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Explaining the Ineffective Implementation of Logging Regulations in Nigeria's Protected Forest Areas

Henry Ufomba
College of Humanities, Arts and Social Sciences
Flinders University, Australia
henry.ufomba@flinders.edu.au

Eze Elekwachi
Department of Political Science and Public Administration
Faculty of Social Sciences,University of Uyo, Nigeria
elekwachi89@gmail.com

Abstract

This study investigates the ineffective implementation of logging regulations in Nigeria's protected forest areas, focusing on Oyo State as a case study. We explored how inconsistencies among forest officers contribute to ongoing deforestation and forest degradation. Despite the existence of legal frameworks, including logging, haulage, and sawmill permits, enforcement remains inconsistent, particularly at the point of timber extraction. The study highlights the role of corruption, where illegal loggers bypass regulations with the complicity of street-level bureaucrats, undermining conservation efforts. As a recommendation, this research calls for systemic reforms, including enhanced transparency, improved enforcement capacity, and the integration of local communities into forest governance. These measures are essential for addressing deforestation, protecting biodiversity, and promoting sustainable forest management in Nigeria.

Keywords: Deforestation, logging regulations, forest management, corruption, illegal logging, Nigeria.

Introduction

Forest degradation and deforestation as a result of anthropogenic activities like timber logging has been identified as the main driver of the loss of biodiversity globally, and account for up to 20% of the global greenhouse gas emissions (Pokorny et al., 2016; Sotirov, Stelter, & Winkel, 2017). Nigeria exemplifies this global environmental catastrophe because it has one of the worst cases of deforestation in the world, having lost 90% of its primary forest (Ayanlade & Drake, 2016; Enuoh & Bisong, 2015; Enuoh & Ogogo, 2018; Inyang & Esohe, 2014; Mmom & Arokoyu, 2010; Okafor, Okolo, & Ejiofor, 1996). This problem is worsened by the observed acceleration in the deforestation and forest degradation rate in the surviving 10% of Nigeria's forests (Mfon et al.,

2014; Otum, Frederick, & Martina, 2017). For example, recent data from Olajuyigbe, Agwu and Ezekiel (2023) revealed that some protected forest areas in places like Oyo State depreciated by over 50% between 1990 to 2020, the case is worse in some parts of Cross Rivers (Adetola & Adetoro, 2014), and the Niger Delta as a whole (Onojeghuo & Onojeghuo, 2015).

The problem of loss of forest cover in Nigeria has been attributed to pressures from anthropogenic activities such as urbanisation, agricultural development (expansion of cropland and pastoral areas), and infrastructural development among others (Adetoye, 2019; Maijama'a et al., 2020; Nathaniel & Bekun, 2020; Oyetunji et al., 2020). However, there is a consensus in the

literature that the main driver of forest degradation and deforestation in Nigeria today is the illegal extraction of forest trees, especially in protected forest areas which accounts for 6.95% of the country's remaining 10% of forest (Adekunle, Olagoke, & Ogundare, 2010; Adekunle, Olagoke, & Ogundare, 2013; Adetola & Adetoro, 2014; Ahmed & Oruonye, 2017; Ayanlade & Drake, 2016; Enaruvbe & Atafo, 2016; Enuoh & Ogogo, 2018; Ezebilo & Mattsson, 2010; Faleyimu & Agbeja, 2012; Fitz, Adenle, & Speranza, 2022; Maijama'a et al., 2020; Obaji et al., 2020; Oyerinde, 2013; Von Hellermann). This problem needs to be addressed because of the socio-economic and environmental importance of the forest to the country (Adeyeye & Ogundipe, 2018; Ajala, Arowolo, & Oloyede, 2019). Timber and non-timber forest products account for over 3% of Nigeria's GDP, 90% of domestic energy uses in rural communities in the form of firewood and charcoal, and the provision of household commodities like medicine, food, and shelter (Abdu-Raheem & Ajibola, 2017; Fasona & Adenuga, 2015; Jimoh & Odewumi, 2019; Sambo, 2009).

Nigeria is a major exporter of timber, however, more than 50% of all harvested and exported timber from the country have been identified as illegal (FMoE, 2022; Oyerinde, 2013; Ufomba, 2022). Data from the Nigerian government's Federal Ministry of Environment reveals that Nigeria is in the top five exporting countries of illegally acquired forest products (timber included). Between 2007 and 2019, Nigeria contributed 93% of all seized shipments of illegal forest products globally, 31.7% of which are a group of protected trees known as "rosewoods" (FMoE, 2022). Rosewood is not a specie or botanical category, rather it is a colloquial used by timber loggers to refer to a set of richly hued tropical hardwoods with darker and brownish veining which consists of more than 29 species of trees. Classified as endangered species and listed in Appendix II of the *Convention on International Trade on Endangered Species of Wild Fauna and Flora* (CITES), some of the species of "rosewoods" exported from Nigeria illegally are *Pterocarpus Erinaceus* (known locally as "Kosso"), *Millettia Laurentii*, *Diospyros Crassiflora*, and *Dalbergia Melanoxylon* (Ahmed, Oruonye, & Ayuba, 2016; FMoE, 2022; Leggett, 2018).

In response to this problem, the Nigerian government is currently implementing two overarching national policies- *the Nigerian National Forest Policy of 2020* and the more recent *National Strategy to Combat Wildlife and Forest Crime in Nigeria (2022-2026)* - with the objective of combatting illegal logging and encouraging afforestation (FMoE, 2022). However, the *Land Use Act* placed the jurisdiction over forest areas in the office of the State Governors. Hence, it is the forestry laws of each of the 36 states of the federation that forms the legal framework for regulating timber logging within each state. This position is further encapsulated in the *Nigeria Timber Legality Standards 2023* which stipulates that "the forestry law enacted by each State Government forms the primary legal instrument for jurisdictional forest resources management and control in Nigeria within each state's boundary"(Federal Department of Forestry, 2023, p. 6). Hence, the problem of accelerated deforestation in Nigeria raises the question of the robustness of laws regulating forest use and its implementation within states. Armed with this observation, the aim of this paper is to engage the question- why are the laws regulating logging in Nigeria ineffective in addressing the problem of deforestation and forest degradation?

Interrogating the case of the nine forest reserves in Oyo State using the framework of the Street-Level Bureaucracy Theory (SLB Theory), we observed that the legal frameworks regulating logging activities present street-level bureaucrats with enormous discretionary powers. It is the use of these discretionary powers in a workplace environment characterised by political interferences that led to the suboptimal effectiveness of the implementation of logging

regulations. This abysmal performance made Oyo State incapable of arresting the continual loss of forest cover in its protected forest areas.

