



Research Journal of **Forestry**

ISSN 1819-3439



Academic
Journals Inc.

www.academicjournals.com

Benefit of Unregulated Teak Exploitation in Edo State, Nigeria

¹C. Kalu and ²S.K. Adeyoju

¹Department of Forestry and Wildlife, Faculty of Agriculture,
University of Benin, Benin City, Nigeria

²Department of Forest Resources Management, Faculty of Agriculture and Forestry,
University of Ibadan, Ibadan, Nigeria

Abstract: Edo Teak (*Teactona grandis*) plantations suffered unprecedented and unregulated exploitation two decades ago. Research was therefore, undertaken to evaluate the associated social benefits by administering 958 questionnaires comprising 3 sets for forestry personnel, saw millers and timber contractors. Results showed that assistance to building of school/health centres and markets (BSHE) and Provision of training centre (PTOC) were significantly dominant ($p < 0.05$). At employment ranged between 1 and 10 persons was affirmed by 90.9% of the respondents while at Sobe and Odighi the ranges were between 11-20 and (>30) persons which affirmed by 46.2 and 2.6% of the respondents, respectively. There were significant differences ($p < 0.05$) among the variables considered for social overhead. Further analysis with Fishers significant difference revealed that the mean of job creation was the most dominant. Respondents' view on employment opportunities had various levels of affirmatives; agreed (45.4%), strongly agreed (3.75%) while indecision and disagreed accounted for 14.43 and 14.44%, respectively. An average of 14.1% respondents believed in the existence of road construction. Social benefits need to be maintained through sustainable management and harvesting.

Key words: Job creation, social overhead, employment, income

INTRODUCTION

Generally, the forestry sector in Edo state does not perform well compared with other sectors, it plays significant in the social benefits like employment and rural development. Human communities' world over have always made use of forest services and products (LEISA, 2006). Forest service offers new sources of forestry employment but the bulk continues to come from traditional productive activities or other sectors of the economy. One of the roles of logging activities and timber based industry is to provide rural area employment in such a way as to maintained and check rural/urban migration (Asuma, 2006). The employment statistics include part-time and seasonal employment in forestry, as well as informal employment and subsistence activities which are significant in the forestry sector in most Third World countries. However, lack of official employment statistics on subsistence activities in forestry makes it difficult to compare among countries based on individual producer, industry or sector (Poschem, 1997; UN, 2002). This is because any sub sector in the economy that increases a labour force is traditionally considered a positive factor in stimulating economic growth (Todaro and Smith, 2002). It is apparent that job opportunities are created at various stages of teak exploitation, processing; sawing and marketing and/or exporting. The level of technology is essential in determining the employment requirement for a given enterprise. For instance, when exploitation of teak is automated, most of the rural populace will be excluded from gaining employment, be it temporary or permanent.

Corresponding Author: C. Kalu, Department of Forestry and Wildlife, Faculty of Agriculture, University of Benin, Benin City, Nigeria

In forestry and forest industries, technological development has been labour saving due to progress in mechanization and automation (Simulu, 1977). This is because productivity has direct relationship with volume of output, not employment which is the aspiration of most enterprises. This situation is common in Edo State where private enterprises are mostly involved in the business, whose primary objective is to optimize their output by minimizing cost. However, a lot of people live off forest to meet a wide variety of uses (Osemeobo, 2005). The majority of these persons are not wage earners but self employed who practise subsistence production. This is because the data on labour markets do not give exact figure of people for whom forests are main source of livelihood. It is in line with this premise that Poschem (1997) posited that employment of workforce in the forest industries has been failing in most of the industrialized countries.

Forestry activities whether in the field or otherwise, leads to the building of roads and establishment of industries (Adeyoju, 1975; FAO, 1997a). It is noteworthy that most of the highways and other roads in Nigeria started as logging routes. Ibor and Abi (2005) also added that royalties accruable to forest communities are used for the provision and development of health centres, schools, roads and other social infrastructures. These facilities have positive effect on the socio-economic conditions and livelihoods of the communities. The possibility of establishing forest based industries is due to the availability of raw material like teak.

