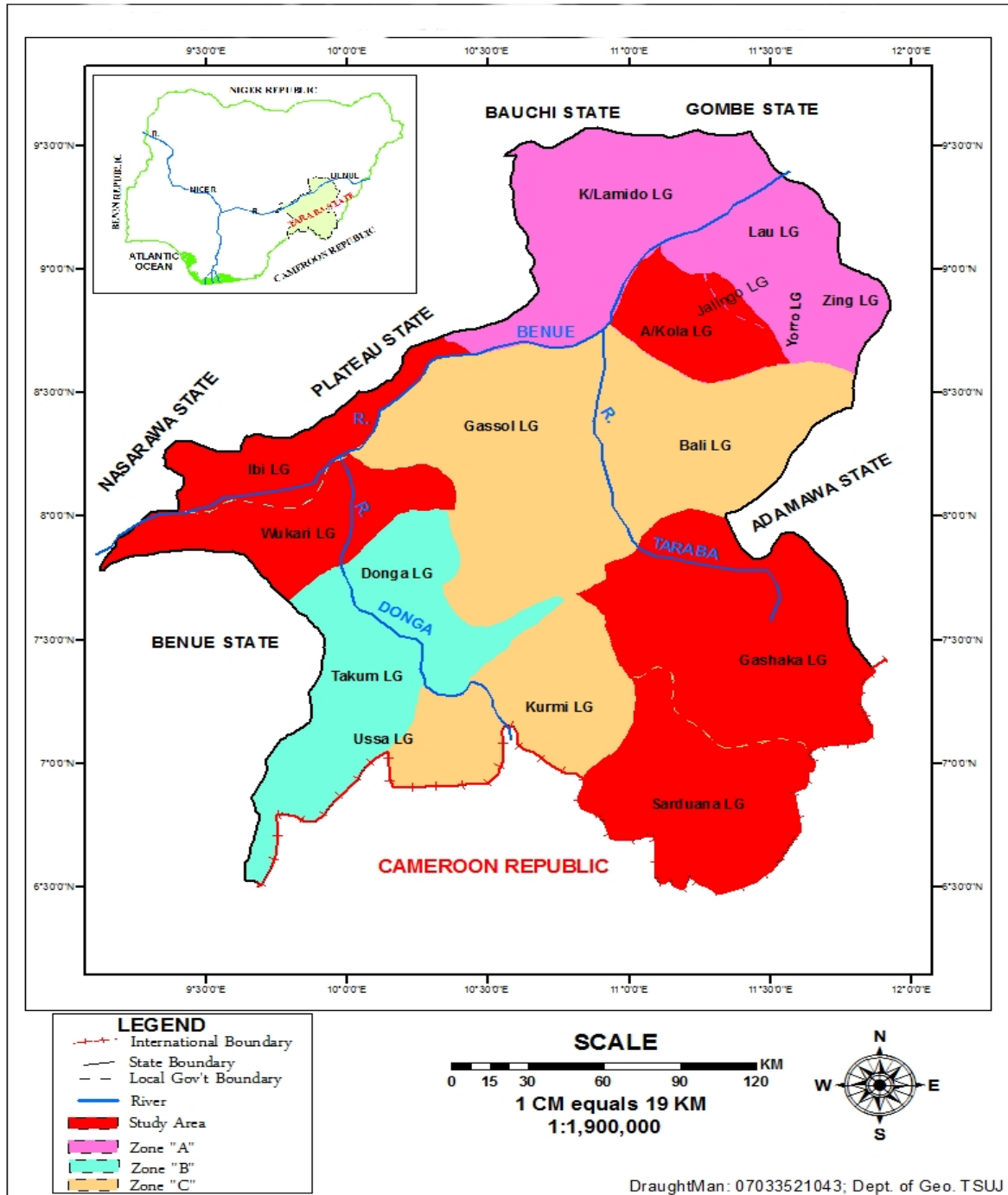


Fig 1: Map of Taraba State showing the study area

will help boost agroforestry practices in the study area. This could be done by providing women with more incentives and introduction of species which are attractive to them.

iii Farmers should be educated to have their own tree nurseries such that the seedlings can be accessed easily by them.

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