Literature Review

In 1896, the Nobel Prize winner Svante Arrhenius first suggested the relationship between the level of carbon dioxide in the atmosphere, and the earth's surface temperature due to the greenhouse effect (Arrhenius, 1896). Since then the identification and mitigation of anthropogenic drivers of climate forcings remain a topical issue globally. One of the topical issues in climate change discussions is the problem of deforestation and forest degradation. All human societies in every historical epoch were sustained by the exploitation of forest resources like timber to produce goods and services to meet what Maslow (1998) referred to as human "physiological needs". These goods and services include but are not limited to accommodation, clothing, energy (firewood and charcoal), and transportation (ships, wagons etc) among others. Hence, over the ages, one of the most continually exploited resources on earth is timber. From the discovery of anthropogenic fire and the use of firewood as a source of energy about two million years ago to our modern era of furniture and skyscrapers, the harvesting and use of timber from the forest remain an important resource to the sustenance of human civilization (Gowlett, 2016).

Although forests are generally considered renewable resources, however, there is a consensus in the literature that the rate of deforestation and forest degradation as a result of anthropogenic activities is higher than the capacity of the forest to renew itself. It is estimated that the decrease in worldwide forest cover is currently at 46% of its prehistoric levels (Roberts et al., 2017). The impact of the steady decline in the earth's forest cover on the environment is considered problematic globally. Using the case of tropical countries as an example, Duggan and Connors (2021, p. 4) observed that:

> Deforestation in tropical countries (alone) caused approximately 4.8 gigatons of carbon emissions per year between 2015 and 2017, roughly equivalent to the lifetime emissions of 85 million cars. If tropical deforestation were a country, it would emit the third-most carbon-equivalent gases in the world- behind only China and the United States- and more than the entire European Union combined.

Duggan & Connors (2021) are not alone in this view, previous studies have shown that forest degradation and deforestation are major drivers of greenhouse emissions, climate change and loss of biodiversity globally (Mechik & Hauff 2022; Guan et al 2018; Sotirov et. al 2017; Yi 2019; Marchioro et. al 2020; Brack 2017). As a result, the *Non-Legally Binding Authoritative Statement of Principles for Global Consensus on the Management, Conservation, and Sustainable Development of all types of Forests* at the 1992 United Nations Conference on Environment and Development (Earth Summit) in Rio de Janeiro considers the combating of deforestation and forest degradation as one of the topical issues relating to climate change discussions globally. To this end, various conventions such as the *Convention on International Trade in Endangered Species* (CITES), Agenda 15 (Life on Earth) of the Sustainable Development Goals (SDGs), and *Convention on Biological Diversity* (CBD) among others were brought forward as a guiding framework for the sustainable use of the forest (Ufomba, 2021). These conventions also provide guidelines for domestic legislation in timber-producing countries that aim at regulating timber logging. However, how well this domestic legislation is implemented is open to debate.

Since the beginning of the 21st century, a significant body of literature on logging

regulations in developing countries has focused on the problem of illegal logging and suggested a nexus between it and the discretionary decisions of street-level bureaucrats. This is because, despite the existence of logging regulations in these countries, data from previous studies show that illegally logged timber accounts for between 30 to 50% of harvested forest trees in Nigeria (Oyerinde, 2013), Honduras (Richards et al., 2003; Wells et al., 2012), Benin (Siebert & Elwert, 2004), Malaysia (Noor, Muhamad, & Kadir, 2022), Cameroun (Cerutti et al., 2013) and other tropical timber-producing countries. Armed with this observation, we shall use the framework of street-level bureaucracy theory presented in the next section to engage this problem.

Theoretical Framework

Many scholars perceive the Street-level bureaucracy (SLB) theory as a ubiquitous and valuable framework for understanding the implementation of environmental regulations because it provides a valuable lens for understanding the use of discretion by public officials (Brodkin, 2011). As a theory, the SLB evolved from Lipsky (2010) groundbreaking work, "Street-Level Bureaucracy: Dilemmas of the Individual in Public Services" which conceptualized street-level bureaucrats as public officials who interact directly with citizens and have substantial discretion in their decision-making. Lipsky (2010) opined that the street-level bureaucrat is a *sui generis* group empowered to implement policies. Hence, this puts street-level bureaucrats in a decisive position in the success or failure of any regulation at the level of its implementation (Seva, 2015). In addition, Lipsky (2010) viewed street-level bureaucrats as operating in contexts characterised by limited resources, ambiguous goals, and demanding workloads. These constraints compel them to develop coping mechanisms, including rationing services, routinising interactions, and relying on stereotypes (Ratzmann, 2021). As a result of this, street-level bureaucrats are perceived to possess significant discretion in how they interpret and implement policies due to the inherent ambiguity of their roles and the complexity of the situations they encounter (Jansen et al., 2021).

Subsequent studies have significantly advanced our understanding of the multifaceted factors influencing the discretionary decision-making of street-level bureaucrats, and a robust body of literature has emerged, demonstrating that the implementation of regulations is not a linear process but rather a dynamic interplay shaped by the interactions between public officials, their clientele, colleagues, and supervisors (Gofen, Sella, & Gassner, 2019; Kørnøv, Zhang, & Christensen, 2015; Lotta & Marques, 2020; Tummers & Bekkers, 2014). In addition, these studies have uncovered the impact of various factors on the use of discretion by street-level bureaucrats and their performance. These include the characteristics of the actors they interact with, the organisational environment within which they operate, and their individual personal, social, and professional profiles (Buffat, 2015; Ganda & Muna, 2023; Maynard-Moody & Musheno, 2003; Zedekia, 2017).This nuanced understanding of discretion highlights the complex interplay of individual agency and some of the structural constraints that shape regulation outcomes. This is evident in some contexts when implementing environmental regulations (Seva, 2015).

Environmental regulation is a complex and dynamic field where the actions of street-level bureaucrats play a crucial role in translating policy into practice. Street-level bureaucrats, including environmental inspectors, permit officers, and enforcement agents, are the frontline workers who interact directly with regulated entities, making decisions that significantly impact environmental outcomes. Discretion, defined as the freedom to make choices and judgments within the boundaries of one's role, is an inherent feature of environmental regulation due to the complexity and ambiguity of environmental issues, the limitations of resources, and the need for adaptability in responding to diverse situations. However, the outcome of the use of discretion by

street-level bureaucrats can be both empowering and problematic, as it allows for individual flexibility but also opens the door to bias and inconsistency. One area where this has been suggested to be problematic is the implementation of logging regulations in developing countries.

Research Methodology

Study Area

This study was conducted in Oyo State. Oyo State (8°00'N, 4°00'E) is located in the southwestern region of Nigeria (Figure 1). It is bordered in the North by Kwara State, East by Osun State, South by Ogun State and West by Benin Republic.