MATERIALS AND METHODS

Study Area

The study area is Edo State in southwestern, Nigeria which situates between latitudes 6° and 7° 30" E and 6° and 7° 20' N. Specifically, the study was undertaken in ten communities where there were teak plantations established in between 1961 and early 1976 by the state Forestry Department. These are Iguobazuwa, Idale, Ologbo, Ubiaja, Okhuesan, Camp-34-Ogba, Odighi, Udo-Nikowa, Sobe and Ugbogui.

Sampling Methods

A random sampling technique (Babbie, 1990) was used to select ten communities that had teak plantations in the state. The communities were Iguobazuwa, Idale, Ologbo, Odighi, Okhuesan, Ubiaja, Sobe, Ubiaja, Ugbogui and Camp-34-Ogba out of 29 teak plantations in the state. A field survey was undertaken in these locations to collect primary data through questionnaires administration to a number of respondents. Secondary data were also collected from respective area forestry offices and the state Headquarter.

Selection of Respondents

The respondents were composed of saw millers and/or timber exporters, farmers and/or contractors and forestry department staff (Table 1). Both the officers, technical and uniform staff in-charge of the zone where the plantations situated were interviewed. Subsequently Saw millers/timber exporters and farmers/contractors in each were identified for interview. The criterion used was to select villages near the logging site in order to locate the members of the communities that were employed by logging firms or who cultivated the logged-over forests.

Statistical Analysis

The data comprising primary and secondary types were collected, recorded and statistical parameters calculated with various analytical techniques employed depending on parameters considered, such as ANOVA (Analysis of variance) for social benefits and social overhead while simple percentage was used for labour force, employment generation and road construction.

Table 1: Number of questionnaires administered in communities

Locations	FSQ		SMTEQ		TCFQ		TOTAL	
	AD	RET	AD	RET	AD	RET	AD	RET
Iguobazuwa	28	18	40	20	50	25	118	63
Idale	10	7	15	7	31	22	56	36
Camp-34	10	7	50	28	15	13	75	48
Ugboui	30	18	14	11	60	36	104	65
Sobe	18	10	60	30	25	17	103	57
Udo-Nikrowa	25	18	14	10	32	29	71	57
Ologbo	12	10	30	16	50	30	92	56
Ubijaja	11	10	8	7	60	30	78	47
Okhuesan	11	10	11	9	42	30	64	49
Odighi	28	16	64	39	72	40	144	95

FSQ = Forestry staff questionnaire, SMTEQ = Sawmillers and timber exporters questionnaire, TCFQ = Timber contractor and Farmers questionnaire, AD = Administered questionnaire's, RET = Questionnaires retrieved

RESULTS

Some Social Benefits of Unregulated Teak Exploitation

Some social benefits such as assistance in road construction, rural electrification, bridge construction, building of schools/health centre/markets and provision of training centres are summarized (Table 2). ANOVA was used on the arcsine-transformed percentage of the final count of the data. Further analysis with LSD showed significant difference among the variables being considered. The assistance to establishment of schools/health centre/markets dominated most of the other variables considered in the study ($p < 0.05$).

Table 3 shows the employment level of labour force in teak timber conversion. It was observed that various ranges of persons dominated employment in teak conversion mills at varied locations in the study area. At Ugbogui, 90.9% of the respondents affirmed that 1-10 persons were employed while 46.2 and 2.6% of them affirmed that 11-20 and >30 persons were employed at Sobe and Odighi, respectively.

Social Overheads of Unregulated Teak Exploitation

Table 4 highlights some social overheads associated with unregulated teak exploitation. The data were subjected to ANOVA which revealed that there were significant differences among the variables considered ($p < 0.05$). Further analysis with Fisher's Least Significant Difference (LSD) also showed significant difference among the means of the variables, it is observed that the mean of job creation differed significantly from the means of other variables.

Employment Opportunities in Unregulated Teak Exploitation

Table 5 shows that 45.38% of the respondents agreed while 3.75% strongly disagreed with the existence of employment opportunities in unregulated teak logging in the study area. Other levels of affirmative exhibited by the respondents were 14.43 and 14.44% for indecision and disagreement, respectively.

Construction of the Rural Roads in the Study Area

Table 6 indicates that on the average, 14.1% of the respondents affirmed that the rural road construction existed while 51.36% had no idea of the existence of road construction due to unregulated teak exploitation. In fact the results varied from one location to another, hence 21.7 and 6.5% of the respondents answered in affirmative to existence of rural road construction in Idale and Udo-Nikrowa, respectively.

