

EFFECTS OF PAID LABOUR ON THE SURVIVAL OF ECONOMIC TREE SPECIES UNDER TAUNGYA SYSTEM IN SAKPOBA FOREST RESERVE, EDO STATE NIGERIA.

¹Osikabor B., ^{1*}Oyelami B. A., ¹Adeleye A. S., ¹Ogundare T. & ²Osazuwa D. K.

¹Federal College of Forest Resources Management, Fugar, Edo State, Nigeria

²Moist Forest Research Station, Benin, Edo State, Nigeria

*oyebusayomi@gmail.com

ABSTRACT

The study was carried out using a well-structured questionnaire administered to Taungya afforestation participants to investigate the effect of using paid labour on survival rate of economic tree species under taungya farming system in Sakpoba forest reserve, Edo State. Random sampling technique was used to sample 108 participants for data collection. Descriptive statistical tools and Pearson's correlation were used to analyze the collected data. The result shows that majority of the respondents were male (77.8%), married (63%) in their middle age (66.7%) with house hold size of between 1 and 5 (68.5%). Not fewer than 81.5% of the respondents had above primary education. All (100%) the respondents make use of paid labour for most of their farming activities while majority (44.7%) reported between 81-100% survival rates of economic trees in their plantation plots. The study observed a weak but positive correlation between the engagement of paid labour and the rate of survival of economic tree in the study area. This study however recommended that further study should be carried out to investigate the survival rate of economic trees within taungya farming system at interval till the time of harvest and that regular training of farmers along with the paid labor will sustain the success of agroforestry in the study area.

Key words: Economic tree, Labour, Survival, Taungya

INTRODUCTION

Taungya system remains a sustainable and cheap way of establishing tree plantation across the world (Nicholas 1988). There is empirical evidence that the system improves the economic standing of participating farmers as expressed in improved yield and income (Kalu et al., 2011 and Ojo 2014). This is so because both the farmers and the tree plantation developers have stakes and benefits in the system. While the farmers get the farmland at little or no cost they are expected to maintain the plantation (tree species) alongside their arable crops at minimal cost to the Forestry Department. However, it is common knowledge that farmers do not keep to the strict laws guiding Taungya system of Agroforestry thereby leading to eventual diminishing forest cover in areas where Taungya is practiced (Hellerman, 2007; Edo State Forest Department, 2002). While some lines

of thought says the practising Taungya farmers are not keeping to the forestry rules, personal encounter of the authors reveal that there could be underlying challenges due to the use of paid labour on Taungya farms. The activities of the labourers with respect to the maximum survival of the economic trees in the taungya farming system could be a source of challenge to the actualization of the dream of afforestation in Nigeria through the taungya system and therefore needs to be investigated. The study investigated the effects of using paid labour on the survival rate of economic tree species under taungya system in Sakpoba forest reserve, Edo

State, Nigeria. We specifically analysed the survival rate of economic trees in the study area, engagement of paid labour for farming activities for Agroforestry among the respondents as well as relationship between the usage of paid labour by respondents and survival rate of economic trees in the study area.

METHODOLOGY

This study was carried out in Sakpoba Forest Area in Orhionmwon Local Government Area of Edo state. The vegetation of the state is moist rain forest in the south and derived savanna in the north. Sakpoba Forest Reserve lies between latitudes 4° - 4° 30' and longitudes 6° - 6° 5'E. It is bounded on the south by Delta State, on the East by Urhionigbe Forest Reserve and on the West by Free Area, B.C. 30. It is located in Orhionmwon Local Government Area, about 30 kilometers South-East of Benin City. Some of the major villages located within and around the reserve are Ugo, Ikobi, Oben, Iguelaba and Amaladi in Area B.C 32/4, and Ugboko-Niro, Iguere, Idunmwowina, Evbarhue, Idu, Evbueka, Iguomokhua, Ona, Abe, Igbakele, Adeyanba, Evbuosa in Area B.C 29. Orhionmwon LGA has a population of about 182,717 according to 2006 census with a land area of 2.382km² (NPC, 2006). The people in the area are mainly farmers and traders. Crops grown in the area include; yam, cassava, maize, plantain planted with some trees like *Tectona grandis* (teak) *Gmelina arborea*, *Terminalia ivorensis*, *Khaya ivorensis* L. The primary data were obtained using a well-structured questionnaire administered to 120 farmers who were purposively selected and interviewed while only 108 were retrieved.

