Quest Journals
Journal of Research in Environmental and Earth Sciences
Volume 7 ~ Issue 8 (2021) pp: 36-41
ISSN(Online) :2348-2532
www.questjournals.org

Research Paper

Environmental Effect of Timber Production in Sapele And It's Environ In Delta State.

Aghanenu Oghenemudiakevwe

ABSTRACT
Several studies have identified the main contribution of deforestation to the environmental degradation all over the world. This situation is mainly due toneeding to meet the high demand of timber products. Several studies have been conducted on the environmental effect of timber production on the soil. For this research,soil samples were collected from each area using a soil auger with a depth of 15cm and 30cm respectively. A coordinate of each location was equally taken AT&P, Amukpe, sawmill and market (control)for the purpose of mapping. Anova result shows that timber production has no significant effects on the environment (soil)

Received 06 August, 2021; Revised: 18 August, 2021; Accepted 20 August, 2021 © The author(s) 2021. Published with open access at www.questjournals.org

I. INTRODUCTION

Timber harvesting is the cutting down of wood from the wild and reserved areas for both domestic and commercial purposes. It should not be confused with illegal logging, which refers to the harvest, transportation, purchase, or sale of timber in violation of laws. The harvesting procedure itself maybe illegal including using corrupt means to gain access to forests; extraction without permission or from a protected area; the cutting of protected species; or the extraction of timber above agreed limits. Throughout history, humans have manipulated natural resources to produce food. Although other products from the natural environment have been exploited, the rate of timber harvesting has accelerated significantly since the turn of the century(Friday et al 2015).The tradition of falling timber in west Africa has been inherited by the present companies no export up to the last nineteenth century. The timber industry existed in Nigeria and the great natural forest resources remained untapped. About 1890 enterprising pioneers such as Crausto, MC Neil and Matheson began operating in the Benin province making Sapele the first port to export timber from Nigeria. The firms first in the field were McClure, Mc Neill Scott, and Miller Brothers. The east named a famous West Africa trading firm began their timber enterprise at Koko on the Benin River in

1917

These forest zones are found in Rivers Delta, Edo and Ondo States respectively. The varieties of trees found in these forest zones supply the tropical hardwood for the international market which Nigeria is famous for and earn her foreign exchange viz. As a result of this forest wealth, timber production sprang up as one of main human activities in the forest zone of the south which includes, survey, felling and transportation of timber from the extraction point to the production area.

This study however concentrated on the environmental effect of timber production in Sapele and its environs. It is going to look at the extent to which distance, lack of road Network and lack of homogenous trees stands in the forest affects the environment and other species (Timber).

Forest is not a new phenomenon most countries in the world have forest and Nigeria is among the countries of the world blessed with forest resources and timber is one of them. This led to the establishment of numerous saw mills in the country. Despite these numerous sawmills, the prices of timber products on the increase. Many problems are responsible for this.

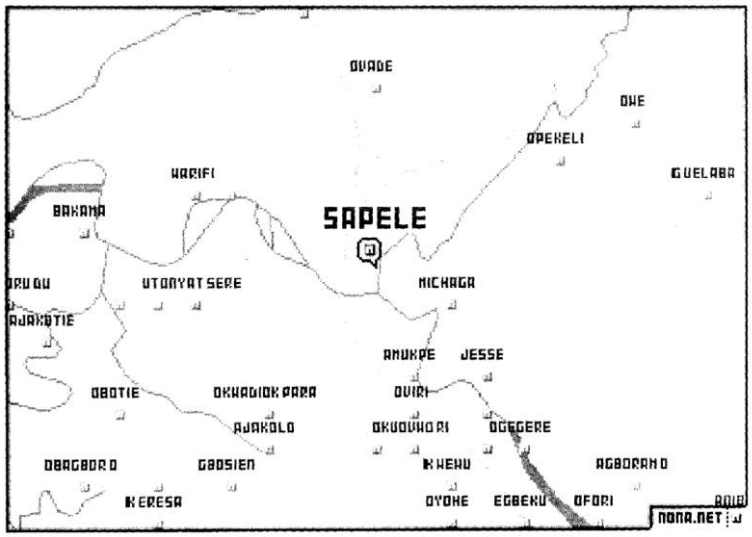
Some of these problems have been looked into by geographers and economic geographers alike.

Source *FDF (1988):* Forest Resources Study Nigeria.

Sorensen (1959) from studies in eastern part of Cameroon argued that getting log out of the forest is a specific problem. Such problems as the ground which are water soaked. There is few railroad or highway. There's no lack of stream in the tropic but many logs from tropical tree are so heavy that they will not float.

Hull (1968) in his studies carried out in Burma south East Asia said that the tropic still holds huge untapped reserves of hardwood that are valuable industrially a well as domestically. The disadvantage of the natural forest is that it contains few stands.