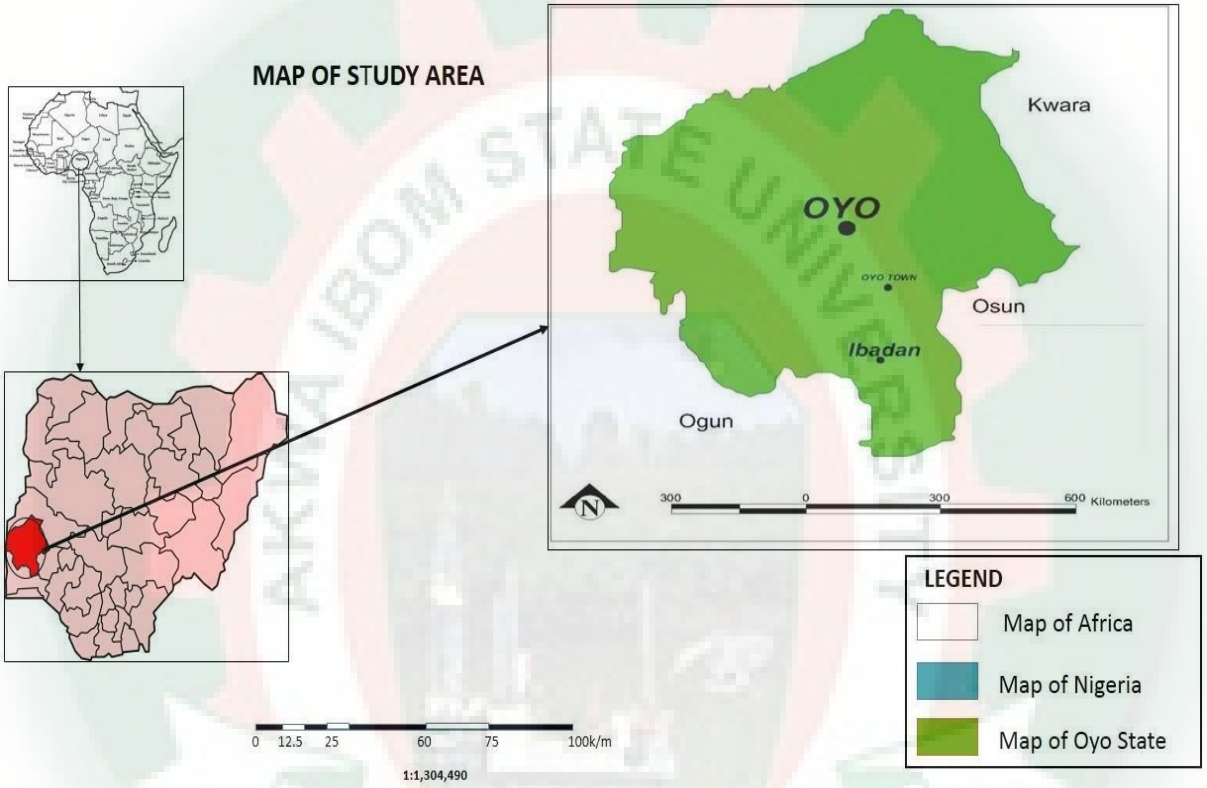


Figure 1: Study Area (Oyo State)
Source: Authors

There are ten protected forest areas in Oyo State. Nine are forest reserves and one is a national park. The nine forest reserves which form our case study are; Opara, Igangan, Ago Are I and II, Oke Iho, Olokemeji, Lanlate, Ijaiye, Osho and Onigambari. The only national park in Oyo State is the Old Oyo National Park (OONP). Despite its regulated status, the protected forest areas in Oyo State are characterised by an accelerated decline in its forest cover since 1990. Data from Olajuyigbe, Agwu and Ezekiel (2023) and Olaniyi, Hlengwa and Anderson (2022) reveals a high level of deforestation in these areas. For example, between 1990 and 2020 Opara lost 53% of its trees and total forest cover (Figure 2), Lanlate lost 34% (Figure 3), Ijaiye lost 50% (Figure 4),

Igangan lost 71% (Figure 5) and Onigambari 43% (Figure 6).

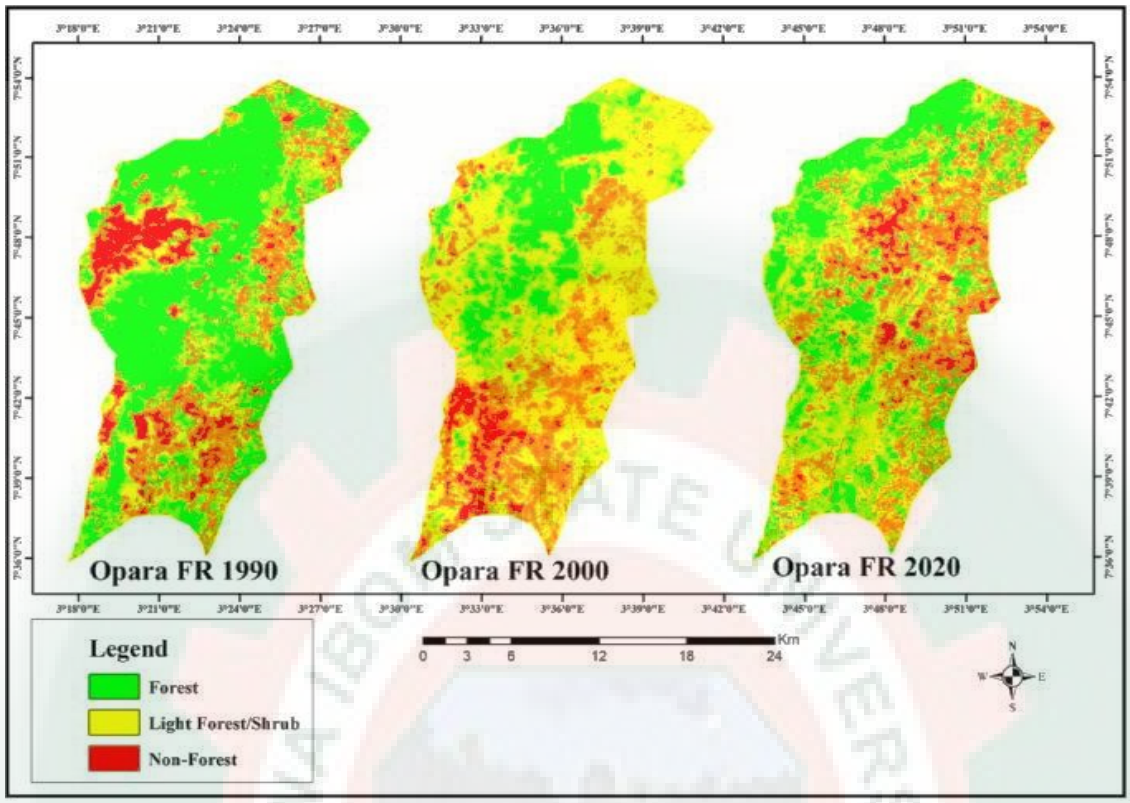


Figure 2: Deforestation in Opara Forest Reserve (1990-2020)
Source: Olajuyigbe, Agwu and Ezekiel (2023)

