

Assessment of Socio-economic Factors Influencing Stakeholder Participation in Forestry Practices in Benue State, Nigeria

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Abstract: Socio-economic factors influencing stakeholder participation in forestry activities in Benue State were assessed to establish the indicators of participation in forestry activities in the State. Thirty percent of Local Government Areas from each of the 3 geo-ecological zones of the State were randomly selected for the study. A semi-structured questionnaire was administered among 420 stakeholder groups to elicit information on factors influencing their participation in forestry activities. Data collected were analyzed using descriptive and inferential statistics such as binary logistic regression and Kruskal-walis. The study showed that most forest sector actors in the area were males (78.10%) at a mean age of 45 years with no formal education (32.40%). It was established that socio-economic variables which influenced stakeholder involvement in forestry practices were age, family size, annual income (₦) and distance (Km) from forest enclaves, which had significant influence ($P < 0.01$) on involvement of stakeholders in forestry practices. Similarly, educational and employment status of the actors significantly influenced their involvement in forestry practices ($P < 0.05$). The study concludes that socio-economic variables influenced stakeholder's involvement in forestry practices in the State and recommends awareness creation and sensitization on sustainable forestry practices to support conservation of forest resources in the area.

Key words: Socio-economic factors, stakeholder participation, forestry practices, Benue State

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I. Introduction

People depend on forests largely to meet rapidly growing demands for timber, fibre, fuel, fresh water and food. However, modern approaches in forest conservation have found that enforcement of forest laws or policies that do not recognize the legitimate needs of different groups and stakeholders who depend on the forest, often fail in their objectives. Different approaches developed to support policy implementation have also acknowledged the complexity of ecosystems and social systems and seek to address the challenges of accommodating multiple users' claims and interests (Elbakidze, *et al.*, 2010). A forestry stakeholder refers to a person or those with rights to, claims on, and/or responsibilities for forest and woodland areas, trees, forest and woodland goods and services (Shackleton, *et al.*, 2002). According to Kakizawa (2002), stakeholders' participation in forestry has become an essential element in decision-making that affects the status of natural resources. This reflects the increasing interest of many stakeholders in environmental issues and the evolving relationships among stakeholders in order to reach better decisions and prepare better plans. Chambers (2005) sees stakeholder participation as an attempt by a development partner to make a broader consultation and involve the rural communities where projects are to be situated. This means involving local people in the decision making, planning and implementation processes of any intervention project in any targeted area. It implies a change in management paradigm from the conventional top-down approach to a broader consultation, and involvement of beneficiaries especially women, children and disadvantaged groups (Seitz, 2000). Participation in forestry include active involvement of various stakeholders in managing forest resources, resolving conflicts over forest uses, monitoring and evaluating the performance of forestry and biodiversity conservation projects (Roe *et al.*, 2009; Elbakidze, *et al.*, 2010). This work assessed socio-economic factors which influence stakeholder participation in forestry activities in Benue State.

II. Methodology

2.1 Study Area

Benue State is located within the Middle Belt of Nigeria on Longitude 6°31'E and 10°E and between Latitudes 6°30'N and 8°10'N and has land mass of 33,955km² (BNARDA, 2005). The State has a population of approximately 5 million by 2009 estimate/projection based on a 2.8% growth rate (NPC, 2006). The area is characterized by two distinct seasons; wet and dry season, with the wet season occurring between April to October while the dry season occurs between November to March (Hula, 2010). According to the author, mean

annual rainfall is between 1000mm-1500mm, mean annual temperature is 30°C while the relative humidity is between 60% and 80% but decreases during the dry season.

2.2 Sampling Techniques

A multistage sampling technique was adopted for the study with a stratification of Benue State into three (3) Zones at a 30% sampling intensity of the Local Government Areas (LGAs) in the State (Table 1). In each of the selected LGAs, key informants involved in forest practices were purposive selected in line with Dagba *et al.*, (2018). Four hundred and twenty semi-structured questionnaire were designed and administered in line with Ajake and Anyandike (2012) and Casley and Kumar (1988). Both descriptive and inferential statistics were employed to analyze the data using SPSS Version 20 along with Binary Logistic Regression and Kruskal-Wallis analysis tools.

Table 1: Summary of Sampling Procedure for the Study

Zones	Number of LGAs in each Zone	Number of LGAs Selected (30% of LGAs in Zone)	Name of Selected LGA
Zone A	7	2	Kwande
			Konshisha
Zone B	7	2	Gboko
			Makurdi
Zone C	9	3	Otukpo
			Oju
			Ogbadibo
Total	23	7	