Map of Sapele



II. MATERIALS AND METHODS

The fieldwork was used to achieve the aims and objective of the study and the formulated hypothesis. In order to ensure validity of the fieldwork, that is to see whether the meaningful, soil samples will be taken from Africa timber and plywood (AT&P), Sawmill in Amukpe, wood drive and on the basis of economic importance in Sapele, using soil anger which will be placed on cellophane bags and labeled for easy identification. A control area will be selected within the study area from which samples will be collected as well. The soil will be analyzed in the laboratory for particle size composition, bulk density, pit, macronutrients (calcium, magnesium, potassium, and sodium), and available phosphorus.

For the purpose of this research work, the data collected and presented will be analyzed using ANOVA and T-test.

A total of eight (8) samples were taken two (2) samples from each area using a soil auger with a depth of 15cm and 30cm respectively. A coordinate of each location were equally taken in order to have a view of the area in which samples were collected and for the purpose of mapping. Thereafter the data collected were coded, collected and presented in tables for easy analysis and comparison. The hypothesis postulated in this study was tested using Anova and T-Test and the result of findings discussed accordingly.

Table 4.1:1 Area of coordinate

Area	N.coordinate	Coordinate
A.T & P	05^{O} 53.730	005^{O} 41.541
Amukpe	05^{O} 50.775	005^{O} 43.925
Wood drive	05^{O} 025	005^{O} 41322
Saw mill (Control)	05^{O} 53.726	005^{O} 41.538

Table 4.1:1 shows the coordinate of different locations where soil samples were collected in Okpe Local Government

Table 4: 2 Soil Samples

Area	Depth	Number of samples 15	Number of samples 30
A.T & P	15cm 30cm	1	1
Amukpe	15cm 30cm	1	1
Wood drive	15cm 30cm	1	1
Saw mill (Control)	15cm 30cm	1	1

Table 4:2 shows the different locations where soil samples were collected in Okpe Local Government

Table 4:3 shows the summary of the various soil parameters

Area	Mean	Minimum	Maximum
Sodium ATP	0500	04	06
Amukpe	0400	04	04
Wood drive	0750	07	08
Control	0550	04	07
Total	0550	04	08
Magnesium ATP	5390	54	54
Amukpe	5345	53	54
Wood drive	5570	56	56
Control	5245	51	55
Total	5400	51	56
Calcium ATP	1.8170	1.81	1.82
Amukpe	1.8070	1.80	1.81
Wood drive	1.8355	1.83	1.84
Control	1.8060	1.74	1.87
Total	1.8164	1.74	1.87
Potassium ATP	2555	24	27
Amukpe	2170	21	23
Wood drive	2885	26	32
Control	2530	22	29
Total	2535	21	32
TotalNitrogen ATP	1.0755	1.08	1.08
Amukpe	1.0715	1.07	1.07
Wood drive	1.0820	1.08	1.09
Control	1.0770	1.06	1.09
Total	1.0765	1.06	1.09
Phosphorus ATP	8.2740	8.03	8.52
Amukpe	8.4895	8.22	8.76
Wood drive	8.8655	8.82	8.91
Control	8.7160	8.47	8.96
Total	8.5868	8.03	8.96
Sand ATP	83.50	82.00	85.00
Amukpe	80.00	79.00	81.00
Wood drive	84.00	82.00	86.00
Control	83.00	81.00	85.00
Total	86.625	79.00	86.00

Table 4:3 shows the summary of means of the various soil parameters.

Table 4:4 Anova table

Sodium Between groups Within groups	F 2.476	Sig 201
Magnesium Between groups Within groups	 1.122	439
Calcium Between groups Within groups	160	918
Potassium Between groups Within groups	1.550	332
Total Nitrogen Between groups Within groups	319	813
Phosphorus Between groups Within groups	1353	376
Sand Between groups Within groups	1.148	432
Silt Between groups Within groups	1.733	298
Clay Between groups Within groups	2.390	209
Ph Between groups Within groups	3.907	111

Anova table showing the significant difference between the various soil parameters in different location.