Table 2: Some social benefits of unregulated teak exploitation (arcsine transformed)

Communities	ARC	ABC	PTOP	ARE	BSHE
Iguobazuwa	17.46	5.74	11.54	-	14.13
Ubiaja	5.74	-	-	9.13	8.13
Udo Nikrowa	5.74	-	-	9.13	11.54
Sobe	14.18	8.13	-	-	14.18
Ugbogui	8.13	5.74	8.13	5.74	14.18
Camp-34	9.98	-	-	-	15.34
Ologbo	5.74	-	-	5.74	21.15
Idale	-	-	-	-	11.54
Odighi	16.43	8.44	12.92	11.54	26.56
Okhuesan	5.74	-	-	5.74	14.13
Total	89.14	38.05	32.59	47.02	150.86
Means	9.90 ^a	9.50 ^a	10.86 ^b	7.84 ^a	15.09 ^b

Source: Field Survey (2003)

ARC = Assistance to road construction, ABC = Assistance to Bridge construction, PTOC = Provision of training centre, ARE = Assistance to rural electrification, BSHE = Assistance to building of schools/ health centre and markets, Labour force in teak conversion mills (sawmills)

Table 3: Labour force in some teak conversion mills (saw mills)

Labour force	Udo-									
	Obazuwa	Ubiaja	Nikriowa	Sobe	Ugbogui	Camp-34	Ologbo	Idale	Odighi	Okhuesan
	Freq (%)									
No response	2 (10)	1 (16.7)	2 (20)			3 (14.3)	5 (29.41)	2 (28.6)	3 (7.7)	
1-10	20 (90)	5 (83.3)	5 (50)	7 (53.8)	10 (90.9)	15 (71.4)	12 (70.59)	5 (71.4)	30 (78.9)	6 (66.7)
11-20			3 (30)	6 (46.2)	1 (9.1)	3 (17.6)			4 (10.3)	2 (22.2)
21-30										1 (11.1)
>30									1 (2.6)	
Total	22 (100)	6 (100)	10 (100)	13 (100)	11 (100)	21 (100)	17 (100)	7 (100)	38 (100)	9 (100)

Source: Field Survey (2003)

Table 4: Social overheads of unregulated teak exploitation (arcsine transformed %)

Communities	PFR	COB	JOC	PUD	DTRD
Iguobazuwa	21.13	5.74	25.10	16.43	5.74
Ugbogui	12.92	-	21.13	9.97	-
Idale	9.97	-	8.13	9.97	8.13
Ubiaja	5.74	-	16.43	5.74	8.13
Udo Nikrowa	19.37	5.74	20.27	14.18	5.74
Odighi	11.54	12.92	31.31	16.43	5.74
Ologbo	11.54	8.13	17.46	5.74	-
Camp-34	9.97	-	12.92	9.97	8.13
Sobe	5.74	-	12.92	-	-
Okhuesan	5.74	-	16.43	5.74	8.13
Total	13.66	32.53	182.10	94.17	49.74
Means	11.37 ^{ab}	8.13 ^{ab}	18.21 ^c	10.46 ^{ab}	7.11 ^{ab}

Source: Field Survey (2003)

NB = Values above are Arcsine transformed, COB = Construction of bridges, DTRD = Donation towards rural developments, JOC = Job creation, PFR = Provision of feeder roads, PUD = Prevention of rural urban drift

Table 5: Respondents' view of employment opportunities in unregulated teak exploitation %

Communities	Strongly agreed	Agreed	Undecided	Disagree	Strongly disagreed
Iguobazuwa	-	4.28	8.02	-	-
Ubiaja	-	7.49	2.14	-	-
Udo- Nikrowa	-	4.28	-	4.28	3.22
Sobe	-	-	1.07	0.53	-
Ugbogui	-	2.67	-	4.28	-
Camp34	-	-	0.53	4.28	-
Ologbo	-	6.42	2.67	1.07	-
Idale	0.53	9.09	-	-	0.53
Okhuesan	8.02	3.74	-	-	-
Odighi	13.37	7.49	-	-	-
Total	21.92	45.38	13.43	15.44	3.75

Source: Field Survey (2003)

