

# Challenges of Plantation Forestry to Local Tree-Crop Farmers in Benue State, Nigeria

B. I. Dagba<sup>1</sup>, J. I. Amonum<sup>2</sup>, S. I. N. Agera<sup>3</sup>

<sup>1</sup>Department of Social and Environmental Forestry, University of Agriculture, Makurdi

<sup>2,3</sup> Department of Forest Production and Product, University of Agriculture, Makurdi

**Abstract:** *This study investigated challenges faced by members of co-operative societies in their efforts to establish forest plantations. A total of 480 respondents drawn from 1,240 members of six co-operative societies were randomly selected and interviewed using questionnaire. In addition, an in-depth interview with key informants (IDI) and a focus group discussion (FGD) were held to provide information on area not covered in the questionnaire. Data obtained were analyzed using both non inferential and inferential statistics. Results showed that member very low participation (22%) in forest plantation establishment of various tree species. Challenges of member of tree Crop Association to effectively involve in forest plantation forestry were found to include lack of credit (82%), lack of extension education activities (68%) lack of government support (66%), while lack of control over planting operations by members (6%) was found to pose the least challenge. Multiple Regression Analysis showed significant difference ( $p < 0.05$ ) among the different challenges. It was concluded that if these challenges were removed; members would embark more on plantation forestry with high level of success. It was recommended that these challenges especially lack of credit support, lack of awareness and aggressive extension service should remove to encourage more participation by member in plantation forestry.*

**Key Words:** Challenges, plantation forestry, awareness, indigenous knowledge, involvement

## 1. Introduction

Deforestation is said to be on the increase in recent years. According to International Panel on Climate Change [1], deforestation stood at 7.3 million Hectares/yr. If urgent steps are not taken to check the trend, it is feared that our forests will completely disappear. There is therefore evidence of our ecosystems becoming less diverse in terms of forest species and products. In order to avoid this calamity, there is global consensus on the need to recreate forests through plantation development for a long term sustainability measure. According to Quiror [2] this view must be embraced by all segments of society in order address the issue of climate change. In many societies, indigenous peoples have successfully cultivated and inhabited areas with fast and high yielding tree species to replace the naturally occurring species that people have destroyed indiscriminately. It is believed, Alcorn, [3], Warren [4] that indigenous knowledge accumulated by the local people and communities constitute a reservoir of adaptations which are of great importance for long-term sustainability.

Societies' relevance as partners in progress and as advocates of community forestry development has been neglected by governments and its agencies. One implication of this is that half or more of indigenous ecological science practices have been curtailed due to the prevailing non-involvement of co-operative societies. Yet it is reported by Jiggins, [5] that when people are given the opportunity to exercise their rights particularly to influence the development agenda for their environmental problems, they usually opt for the best to conserve forests, since they derive a lot of livelihoods from them. In many cases, the interests of this group of people are not respected when forest estates are being established and managed.

According to Dagba [6], several attempts have been made by some of the co-operative societies to involve in community

forestry with lots of challenges. In the study, the researcher discovered that not much support was given to local communities by way of finance, supply of inputs and extension services for effective participation in community forestry. As a result, very little contributions have been made by the communities in the areas as far as forest development and conservation efforts are concerned. The pertinent question therefore comes to mind. What are the real challenges facing co-operative societies in Benue State that their efforts have not yielded the desired result? It was in an attempt to unravel the possible challenges to involvement in plantation forestry establishment that this study was carried out.

## 2. Methodology

A sample size of 480 respondents was selected randomly among 1,240 members of Tree Crop Farmers drawn from six local government areas of Gwer, Gwer-west, Makurdi, Gboko, Tarka and Guma. Data was collected using questionnaire which sought to know the nature and amount of extension support activities members received from both government and non-governmental organizations. The amount of finance support available to them, the standard of living of members, level of awareness about plantation establishment by members and the benefits derivable from it and whether the participants have control over productive, planting actions and resources. In addition, in-depth interview with key informants (IDI) and focused group discussion (FGDs) using checklists different from information contained in the questionnaire were undertaken which augmented information on challenges to members' involvement in plantation forestry. The challenges experienced by them were ranked to determine which of them exerted most influence in a sequential order to arrive at the factors militating against plantation forestry. The test-retest method of administration of questionnaire was carried out twice on the same respondents i.e. match group with time

interval of 2 months as described by Egbugara, [7] was used for determining the reliability of the instrument, which gave a coefficient of 0.80.

