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The Constraints to Effective Implementing of Illegal Logging Prohibition Regulation in Nigeria

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ABSTRACT: Since the adoption of the Non-Legally Binding Authoritative Statement of Principles for Global Consensus on the Management, Conservation and Sustainable Development of all types of Forest at the 1992 Earth Summit in Rio de Janeiro, the issue of combating deforestation remains one of the topical issues relating to climate change discussions globally. To combat deforestation, countries go beyond international conventions to institutionalize domestic frameworks to regulate illegal timber logging. However, the implementation of regulatory policies has been ineffective in countries like Nigeria. Situated within this problem, this study identified some domestic constraints affecting the effectiveness of timber logging regulation in Nigeria. To this end, data was collected from respondents using structured questionnaires. The data were analysed using the Pearson Product Moment Correlation Coefficient (PPMC) at a 0.05 level of significance. Constraints identified are corruption, insufficient legal framework, lack of coordination in regulation enforcement, inadequate staff, and the state monopoly of forest ownership.

KEYWORDS: Deforestation, Climate Change, Illegal Timber Logging, Regulation, Forest Governance.

INTRODUCTION

Since the adoption of the *Non-Legally Binding Authoritative Statement of Principles for Global Consensus on the Management, Conservation and Sustainable Development of all types of Forest* at the 1992 United Nations Conference on Environment and Development (Earth Summit) in Rio de Janeiro, the issue of combating deforestation remains one of the topical issues relating to climate change discussions globally. To combat this problem, several conventions such as the Convention in International Trade in Endangered Species (CITES), Agenda 15 (Life on Earth) of the Sustainable Development Goals, Convention on Biological Diversity (CBD) among others were brought forward as a guiding framework for the sustainable use of the forest. However, deforestation and forest degradation remain the root cause of loss of biodiversity globally (Sotirov et al 2017). According to the FAO (2020) between 2015 and 2020, the rate of deforestation globally is estimated at 10 million hectares per year. One major driver of deforestation is illegal timber logging and trade which is estimated at US$10-15 billion annually (Daramola et al 2021). The large market for illegal timber is stimulated by its lower prices which are estimated to be 7- 16% lower compared to legally purchased timber and distort the competitiveness in the legal operating forest industries (Worldwide Fund for Nature, 2020).

Since 2003 there was an attempt to address the problem of illegal timber logging through the framework of the Voluntary Partnership Agreements (VPA) of the Forest Law Enforcement Governance and Trade (FLEGT) initiative and other international policy instruments like non-state market-driven forest certifications (Cashore, 2012, Levashova, 2011). However, these instruments failed to eliminate the problem (Leopold & Winkel, 2017). For example, estimates by Brack (2003) and Brack (2005) showed that illegal timber logging accounts for 80% of the timber used in Brazil, 73% in Indonesia, 50% in Cameroun, and 30% in Russia. Furthermore, data by the Worldwide Fund for Nature (2020) showed that "Illegal logging accounts for 50- 90% of all forestry activities in key producer tropical forests, such as those of the Amazon Basin, Central Africa, and Southeast Asia, and 15-30% of all wood traded globally".

The failure of existing instruments to address the problem of illegal timber logging led to the call for in-country regulations and legislation. In recent times,far-reaching regulations such as the amendment of the Lancey Act in the United States, the European Union Timber Regulation (EUTR), and the Australian Illegal Logging Prohibition Act (AILPA) brought the focus of recent studies on the subject to be centered on developed countries (Florian et al 2012). However, there appears to exist limited focus on developing countries like Nigeria whose large timber resource plays a key role in the global drive for sustainability in natural resource management and is a source of illegal timber in the market. Daramola et al (2021) observed that illegal logging and policy regimes in "producer" countries like Nigeria

