

LAND TENURE MOTIVATIONS FOR SUSTAINABLE FOREST CONSERVATION IN SOUTHWEST NIGERIA

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ABSTRACT

Incentive is anything that motivates or stimulates people to act. This paper identifies motivations to sustain forest conservation in South-west Nigeria. Primary data were collected from the following groups of respondents: forest officers, tree takers and villagers from within and around eleven forest reserves selected from seventy eight forest reserves. All the forest officers in charge of the 31 forestry administrative zones in the six States namely: Ekiti (four); Lagos (five); Ogun (four); Ondo (eight); Osun (six) and Oyo (four) and one forest officer from each of the six State's Headquarters were interviewed using structured questionnaires. In addition,, 97 villagers from randomly selected forest reserves, 10% of registered tree takers comprising 94 timber Contractors, 167 registered Sawmillers and 115 plank Sellers were administered structure questionnaire. Descriptive statistics and Kolmogorov-Smirnov test (D) were used to analyze the data obtained. Result revealed that incentives on land tenure review ($D=9.20, p<0.01$), long term lease of land ($D=9.34, p<0.01$), Market service ($D= 10.71, p<0.01$), land for arable farming ($D=9.27, p<0.01$) and award/prizes for the best managed woodland ($D=10.08, p<0.01$) had significant relationship with forest conservation. There is need for policy reformation to take cognizance of the motivations identified to boost forest conservation in the South-west Nigeria.

Key words: motivation, forest conservation, sustainability, South-west Nigeria

INTRODUCTION

While there is no dearth of definitions for incentives, a single agreed definition does not exist (Meijerink 1997). Defined in very broad terms, an incentive is anything that motivates or stimulates people to act (FAO 1999). According to Tomforde (1995) incentives can be defined as signals that motivate action. Other definitions refer to the “incitement and inducement of action” (Enters 2001). Within the context of development projects, incentives have also been described as “bribes” and “sweeteners” (Smith 1998). Two points are illustrated by the various definitions and descriptions. First, incentives can be financial or non-financial in nature. Second, if incentives include “anything” that motivates, then surely they cannot just be policy instruments. In fact, there are incentives that cannot be influenced through intervention or can be changed only with great difficulty (Enters, 2004). Reliable rainfall and low fire danger are certainly factors - or enabling incentives - that determine investment decisions related to tree growing. While rainfall patterns are virtually impossible to change, the danger of fires breaking out and burning down a plantation can be managed to a certain extent. To be of interest and to have an impact, incentives need to affect the cost-benefit structure of economic activities such as plantation management. Hence, in the context of the regional study, incentives can be defined as policy instruments that increase the comparative advantage of forest plantations and thus stimulate investments in plantation establishment and management. This definition is broader

than the more narrow definition for subsidies (Enters, 2004). The latter are of a purely pecuniary nature and usually viewed as payments provided to reduce the costs or raise the returns on an activity. The broader definition includes research and extension, which are important elements in supporting plantation development. Natural ecosystems provide a wide range of ecosystem services from which people benefit, and upon which all life depends. These include provision of food, fuel, building materials, freshwater, climate regulation, flood control, nutrient and waste management, maintenance of biodiversity, and cultural services, to name a few. While the benefits of environmental services are public goods, the cost of ensuring their provision often falls on local land managers. Forest loss, primarily tropical deforestation and forest degradation, accounts for approximately 17 per cent of global greenhouse gas emissions (Rogner *et al.* 2008). Historically, public-sector agencies have dominated forest plantation development in most countries. This pattern has changed in many countries over the past 10 to 20 years, mainly for four reasons. First, devolution of forest management has led to greater involvement of communities and the private sector in forestry. Second, the performance (financially and biologically) of public-sector plantations - with few exceptions - has been disappointing. Third, shrinking government budgets make it impossible for most forest departments to devote as many resources to forest plantations as they have in the past. Fourth, problems related to weak governance structures are driving many countries to reconsider the role of government in administering forest resources and in directly implementing forest programmes (Gregersen *et al.* 2004).