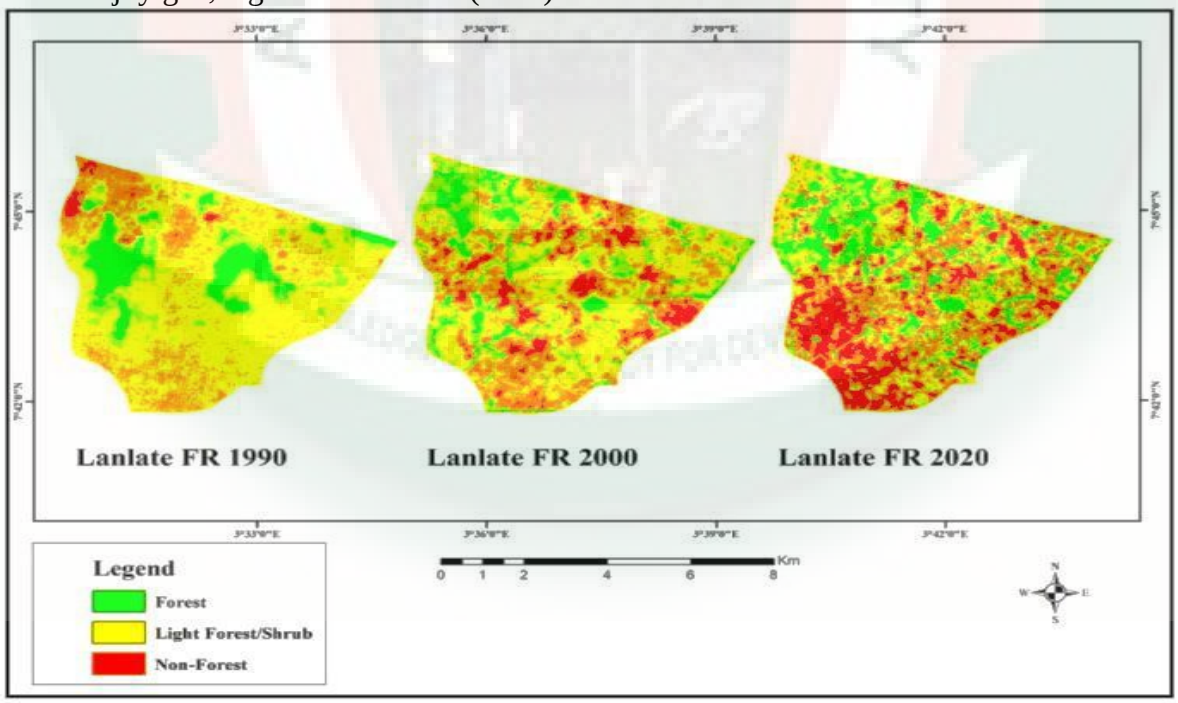


Figure 3: Deforestation in Lanlate Forest Reserve (1990-2020)
Source: Olajuyigbe, Agwu and Ezekiel (2023)

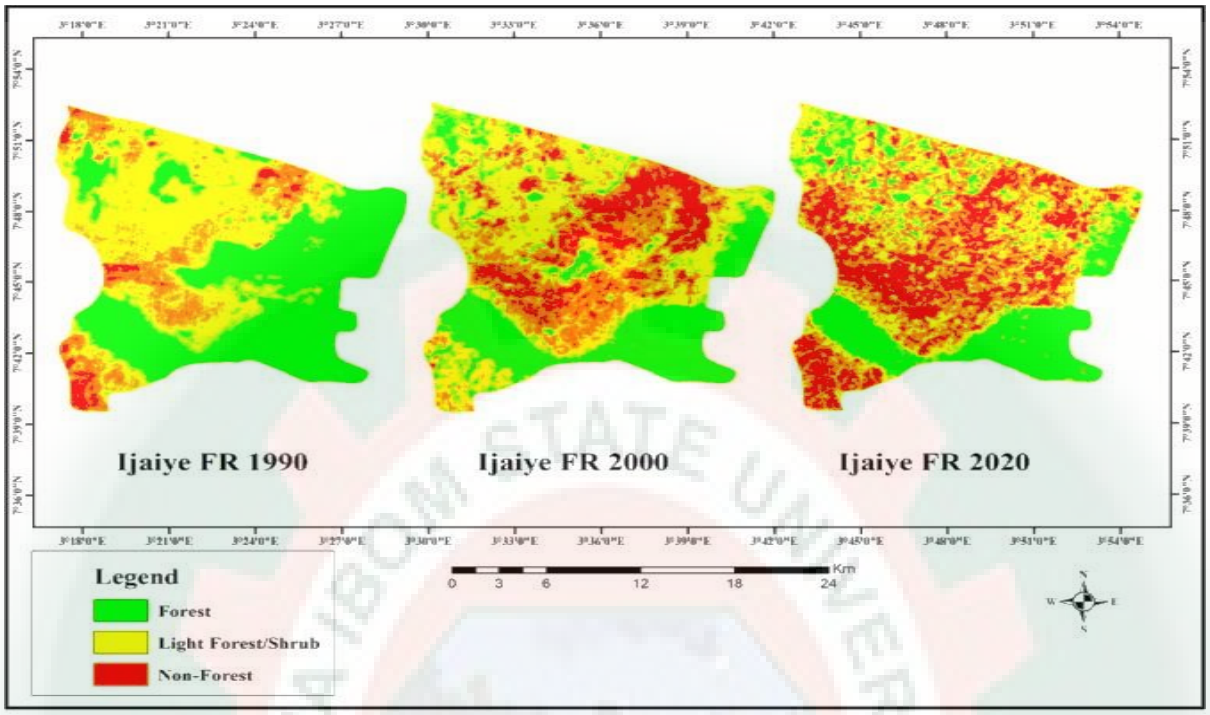


Figure 4: Deforestation in Opara Forest Reserve (1990-2020)
Source: Olajuyigbe, Agwu and Ezekiel (2023)

