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### **ABSTRACT**

*This study examines the prevalence of deforestation in Akwa Ibom State, Nigeria, highlighting its causes, consequences, and potential solutions. Deforestation in the region is driven by factors such as agricultural expansion, urbanization, fuelwood harvesting, and infrastructural development, resulting in biodiversity loss, soil degradation, and climate vulnerabilities. Using insights from existing literature and empirical findings, the research underscores the urgency of addressing these challenges through strategic interventions, including effective policy implementation, afforestation programs, community awareness campaigns, and the promotion of sustainable livelihoods. The paper argues that a multi-stakeholder approach involving government, local communities, and civil society organizations is crucial for curbing forest depletion and promoting environmental sustainability. Ultimately, the study contributed that while the ecological and socio-economic consequences are profound ranging from biodiversity loss to climate vulnerabilities strategic interventions such as policy enforcement, afforestation initiatives, community sensitization, and the promotion of alternative livelihoods remain viable pathways to mitigation. One of the recommendations is that Large-scale tree planting campaigns should be introduced in degraded areas, supported by community-driven afforestation projects to restore lost forest cover and enhance biodiversity.*

**Keyword: Deforestation, Society, Curbing, Menace, Akwa Ibom State**

### **INTRODUCTION**

With major effects on biodiversity, climate change, and human livelihoods, deforestation has become one of the 21st century's most urgent environmental issues. The problem is especially noticeable in Nigeria because of the country's growing population, urbanization, agricultural development, and unsustainable forest resource extraction. Since forest degradation continues to jeopardize ecological balance and community well-being, Akwa Ibom State, which is part of the Niger Delta, is not exempt from this dilemma. Academics have underlined that combating deforestation necessitates both worldwide attention and locally specific solutions that are adapted to local conditions (Etuk, 2021; Ubom & Ekanem, 2018). Fuelwood collection, shifting farming, and infrastructure development are the main causes of Akwa Ibom State's high rate of deforestation. Rapid urbanization has raised the demand for

land and timber, which has resulted in careless tree cutting without sufficient replanting efforts.

According to *Ite et al. (2016)*, with an annual loss of about 3.5% of its forest cover, Nigeria has one of the highest rates of deforestation in the world, which has serious repercussions for ecosystem services, environmental sustainability, and food security. These patterns demonstrate how urgent it is to evaluate Akwa Ibom State's forest depletion's causes and effects.

According to a number of studies, reducing deforestation in Akwa Ibom necessitates a mix of community involvement, legislative initiatives, and sustainable livelihood options. Among the tactics suggested by researchers are bolstering forestry laws, encouraging afforestation initiatives, and funding renewable energy sources (Effiong et al., 2019; Ekpo & Nse, 2020). Furthermore, strengthening rural people with sustainable farming methods and raising awareness can lessen their reliance on damaging practices like slash-and-burn farming. This emphasizes how important it is to undertake forest conservation in the area holistically and with several stakeholders. Thus, this study aims to investigate the extent of deforestation in Akwa Ibom State and evaluate tactical methods to lessen its negative impacts. The study adds to current discussions on environmental management and sustainable development in Nigeria by examining the socioeconomic factors as well as possible remedies. The findings are expected to inform policymakers, civil society, and local communities on effective frameworks for balancing development needs with ecological preservation (Etuk, 2021; Ite et al., 2016; Ekpo & Nse, 2020).

### Concept of Deforestation

According to Dauphin (2024), deforestation means cutting or clearing trees and forests covering a large area and not replanting them. Deforestation affects all types of forests worldwide, but it primarily happens in tropical regions. In 2022, 4.1 million hectares of tropical primary forest were lost, which is the same as 11 football fields of forest being lost per minute. The 2.7 gigatonnes (Gt) of carbon dioxide emissions caused by all of this forest loss are equal to India's yearly emissions from fossil fuels. One of the main causes of the climate crisis and global warming is deforestation. Carbon dioxide, a greenhouse gas released by burning fossil fuels like coal, gas, and oil, is absorbed and stored by a mature tree. The planet's temperature rises as a result of these gases' effects on climate change. Our capacity to absorb these greenhouse gases and decrease global warming, which results in droughts, forest fires, and an increase in the frequency of storms and typhoons, is diminished as more forests are lost.

