

# Evaluation of Loggers' Knowledge of Environmental Consequences of Logging in Kwarra, Wamba L.G.A, Nasarawa State

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**Abstract:** - Evaluation of loggers' knowledge of environmental consequences of logging in Kwarra, Wamba L.G.A, Nasarawa State. Stratified sampling technique was employed for data collection. The sample points were stratified into 23 villages where each village represents a stratum. The result obtained from the respondents' knowledge on the impact of logging on the environment revealed that 51.7% of the respondents are aware of the fact that logging can pose significant impact on the environment while 48.3% are ignorant. Out of the number of the respondents that are aware of the impacts or effects of logging on the environment, 44.4% of them cannot say specifically what constitutes the impacts. However, it is also revealed that much of the impacts was related to soil erosion; while degradation, change in the amount of oxygen, absence of some medicinal plants and economic trees accounts for only 4.4%, 2.2%, 2.2% and 2.2% respectively. The study concluded that the Loggers in Kwarra District are not ignorant of the impacts of logging on the environment; despite the knowledge of the impacts, but could not do anything to mitigate the impacts. So, the study recommended that policies and laws that support conservation of natural resources should be fully implemented.

**Key words:** Evaluation, Logging, Environmental consequence, Kwarra, awareness.

## I. INTRODUCTION

Hardly any part of the world has remained unchanged since the arrival of the species Homo Sapien (Pallavi et al, 2010). It is the action of the human race that can make or break the future of the earth as a planet. However, Logging is one of the environmental issues that affect every life on this planet. The reason for this can be that a single disruption in the earth's delicate balance can mean certain single destruction of the very place that cradles the lives of many species (Joycelyn, 2010). Therefore it is imperative for man to consider the environment in his quest for survival so that the adverse impacts of his actions on the environment, and himself can be reduced to the barest minimum. Failure to do this is self destructive (Michael and Prasad, 2010). Yet the scale of human pressures on ecosystems everywhere has increased enormously in the last few decades. Since 1980, the global economy has tripled in size and the world population has increased by 30 percent. The world resources institute has estimated that the demand for food is expected to rise by 40

percent by the year 2020 (Taylor, 2004). It is further reported that demand for wood could double by the year 2050, yet it is forest in developing countries that will be at stake.

Logging presents multiple social and environmental problems. The immediate and long- term consequences of logging are almost certain to jeopardize life on earth. Some of these consequences include loss of biodiversity, destruction of forest based resources, health problems, destruction of watershed, soil erosion, flooding and climatic disruption. The activity of loggers popularly known as operators in Kwarra District is alarming (Author's field survey, 2010). Investigation during reconnaissance survey (2010) revealed that logging in the past was highly selective on the bases of species, shapes and the sizes of trees to be logged but the current practice is centered mostly on the shape and size only. Therefore, *Parkia biglobosa* (Dorowa) which in the past was not considered for timber but as one of the most important ingredients for soup locally known as 'Dadiawa' is now undergoing extinction due to incessant activities of loggers in the area.

The rate at which forests are being deforested in Kwarra District is alarming (Forestry Department, Farin Ruwa Development Area, Nasarawa State, November 2012). Loggers are no longer afraid of clear felling of economic trees such as *Parkia biglobosa* (Dorowa), *Butruspermusparadoxa* (Kade) and *Magnifera indica* (Mango).

Ayua (1997) described forest as "God's own pharmacy". This statement confirms the fact that some native doctors (herbalists) have started complaining of the non availability of some medicinal plants locally known as Shinge and Yuwanmonmungu.

Farming is the major occupation of the people in Kwarra District but some of these farmers are already engaged in logging for timber and charcoal at commercial quantities; this is likely going to affect farming. In addition, many youth have also resorted to logging as their major occupation at the expense of farming and schooling. What then will be the fate of youths and the future generation if the forests are destroyed beyond resilience and when they grow old? Nevertheless, no serious effort was made to halt the incessant activities of

loggers in the area. It is on this background that this research is set to address logging as one of the salient forces militating against the sustainability of environmental resources in Kwarra District.