Table 6: Construction of rural roads

	Locations									
	Iguobazuwa	Ubiaja	Udo-Nikrowa	Sobe	Ugbogui	Camp-34	Ologbo	Idale	Odighi	Okhuesan
	Freq (%)									
No response	9 (36)	6 (20)	6 (19.4)	14 (93.3)	10 (71.4)	10 (71.4)	13 (41.9)	1 (4.3)	4 (10)	7 (23.3)
Yes			2 (6.5)					5 (21.7)		
Don't know	16 (64)	24 (80)	15 (48.4)		4 (28.6)	4 (28.4)	16 (51.6)	1(4.3)	36 (90)	20 (66.7)
No			8 (25.8)	1 (6.7)			2 (6.5)	16 (69.6)		3 (10)
Total	25 (100)	30 (100)	31(100)	15 (100)	14 (100)	14 (100)	31 (100)	23 (100)	40 (100)	30 (100)

Source: Field Survey (2003)

DISCUSSION

Social overheads of the towns and villages which are the adjoining communities to the teak plantations included; assistance to road and bridge construction, electricity supply, building of schools/health centres and markets and provision of training opportunities such as award of scholarships and payment of educational levies (Table 2). Building of schools/health centres and market stalls is regarded as a prime social benefit. The findings corroborated the views of FAO (1997b). It is a common feature in most parts of West African countries due to its significant effects on government resources, which makes it possible to contribute in the delivery of other welfare benefits in rural areas (Bird and Dickson, 2005). Teak conversion mills created varied employment opportunities while the business lasted. A range of 1-10 employment opportunities were created at Ugbogui while labour force >30 was created at Odighi accounting for 90.9 and 2.6% respondents (Table 3). Also, farming activities featured prominently. About 42.70% of the respondents agreed that unregulated teak exploitation created employment in farms. The findings affirmed two similar studies that examined the inclusion of social benefit issues (Chavez-Tafur *et al.*, 2007) and forest issues (Oksanen and Mersmann, 2003). This offers different initiatives geared towards improving the living standard of the people in the rural area. In contrast, Simulu (1997) opined that technological development in forestry and forest industries is characterized by labour saving through mechanization and automation. This is because productivity has direct relationship with the volume of output not with labour input. The results indicated that job creation (JOC) dominated other variables for social overhead that were considered in the study (Table 4). This is apparently due to the fact that forest estates serve as means of sustenance to the people dwelling in the immediate communities. It does fit neatly into evidence to show that all the poor rely on various aspects of teak exploitation. The collection of a wide range of forest products to sustain and supplement livelihood of the rural by improving monetary incomes (Kalimowitz, 2003; Adereti, 2005). Another interesting outcome of the study was that 45.46% of the respondents agreed that unregulated teak exploitation ceates employment opportunities in the area which to a large extent meets the welfare needs of the people (Table 5). Other social benefit associated with unregulated teak exploitation was construction of rural roads in the places where the unregulated teak exploitation took place. An average of 14.1% of the respondents acknowledged the existence of rural road construction (Table 6). These findings somewhat agreed with the view of Adeyoju (1975) who noted that forestry activities play significant roles in the development of road networks.

Finally, it is interesting to note that forest enterprise like teak exploitation is central in the family well being of the people were involved directly and indirectly in the exercise. Thus, it plays significant roles in the national poverty reduction especially in employment generation. Teak plantation is one of the few government properties with physical presence in remote areas. In fact, forestry staff and officers can support other government services provide infrastructure, health, education, etc. and communications among the remote communities as well as the urban cities.

CONCLUSION

Social benefits are gains and desirable results of production which accrue to persons or to the society rather than to the entrepreneur who generate them. However, the study was focused on some of the social benefits that are accruable from unregulated teak exploitation. There is a clear evidence that these benefits play vital role in the life of rural community dwellers where such a forest based activities take place. In fact, rural people are heavily reliant on various ranges of forest resources for the purpose of these benefits (Aiyeloja and Popoola, 2005). This is because forestry provides rare opportunities for people who are marginalized by poor skills, education, infrastructure and remoteness to get involved in the cash economy through wage employment in small-scale enterprise opportunities (Bird and Dickson, 2005).

The study revealed that the provision of infrastructural facilities remains one of the most important social benefits of unregulated teak exploitation. Building of school, health and market centres and job creation were dominant variables while employment generation and construction of rural road were equally accounted for in the social infrastructural facilities of the communities provided by the logging exercise.