As mentioned by Mis à jour le (2024) Deforestation refers to the decrease in forest areas across the world that are lost for other uses such as agricultural croplands, urbanization, or mining activities. Since 1960, human activity has greatly accelerated deforestation, which has had a detrimental impact on biodiversity, natural ecosystems, and the climate. According to the UN Food and Agriculture Organization, deforestation occurs at a pace of about 1.3 million km<sup>2</sup> every ten years. The soil deteriorates and becomes weaker due to deforestation. In addition to having higher levels of organic matter, forested soils are typically more resilient to erosion, inclement weather, and harsh weather conditions. This primarily occurs as a result of the roots holding trees firmly in place and the sun-blocking tree cover allowing the soil to gradually dry up.

As explained by Stanley (2025), deforestation is the purposeful clearing of forested land. Forests have been cleared for agriculture, animal grazing, and the production of wood for

building, manufacture, and fuel throughout history and into the present. Globally, deforestation has significantly changed the terrain. Today, only 34% of Western Europe is covered by forests, compared to 80% 2,000 years ago. Between the 1600s and the 1870s, over half of North America's eastern woods were felled for agriculture and lumber production. Over the last 4,000 years, China has lost large tracts of its woods, leaving slightly more than 20% of the country covered by trees today. There used to be a lot of forest land on Earth.

According to Anderson (2025), deforestation can be defined as the intentional clearing of forests or trees on a massive scale, resulting in a permanent loss of forest cover. Often for agricultural or urban purposes, this human-driven activity drastically changes the terrain, transforming what was formerly a forested area into an entirely different landscape. Carbon emissions are not the only way that deforestation fuels climate change. Additionally, it alters the Earth's albedo, or surface reflection, and can cause variations in local humidity and temperature, which further impacts local and worldwide climates.

### **Types of Deforestation**

"Deforestation" refers to the widespread removal, clearing, or degradation of forest area, usually to make way for the growth of cities, industries, or farms. It can take many different forms, depending on the purpose, method, and scope of forest removal. Among the primary kinds are:

#### **1. Clear-Cutting (Clear-Felling) Deforestation**

This happens when a region's trees are all chopped down, leaving the earth barren. It is widely used in forestry harvesting, infrastructure development, and agriculture. Even while it provides the biggest short-term economic benefits, it has the most negative ecological effects since it devastates habitats, reduces biodiversity, and encourages soil erosion (FAO, 2020).

### **2. Selective Logging (Selective Deforestation)**

This method is only used to cut down specific tree species, usually the most expensive ones, such as teak or mahogany. Although selective logging is believed to be less harmful than clear-cutting, it nevertheless contributes to forest degradation by destroying nearby vegetation, constructing access roads, and splintering ecosystems (Asner et al., 2005).

### **3. Slash-and-Burn Agriculture (Shifting Cultivation)**

When vegetation is cut down and burned to provide space for temporary agricultural use, deforestation of this type takes place. Despite its historical use by subsistence farmers, large-scale slash-and-burn is a significant contributor to deforestation, especially in tropical locations like the Amazon and Central Africa. Furthermore, greenhouse gases are released during the burning process, exacerbating climate change (Fearnside, 2017).

### **4. Conversion to Agriculture and Ranching**

For instance, one of the primary drivers of Amazon deforestation in Brazil is cattle ranching. Around 80% of forest loss is caused by agricultural expansion, making it the leading source of deforestation globally. To create cropland or animal grazing pastures, large areas of forest are destroyed (FAO, 2020).