Data obtained from questionnaire administration were carefully collated and both frequencies and percentage were calculated, details of which have been presented in tables.

Multiple regression analysis was employed to determine the relative importance of each of the independent variables, the net contribution of each variable and total variance explained by all the variables on the challenges to members of the co-operative societies as regards their involvement in plantation forestry. Of all the various combinations entered, the one with the highest predicting values was adopted as being influential. The regression equation used was as stated thus:

$$Y = K + AX_1 + BX_2 + CX_3 + DX_4 + EX_5 + FX_6 + GX_7 + HX_8$$

Where Y is the challenger to members' involvement in plantation forestry

K = intercept which is constant

A, B, C, D, E, F, G, and H are the net contributions of each of the variables

X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub>, X<sub>6</sub>, X<sub>7</sub> and X<sub>8</sub> respectively to the dependent variable Y.

X<sub>1</sub> = Lack of credit.

X<sub>2</sub> = Lack of awareness.

X<sub>3</sub> = Lack of extension education.

X<sub>4</sub> = Lack of government support.

X<sub>5</sub> = Lack of control over productive resources.

X<sub>6</sub> = Lack of control over planting operations.

X<sub>7</sub> = Diminishing living standards.

X<sub>8</sub> = Control over actions

### 3. Measurement of Dependent Variable

Respondents were asked to indicate if they had been involved in plantation of forestry previously through a yes or no answer. The result was later collated and analyzed and presented in Table 3.

#### 3.1 Measurement of Independent Variables

Questionnaire was designed to provide information on extension support activities, financial support, assistance from government, standard of living of members, control over action and productive resources, as well as assessment of level of awareness of respondents about the importance of plantation forestry. As stated earlier, 480 questionnaire were administered on respondents. Respondents were asked to select as appropriate for each of the independent variables.

##### i) Demographic variables of respondents

Information on demographic variables such as age, gender, educational attainment, occupation as well as marital status of the respondents were obtained by asking them to select from options made available. Results were collated and analyzed and presented in Table 1.

##### ii) Lack of awareness about Plantation Forestry

This was measured by asking respondents to say whether they were aware of the need for Plantation Forestry or not with a yes or a no response. The result was later collated, analyzed and presented in Table 4.

##### iii) Control over productive resources/action/planting operations

These were measured by asking respondents to indicate if they had control over productive resources, or they had to take permission from external institution. They were also required to indicate if they controlled plantation operations. The objective was to know if lack of any of these would be devastating to plantation forestry establishment. Detailed result is as presented in Table 4.

##### iv) Lack of financial support/credit

Participants were asked to indicate if they received any financial support from any source or individuals in form of grants or free donations. They were also required state if credit facilities in any form and from whatever source were available to them. This was further divided into support from government or non-governmental organization. The results were collated and analyzed and presented in Table 4.

##### v) Government policy/support

Participants were asked to indicate in their own opinion, government policy about plantation forestry was encouraging in any way to support plantation forestry and whether they were being supported by government in area such as free distributions of seedlings or herbicides distribution or even at subsidized rates. The results were collated and analyzed in percentages as presented in Table 4.

##### vi) Diminishing standard of living

Members were asked to state their total incomes for the last 5 years and cumulative average were calculated to determine if their incomes hence their standards of living were diminishing. This was to know if their decreasing financial positions could be responsible for their low level of participation in plantation forestry. Table 2 contains details of their income for 5 consecutive years.

## 4. Results

### 4.1 Demographic variables of respondents

Result showed that 41-50 age range had 41.5% of the total number of those interviewed followed by the age range of 31-40 with 37.7%. Only 8.3% of the population was above 50 years. Of the total respondents interviewed, 80.2% were males while 19.8% were females. In terms of educational attainment, 35.4% of the respondents had secondary education followed 33.5% without formal education. For occupational status, 66.7% of the respondents were farmers followed by the civil servants. It was found also that 74.9% of the respondents were married while 25.2% were single. Detailed results of demographic variables are contained in Table 1.