RESULTS AND DISCUSSION

Table I: Socioeconomic Characteristics of Respondents

	Frequency (n=108)	Percentage
Gender		
Male	84	77.8
Female	24	22.2
Age range (Years)		
20-29	24	22.2
30-39	48	44.5
40-49	16	14.8
50 and above	20	18.5
Educational Status		
No formal education	0	00.0
Completed primary school	20	18.5
Completed Secondary school	56	51.9
ND/HND	28	25.9
Post graduate	04	03.7
Marital Status		
Single	20	18.5
Married	68	63.0
Divorced	16	14.8
Separated	04	03.7
House Hold Size		
1-5	74	68.5
6-10	34	31.5
Primary Occupation		
Farmer	104	96.3
Civil Servant	04	03.7
Secondary Occupation		
Farmer	28	25.9
Herb seller	08	07.4
Civil servant	24	22.2
Retiree	20	18.5
Others	28	25.9

Table I shows that majority (77.8%) of the participants were male which implies that male are more actively involved in Agro-forestry in the area of study. This may be because the female are likely to be more involved in food processing and domestic chores in the study area. However 22.2% female participation is commendable. The table also shows that respondents within age bracket 20-49 had the highest representation (74.1%). This is very significant as age factor determines the level of effectiveness in agroforestry activities. This result is in agreement with earlier findings (Jamala *et al.*, 2013, Idumah *et al.*, 2014 and Gambo *et al.*, 2018) who submitted that most of their respondents were

young and male but however disagrees with the submission of Ojo (2014) who reported majority of his respondents being above 50years. Table I further revealed that 81.5% of the respondents had formal education above primary school education. This shows that a good number of the respondents are well informed and may be able to read extension messages. The table also shows that majority (96.3%) of the respondents were full time farmers, while only (3%) are civil servants. This implies that even most of the respondents involved in taungya farming in the study area are committed to farming.

Table II: Distribution according to the survival rate of economic trees in the study area

Survival Rate (%)	Frequency (n=108)	Percentage
81-100	44	40.7
61-80	24	22.2
41-60	12	11.1
20-40	12	11.1
No estimate	16	14.8

Table II shows that survival rate of economic trees in the study area is high as majority (62.9%) of the respondents reported 61-100% survival rate. This however may not be unconnected with the fact that the respondents have been in

the practice over the years as well as availability of the researchers to guide and instruct the farmers regularly. The result of this finding is higher than as reported by Murekezi *et al.*, who reported between 30 and 61% survival rate.