have yet to be systematically analyzed. Previous studies on Nigeria have been concerned more about the management practice and effect of illegal timber logging on the environment and government revenue (Ahmed & Oruonye 2017; Adekunle et al 2013; Izekor & Amiandamhen 2019; Adekunle et al 2010). None have systematically questioned and deconstructed Nigeria´s illegal timber logging policy and implementation which is encapsulated in the 2006 Federal Republic of Nigeria National Forest Policy (updated in 2012). According to FAO (2012:2) "the aim of this policy (Nigeria National Forest Policy) is the attainment of sustainable forest management that would ensure sustainable increases in the economic, social, and environmental benefits from forests and trees for the present and future generation". This is to be achieved through the implementation of the overarching guidelines encapsulated in the 12 Principles of Ecosystem Management Approach set out in the CBD (Agbo et al 2015). However, the 2018 report by the Environmental Investigation Agency (EIA) revealed that the implementation of illegal timber prohibition regulation in Nigeria is the "largest forest crime uncovered in recent history". Armed with this observation, this study examined illegal timber regulation policy in Nigeria with a focus on the domestic constraints that impede the effective implementation of this prohibition regulation policy. However, since factors affecting the effective implementation of a policy is complex and multi- dimensional, this study delimited its focus on selected factors that affects the performance of street-level bureaucrats vis-a-viz the implementation of illegal timber regulation policy in Nigeria, because according to Noortje (2018)street-level bureaucrats ultimately determine the level of effectiveness of any policy, they are the bridge between policymakers and the citizens. This study provided an answer to the overarching question: what domestic constraints play a significant role in the ineffectiveness of illegal timber prohibition regulation in Nigeria?

RESEARCH METHODOLOGY

Research Hypothesis

Illegal timber logging is a topical issue in Nigeria today, for example, recent findings based on export data by the Environmental Investigation Agency (EIA) and the Secretariat of the Convention on International Trade in Endangered Species (CITES) revealed that approximately 40 containers of "Kasso" timber (*Pterocarpus Erinaceus)* are illegally shipped from Nigeria to China and Vietnam per day (Aiyetan 2018; Akana 2016). In what is known as the largest violation of the CITES, more than four million trees worth over US$500 million are cut down in Nigeria from January 2017 to March 2018 despite the inclusion of the "Kasso" tree in Appendix II of the Convention aimed at regulating trade and enduring legal and sustainable harvest. The failure of the Nigerian government to effectively implement its regulatory policies to curb illegal timber logging brought to the limelight the question- what domestic factors contribute to the ineffectiveness of Nigeria's illegal timber regulation policies? This study is guided by this overarching question. However, this study focused on five key variables that appears in literature: corruption, insufficient legal framework, lack of coordination in regulation enforcement, inadequate staff, and state monopoly of forest ownership. To this end, the following null hypothesis will be tested:

1) The role of corruption as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is *NOT* significant.
2) The role of insufficient legal framework as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is *NOT* significant.
3) The role of the lack of coordination in regulation enforcement as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is *NOT* significant.
4) The role of inadequate staff as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeriais *NOT* significant.
5) The role of the state monopoly of forest ownership as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is *NOT* significant.

Research Design

This study was conducted in Nigeria. Nigeria is a West African country that is bordered in the North by the Niger Republic and Chad; in the West by the Republic of Benin; in the East by Cameroun and in the South by the Atlantic Ocean. Nigeria has a total landmass of 923,768 kilometers square which extends from the Sahel (the shore of the Saharan Desert) in the North to the Gulf of Guinea in the South. Specifically, the study locations are the forest reserves in Cross River, Edo, and Ondo State. It was conducted in Akpamkpa in Cross Rivers State, Owo-Ifon forest belt in Ondo State, Ozalla, and Sabongida-Ora zones in Edo State respectively. These are three states in the South-South region of Nigeria and account for most of Nigeria's rainforest reserves. The population is comprised of an estimated figure of 5050 individuals that makes up the population of residents and workers in the forest reserves of Cross River, Edo, and Ondo States. Table 1 below shows the population in the forest reserves covered in this study.