These developments have been paralleled by a shift in the main objectives of forest management, which traditionally focused on timber production. Although forest policies and forest management objectives diversified and expanded long before the United Nations Conference on Environment and Development (UNCED), since 1992 forestry has become even more multidimensional. Forests are increasingly valued for supporting local livelihoods and helping to reduce poverty, for providing local environmental services and as a reservoir of global biodiversity (Durst *et al.* 2001). With the public sector retreating from direct involvement in planting and tending trees, the question is whether the private sector can grow the wood that is expectedly needed. There are several examples in the world where clear, consistent and stable policies, a conducive investment climate and well-programmed incentive schemes have made a significant impact on the success of forest plantation development. In contrast, where initiatives have been ill conceived or poorly implemented, the results have been disappointing despite heavy investment by governments. It is common knowledge that vast plantation areas are of very poor quality. Others exist on paper only, because mismanagement or some disaster led to their premature death in the field. Others were never established, but appear in records only to spuriously indicate that targets have been reached and funds spent.

This study was designed to comprehensively examine the reasons for public involvement in private forestry in South-West Nigeria and to provide guidance in policy formulation to those interested in stimulating investments in tree growing through the provision of incentives to large and small-scale growers.

METHODOLOGY

Study Area

The study area is south western Nigeria which consists of Lagos, Ogun, Oyo, Osun, Ondo and Ekiti States. It is also known as the South West geographical zone of Nigeria. The area lies between longitude $2^{\circ} 31'$ and $6^{\circ} 00'$ East and Latitude $6^{\circ} 21'$ and $8^{\circ} 37'$ N with a total land area of

77,818 km² and a projected population of 28, 767, 752 in 2002. The study area is bounded in the East by Edo and Delta States, in the North by Kwara and Kogi States, in the West by the Republic of Benin and in the south by the Gulf of Guinea. The study area has 85 constituted Forest reserves with a forest area cover of 842,499 hectare (Table 1). Figure 1 shows the position of the study area in the map of Nigeria.