### **5. Urbanization and Infrastructure Expansion**

Forests are cleared to build cities, roads, trains, and dams. Because it replaces natural ecosystems with constructed landscapes, damaging and fragmenting habitats, this type of deforestation is usually irreversible and exceedingly detrimental (Geist & Lambin, 2002).

### **6. Illegal Logging and Fuelwood Harvesting**

In many developing countries, forests are being illegally removed for lumber, charcoal, and fuel. The loss and degradation of forests are accelerated by this unchecked exploitation, especially in areas where communities rely heavily on wood for electricity. (Chakravarty et al., 2012).

### **7. Mining-Induced Deforestation**

For the extraction of coal, bauxite, and gold, mining activities usually require the clearing of large areas of forest. Over time, mining ruins ecosystems, contaminates water, and degrades soil in addition to eliminating trees (Sonter et al., 2017).

There are numerous ways that deforestation can occur, ranging from small-scale fuelwood collection to extensive clear-cutting. Each type contributes differently to biodiversity loss, climate change, and environmental degradation. Communities and governments can develop more successful plans for sustainable land use and forest conservation by being aware of these categories.

### **Causes of Deforestation**

Deforestation, or the widespread removal of forest cover for uses other than forests, is one of the most pressing environmental problems facing the globe today. Forests are essential to maintaining ecological balance because they offer ecosystem services like carbon sequestration, biodiversity conservation, soil preservation, and water management. Despite these advantages, both natural and human-caused factors are causing forests to decline quickly. According to the Food and Agriculture Organization (FAO, 2020), globally, roughly 10 million hectares of forest are destroyed each year, with tropical areas suffering the most. Designing effective policies to

lessen the effects of deforestation and guarantee the sustainable management of forest resources requires an understanding of its root causes.

➤ *Agricultural Expansion*

One of the most significant causes of deforestation is agricultural expansion, which accounts for nearly 80% of global deforestation (FAO, 2020). Growing populations and the global demand for food are driving the conversion of forest land into farmlands and pastures. In countries such as Brazil, vast areas of the Amazon rainforest have been cleared for the production of soybeans and cattle for both local and international markets (Nepstad et al., 2014). In a similar vein, large oil palm plantations have supplanted forests in Southeast Asia, contributing to both economic growth and environmental degradation. Agriculture is essential to food security, but overdevelopment in wooded areas threatens biodiversity and significantly speeds up climate change.

➤ *Logging (Legal and Illegal)*

Deforestation is largely caused by logging, both legal and illegal. Paper, fuel, furniture, and building materials are all made from harvested wood. Even if there are sustainable logging practices, the preservation of forests is at risk since a significant amount of the timber trade in developing countries is illegal. Even selective logging, which targets important species like mahogany and teak, can damage forests by splitting ecosystems and constructing access roads (Asner et al., 2005). In addition to depleting forest resources, illegal logging causes social unrest in communities that depend on forests and reduces government revenue.

➤ *Infrastructure Development and Urbanization*

Deforestation is largely caused by urbanization and rapid population expansion. Large swaths of forest land must frequently be cleared for the construction of roads, dams, industrial zones,

and cities (Geist & Lambin, 2002). Infrastructure development restricts wildlife mobility, fragments ecosystems, and promotes human intrusion into forest areas. For instance, road construction in the Congo Basin has accelerated the loss of forests by allowing loggers and agricultural settlers to access previously inaccessible areas. Urbanization has long-term ecological repercussions because, despite its ability to spur economic expansion, it frequently leads to the irreversible replacement of forests with built areas.

➤ *Mining Activities*

Mining is another significant contributor to deforestation, particularly in regions with a wealth of minerals. The regular loss of forest cover during the extraction of resources, such as coal, oil, bauxite, and gold, leads to both direct and indirect deforestation. Locals are displaced by mining operations, which also degrade soil quality and poison water supplies with heavy metals (Sonter et al., 2017). For example, mercury poisoning of rivers and extensive forest destruction have resulted from gold mining in the Amazon basin, putting public health and aquatic life at risk. Deforestation brought on by mining not only eliminates vegetation but also creates ecological wounds that are hard to repair.