Table 1: Population of the Study

Location	Estimated Population	Foreigners
Akpamkpa, Cross Rivers State	1250	12
Ozalla, Edo State	1350	25
Ifon and Owo, Ondo State	2450	52

A purposive sample with a convenience population was utilized. The sample was composed of 600 respondents. Specifically, the sample comprised of 400 residents of communities within the forest reserves, 128 forest guards and 82 dealers in timbers and allied products. The age of the respondents was between 17 and 65 years.

The instrument employed for the data collection in this study was a researcher-made questionnaire known as *Explaining the Domestic Constraints to Effective Illegal Timber Logging Prohibition Regulation in Nigeria Questionnaire (EDCEITLPRNQ).* The questionnaire is designed in a 4-point Likert scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SA) with numerical values of 4, 3, 2 and 1 respectively. Respondents were expected to tick (√) against each item as it reflected their view.

To establish whether domestics constraints and illegal logging prohibition regulation questionnaire were measuring consistently what it was supposed to measure, a trial testing was carried out using a group that was similar to the study sample but neutral to it. The analysis of the trial test resulted in the Cronbach Alpha coefficient of r =0.69. This index was considered high enough for the instrument to be used reliably in the study.

The questionnaire was administered by the researcher and five (5) assistants in person. The visit to each forest guard and timber-related business was made during official working hours. The respondents were informed of the importance of the study and were told that their honest and true responses to the items would bring to light the problems of deforestation and the dynamic of criminality (specifically illegal logging) in the communities. As such, they were eager to complete the questionnaire freely so long as their identity is anonymous. The principle of anonymity and confidentiality of respondents were therefore maintained. At the end of the exercise, 600 copies of the questionnaire were administered and collected back. Of this number, only 598 were found to have been correctly filled. The data from these 598 copies were therefore sorted and coded for analysis using SPSS.

Data Analysis and Result

After coding, the data were statistically analyzed to test the hypotheses stated in earlier. Based on the design of the study, the Pearson Product Moment Correlation Coefficient (PPMC) was used in analyzing the data. The findings were tested at a 0.05 level of significance.

Table 1: Descriptive statistics on independent and dependent variables

Variables	N	Min Score	Max Score	Mean	Std. Deviation
Corruption	598	1.60	5.00	3.54	0.79
Insufficient legal framework	598	1.80	5.00	3.67	0.88
Lack of coordination in regulation Enforcement	598	1.00	5.00	3.63	0.86
Inadequate staff	598	1.50	5.00	3.66	0.87
State Monopoly of Forest	598	2.00	5.00	3.53	0.71
Valid N (list wise)	598				

(Strongly disagree (1), Disagree (2), Agree (3) and Strongly Agree (4).

Source; Survey Results, SPSS (2023) output and Own Computation

H1: ***The role of corruption as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is significant.***

This hypothesis was formulated to determine the significancy of the relationship between corruption and the ineffectiveness of illegal timber prohibition regulation in Nigeria. The Pearson Product Moment Correlation Analysis of these variables produced an r- value of 0.171. To test the significance of this value, it was converted to t-value. Table 2 shows that the r-value of 0.171 produced a converted t- value of 2.68. When compared with the critical t-value of 2.04 at

0.05 level of significance with 596 degrees of freedom, it was found to be greater. This means that there is a significant relationship between corruption and the ineffectiveness of illegal timber prohibition regulation in Nigeria. Based on this finding, the null hypothesis was rejected. We, therefore, accept the alternative hypothesis which states that the role of corruption as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is significant.

Table 2: Testing Hypothesis 1 (Conversion of r-value of corruption as a domestic constraint to the effectiveness of illegal timber prohibition regulation in Nigeria to t-value)

Variables	Σx Σy	Σx^2 Σy^2	Σxy	r_{cal}	df	t_{cal}	t_{crit} at 0.05	Remark
Corruption	*6884*	*201134*						
Domestic constraint to the effectiveness of timber prohibition regulation in Nigeria	*7685*	*251531*	*221199*	*0.171*	*596*	*2.68*	*2.04*	*Significant*

H2: ***The role of the insufficient legal framework as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is significant.***

This hypothesis was formulated to determine the relationship between the insufficient legal framework and the ineffectiveness of illegal timber prohibition regulation in Nigeria. The Pearson Product Moment Correlation (PPMCC) coefficient of the two variables was 0.262. To determine the significant relationship of the two variables, this r-value was converted into t-value. The result is as shown in Table 3.