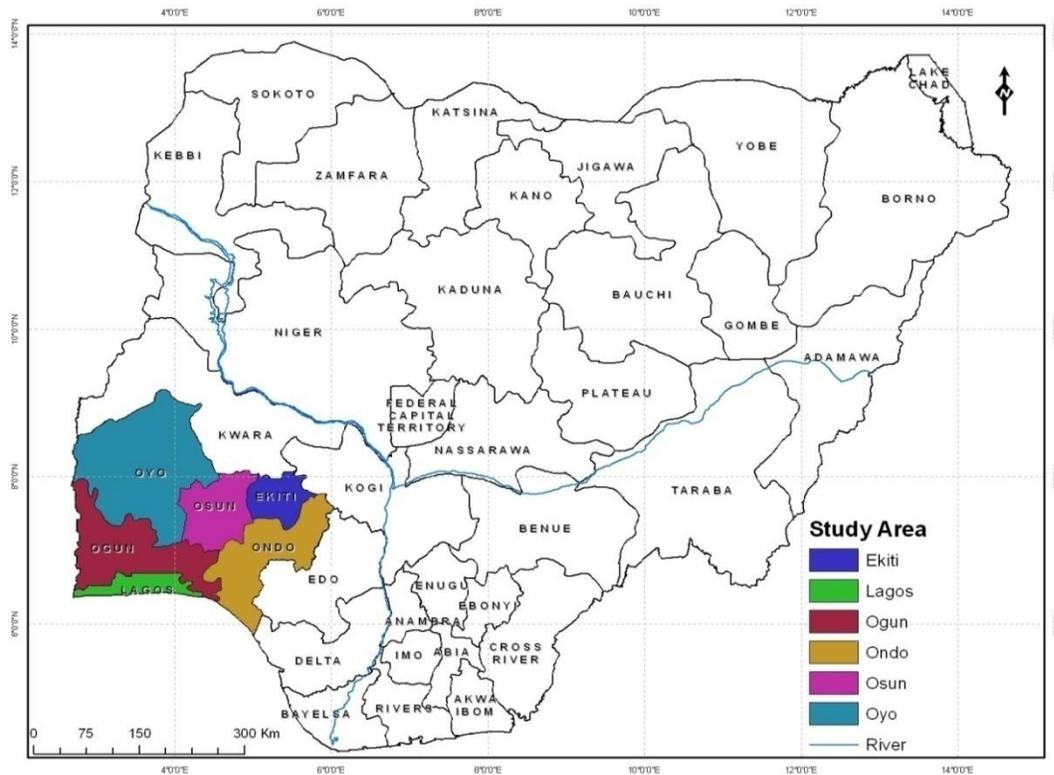


Figure 1: Map of Nigeria showing the position of the study areas

Table 1: South-West Nigeria States and their Land Area

State	Total land Area (Km ²)	No of Forest Reserve	Area of Forest Reserves (Ha)	No of Local Government Area	Forest reserve and land area ratio (%)
Osun	9,491	11	91,268	30	9.62
Ondo/Ekiti	20,451	37	305,541	17 & 16	14.94
Ogun	16,086	9	275,362	20	17.12
Oyo	27,848	18	169,173	33	6.06
Lagos	3,939	03	6,873	20	0.30

Source: (FORMECU, 1998)

Climat and Vegetation of the Study Area:

The climate of Southwest Nigeria is tropical in nature and it is characterize by wet and dry seasons. The temperature ranges between 21⁰ C and 34⁰ C while the annual rainfall ranges between 150mm and 3000mm. The wet season is associated with the Southwest monsoon wind from the Atlantic Ocean while the dry season is associated with the northeast trade wind from the Sahara desert. The vegetation is Southwest Nigeria is made up of fresh water swamp and mangrove forest at the belt, the low land in forest stretches inland to Ogun and part of Ondo state

while secondary forest is towards the northern boundary where derived and southern Savannah exist (Agboola, 1979).

Data Collection and Analysis

Primary data were collected from the following groups of respondents: forest officers, tree takers and villagers from within and around selected forest reserves. All the forest officers in charge of the 31 forestry administrative zones in the six states namely: Ekiti (four); Lagos (five); Ogun (four); Ondo (eight); Osun (six) and Oyo (four) and one forest officer from each of the six State's headquarters were interviewed using structured questionnaires. Furthermore, 97 villagers from randomly selected forest reserves, 10% of registered tree takers comprising 94 timber contractors, 167 registered sawmillers and 115 plank sellers were administered structure questionnaire. Descriptive statistics and and Kolmogorov-Smirnov test (D) were used to analyze the data obtained.

Inferential statistics

Kolmogorov- smirnov two sample test

A nonparametric test that test difference between two distributions is the Kolmogorov- smirnov two sample test. Its null hypothesis is identity in distribution for the two samples and thus the test is sensitive to differences in location, dispersion, skewness and so forth. This test is based on the unsigned differences between the relative frequency distributions of the two samples. Expected critical values can be looked up in a table or evaluated approximately. Comparison between observed and expected values leads to decisions whether the maximum difference between the two cumulative frequency distributions is significant. It has greater power than the chi-square test for goodness of fit (Sokal and Rohlf, 1981).