➤ *Fuelwood and Charcoal Production*

In many poor countries, especially in rural regions with limited access to power and clean fuels, forests supply the majority of household energy. Reliance on trees for fuel and charcoal has accelerated forest degradation in regions such as South Asia and Sub-Saharan Africa (Chakravarty et al., 2012). In addition to weakening ecosystems, overharvesting for fuel reduces forest density and raises the risk of desertification. Even though this type of deforestation

usually takes place locally, it can eventually have a significant effect, particularly in places with high poverty rates and little access to alternative energy sources.

➤ *Fires (Natural and Human-Induced)*

Forest fires, which can result from natural sources like lightning or human activities like slash-and-burn agriculture, are the primary drivers of deforestation. Even though fire is a natural ecological activity in some ecosystems, uncontrolled wildfires have the potential to destroy large forest tracts. Peatland fires linked to land clearing for palm oil plantations in Indonesia have resulted in the burning of millions of hectares of forest and the production of massive amounts of greenhouse gases (Fearnside, 2017). Similarly, Amazonian wildfires have gotten worse due to droughts caused by climate change and more human activities. Fires can disrupt natural cycles and lower soil fertility in addition to damaging trees.

➤ *Climate Change*

Climate change influences and exacerbates deforestation. Rising temperatures, longer droughts, and more frequent storms degrade forest ecosystems, making them more susceptible to diseases, pests, and fires (Bonan, 2008). Climate change can sometimes reduce the amount of forest cover by converting woody areas into savannahs, even in the absence of direct human activity. Additionally, there is a self-reinforcing relationship between deforestation and climate change. Deforestation accelerates global warming by releasing carbon dioxide into the atmosphere, endangering forest ecosystems.

➤ *Population Growth and Poverty*

Underlying socioeconomic factors like poverty and population growth are significant indirect causes of deforestation. Because of the increased demand for homes, food, fuel, and land due to fast growing populations, forests are being converted (Geist & Lambin, 2002). Poverty forces

people in many rural communities to use trees in ways that are not sustainable, like subsistence gardening, fuelwood collection, or illegal logging. Reducing poverty is an essential strategy in the battle against deforestation because this cycle is fueled by a lack of sustainable livelihood possibilities.

Deforestation is a complicated problem with both direct and indirect causes, ranging from logging and agricultural expansion to urbanization, mining, and social pressures. While local governance problems and survival needs are the root of certain reasons, the demands of the global market are the cause of others. To stop deforestation, an integrated approach that balances economic growth with environmental sustainability is required. Strategies including promoting sustainable agriculture, maintaining forest governance, providing alternative energy sources, and supporting rural lives are all necessary to reduce the loss of forests. Ultimately, halting deforestation is essential for a sustainable future's socioeconomic and moral well-being in addition to the environment.

### **Effects of Deforestation in our Society**

The second major effect is loss of biodiversity and collapse of ecosystem services that societies depend on. Forests contain the majority of terrestrial species and provide pollination, pest regulation, soil formation and nutrient cycling, freshwater filtration, and genetic resources for medicine and agriculture; fragmentation and clearance produce rapid species declines, disrupt mutualisms (for example, between plants and pollinators), and reduce the capacity of landscapes to rebound after shocks (fires, storms, pests). In addition to lowering crop yields, these ecological losses also make people more susceptible to landslides and erosion, which initially affect rural livelihoods but then ripple out to affect food prices and cause more general economic hardship. In areas with extensive forest conversion, large recent syntheses and

regional studies show increased species loss, deteriorated ecosystem function, and escalating threats to food and water security (Prochazka et al., 2023).