Results from Table 3 show that when the r-value of 0.262 was converted, it gave a t-value of 4.19. When compared to the critical t-value of 2.04 at 0.05 confidence level with 596 degrees of freedom, it was found to be greater. This means that there is significant relationship between the insufficient legal framework and the ineffectiveness of illegal timber prohibition regulation in Nigeria. Based on this finding the null hypothesis was not retained. We therefore accept the alternative hypothesis which states that: The role of insufficient legal framework as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is significant.

Table 3: Testing Hypothesis 2 (Conversion of r-value of the insufficient legal framework and domestic constraint to the effectiveness of illegal timber prohibition regulation in Nigeria to t- value)

Variables	Σx Σy	Σx^2 Σy^2	Σxy	r_{cal}	df	t_{cal}	t_{crit} at 0.05	Remark
Insufficient Legal framework	*4573*	*90069*						
Domestic constraint to the effectiveness of illegal timber prohibition regulation in Nigeria	*7685*	*251531*	*147481*	*0.262*	*596*	*4.19*	*2.04*	*Significant*

H3: ***The role of the lack of coordination in regulation enforcement as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is NOT significant.***

Table 4: Testing Hypothesis 3 (Testing of Conversion of r-value of lack of coordination in regulation enforcement and the ineffectiveness of illegal timber prohibition regulation in Nigeria to t-value)

Variables	Σx Σy	Σx² Σy²	Σxy	rcal	df	tcal	tcrit at 0.05	Remark
Lack of coordination in regulation enforcement	*4508*	*88258*						
Domestic constraints to the effectiveness of illegal timber prohibition regulation in Nigeria	*7685*	*251531*	*44838*	*0.210*	*596*	*2.71*	*2.04*	*Significant*

From Table 4 above it can be seen that the r-value of 0.210 produced a converted t-value of 1.71. When compared with the critical t-value of 2.04 at 0.05 level of significance with 596 degree of freedom, it was found to be high. This means that there is a significant relationship between lack of coordination in regulation enforcement and the ineffectiveness of illegal timber prohibition regulation in Nigeria. Therefore, the null hypothesis was rejected. We, therefore, accept the alternative hypothesis which states that: The role of the lack of coordination in regulation enforcement as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is significant.

H4:*The role of inadequate staff as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is NOT significant*.

This hypothesis was formulated to determine the level of significancy in the relationship between inadequate staff in enforcement agencies and the ineffectiveness of illegal timber prohibition regulation in Nigeria. An r-value of 0.162 was obtained using the Pearson Product Moment Correlation Analysis. This r-value was then converted to a t- value. The result is as shown in Table 5.

Table 5: Testing Hypothesis 4 (Conversion of r-value of the relationship between inadequate staff and the ineffectiveness of illegal timber prohibition regulation in Nigeria to t-value)

Variables	Σx Σy	Σx² Σy²	Σxy tcal	rcal	df	tcrit at 0.05	Remark
Inadequate Staff	*3866*	*6482*					
Domestic constraint to the effectiveness of illegal timber prohibition regulation in Nigeria	*7685*	*251531*	*124380*	*0.162*	*596*	*2.53*	*2.04*	*Significa*

The result shows a calculated t-value of 2.53. This was found to be greater than the critical t-value of 2.04 when compared at 0.05 level of significance with 596 degree of freedom. This means that there is a significant relationship between the two variables. Based on this finding, the null hypothesis was rejected. We therefore accept the alternative hypothesis which states that: The role of inadequate staff as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is significant.

H5: The role of the state monopoly of forest ownership as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeriais NOT significant.