An approximate two-tailed critical value for the test statistic D can be computed as:

$$D\alpha = K\alpha \sqrt{\frac{n1 + n2}{n1n2}} \quad \text{Equation 1}$$

$$\text{Where } K\alpha = \sqrt{1/2 - \ln(\alpha/2)} \quad \text{Equation 2}$$

$K = 1 - \alpha$

D = test statistic

$n_1, n_2 =$ Sample sizes

RESULTS

Review of Land Tenure as a Means of Enhancing Forest Conservation

Land in the South-West Nigeria is mostly acquired by inheritance. Therefore getting very large hectares of land could be relatively difficult. This is why the land is in care of the government. The pooled data in the South-West Nigeria clearly indicated in figure 2 showed that 89.3% of the respondents are willing to participate in private forest plantation if the land tenure is reviewed while 10.7% are not willing to participate. Kolmogorov-smirnov test (D) analysis revealed that forestry development in the South-West Nigeria have significant relationship with review of land tenure ($D=9.20, p<0.01$).

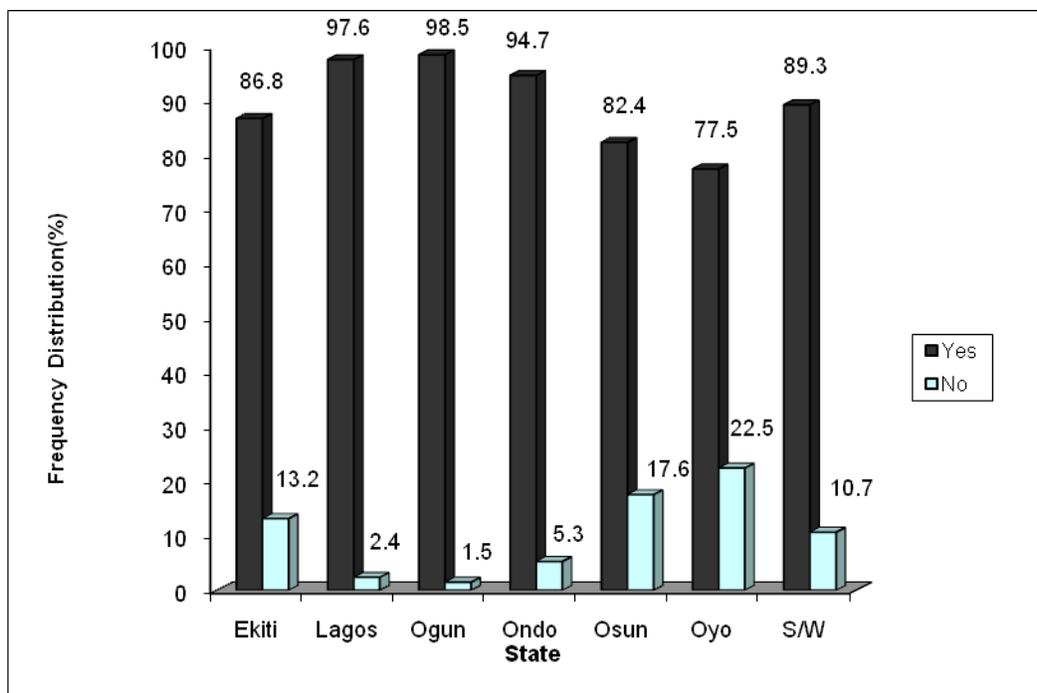


Figure 2: Frequency Distribution of Stakeholders' Response to the Review of Land Tenure as a Means of Enhancing Forest Conservation.

Long-term Lease of Land as means of Enhancing Forest Conservation

This refers to the lease of land for considerable number of years by the government. Land made available this way would be able to accommodate trees with long rotation age. Figure 3 revealed that all the respondents in Lagos and Ogun State are willing to participate in private forest plantation if given long term lease of land incentives. The pooled data from the South-West Nigeria indicated that 86.8% of the respondents are willing to participate while 13.2% are not willing to participate. Further analysis revealed that forestry development in the South-West Nigeria have significant relationship with long term lease of land to stakeholders ($D=9.34$, $p<0.01$).