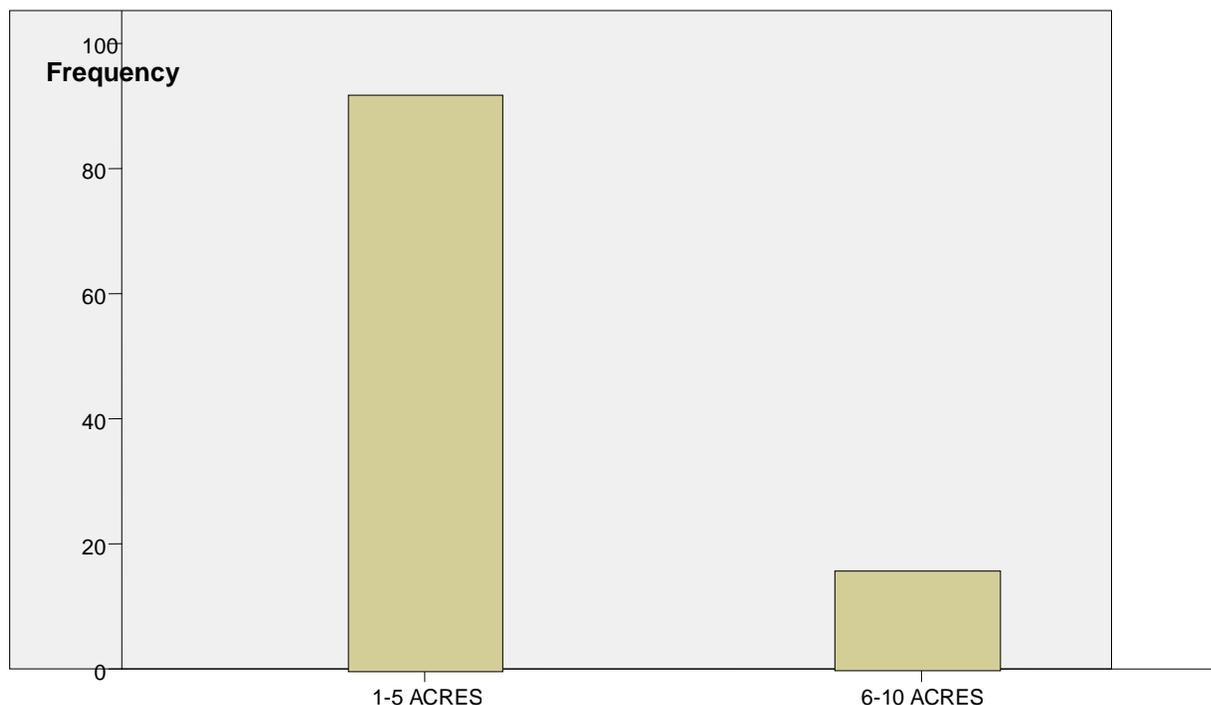


Figure 1. ACRAGE PER YEAR/FARMER IN THE STUDY AREA

Figure 1 shows that majority (85.2%) of the respondents had between 1 and 5 acres of land only while 14.8% of the respondents had between 6 to 10 acres of plantation land yearly. This result implies that majority of the farmers sampled had manageable size of plantation land for farming

activities. This results actually agrees earlier reports (Ojo 2014 and Abdulhamid *et al.*, 2017) who submitted that most of the farmers in their study areas operate on land of farm size between 0.5 to 5 hectares. This will actually demand the utilization of paid labour for farming activities.

Table III: Engagement of paid labour for farming activities for Agroforestry in study area

Activities	Frequency (n=108)	Percentage
	Yes (%)	No (%)
Initial Clearing & Packing activities	108 (100)	0 (0)
Planting cash crops	95 (88.0)	13(12.0)
Planting of Economic Forest Trees	20 (18.5)	88 (81.8)
Weeding manually	96 (88.9)	12(11.1)96 (88.9)
Weeding using chemicals	12 (11.1)	0 (0)
Harvesting activities	108 (100)	0 (0)
Processing and Storage activities	108 (100)	

Table III shows that all (100%) of the respondents engage paid labour for most of their farming activities including initial site preparation, harvesting and processing of food crops. This agrees with the findings of Kalu *et al.*, 2011 who reported that paid labour were used for site preparation and planting. This implies that paid labour is always involved in taungya farming activities in the study area from planting to harvesting. Most (88%) of the respondents also engage paid labour in planting some food crops like plantain suckers and yam. This may be because most of the respondents have

family sizes of between 1 and 5 which may not be adequate for the farming activities throughout the year. Majority of the respondents did not use paid labour in planting the forest tree species (81.5%) and therefore that category of labour force are not familiar with the trees species planted. The use of paid labour in weeding exercise proved to have negative effect on survival of the economic tree species. Farmers that engaged paid labour to use herbicides in weeding their farms (11.1%) were worst hit and had between 20 to 40 percent survival rates.