## II. METHODOLOGY

### *Instrumentation and Administration*

The tools used for this study were reconnaissance survey, structured questionnaires, field observation, and focused group interview.

### *Reconnaissance Survey*

Prior to the commencement of this study, a tour of the area was undertaken to obtain firsthand information about the study population. The tour also provided the information that enabled the researcher to determine the scope, appropriate sampling techniques and research design for this work.

### *Questionnaire Design and Administration*

Based on the information obtained during the tour of the study area, 120 questionnaires were designed. The questionnaires have four sections. The first section required information on the socio-demographic characteristics of the respondents, the second was on the impacts of logging on biodiversity and vegetal cover, the third section was on the impact of logging on climate change while the fourth section sought information on illegal logging, sustainable logging and forest management. The questionnaires were administered in the 23 villages in the study area according to the number of loggers found in each village.

### *The Study Population*

The study population includes all loggers who use chain saws in their operations. In Kwarra District, loggers are known as operators or contractors. All Operators can use chain saw for cutting trees but not all Contractors can do so. The operators cut trees either for timber production or logs commonly known as 'cross cutting' which are sold directly to the market, used as fuel wood or converted to charcoal.

### *Sampling Technique and Procedures*

Stratified sampling was employed for data collection. The study area was stratified into 23 villages where each village represents one stratum. The villages and the number of loggers sampled are as follow;

Table 1: Sampled villages

Village name	Number of loggers in the village	Number of loggers sampled	Percentage
Mama	3	3	100%
Kwarra	3	2	90%
Mangar	5	5	100%
Marhai	5	3	80%
Kanje	6	6	100%

Shawe	1	1	100%
Mashinge	3	3	100%
Arum	4	3	90%
Kado	10	5	50%
Muggu	15	11	73.3%
Ukolo	5	4	90%
Arum Sarki	7	7	100%
Ambaka	2	2	100%
Yashi	5	2	40%
Jimiya	4	2	50%
Arum Turukwan	5	3	80%
Mbua	2	1	100%
Ka'alan Mbua	12	9	75%
Wunju	2	2	100%
Manikon	11	8	73%
Kam	2	1	50%
Chesu	1	1	100%
Sisinbaki	3	3	100%
<b>Total</b>	<b>116</b>	<b>87</b>	<b>75%</b>

Source: Field survey, 2018

### *Procedure for Data Analysis*

Data collected from the field were presented in table. The simple percentage was employed for analyses of data.

## III. RESULTS AND DISCUSSION

### *Impact of logging on the environment*

Based on the record obtained from the analyses, table 2 contains information on respondents' knowledge on the impact of logging on the environment. The table shows that 51.7% of the respondents are aware of the fact that logging can pose significant impact on the environment while 48.3% are ignorant. Out of the number of the respondents that are aware of the impacts or effects of logging on the environment, 44.4% of them cannot say specifically what constitutes the impacts. However, table 2 also revealed that much of the impacts was related to soil erosion; while desertification, change in the amount of oxygen, absence of some medicinal plants and economic trees accounts for only 4.4%, 2.2%, 2.2%, and 2.2% respectively.

Table 2: Impact of logging on the environment

variable	Frequency	Percentage
<b>Knowledge of impact.</b>		
Yes	45	51.7%
No	42	48.3%
Total	87	100%

Impacts		
Soil erosion	20	44.4%
Desertification	2	4.4%
Reduced air quality	1	2.2%
No economic trees	1	2.2%
Absence of some medicinal plants	1	2.2%
No idea	20	44.4%
<b>Total</b>	<b>45</b>	<b>100%</b>

Source: Field survey, 2018.