III. Results and Discussion

3.1 Socio-economic characteristics of stakeholders in the Study Area

The socio-economic characteristics of the stakeholders in the study area (Table 2) reveal that the males constituted 78.10% of study population as against female stakeholders (21.90%). The involvement of more males in forestry practices could be attributed to the nature of the job which requires strength and sometimes in rugged terrains and may not be fit for females. This is in agreement with the findings of Falconer and Arnold (1991) who observed that, generally, males have greater access to the cash economy from forest product activities. The mean age of the stakeholders who were involved in forestry practices was 45 years. This portends prospects for active participation in forestry practices as this class consists of adults with strength for all types of forestry practices. The observation also agrees with Nair (1995), who affirmed that people in this age category can exhibit high productivity especially if properly trained in various aspects of forestry practices. The educational status of the respondent's showed that stakeholders with non-formal education were more (32.40%), while those with tertiary education were the least (23.1%). This could be due to the fact that most educated people seek better vocations and prefer to migrate to urban areas for greener pastures than engage in forest products harvesting and marketing. Majority of the stakeholders were married (78.33%) while 21.67% of the respondents were single, indicating the prospect for improved family size and impact on forest resources. The mean family size as observed in the study area was 5 members, which supports the preponderance of large family sizes among the poor in rural areas of Nigeria (Eboh, 1995). The mean estimated annual income of the study respondents was ₦ 607, 357 with over 61.19% of them earning the least amount of between #50,000 - #1,000,000.

Table 2: Socio-demographic characteristics of stakeholders in Benue State (n = 420)

Characteristics	Category	Frequency	Percent (%)
Gender	Male	328	78.10
	Female	92	21.90
Age (Years)	20-30	21	5
	31-40	133	31.67
	41-50	166	39.52
	51-60	71	16.90
	61-70	29	6.90
Mean Age (Years)	45		
Educational Status	Non-formal Education	136	32.40
	Primary Education	101	25.00
	Secondary Education	82	19.50
	Tertiary Education	97	23.10
Marital Status	Single	91	21.67
	Married	329	78.33
Employment Status	Civil Service	89	21.19
	Timber merchants	140	33.33

	Farming	169	40.24
	Schooling	16	3.81
	Private Service	6	1.43
Family Size	1 – 5	154	36.67
	6 – 10	225	60.71
	11 – 15	11	2.62
Mean Family Size	5		
Income (₦)	₦ 50,000 – ₦ 500,000	257	61.19
	₦ 501,000 - ₦ 1,000,000	109	25.95
	₦ 1,001,000 - ₦ 1,500,000	38	9.05
	₦ 1,501,000 - ₦ 2,000,000	13	3.10
	₦ 2,001,000 - ₦ 2,500,000	3	0.71
Mean Annual Income(₦)	₦ 607,357		
Std Error	±23,207.09		
SD	475603.8		

n= number of respondents, SD = Standard Deviation

3.2 Forestry Practices in Benue State

Forestry practices in the State include forest products harvesting and marketing, plantation establishment, awareness campaigns and forestry projects evaluation and auditing, done mainly by timber dealers, Non Governmental Organizations (NGOs) and Government Ministries, Departments and Agencies (MDAs) (Table 3). Not much was done in forest regeneration as only 4.4% of MDAs and about 3% of NGOs engaged in plantation establishment in the State. On the other hand, forest products harvesting was prevalent among timber dealers/saw millers (58%) and adjoining communities (46%) around forest enclaves. This indicates that preferred tree species may be threatened since the rate of regeneration is far less than the rate of utilization. Relevant NGOs in the State were committed to awareness campaigns (100%) as well as Government MDAs (67%) to sensitize the populace on the effects of forest exploitation and adoption of sustainable forest practices.

Table 3: Stakeholder involvement in forestry practices in Benue State

Type of stakeholder	Forestry Practices	Frequency	Percent (%)
Timber dealers/chain Saw millers	Forest products harvesting	69	57.98
	Forest product marketing	50	42.02
NGO's	Campaign, education and awareness creation	20	100.00
Enclave/Adjoining Communities	No practice	36	15.25
	Plantation Establishment	7	2.97
	Forest products harvesting	108	45.76
	Forest product marketing	85	36.02
MDAs	No practice	7	15.56
	Plantation Establishment	2	4.44
	Campaign, education and awareness creation	30	66.67
	Forestry projects evaluation	6	13.33

NGOs = Non-Governmental Organizations, MDAs = Ministries, Departments and Agencies

3.3 Socio Economic Factors Influencing Stakeholder Involvement in Forestry Practices in Benue state

The results from Table 4 indicates that gender has no significant influence ($P>0.05$) on stakeholders involvement in forestry practices in the study area. Age of the respondents have significant negative influence ($P<0.01$) on involvement of stakeholders in forestry practices, and educational status of the respondents significantly influenced their involvement in forestry practices ($P<0.05$). Also, the marital status of the respondents did not influence their involvement in forestry practices in the study area ($P>0.05$). The table indicates that employment status of the respondents in the study area has a significant positive influence on stakeholder's involvement in forestry practices ($P<0.05$). The results also indicate that family size, annual income (₦) and distance (Km) of respondents to the reserve area has a significant influence on stakeholder's involvement in forestry practices in the study area ($P>0.01$)

Table 4: Factors Influencing Stakeholder Participation in Forestry Practices in Benue State

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Age	-0.265	0.049	29.096	1	0.000**	0.767
Education	-0.601	0.270	4.956	1	0.026*	0.548
Employment	0.862	0.415	4.307	1	0.038*	2.367
Family size	0.533	0.213	6.261	1	0.012**	1.705
Income (₦)	0.000	0.000	9.088	1	0.003**	1.000
Distance (km)	-0.724	0.234	9.539	1	0.002**	0.485
Constant	16.787	2.871	34.193	1	0.000	1.952E7