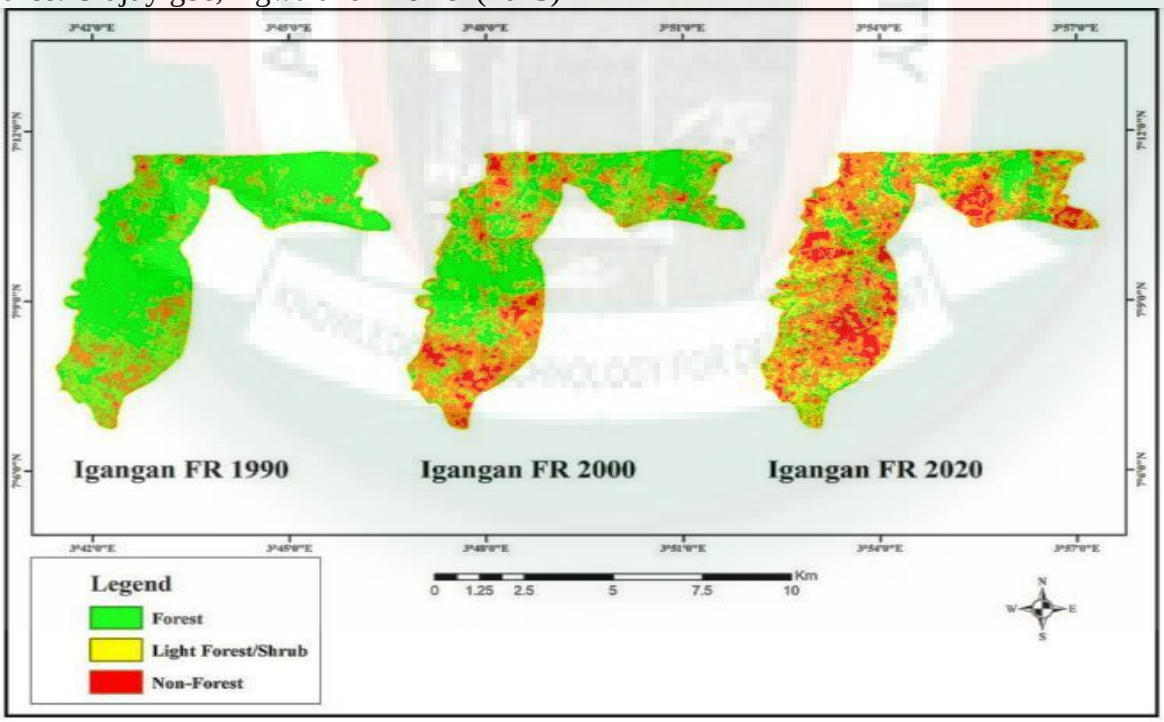


Figure 5: Deforestation in Opara Forest Reserve (1990-2020)
Source: Olajuyigbe, Agwu and Ezekiel (2023)

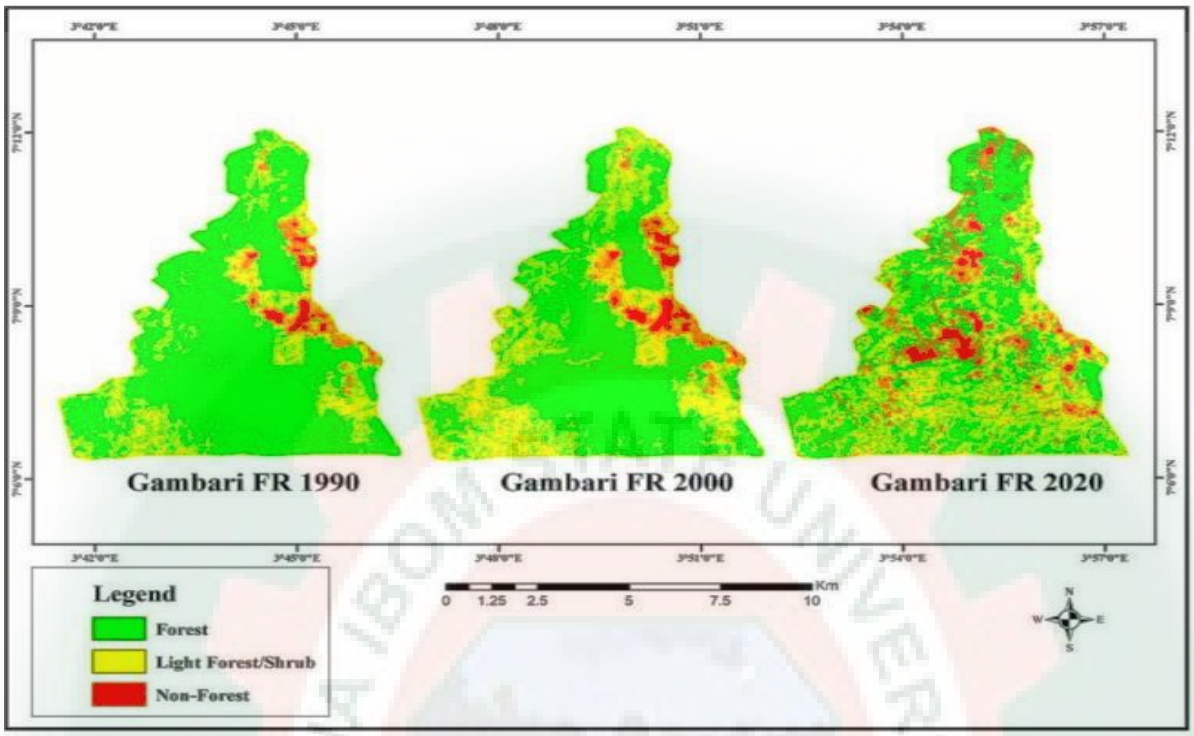


Figure 6: Deforestation in Opara Forest Reserve (1990-2020)
Source:Olajuyigbe, Agwu and Ezekiel (2023)

Research Design

For this study, our empirical data is drawn from the sampling of four groups of stakeholders: residents of communities around the buffer zones of the protected forest areas (residents), forestry-oriented members of academia and non-governmental organizations (experts), forest officers of the Oyo State Department of Forestry and Federal Ministry of Environment (public officers) and timber loggers. These four groups provide a nuanced perception of our case study which is the protected forest areas in Oyo State. A case study research approach entails conducting an empirical investigation of a specific contemporary phenomenon in a real-life context in order to gain a better understanding of the issue under consideration(Yin, 2014). Oyo State was selected as the case study for this research because the state hosts some of Nigeria's most important protected forests and forest-related regulatory agencies and research institutions. More so, the state is one of Nigeria's oldest states and has some of its oldest forestry laws and protected forests. This research employs a range of data sources and collection techniques. A multiple-methods research design is a process that obtains different but complementary data on the same topic by integrating different methods and data types (Davis, Golicic, & Boerstler, 2011; McKendrick, 1999, 2009). This design entails a combination of qualitative and quantitative research methods. In this way the researcher gathers data from different sources, and the results are then analysed to get a robust and nuanced conclusion (Davis, Golicic, & Boerstler, 2011).

We collected primary data using questionnaires and semi-structured interviews. We designed a 29-item questionnaire to assess participants' perceptions of logging regulations in

protected forest areas in Oyo State. After obtaining ethical approval, the questionnaire was published online using Qualtrics, and printed versions were also provided as an alternative for respondents. Participants for the questionnaire and semi-structured interview phases of this study were recruited in Abuja and Oyo State using a multimodal recruitment technique. As used in this study, a multimodal recruitment technique involves the use of different strategies in recruiting participants. In essence, this technique harnesses the power of different recruitment methods to create a comprehensive and inclusive research environment, aimed at enhancing the quality and diversity of a sample population. It enabled us to reach a wider range of participants, enhance the quality of data collected, and ultimately drive more impactful and insightful research outcomes. Using this technique, we leveraged various modalities, such as professional networks, bureaucratic hierarchy, trade associations and community-level authorities to recruit stakeholders of Nigeria's forest sector across different endeavours of life.