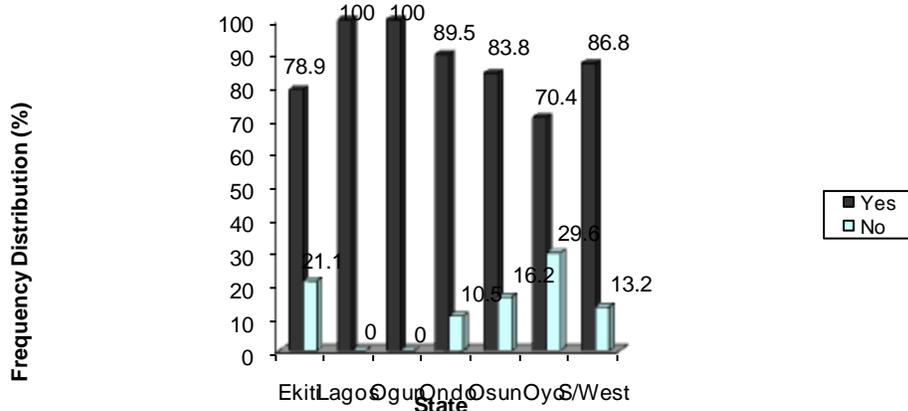


Figure 3: Frequency Distribution of Stakeholders' Response to the Long Term Lease of Land as a Means of Enhancing Forest Conservation.

Market Service motivations as a Means of Enhancing Forest Conservation.

The respondents will be encouraged if they are aware of market for their products as well as a conducive environment to operate. Figure 4 clearly revealed that all the respondents in Lagos and Ogun State are willing to participate in private forest plantation if given market service incentives. Information from the pooled data in the South-West Nigeria indicated that 94.2% of the respondents are willing to participate in private forest plantation while 5.8% of the respondents are not willing to participate. Further analysis revealed that forestry development in the South-West have significant relationship with the provision of market service incentives ($D=10.71, p<0.01$).

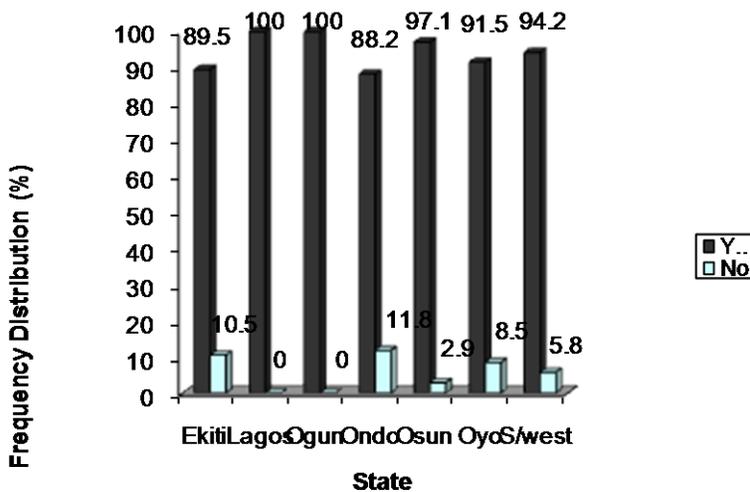


Figure 4: Frequency Distribution of Stakeholders' Response to the Provision of Market Service Incentives as a Means of Enhancing Forestry Development.

Long-term Lease of Land as a means of Enhancing Forest Conservation.

This refers to the lease of land for considerable number of years by the government. Land made available this way would be able to accommodate trees with long rotation age. Figure 5 revealed that all the respondents in Lagos and Ogun State are willing to participate in private forest plantation of given long term lease of land incentives. The pooled data from the South-West Nigeria indicated that 86.8% of the respondents are willing to participate while 13.2% are not willing to participate. Further analysis revealed that forestry development in the South-West Nigeria have significant relationship with long term lease of land to stakeholders ($D=9.34, p<0.01$).