This hypothesis was formulated to determine the relationship between the state monoply of forest ownership and the ineffectiveness of illegal timber prohibition regulation in Nigeria. An r-value of 0.262 was obtained using the Pearson Product Moment Correlation Analysis. This r-value was then converted to a t-value. The result is as shown in Table 6.

Table 6: Testing Hypothesis 5 (Conversion of r-value of state monopoly of forest ownership as a domestic constraint to the effectiveness of illegal timber prohibition regulation in Nigeria to t-value)

Variables	Σx Σy	Σx^2 Σy^2	Σxy	rcal	df	tcal	tcrit at 0.05	Remark
State monopoly of forest ownership	*5666*	*6494*						
Domestic constraint to the effectiveness of illegal	*7635*	*271532*	*154382*	*0.262*	*596*	*2.63*	*2.04*	*Significant*

The result shows a calculated t-value of 2.63. This was found to be greater than the critical t- value of 2.04 when compared at 0.05 level of significance with 596 degree of freedom. This means that there is a significant relationship between the state monopoly of forest ownership and domestic constraint to the effectiveness of illegal timber prohibition regulation in Nigeria. Based on this finding, the null hypothesis was rejected. We therefore accept the alternative hypothesis which states that: The role of the state monopoly of forest ownership as a domestic constraint to the effectiveness of the implementation of illegal timber prohibition regulation in Nigeria is significant.

DISCUSSION AND CONCLUSIONS

Based on the findings of the study, the following conclusions were made:

1. Corruption plays a significant role as a domestic constraint to the effectiveness of illegal timber prohibition regulation in Nigeria. From the data analysis presented in Table 7, it is shown that corruption undermines the effectiveness of illegal timber prohibition regulation in Nigeria. This result is similar to the study carried out by Akana (2016) on illegal trade in forest products in China. The study revealed that the volume of trade on illegally logged timber imported into China is higher from countries that also have high corruption index than others. This result also supports the findings by Ejue (2016), who stated that the morale of law enforcement agents can be negatively affected substantially by the quality of administrative leadership vis-a-vis corruption. Adesina (2019) in a similar study showed that corruption weakens the ability to implement the law, impairs the safety of a country and international community, and ultimately affects the effective implementation of regulatory frameworks.
2. Insufficient legal framework is a significant domestic constraints to the effectiveness of illegal timber prohibition regulation in Nigeria. The data analyzed showed that there was a significant relationship between insufficient legal framework and the ineffectiveness of illegal timber prohibition regulation in Nigeria. This result is in support of Njoku (2017) who viewed public institution as a control measure towards effective monitoring and supervision of public enterprise, but, it is "toothless" if not given the legal mandate to perform. Okorie (2019) also asserts that insufficient legal framework hampers the ability of public officials to discharge their duties effectively. It also leads to the mismanagement of valued resources and failure. Establishments that perform regulatory functions needs a legal framework which empowers it to perform its duties.
3. Lack of coordination in regulation is a domestic constraint to the effectiveness of illegal timber prohibition regulation in Nigeria. In Nigeria there is no sense of coordination between the Customs, Forest Guards, Police, Civil Defence and the local community. This lack of coordination hampers the ability to share information and effectively check illegal activities.
4. Inadequate staff plays a significant role as a domestic constraint to the effectiveness of illegal timber prohibition regulation in Nigeria. The lack of manpower to police the forest effectively remains one of the biggest problem faced by Nigeria in combatting illegal timber logging. Oyerinde (2013) observed that one of the greatest impediment to effective forest management in Nigeria is the lack of manpower. The Forest Guard is largely understaff, hence, it is difficult to effectively monitor activities in all the forest reserves.
5. State monopoly of forest ownership contributes significantly to the ineffectiveness of illegal timber prohibition regulation in Nigeria. This study found that state monopoly of forest ownership plays a significant role as a domestic constraint to

the effectiveness of illegal timber prohibition regulation in Nigeria. The centralization of all resources in Nigeria, including forest, by the Land Use Decree of 1978 ensures that there is a concentration of regulatory powers in the hands of the Federal Government. Since the Federal Government owns all the forest it becomes impossible for reg

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