### 4.2 Member's involvement in Plantation Forestry

Results from respondents showed low level of participation of members of cooperative societies in Plantation Forestry of different species as shown by very low scores (109) in Table 3.

### 4.3 Challenge of Plantation Forestry

Challenges of Plantation Forestry were found to include lack of credit (82%), lack of awareness (73%), lack of control over productive resources (61%), lack of control over

actions (29%), diminishing living standard (27%) and lack of control over plantation operation (0.6%). Details of these challenges are shown in Table 4

#### 4.4 Regression Analysis

Multiple regression analysis was performed and the result is presented in Table 3. The result showed that lack of credit (Beta=0.22) was the greatest predictor of the members' challenges to involve in Plantation Forestry. Contribution of other challenges in diminishing order was lack of awareness (Beta=0.13), lack of extension services (Beta=0.12), lack of government support (Beta=0.05), lack of control over productive resources (Beta=0.04), lack of control over actions (Beta=0.03), diminishing living standards (Beta=0.02), lack of control over Plantation operations (Beta=0.01). All the variables entered could predict 72 percent of the variations in the challenges to co-operative societies' involvement in Plantation Forestry ( $R^2=0.71$ ). They all have linear relationship with the respondent variable. It gave a constant of 3.25 and a standard error of 0.18, F value=3.2. Thus, the variables in the regression equation are good predictors of the variations in challenges to co-operative societies' involvement in Plantation Forestry.

### 5. Discussion

Age has been found to be very basic in Forestry business generally because apart from the fact that young people or those who are too old lack energy to work on fields, it is equally true that only adult own land in African societies. It was found in the study that the respondents were in the ripe age for Forestry activities but total involvement was regrettably low.

There was higher number of male respondents than females implying high level of involvement. However, contrary to expectation, low participation was still recorded. Results showed a slightly higher number of respondents with formal education, the percentage without formal education was still very high (33.5%). This could probably be responsible for low participation among other factors. This is because education gives knowledge about the skills, creates awareness and empowers people. Respondents of the tree Crop Co-operative societies showed a very high devastating effect (73%) of lack of awareness about the importance of Plantation Forestry. It is very obvious from the responses and focus group discussions that in addition to the fact that members were not aware of the benefits derivable from Plantation Forestry, there were some constraints. Only 22% of total membership of 480 actually was found to be involved in Plantation Forestry.

Socio-economic analysis of the respondents revealed that more than half said that their annual incomes could not support costs of engaging in Plantation Forestry. Money is needed to prepare planting sites, procure seedlings, and pay for labour to nurture seedlings to maturity after planting. It is expected that government or some other agencies should provide for some of these costs to enable members participate fully in Plantation Forestry. Unfortunately, results from the study showed that there was very little support from government and non-governmental organizations. The fact

that members could hardly afford operation costs, participation by them had been low. Another setback to participation in Plantation Forestry as revealed by respondents was lack of extension education. Extension services take care of advocacy, provision of input, teaching of technology for planting, cultural practices as well as value system. For example, tree planting was not encouraged by the Idoma indigenes because it was believed that if you planted a tree, you would not live to enjoy it. So this was a constraint to many since nobody wants to die. However, with more people becoming educated, the practice is dying down.

Education empowers people to become independent. It confers knowledge on people, teaching them how to do things differently. In the study, results showed that probably because of low level of education, participants did not have control over several vital activities such as planting activities and decision making. This encourages top-down instead of bottom-up approach which is advocated for participatory processes. The importance of extension education in mobilizing for participation in any project cannot be over emphasized. According to Forest and Baker[8], extension involves planning which in itself includes integrated analysis of needs and interests, opening up new horizons for action, strengthening programme resources and attracting funds that allow for sustainability, improving team and community capacities, motivations, performance and autonomy and serving as a means to open dialogue with other organizations involved in development of similar projects. Therefore there is need for aggressive extension activities to fully motivate co-operative members to fully participate in Plantation Forestry in the study area.