Family size and income of respondents positively influenced stakeholders involvement in forestry practices. Also age, education and distance from forests negatively influenced involvement of stakeholders in forestry practices. The negative influence of age on involvement in forestry practices implies that, the older the person is, the less he/she involvement in forestry activities. The findings support the study by Kajembe and Mwihomeke (2001) who reported that elders are however, usually committed to conservation and they do insist on conservation rather than over-exploitation of the resources. Education has a negative regression coefficient; this implies that an increase in education may reduce involvement in exploitation activities. Education is a problem solving tool with emphasis at rejuvenating the abilities of a person. Shali (2003) emphasized that the level of education has a remarkable bearing on sustainable management of natural resources. Family size determines per capita collection and utilization and therefore influences involvement in forestry practices. Larger family sizes sometimes lead to over-exploitation of forest resources to satisfy livelihood needs. This agrees with findings of Nduwamungu (2001), who established a strong relationship between family size and environment degradation. According to Baland and Platteau, (1996), low income exacerbates pressure on common pool resources resulting in consequent degradation of natural resources. Distance from homestead to the reserve has a negative regression coefficient. This implies that a unit increase in distance between the homestead and the reserve will limit the likelihood of involvement. Grundy *et al.* (1983) recorded the spatial effects of Miombo woodland resource use in Zimbabwe and showed that an increase in distance from homestead to the woodland raised costs of resource collection and vice versa.

3.3 Socio-economic Factors Influencing Stakeholders Choice of Forestry Practices in Benue state

The socio-economic factors influencing stakeholder's choice of forestry practices in the study area as shown in Table 5 revealed that, age of the respondents had significant influence on the choice of forestry practices with Kruskal-wallis (H) value of 29.97 and p-Value of 0.00. People of all ages can choose different forest practices to involve in; however young people may be more involved in forest products harvesting and marketing than the elderly people. The reason for this is that the young people may have multiple uses of the forests and forest products harvesting and marketing. On the other hand, the elderly people may not take the risk of going into the forest to undertake forest activities particularly that the elderly people may not have the strength to carry out forest related activities (Kohlin and Parks 2001). It is therefore hypothesized that choice of a particular forestry practice is inversely related to age. The education and employment status of the respondents also significantly influenced stakeholder's choice of forestry practices with H-value of 118.75, p-value of 0.00. Higher educational status of stakeholders may restrict their choice of some forestry practices that are laborious, since they can choose practices that are less labour intensive. Therefore the choice of a particular forest practice is inversely related to the education level of a particular stakeholder. Also, education opens up better employment opportunities for people, thus diverting their attention from agriculture to other subsistence activities. The employment status of the respondents also influenced their forestry related choices (H-value of 98.54, p-Value of 0.00 respectively). Type of employment may determine or influence choice of forestry practice because; some of the jobs may be time consuming. For instance, stakeholders that are in the civil service may not have full time for forest resources harvesting and marketing, but farmers who spend substantial part of their time on their farms during the rainy season, are more likely to concentrate on forest resources harvesting and marketing during the dry season. The family size of the respondents do not significantly influence choice of stakeholder's forestry practices (p-Value above $p < 0.05$). Large families tend to be involved more forest resources harvesting (Gunatilake 1998; Masozera and Alavalapati 2004) because they are able to mobilize their families to undertake forest dependent activities while maintaining a labour supply for other village-based activities. Furthermore, larger families have higher subsistence needs, and that may be another reason to depend more on forest resources harvesting and marketing.

The respondent's annual income has significant influence on the choice of stakeholder's forestry practices involved in with H-value of 30.13 (p-Value 0.00). People who have high income depend less on forest activities such as harvesting and marketing of forest products, while stakeholders with less income depend on

forest resources as a means of livelihood (Fisher, 2004). Therefore, it is expected that stakeholders with high annual income are less likely to select practices that exert more pressure on forest resources. Similarly, stakeholders that are closer to forest reserves may opt for forest resources harvesting more than those that are far from the reserve area.

Table 5: Socio-economic Factors Influencing Choice of Forestry Practices in Benue State

Test Variables	Df	H-Value	P-Value
Age vs Type of Forestry Practice	4	29.97	0.00
Education vs Type of Forestry Practice	3	118.75	0.00
Employment vs Type of Forestry Practice	4	98.54	0.00
Family Size vs Type of Forestry Practice	2	4.38	0.11
Annual income vs Type of Forestry Practice	4	30.13	0.00
Distance vs Type of Forestry Practice	2	15.67	0.00

IV. Conclusion And Recommendations

The study concludes that socio-economic variables influence stakeholder's involvement in forestry practices and choice of forest practice in the study area. Socio-economic variable such as education is fundamental to forest development. The stakeholders can be educated on sustainable forestry practices such as afforestation and sustainable that will burst the forestry sector. The study therefore recommends awareness creation and sensitization of stakeholders especially community people around forest reserves and non-formal forest enclaves to support the conservation of remaining forest resources in the State.

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