Lastly, there are immediate and frequently uneven social, economic, and health repercussions. Forest loss increases vulnerability to extreme events (fire, drought, floods), damages livelihoods (timber, non-timber forest products, fisheries supported by intact watersheds), and increases public health risks through increased heat stress, worsened air and water quality, and changed patterns of vector-borne and zoonotic disease emergence. Reddington et al. (2025) links deforestation to measurable local decreases in soil fertility and water availability, which fuel migration, exacerbate poverty, and heighten social conflict over resources; to increased incidence of certain infectious diseases where land-use change alters vector habitats; and to higher local heat exposure and attributable mortality. The burden frequently falls on Indigenous peoples and low-income rural communities since these social repercussions are exacerbated in areas with weak governance or where land-use change is driven by massive commodity-scale activities.

### **Strategic ways to curb the Menace of Deforestation in Akwa Ibom State**

Deforestation, or the extensive removal of forests for urban, industrial, or agricultural uses, continues to be a significant environmental and socioeconomic problem on a global scale. Because they control the temperature, preserve biodiversity, safeguard watersheds, and provide for the livelihoods of millions of people, forests are crucial to maintaining ecological balance on a worldwide scale. Yet, according to the Food and Agriculture Organization (FAO, 2020), about 10 million hectares of forest are lost annually, driven mainly by agricultural expansion, logging, urbanization, and mining. Deforestation causes hastened climate change, water scarcity, soil degradation, and biodiversity loss. Governments, international organizations, local

communities, and people must all take proactive, long-term steps to solve this escalating catastrophe.

➤ *Promotion of Sustainable Agriculture*

One of the primary causes of deforestation is the expansion of agriculture, particularly for cash crops like cocoa, oil palm, and soybeans. To stop this, sustainable agricultural methods must be implemented. Practices like agroforestry, crop rotation, intercropping, and organic farming can boost food production without needing the destruction of more forest land (Altieri, 2018). Agroforestry, for example, is the practice of planting trees on agricultural land to increase soil fertility and agricultural productivity while preserving biodiversity. Governments can also assist smallholder farmers by giving them better crops, irrigation systems, and training in sustainable land management practices to reduce reliance on slash-and-burn farming.

➤ *Strengthening Forest Governance and Legal Frameworks*

Corruption and bad governance often enable illegal logging and unsustainable exploitation of natural resources. Effective forest governance is necessary to reduce deforestation. Governments should enforce existing forest protection laws, increase transparency in the timber trade, and give authority to forest monitoring organizations. Drones, satellite photography, and geographic information systems (GIS) are examples of technology that can be used to improve forest surveillance and monitor illegal activity (Kaimowitz, 2020). The EU's Forest Law Enforcement, Governance and Trade (FLEGT) program is one example of how international cooperation can improve regulatory frameworks and lower demand for timber produced illegally.

➤ *Adoption of Alternative Energy Sources*

In many poor countries, reliance on fuelwood and charcoal for cooking and heating is a major cause of forest loss. To reduce this burden, governments and non-governmental organizations should encourage easily available and affordable alternative energy sources, such as solar, biogas, liquefied petroleum gas (LPG), and improved cookstoves (Chakravarty et al., 2012). By reducing their reliance on forest-derived fuel, households may contribute to the preservation of forest resources. Public initiatives that offer subsidies will hasten the adoption of renewable energy in rural areas.

➤ *Reforestation and Afforestation Programs*

Reforestation, or restoring degraded forests, and afforestation, or planting trees in deforested areas, are crucial strategies to stop the deforestation trend. Large-scale tree-planting initiatives, such as Africa's Great Green Wall Project, are intended to restore ecosystems and combat desertification (UNCCD, 2021). However, reforestation should prioritize planting native species over monoculture plantations since native trees have greater ecological value, support local populations, and promote biodiversity. Community-driven tree planting programs should also be encouraged to ensure that residents benefit from regenerated forest ecosystems.