Group 1 (Residents):

Residents are defined as adult individuals residing in the buffer zones around the protected forest areas. The Nigerian National Park Service (Old Oyo Command) provided assistance in recruiting residents, as well as other security and logistical support. This was crucial as the buffer zones of the protected forest area are unfamiliar terrain to us and the Research Assistant. Officials from the Nigerian National Park Service provided rented accommodation in their camp at Sepeteri Range, valuable security information, and guidance on how to interact with the local communities. To ensure a representative sample from the entire buffer zone, participants were recruited from the five (5) ranges designated by the National Park Service and those designated by the Oyo State Department of Forestry.

In order to recruit participants, the officials of the Oyo State Department of Forestry facilitated introductions between the research team and the *Baale*, the leader of each forest community. Following the team's explanation of the study's objectives, the Baale provided verbal approval for the distribution of ten hard copies of the questionnaire in five communities. Additionally, a Qualtrics survey link was shared via WhatsApp for those who preferred the online version. Upon the collection of 43 hard copies and 16 online responses from residents, a total of 59 responses were obtained from Group 1.

Group 2 (Public officials)

For this study, public officials were recruited from three organizations: the Federal Ministry of Environment in Abuja, the Oyo State Department of Forestry, and the National Park Service in Oyo State. To gather participants for the questionnaire phase, the researchers and a research assistant visited the Federal Ministry of Environment in Mabushi, Abuja on September 25, 2023. They displayed three study posters and shared the Qualtrics questionnaire link via the ministry's official WhatsApp platform. Additionally, 25 hard copies of the questionnaire were left at the ministry's front desk, and seven completed copies were retrieved and inputted into Qualtrics by the researchers.

To engage participants from the Oyo State Department of Forestry, a research advertisement was displayed on the agency's information bulletin, and 20 hard copies of the questionnaire were distributed at the agency's front desk. Additionally, 20 copies were provided to the Office of the Director (Forestry), who facilitated the distribution of both hard copies and the Qualtrics link of the questionnaire to interested participants. This effort resulted in 22 filled questionnaires, which were then inputted into Qualtrics. To involve members of the National Park

Service, we obtained verbal authorization for the study from the Park Director and provided questionnaires in both hard copy and online formats. We received a total of 44 questionnaires from public officials.

Group 3 (Timber loggers)

For timber loggers, sellers, and sawmill operators, we recruited through the Ibadan Plank Sellers Association. A total of 60 questionnaires were completed by this group, both online and in hard copy versions.

Group 4 (Experts)

Recruiting volunteers for Group 4 (experts) was done mostly online. The recruitment poster and Qualtrics link to the questionnaire were distributed through the staff WhatsApp group and information bulletins and emails by the respective administrators at the University of Ibadan, Forest Research Institute of Nigeria (FRIN), the Nigerian Conservation Foundation, Federal College of Forestry, Federal University of Agriculture- Abeokuta, and Cocoa Research Institute of Nigeria. However, we made several visits to these institutions to have informal conversations with experts to assess the spread of the online poster. During these visits, thirteen (13) participants from the Forest Research Institute of Nigeria (FRIN) requested for hard copy version of the questionnaire which was given to them and retrieved on the spot. A total of 54 responses were received from this group. Five individuals responded to the questionnaire without identifying with any of the four groups. Three individuals preferred not to disclose the group that they belong to. Two individuals identified as industrial trainee (IT) students in one of the educational institutions from which experts were recruited.

Recruitment of Interview Participants

Initially, we planned to interview 20 participants, with 5 from each of the 4 groups, selected from the questionnaire respondents. However, due to fieldwork challenges, we adjusted our plan to a multimodal strategy. As a result, we conducted a total of 24 interviews instead of 20. The additional 4 interviews were conducted to compensate for disruptions and to further explore the subject matter.

Results

The data obtained from the 221 returned questionnaires in Qualtrics was analysed using SPSS and the interviews were transcribed manually and analysed using NVIVO. The findings in this part is presented under the headings; use of logging permits, haulage registration, sawmill permits and enforcement of penalties for violation of forestry laws.

Use of logging permits

The Figure 7 illustrates the respondents' perception of the use of logging permits. Logging permits are required to authorize the extraction of timber, and their proper implementation is crucial for forest sustainability. From the graph, it can be observed that 44% of respondents stated that logging permits were "usually" used, with a total of 97 respondents backing this perception. Conversely, 41% of respondents (91 in total) indicated that logging permits were "rarely" used, while 15% remained neutral. This near-equilibrium between the perceptions of "usually" and "rarely" used logging permits may indicate significant regional variations in how logging permits are enforced across Nigeria. In areas where institutions and regulatory bodies are robust, there may be better adherence to obtaining permits. On the other hand, in regions where monitoring and enforcement

are weak or where illegal logging is rampant, the need for permits may be circumvented, leading to a perception that they are rarely used.

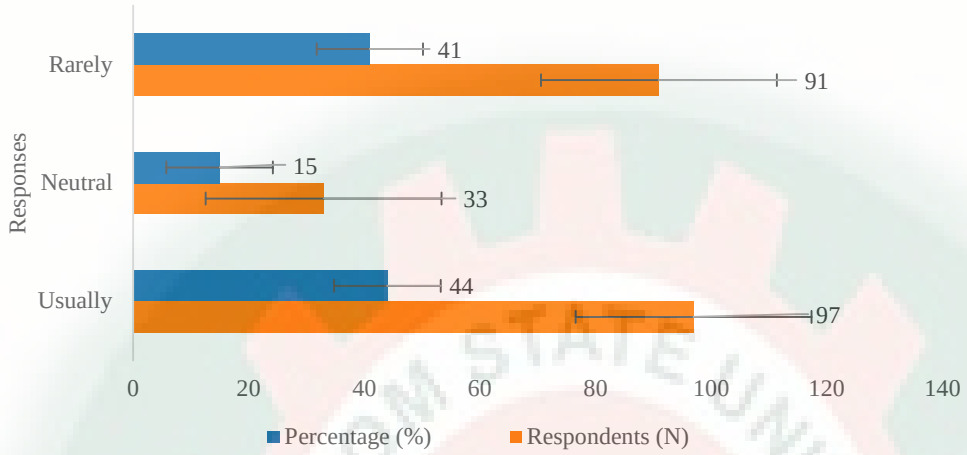


Figure 7: Stakeholders perception of the use of logging permits
Source: Survey, 2023

The substantial number of respondents (91) who indicated that logging permits are rarely used suggests that there are notable challenges in the implementation of logging regulations. This could be attributed to various factors, including inadequate enforcement capacity by forestry departments, corruption, or weak institutional frameworks. Corruption, in particular, can undermine the enforcement of logging regulations, where permits are issued without proper procedures being followed, or logging activities proceed without any permits at all. The respondents who perceive that permits are usually used (44%) highlight the positive side of regulatory enforcement, where certain regions or logging operators are compliant with the law. These areas might benefit from stronger institutional capacity, better-trained personnel, or more awareness among logging operators about the importance of sustainable forestry practices. The 15% of respondents who are neutral may represent a portion of the population that is either indifferent to or unaware of the regulatory mechanisms governing logging in Nigeria. This group could include people living in areas less affected by logging activities or those with limited access to information about forest management policies. Discussing this issue with the 21 interviewees, most of them are of the opinion that there are significant lapses in the way logging permits are handled by the Oyo State Government which gives the opportunity to illegal loggers. In other cases, the forest guards under the payroll of the state government connive with timber contractors to log trees illegally in protected forest. To this end, R21 a public official working with the Oyo State Department of Forestry said during the interview that “the forest guard that is supposed to manage or guard the forest reserves, opens the door for the loggers to come in”.