### *Illegal Logging and Sustainable Forest Management*

Illegal logging has been described as forestry practice or activities connected with wood harvest, processing and trade that do not conform to law. Considering the information in table 2, it is evident that sampled loggers that registered are (48.3%). The result proved so many of the the forestry practices in Kwara District are illegal. Despite the fact that some of the loggers are registered, none of them has received government permits in order to access forest for timber production. It is also evident from the result of the survey that specie or type of tree was not considered significant in the process of selecting trees for logging. This implied that any economic tree that meets their requirement of either shape or size will be felled. In addition, loggers! Contractors who claimed to have registered; still harbor some loggers under them. Table 3 revealed that 78.2% of the respondents have the knowledge of forest Management but their knowledge was not compatible to what they were doing. The only method of forest management in practice was selection. This was mainly practiced by those who cut down trees for timber; but those who cut down trees to obtain logs mainly for sale least consider species of tree as criterion for selection.

Table 3: Illegal logging and sustainable forest management

VARIABLE	FREQUENCY	PERCENTAGE
<b>Registration status</b>		
Registered	42	48.3%
Not registered	45	51.7%
Total	87	100%
<b>Cost of registration</b>		
N50,000	1	2.2%
N10,000	2	4.3%
N15,000	11	24.0%
N20,000	3	6.5%
Others	29	63.0%
Total	46	100%
<b>Reasons for failure to register</b>		
High cost of registration	8	16%
Just started	15	30%

Hiding under another contractor	23	46%
Other	4	8%
Total	50	100%
<b>How trees are acquired</b>		
Use personal land	<b>16</b>	<b>18.%</b>
Compensating land owners	67	77%
Permits from government	-	-
Others	54	4.6%
Total	87	100%
<b>Preferred quality of tree</b>		
Size	17	19.5%
Shape	64	73.6%
Specie	5	5.7%
Others	1	1.1%
Total	87	100%
<b>Knowledge of forest management.</b>		
<b>Yes</b>	<b>68</b>	<b>78.2%</b>
<b>Total</b>	<b>87</b>	<b>100%</b>

Source: Field survey, 2018.

## IV. CONCLUSION

Loggers in Kwara District are not ignorant of the impacts of logging on the environment; despite the knowledge of the impacts, but more than one-third of them could not recognize some of the impacts and could not do anything to mitigate the impacts.

It was found out that logging provided many youths in the area who had limited academic exposure, easy job with quick money. However, the activity does not guarantee sustainable employment.

## V. RECOMMENDATION

In line with the result of this study, it is recommended that loggers and other rural dwellers should be given orientation on the consequences of environmental impacts of logging and the value of non timber forest resources.

## REFERENCE

- [1]. Akpofure R. (2009): Environmental Science, an Introduction. Kraft Books Limited, Thadan.
- [2]. Akwa L, Binbol M, Samaila K and Marcus N (2007): Geographical Perspective on Nasarawa State Oneiwi Printing and Pub. Company Limited, Keffi ,Nasarawa State.
- [3]. Alex A. (Dec. 8, 2011): Nigeria loses NIbn to illegal wood export. Daily trust, P. 49.
- [4]. Asthana D.K and Asthana M. (2005):Environmental Problems and Solution. Chand Company Limited, New Delhi.
- [5]. Brown K. and David W. (1994): Causes of Tropical Deforestation. UCB Press, VancuovaCauses of Deforestation
- [6]. William P. (2008): Principle of Environmental Science, Inquiry andApplication. McGraw Hill Company, New York.

- [7]. Jocelyn C. (2010): Environmental Facts Created and Maintained. Saaveld School of Forestry, Canada.
- [8]. Julian D. aid Kathrine D. (1996): Dictionary of Natural Resources Management. UBC Press, Canada. Liyah Feb. 7, 2010.
- [9]. Odunayo O. (2006): Introduction to Environmental Issues, Causes Effects and Solutions. Ikofa Commercial Press Ltd. Sholomu.
- [10]. Ofomata G.E and Phil-Eze P.O (2001): Environmental Problems and Management In Nigeria 4th ed. Jamoe Enterprises, Enugu, Nigeria.
- [11]. Pallavi, B. and Dung, K. (2001): Journal of the Indian School of Remote Sensing; Volume 3 number 1.