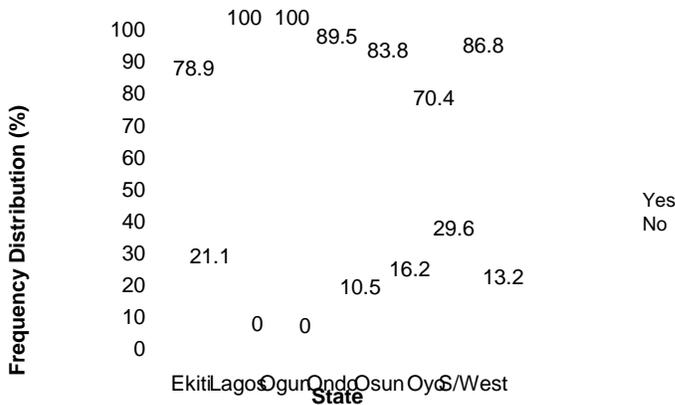


Figure 5: Frequency Distribution of Stakeholders' Response to the Long Term Lease of Land as a Means of Enhancing Forest Conservation.

Land for Arable Farm as a means of Enhancing Forest Conservation

Virtually all the rural dwellers are farmers and they will appreciate the provision of land for agricultural farming to preserve the available forests. In the South-West Nigeria a total of 80.4% of the respondents are willing to participate in private forest plantation if land for arable farming is provided while 19.6% are not willing to participate (Figure 6). Further analysis revealed that forestry development in the South-West have significant relationship with the provision of land for arable farming ($D=9.27, p<0.01$).

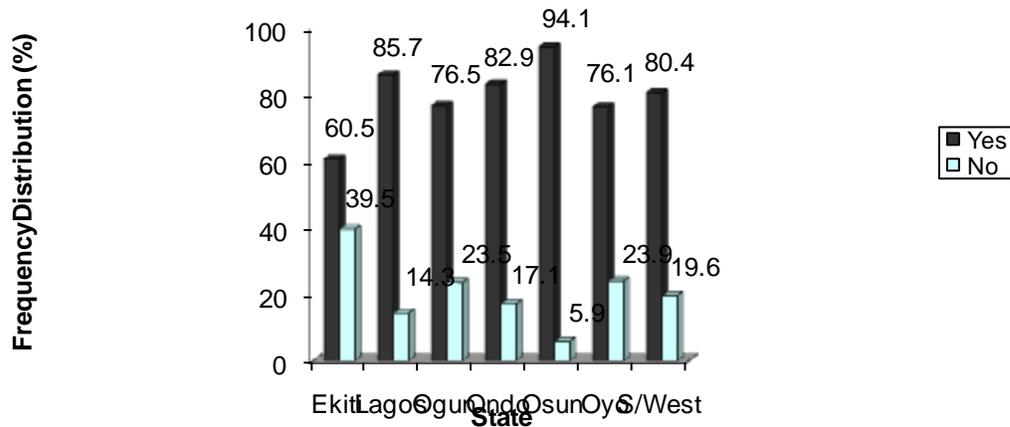


Figure 6: Frequency Distribution of Stakeholders' Response to the Provision of Land for Arable Farming as a Means of Enhancing Forest Conservation.

Award/Prizes for the best Managed Woodland as a means of Enhancing Forest Conservation.

These are incentives given to participants for a job well done. Figure 7 clearly revealed that in the South-West Nigeria, 91.5% of the respondents are willing to participate in private forest plantation while 8.5% of the respondents are not willing to participate if given award/prize

incentive for the best managed woodland. Further analysis revealed that in the South-West Nigeria, forestry development have significant relationship with the provision of awards/prizes for the best managed woodland ($D=10.08$, $p<0.01$).