Figure 8: Seized illegal planks by the Oyo State Department of Forestry in the Onigambari Forest Reserves
Source: Authors

Haulage Registration

The Figure 8 provides insights into the use of haulage permits, which regulate the transportation of timber from logging sites to processing locations or markets. Haulage permits play an essential role in controlling the flow of timber, ensuring that logs transported have been legally harvested. From the graph, it can be observed that a substantial 57% of respondents, representing 126 individuals, stated that haulage permits are "usually" used. In contrast, 26% (54 respondents) indicated that haulage permits are "rarely" used, while 17% (41 respondents) remained neutral. The higher percentage of respondents who believe that haulage permits are "usually" used compared to logging permits suggests that there may be more emphasis on regulating the movement of timber than on controlling the actual logging activities. One possible explanation for this is that transportation of timber is more visible and easier to regulate compared to logging, which may occur in remote areas where enforcement officers are less present

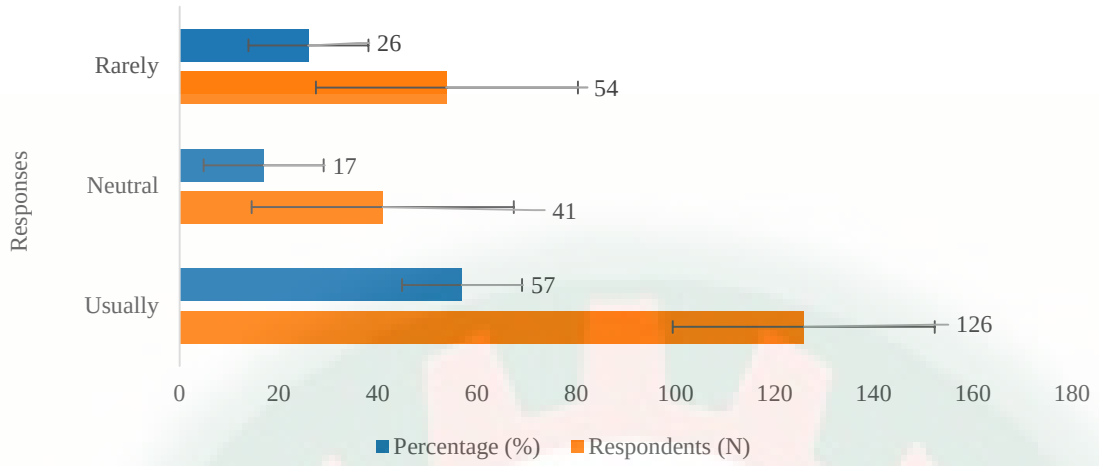


Figure 9: Stakeholders perception of haulage registration
Source: Survey, 2023

Additionally, the requirement for haulage permits might be more strictly enforced because transporting timber involves crossing multiple jurisdictions, where authorities can check for permits at various checkpoints. Therefore, loggers and timber transporters may be more inclined to obtain haulage permits to avoid fines or confiscation of their products during transit. However, the 26% of respondents who perceive that haulage permits are rarely used highlight the challenges of enforcement. In rural or remote areas where roads are less accessible, the transportation of timber may bypass official checkpoints, reducing the chances of haulage permits being checked. This may also reflect the informal or illegal sector of timber transportation, where operators actively evade regulatory scrutiny. The 17% neutral respondents may include individuals who are less engaged in or affected by timber transportation issues. These individuals might reside in areas with low levels of timber transportation activity or may lack sufficient information about how haulage permits are implemented.



Figure 10: Illegal truck seized by the Oyo State Department of Forest parked at the Oyo State Government Secretariat, Ibadan.
Source: Authors, 2023

Sawmill Permit

The Figure 10 reflects respondents' perceptions of the use of sawmill permits, which regulate the operation of sawmills where raw timber is processed into lumber or other products. The graph reveals that 72% of respondents, representing 159 individuals, stated that sawmill permits are "usually" used. Only 11% (23 respondents) indicated that sawmill permits are "rarely" used, while 17% (39 respondents) were neutral. The high percentage of respondents who believe that sawmill permits are "usually" used suggests that this aspect of the logging regulation framework is relatively well enforced compared to logging and haulage permits. Sawmills are often fixed installations, making it easier for regulatory authorities to monitor their operations and enforce permit requirements.

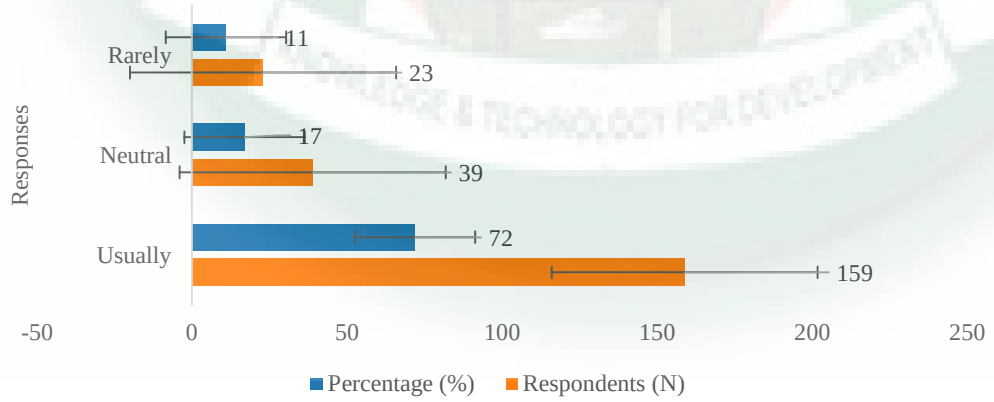


Figure 11: Stakeholders perception of the use of sawmills permit
Source: Survey, 2023

Furthermore, since sawmills are typically located in more urbanized or accessible areas, the regulatory infrastructure may be stronger, and authorities may have better oversight. The 11% of respondents who believe sawmill permits are rarely used could be indicative of informal or illegal sawmill operations that exist outside the purview of official regulation. These operations may process timber that has been illegally logged or transported without the necessary permits, contributing to the perception that sawmill permits are not consistently enforced. The 17% of neutral respondents could reflect individuals who are not directly involved in or impacted by sawmill operations. These individuals may not have sufficient knowledge about the regulatory frameworks governing sawmill permits, leading to a neutral response.