### 6. Conclusion

There was low level of participation by co-operatives societies in Plantation Forestry in the study area due to challenges which were found to be lack of credit, inadequate extension network, lack of government patronage, poor educational attainment, diminishing lifestyles due to poor economic base. Their greatest challenge was that they neither had credit facilities from the government nor other agencies. Equally, there were low extension activities especially in the area of empowering members of the cooperative societies.

### 7. Recommendation

It was recommended that Government and other agencies should support cooperative societies especially in the area of credit facilities and capacity building to encourage indigenous initiatives to actively participate in Plantation Forestry in the study area.

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**Table 1:** Distribution of Demographic Variables of Respondents

	Frequency	Percentage
<b>Age Range (Years)</b>		
20-30	60	
31-40	181	12.5
41-50	199	37.7
>-50	40	41.5
Total	480	8.3
<b>Gender</b>		
Male	385	80.2
Female	95	19.8
Total	480	100.0
<b>Educational status</b>		
Primary	129	26.9
Secondary	170	35.4
Tertiary	20	4.2
Non-formal	161	33.5
Total	480	100.0
<b>Occupational status</b>		
Farming	320	66.7
Business	10	2.0
Civil servant	150	31.3
Total	480	100.0
<b>Marital status</b>		
Single	121	25.2
Married	359	74.8
Total	480	100.0

**Table 2:** Distribution of yearly income of respondents for five years

Income range (N) '000	2007	2008	2009	2010	2011
100-200,	380	385	39	39	398
201-300,	35	37	32	31	28
301-400,	32	26	25	24	21
401-500,	31	24	23	20	21
501-600,	2	8	10	9	10
>600	-	-	-	-	-
Total	480	480	48	480	480

**Table 3:** Distribution of respondents on the basis of involvement in Plantation Forestry

	Involvement in Plantation forestry	
	Yes	No
Frequency	109	371
Percentage	22	78

**Table 4:** Distribution of respondents on effect of challenge on Participation in Plantation Forestry

Challenge	Devastating	Not-devastating
Lack of credit	395(82)	85(18)
Lack of awareness	350(73)	130(27)
Lack of extension education	320(68)	160(32)
Lack of government support	315(66)	165(34)
Lack of control over productive resources	295(61)	185(39)
Lack of control over planting operation	29(06)	451(94)
Diminishing living standards	128(27)	352(73)
Lack of control over actions	139(29)	341(71)

Note percentages in parenthesis.

**Table 5:** Challenges of individual variable to participation in Plantation Forestry

Variables	Beta value	S.E Beta	T	Sig. T
Extension support activities	0.03	0.04	1.27	1.14
Lack of credit support	0.02	0.06	5.54	0.59
Diminishing living standards	0.02	0.09	0.08	1.08
Lack of government support	0.07	0.01	4.32	1.01
Level of awareness of Plantation Forestry	0.01	0.01	3.37	0.71
Control productive resources	0.13	0.02	-4.7	0.10
Control over planting operations	0.28	0.09	6.86	0.38
Control over actions	0.15	0.01	2.35	0.08

## Author Profile

**Dr. Benjamin Ioryem Dagba** is a Senior Lecturer in the Department of Social and Environmental Forestry, College of Forestry and Fisheries, University of Agriculture Makurdi, Benue State, Nigeria with specialization in Extension. His area of Research is in social issues of Environmental Studies.



**Dr. Joseph I. Amonum** is a Senior Lecturer in Forest Ecology with the Department of Forest Production & Products. College of Forestry and Fisheries, University of Agriculture Makurdi, Benue State. Area of Research is Agroforestry



**Mr Agera Stephen I.N.** has a Bachelor's degree in Agriculture as well as a Masters degree in Forest Resources Management from the University of Ibadan. He is currently pursuing a PhD programme in Forest Biology and Silviculture at the Federal University of Agriculture Makurdi. He is currently a Lecturer I in the Department of Forest Production and Products, College of Forestry and Fisheries, Federal University of Agriculture Makurdi, Nigeria. His area of research is in Forest Biology and Silviculture.