ACKNOWLEDGMENTS

We thank the Department of Forestry, Ministry of Environment, Edo state for the encouragement and access to their Teak plantations and archives where records were kept. We are grateful to the staff for their assistance in the field especially during course of data collection. We thank all those whole who assisted with data collection in field as well as data analysis.

REFERENCES

- Adereti, E.O., 2005. Rural women's access to and control over productive resources: Implication for poverty alleviation among Osun-state rural women, Nigeria. *J. Hum. Ecol.*, 18 (3): 225-230.
- Adeyolu, S.K., 1975. *Forestry and the Nigeria Economy*. 1st Edn. Ibadan, University Press, pp: 308.
- Aiyeloja, A.A. and L. Popoola, 2005. The role of Small Scale Forest Based Enterprises in Sustainable Forest Management. In: *Sustainable Forest Management in Nigeria: Lessons and Prospects*, Popoola, L., P. Mfon and P.I. Oni (Eds.). Proceedings of 30th Annual Conference FAN, Kaduna, Nigeria, pp: 179-185.
- Asnma, K., 2006. Papua New Guinea- the other side of the story. *Trop. For. Update*, 16 (4): 3-17.
- Babbie, E., 1990. *Survey Research, Methods*. Belmont, C.A. Wadsworth Publication.
- Bird, N. and C. Dickson, 2005. *Poverty Reduction Strategy Papers: Making the Case for Forestry*. Odi Forestry Briefing, No. 7, 111 Westminster Bridge Rd, London, pp: 1-4.
- Chavez-Tafur, K., A. Hampson, Ingevall and R. Thijssen, 2007. *Learning from Experience: A Manual for Documenting Field Based Information*, ILEIA Centre for Information, Koninklijke BDU, Barneveld Press, The Netherlands, pp: 47.
- FAO, 1997a. *Pacific forestry-Towards 2010*, Regional Community Forestry training centre. Kasetsart University.
- FAO, 1997b. *The Socio-economic Role of the Forest industry: An example from under-developed country-Congo*, 30th Session: Proceedings FAO Advisory Committee on Paper and Wood Products, pp: 163.
- Ibor, O.T. and E.A. Abi, 2005. *Community Forest Management in the Tropical Moist Forest of Nigeria, The Cross River State Experience*, Popoola, L., P. Mfon and P.I. Oni (Eds.). Proceedings 30th Annual Conference FAN Kaduna State, pp: 343-355.

- Kalimowitz, D., 2003. Not by Bread Alone. Forest and Rural livelihood in Sub-Saharan Africa. In: Forest in Poverty Reduction Strategies, Oksanen, T., I.B. Pajar and I. Tuomasjukka (Eds.). Capturing the Potential EF1 Proceedings, 47: 45-63.
- LEISA, 2006. Understanding Sustainable agriculture. Magazine on low External inputs and Sustainable, Amefoot, The Netherland, pp: 4-5.
- Oksanen, T. and C. Mersmann, 2003. Forestry in Poverty Reduction Strategies: An Assessment of Poverty Reduction Strategies Processing in Sub-Saharan Africa. In: Forest in Poverty Reduction Strategies, Oksanen, T., I.B. Pajar and I. Tuomasjukka (Eds.). Capturing the Potential EF1 Proceedings, No. 47, Oulineat[http:// ww.efi.fi/attachment/5d80ba3clb89242c06f2ae3894](http://ww.efi.fi/attachment/5d80ba3clb89242c06f2ae3894).
- Osemeobo, J.G., 2005. Living on wild plants: Evaluation of the rural household economy in Nigeria. Cambridge J., 7: 246-256.
- Poschem, P., 1997. Forest and employment- much more that meets the eye. Proceedings of 11 World Forestry Congress. Antalya Turkey, pp: 1-77.
- Simulu, M., 1977. The economic contribution for forestry to sustainable development. Proceedings of 11 World Forestry Congress, pp: 3-17.
- Todaro, P.M. and C.S. Smith, 2002. Economic Development. 8th Edn. Pearson Education, Inc, Singapore, pp: 829.
- UN, 2002. Forest Products Annual Market Review 2001-2002, Timber Bulletin, United Economic Commission for Europe. Geneva, Switzerland Vol. LV, 3: 39.