Figure 12: Fully licenced sawmill in Oyo-ile
Source: Survey, 2023

Discussion and Findings

Comparative Analysis

When comparing the use of logging, haulage, and sawmill permits, it is evident that sawmill permits have the highest level of perceived enforcement, followed by haulage permits, with logging permits showing the lowest levels of compliance according to respondent perceptions. This could indicate that the further along the timber value chain, the more regulated and enforced the activities become. This finding aligns with the idea that fixed installations, such as sawmills, are easier to monitor than logging operations, which often take place in remote forests. Moreover, the variation in perceptions between the three types of permits could highlight the different challenges faced at each stage of the timber production process. While logging permits might be harder to enforce due to the dispersed nature of logging activities and the potential for corruption or illegal logging, the transportation of timber (haulage permits) is more regulated because it is

visible and can be monitored at checkpoints. Sawmill permits, given the fixed nature of sawmills, are perceived as the most consistently enforced.

Regulatory Gaps

One of the most critical observations in this study is the significant discretionary powers wielded by street-level bureaucrats, such as forest officers, whose actions play a central role in implementing logging regulations. As articulated by Lipsky's SLB Theory, these bureaucrats operate in environments characterized by limited resources, high workloads, and political pressures, often leading to the selective enforcement of policies (Lipsky, 2010). This study finds a striking alignment with these theoretical postulations, as respondents frequently cited instances where forest guards, despite being tasked with monitoring protected areas, colluded with illegal loggers.

Corruption and its Implications for Forest Management

Another significant finding from the interviews and questionnaires is that a large proportion of respondents indicated that logging permits are not properly enforced. This hints at the observation in the broader literature on corruption in environmental governance, which suggests that corrupt practices within regulatory bodies diminish the capacity of the state to enforce its laws (Pokorny et al., 2016; Adekunle, Olagoke, & Ogundare, 2010). In Nigeria, over 50% of the timber harvested is classified as illegal, a figure that is reflected in the high percentage of respondents who reported that logging permits are rarely enforced (Federal Ministry of Environment, 2022). The corruption extends beyond the logging permits to the haulage and sawmill permits, though to a lesser degree. Interestingly, while the majority of respondents indicated that sawmill permits were more consistently enforced, this compliance did not extend to the earlier stages of the logging value chain, such as the issuance of logging permits and the regulation of haulage. This suggests that regulatory frameworks are more effective in accessible areas where sawmills are located, but far less effective in the remote areas where logging takes place. This dichotomy between enforcement and rural neglect is well-documented in environmental governance literature (Fasona & Adenuga, 2015; Nathaniel & Bekun, 2020).

Limitations of the Study

While this study provides valuable insights into the reasons behind the ineffectiveness of logging regulations in Nigeria, it is not without limitations. The data collection was limited to Oyo State, which, while representative of many broader issues affecting forest management in Nigeria, may not fully capture the diversity of experiences across the country's various ecological zones. Future research could expand on this by conducting similar studies in other states to compare the effectiveness of logging regulations in different regions. Additionally, the study relied heavily on self-reported data from stakeholders, which, while informative, may be subject to biases, particularly in the context of sensitive topics such as corruption. Future studies could complement these findings with more objective measures of enforcement effectiveness, such as field audits and satellite monitoring data.

Implications for Forest Management

The data provided by the respondents' perceptions highlight several important implications for forest management and regulatory enforcement in Nigeria. First, the relatively low compliance with logging permit requirements indicates that illegal logging remains a significant problem. This has severe environmental consequences, including deforestation, loss of biodiversity, and increased greenhouse gas emissions. Strengthening enforcement mechanisms at the point of

logging is crucial for reducing these negative environmental impacts. Second, while the perception of haulage permit use is higher, the fact that 26% of respondents believe they are rarely used shows that there are still gaps in the enforcement of timber transportation regulations. Given the importance of haulage permits in tracking the movement of timber and preventing illegal logging, addressing these gaps is critical for improving overall compliance in the timber industry. Third, the high compliance with sawmill permits suggests that this is a regulatory success story that could be built upon. The effective monitoring of sawmills could be leveraged to improve the regulation of logging and haulage permits. For instance, authorities could require sawmills to provide documentation proving the legality of the timber they process, thereby creating a chain of custody that links the wood back to legal logging operations.

Conclusion

The study has examined the ineffective implementation of logging regulations in Nigeria's protected forest areas, using Oyo State as a case study. The investigation, grounded in Street-Level Bureaucracy (SLB) Theory, reveals that the failure to adequately enforce logging regulations is largely driven. The findings emphasize that while logging, haulage, and sawmill permits are central to regulating the timber industry, their enforcement is highly inconsistent. Logging permits, in particular, are rarely enforced, which reflects the widespread issues within the early stages of the timber value chain. This lack of enforcement creates space for illegal logging activities, especially in remote areas where monitoring is minimal. Conversely, the regulation of sawmills—fixed installations that are easier to oversee—shows better compliance, highlighting the challenges of regulating logging activities in dispersed and difficult-to-reach forest areas. Despite its contributions, this study acknowledges certain limitations. The focus on Oyo State, while revealing, may not fully capture the diverse experiences across Nigeria's different ecological regions. Future research should explore similar dynamics in other states to create a more comprehensive understanding of the challenges facing forest regulation nationwide. Moreover, the reliance on self-reported data from stakeholders introduces potential biases. Combining the qualitative approach with more objective methods, such as satellite monitoring and field audits, could yield a more nuanced and complete picture. In conclusion, the ineffective implementation of logging regulations in Nigeria's protected forest areas is a multifaceted problem, deeply rooted in governance failures.

Recommendations

From the analysis and findings, the study makes the following recommendations:

1. There is a need for the government to improve the enforcement of logging permits at the point of timber extraction. This could involve deploying more forestry officers to remote areas, increasing the use of technology such as satellite monitoring to track logging activities, and addressing corruption within forestry departments. Public awareness campaigns could also help inform local communities about the importance of logging permits for sustainable forest management.

2. To address the gaps in the enforcement of haulage permits, relevant authorities could increase the number of checkpoints along major transportation routes and improve collaboration between different government agencies responsible for monitoring timber movement. Additionally, the use of digital systems for tracking timber loads could help create a more transparent and efficient permitting process.

3. The high compliance with sawmill permit requirements suggests that the regulatory framework governing sawmills is functioning relatively well. Authorities could expand on this success by implementing a more stringent system of documentation that tracks the source of timber entering sawmills. This would ensure that only legally harvested timber is processed, thereby discouraging illegal logging.
4. Local communities are often the first to witness illegal logging activities, and their involvement in forest management could improve the enforcement of logging regulations. Initiatives such as community-based forest management, where locals are given a stake in the sustainable use of forest resources, could empower them to monitor and report illegal logging.
5. Addressing corruption within the forestry sector is critical for improving compliance with logging regulations. This could involve establishing independent oversight bodies to monitor the issuance of permits and investigate cases of illegal logging. Ensuring that permit issuance processes are transparent and involve community participation can also reduce opportunities for corruption.

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