Table IV: Relationship between the usage of paid labour by respondents and survival rate of economic trees in the study area

Variable	r-value	p-value	Decision
<i>usage of paid labour by respondents and survival rate of economic trees</i>	0.39	0.078	Significant

n= 108

Table IV shows that the pearson co-efficient value of 0.039 is a positive but weak correlation between the two variables. (r=.39,N=108,p=.078). It implies that the more the use of paid labour for post- planting activities, the higher the rate of survival of economic trees though it is low. (The Correlation co-efficient is significant at 90% and there is only 7% probability that the correlation is due to chance).

CONCLUSION AND RECOMMENDATIONS

Taungya farming system proves effective and efficient in reforestation of deforested areas and study shows that young and married males are more involved in farming activities within the taungya farming system in the study area. The survival rate of economic trees in the study area is not affected by the engagement of paid labour in the study area. We however recommend that government should intensify reforestation activities as well as activities of extension agents in the area. We recommend that the paid labour used in Taungya afforestation projects should be identified and trained on the importance of the tree components of the farm, the use of pegs as a means of identifying economic forest trees and the technicality of weeding and/or spraying Taungya/Agroforestry plantations in order to improve survival rate of the tree component of such plantation.

References

Abdulhamid, B., Abubakar, E. M., & Dawaki, S. A. (2017). An assessment of potential contributions of groforestry to food security in Katsina, Sudan

Savannah Area, Nigeria. *Current Life Sciences*, 3(3), 39-46.
 Edo State Forest Department (2002). Brief on Forestry Activities in Edo State by the Director of Forestry presented to the Honourable Commissioner of Agriculture and Natural Resources on the 16th May 2002, Benin City: Department of Forestry, Ministry of Agriculture and Natural Resources.
 Gambo, P. ; Maguda, A. S. Adole J. A., Dyek D. Y., Ifende V. I., Bot T. & Adedeji A. J. (2018): A Survey of Viral Diseases of Livestock Characterized by Skin Lesions in Kanam Local Government Area of Plateau State, Nigeria. *Nigerian Veterinary Journal September 2018 Vol 39 (3): 250-262.*
 Hellerman P.V. (2007): Things fall apart? Management, Environment and taungya Farming in Edo State, Southern Nigeria. *The Journal of International African Institute*, 77(3). Edinburgh University Press.
 Idumah F. O., Owombo P. T., & Ighodaro U. B. (2014): Economics of Yam Production under Agroforestry

- System in Sapoba Forest Area, Edo State, *Nigeria. International Journal of Agriculture and Forestry* 2014, 4(6): 440-445
- Jamala, G. Y. , Tarimbuka, I. L, D. Moris & Mahai, S. (2013): The Scope and Potentials of Fodder Trees and Shrubs in Agroforestry. *Journal of Agriculture and Veterinary Science (IOSR-JAVS) Volume 5, Issue 4 (Sep. - Oct. 2013), PP 11-17.*
- Kalu, C., Oboho, E. G. & Ihama, O.E. (2011). Economic Potential of Taungya Farming System in Edo State, Nigeria. *Journal of Agriculture and Social Research (JASR) Vol. 11, No. 1, 201. Pp 49-57.*
- Murekezi, J. P., Nduwamungu, J. and Munyanziza E. (2013):Investigation of survival rate of trees planted in agroforestry and forest plantations in HuyeDistrict from 2007 to 2011 and underlying factors. *Rwanda Journal, Series E: Agricultural Sciences 1(1) 2013, pp 52-61.*
- National Population Commission (NPC) (2006). Provisional 2006 Nigeria Census Figures.
- Nicholas M. (1988): Three Hundred Years of Taungya: A Sustainable System of Forestry in South China. *Human Ecology, Vol. 16, No. 4, 1988. Pp 361-388.*
- Ojo S. O. (2014). Taungya Farming -a Strategy for Sustainable Land Management and Agricultural Development in Nigeria. *Advances in Forestry Letters (AFL) Volume 3, 2014. Pp 16 – 22.*