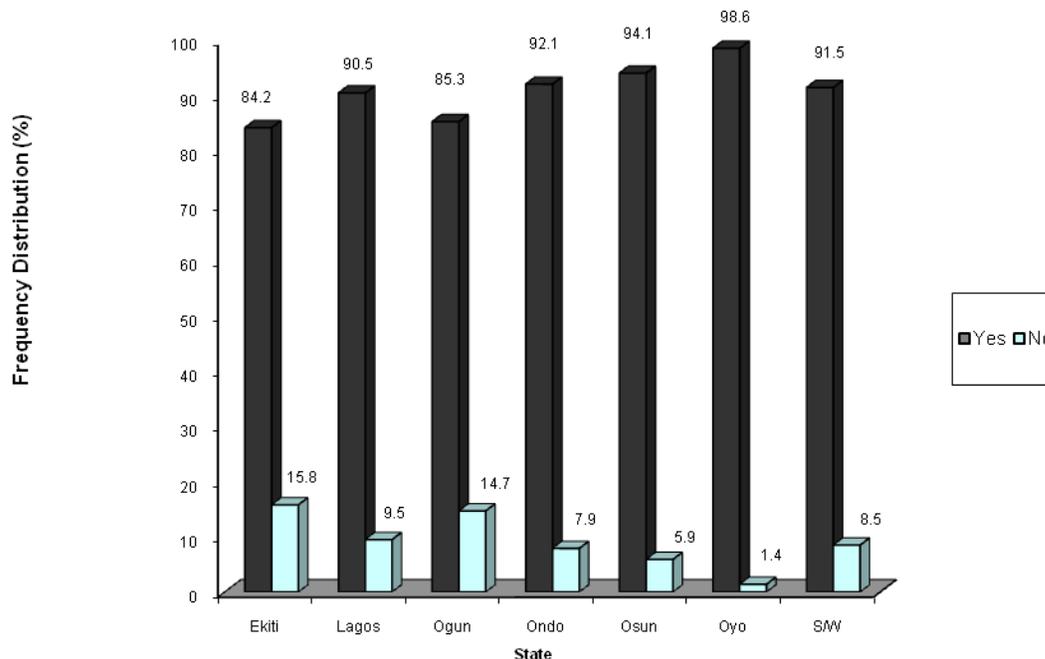


Figure 7: Frequency Distribution of Stakeholders' Response to the Provision Award/Prizes for the Best Managed Woodland as a Means of Enhancing Forest Conservation.

DISCUSSION

This study revealed five important incentives for forest conservation in South-west, Nigeria. These include: land tenure review, long term lease of land market service, land for arable farming and award/prizes for the best managed woodland. All these motivations have impact on forest conservation in the study area. Faleyimu *et al* (2010) identified other incentives that are vital for forestry development in South-west Nigeria. These incentives are Economic incentive, technical assistance, low or defer tax, giving of grants to stakeholders, loan incentives and giving tree seedlings. Enter (2004) reported that there are several examples in the world where clear, consistent and stable policies, a conducive investment climate and well-programmed incentive schemes have made a significant impact on the success of forest plantation development. In contrast, where initiatives have been ill conceived or poorly implemented, the results have been disappointing despite heavy investment by governments. It is common knowledge that vast plantation areas are of very poor quality. In the light of this study. There should be a framework designed to achieve an internationally competitive plantation-growing and processing industry that is commercially focused, market-driven and market-oriented. It should also aimed to develop a significant, long-term and environmentally sustainable plantation resource through major private sector investment, which will enhance the growth of Nigeria's forest industries and

the contribution made by plantations to the Nigerian economy, rural and regional communities and the environment.

CONCLUSION

The study has shown that most of the stakeholders in forestry would like to participate in forest conservation programme if motivations identified are made available. Most people agree that forest plantations can help meet increasing demands for wood and provide public goods and services. Most people also maintain that appropriate incentives - particularly enabling incentives - play a key role in stimulating plantation development. However, motivation systems must be timely, well-targeted and flexible if they are to successfully engage the private sector in forest plantation development. In deciding on measures that increase the interest of investors, it is vital that consideration should be given to factors that motivate people to invest in planting trees, rather than focusing on the needs and objectives of governments and their respective forest agencies.

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Journal of Agriculture and Social Research (JASR) Vol. 12, No. 1, 2012

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