Table 4:5

	Sum of squares	Diff	Mean square	F	Sig
Sodium Between groups and within groups	 000 002 002	1 6 7	000 000 000	1.742	235
Magnesium Between groups and within groups	000 002 002	1 6 7	000 000 003	1.312	296
Calcium Between groups and within groups	003 007 010	1 6 7	003 001	2.597	158
Potassium Between groups and within groups	000 010 010	1 6 7	000 002	000	986
Nitrogen Between groups and within groups	000 000 000 001	1 6 7	000 000	1.677	243
phosphorus Between groups and within groups	036 765 801	1 6 7	036 127	282	615
sand Between groups and within groups	125 41.750 41.875	1 6 7	125 6.958	108	898
Silt Between groups and within groups	2.000 9.500 11.500	1 6 7	2.000 1.583	1.263	304
Clay Between groups and within groups	1.125 47.750 48.875	1 6 7	1.125 7.958	141	720

Ph Between groups and within groups	004 077 081	1 6 7	004 013	314	595

This data represents each parameter for Hypothesis testing

Table 4:6

	T	Sig (2)
Sodium equal variance assured equal variance not assured	277 277	808 811
Magnesium equal variance assured equal variance not assured	421 421	715 746
Calcium equal variance assured equal variance not assured	162 162	886 898
Potassium equal variance assured equal variance not assured	068 068	952 955
Nitrogen equal variance assured equal variance not assured	-100 -100	930 937
Phosphorous equal variance assured equal variance not assured	-1268 -1268	332 332
Sand equal variance assured equal variance not assured	200 200	860 861
Silt equal variance assured equal variance not assured	-1.342 -1.342	312 350
Clay equal variance assured equal variance not assured	623 623	592 625
Ph equal variance assured equal variance not assured	742 742	535 548

The T- test reviewed that there is no significant difference in soil sediment between the control, and AT&P (table 4:6)

Table 4:7

	T	Sig
Sodium	-1.000 -1.000	423 500
Magnesium	222 222	845 7861
Calcium	015 015	990 991
Potassium	-1.024 -1.024	414 475
Nitrogen	-365 -365	750 776
Phosphorous	616 616	601 601
Sand	-1.342 -1.342	312 350
Silt	447 447	690 712
Clay	1.4000 1.4000	296 305
Ph	-632 -632	592 625

T-test reviewed that there is no significant difference between the soil parameter in the control and Amukpe see (table 4:7)

Table 4:8

	T	Sig
Sodium equal variance assured equal variance not assured	-433	707
Magnesium equal variance assured equal variance not assured	-532	648
Calcium equal variance assured equal variance not assured	-2.937	099
Potassium equal variance assured	-2.187	160

equal variance not assured		
Nitrogen equal variance assured equal variance not assured	-1.739	224
Phosphorous equal variance assured equal variance not assured	129	909
Sand equal variance assured equal variance not assured	-5.000	038
Silt equal variance assured equal variance not assured	866	478
Clay equal variance assured equal variance not assured	1.750	222
Ph equal variance assured equal variance not assured	-1.732	225

The Anova revealed that there is no significant difference between soil parameters in the subsoil of the control and study site.
The only difference is in sand having a significant value of 0.038 see (Table 4:8) the difference may be due yet unknown factor.

Table 4:9

	T	Sig
Sodium equal variance assured equal variance not assured	500	667
Magnesium equal variance assured equal variance not assured	2.565	124
Calcium equal variance assured equal variance not assured	4.788	041
Potassium equal variance assured equal variance not assured	730	541
Nitrogen equal variance assured equal variance not assured	4.041	056
Phosphorous equal variance assured equal variance not assured	-1.019	415
Sand equal variance assured equal variance not assured	534	647
Silt equal variance assured equal variance not assured	-945	444
Clay equal variance assured equal variance not assured	-128	910
Ph equal variance assured equal variance not assured	-551	637

The Anova analysis revealed that there is no significant difference between top soil l of the control and study Area.
The only difference is in sand having a significant value of 0.038 see (Table 4:9) therefore from the analysis we can conclude by saying that timber production has no significant effect on the environment. (Soil)

III. CONCLUSION

This study was basically conducted to comparatively assess the environmental effect of timber production in Sapele. The implication of this, is that abandoned timber sites can be used for other purposes.

REFERENCES

[1]. Ainwick, I. (1974) A geography of commodities, Harraps, London, England.
[2]. FAO (1990) FAO Year book of forest products 1977 — 78, FAO Forestry series No. 33, FAO statistics series no. 90 FAO, Rome, Italy.
[3]. Handan, R. (ed.) (1988) Forestry Policy in Japan Association for Research and Publishing in Japanese forestry, Tokyo, Japan.
[4]. HID (1988) the case for multiple-use management of tropical hardwood forest. Harvard institute for international Development, Pre-project report for the ITTO, Cambridge, Mass, USA.
[5]. Nectoux, F. and Dudley, N. (1987) A Hard wood story. Europe's involvement in the tropical timber trade. Friends of the Earth, London, UK.
[6]. Nectoux, F. and Kuroda, Y. (1989) Timber from the south seas. WWF international, Gland, Switzerland.UN Economic Commission for Europe and Food and Agriculture organization, Geneva, Switzerland.
[7]. Friday,A.O,Festus.U.A.and Chinasa.S.O. (2015) Environmental and socio-economic effect of timber production in Ebony State, Nigeria