➤ *Economic Incentives and Market-Based Approaches*

Financial incentives can be used to encourage sustainable forest management. Programs like Payment for Ecosystem Services (PES) incentivize landowners and communities to protect their forests by compensating them for the ecological services that trees offer, such as water purification and carbon sequestration (Wunder, 2015). Certification schemes like the Forest Stewardship Council (FSC) also promote sustainable timber production by ensuring that forest products are supplied ethically. Encouraging businesses and consumers to select eco-certified products can reduce the market demand for timber and agricultural products linked to deforestation that are not harvested responsibly.

➤ *Community Participation and Indigenous Rights*

Local communities and indigenous peoples often bear the brunt of deforestation, despite their crucial role as forest stewards. Recognizing and protecting their land rights can significantly minimize deforestation, as forests tended by indigenous groups tend to have lower rates of deforestation (Stevens et al., 2014). When communities are empowered via education, financial aid, and participatory forest management, they can balance the demands of livelihood with conservation. The sustainability and effectiveness of forest conservation measures are ensured when local inhabitants are involved in decision-making.

➤ *International Collaboration and Climate Agreements*

Coordinated international action is required since deforestation is a global issue. The REDD+ program (Reducing Emissions from Deforestation and Forest Degradation), which provides developing countries with financial incentives to protect forests and reduce carbon emissions, is one example of a climate initiative supported by the UN (Angelsen et al., 2018). Trade regulations and international agreements should also forbid the importation of products linked to deforestation, such as cattle and unsustainable palm oil. The goals of sustainable forest management are guaranteed to align with the demands of the global market through international cooperation

➤ *Public Awareness and Education*

Lastly, it is crucial to spread knowledge about the negative effects of deforestation and the advantages of forest protection. Reducing paper waste, recycling, and supporting eco-friendly items are just a few examples of the more sustainable consumption habits that can be promoted by public education campaigns, school initiatives, and media lobbying. Market demand is influenced by consumer behavior, and well-informed decisions can put pressure on businesses to implement sustainable practices. Long-term cultural changes that emphasize forest

conservation for future generations are also fostered by environmental education. Reducing the threat of deforestation necessitates a multifaceted strategy that tackles the root causes of the problem, such as poverty, ineffective governance, and unsustainable consumption, as well as its direct drivers, such as logging and agriculture. Promoting sustainable agriculture, bolstering governance, implementing alternative energy sources, replanting, providing financial incentives, and empowering indigenous populations are examples of strategic solutions. Long-term success also depends on public awareness and international cooperation. In addition to being ecological gems, forests are essential to human survival. Therefore, protecting them is both strategically necessary to prevent climate change and achieve sustainable development, as well as morally required.

## **CONCLUSION**

In conclusion, protecting Akwa Ibom State's forests is crucial for environmental sustainability as well as the long-term well-being and resilience of its people. In conclusion, the continued deforestation in the state is a reflection of Nigeria's larger environmental problems, which are primarily caused by agricultural expansion, urbanization, and unsustainable resource exploitation. Despite the serious ecological and socioeconomic effects, which range from biodiversity loss to climate vulnerabilities, strategic interventions like policy enforcement, afforestation initiatives, community sensitization, and the promotion of alternative livelihoods are still viable avenues for mitigation.

## **RECOMMENDATIONS**

1. To replenish lost forest cover and improve biodiversity, large-scale tree planting campaigns must be implemented in degraded areas, bolstered by neighborhood-based afforestation initiatives.

2. To replenish lost forest cover and improve biodiversity, large-scale tree planting campaigns must be implemented in degraded areas, bolstered by neighborhood-based afforestation initiatives.
3. To lessen their need for slash-and-burn techniques, farmers should be encouraged to embrace environmentally benign techniques, including crop rotation, agroforestry, and organic farming.
4. Encourage Reforestation and Afforestation: In degraded areas, extensive tree planting programs must be implemented

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