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Effects of Illegal Logging on Rainforest Sustainability and Community Livelihoods

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Keywords

Abstract

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Illegal logging remains a major environmental and socio-economic challenge with severe implications for rainforest sustainability and community livelihoods, particularly in Nigeria. It involves unauthorized extraction, processing, transportation, and trade of forest resources, often driven by weak governance, corruption, poverty, and high global demand for timber. This study examines the impacts of illegal logging on biodiversity, climate stability, ecosystem integrity, and the socio-economic wellbeing of forest-dependent communities. Findings show that illegal logging contributes significantly to deforestation, habitat destruction, and species extinction, including endangered wildlife such as the Cross River gorilla and Nigeria–Cameroon chimpanzee. It also accelerates climate change through increased carbon emissions and the loss of forest carbon sinks. Ecologically, it leads to soil degradation, reduced forest regeneration, and ecological imbalance. Socio-economically, affected communities experience loss of income, food insecurity, increased poverty, higher cost of living, and displacement. Furthermore, illegal logging fuels social conflicts, rural–urban migration, and human rights abuses. The study reveals that Nigeria records substantial annual forest loss, driven largely by illicit timber exploitation. It concludes that illegal logging undermines both environmental sustainability and human development. The paper

	recommends stronger forest governance, improved enforcement of environmental laws, community participation, and sustainable forest management practices to mitigate these challenges and promote long-term ecological and socio-economic stability.
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Introduction

Illegal logging poses a global challenge impacting both developing and developed nations (Food and Agricultural Organization-FAO, 2021). According to Olawuyi & Odeyale, (2025), the world has lost almost half of its forest to agriculture, development and resource extraction. - resulting in forest deforestation, jeopardizing valuable ecosystem services, biodiversity and the livelihoods of forest-dependent communities (Hansen & Treue, 2018). The forest belt, which provides timber, wildlife and other essential products, is increasingly under pressure from illegal activities driven by intensive logging, vegetation degradation, land clearing for agriculture, industrialization and urban expansion. These pressures have resulted in significant global forest loss and depletion of forest resources. According to Aluko, Adejumo and Bobadoye (2020), illegal forest activities include all unlawful actions within forest ecosystems, ranging from unauthorized exploitation of timber and non-timber products to operations beyond concession limits, as well as illegal processing, transportation and trade that violate environmental laws. Kleinschmit, Leipold, and Sotirov (2016) further emphasize these violations. Such practices severely damage biodiversity conservation (Olawuyi & Odeyale, 2025), reduce government revenue, distort market prices and discourage investment in legitimate forestry operations (Tacconi, 2017).

In Nigeria, the forest industry encompasses both formal and informal sectors, with products including fuelwood, charcoal, roundwood, sawn wood, wood-based panels, pulp and paper. According to Areo et.al. (2024), the current demand for forest products is substantial and continually growing exponentially and potentially leading to long-term shortages. No doubt, forests play a significant role in Nigeria's national gross domestic product and support the livelihoods of its people while also providing vital environmental and ecological services. White, (2018), argued that illegal logging stands as a primary driver of deforestation, encompassing various illicit practices such as logging protected or endangered species, violating logging regulations, using forged permits, tax evasion and processing wood without proper documentation. Leblois, Damette, and Wolfersberger (2017) acknowledged that agricultural exports are a major driver of deforestation, though the extent differs across countries depending on forest cover. They also note that illegal forest activities worsen deforestation, marginalize local communities, and encourage environmental degradation and fraud. Hence, sustainable agriculture that discourages unauthorized logging should be promoted by addressing gaps between harvested wood and legal consumption.

Forest resources offer inherent benefits like income generation and economic growth, making them prone to continuous exploitation and according to Manuel, Chazdon & Brancalion (2019), inability to regulate this exploitation can lead to incalculable environmental issues that will adversely affect the forests. Recently, there has been a growing discourse on the necessity for sustainable growth, emphasizing the importance of pursuing growth in a manner that can be sustained across generations. In response, Areo *et al*, (2024), asserts and warned advisedly that illegal logging severely degrades rainforest sustainability by causing biodiversity loss, habitat fragmentation, and increased carbon emissions. It disrupts local communities by depleting resources essential for subsistence, such as timber and non-timber products, which increases poverty and causes economic hardship, while also increasing vulnerability to environmental disasters. Illegal logging in Nigeria has severe, long-term consequences on rainforest

sustainability and the livelihoods of local communities. The practice, driven by high demand for timber, poverty and weak law enforcement, has resulted in Nigeria having one of the highest rates of deforestation in sub-Saharan Africa, with an average of 400,000 hectares of forest lost annually.

The escalating practice of illegal logging within rainforest ecosystems presents a crucial challenge, threatening both the ecological integrity of these vital habitats and the socioeconomic wellbeing of communities that rely on them. It is an ever-increasing global problem with devastating social, economic and environmental consequences which makes it easier in countries where forests are not well regulated, further accentuate the destructive issue of illegal logging business worldwide. This paper aims to provide an understanding of the effects of illegal logging on rainforest sustainability and community livelihoods in Nigeria.

Statement of the Problem

Rainforests are among the most valuable natural resources in the world, providing essential ecological services such as biodiversity conservation, climate regulation, soil protection and water cycle maintenance. They also serve as a vital source of livelihood for millions of people who depend on forest resources for food, income, medicine, fuelwood and other economic activities. Despite their importance, rainforests continue to face severe threats from illegal logging, a practice that has become increasingly widespread in many developing countries, including Nigeria. Illegal logging involves the unauthorized harvesting, transportation, processing, and trade of timber in violation of existing forestry laws and regulations (Telo da Gama, 2023). The persistence of this practice has resulted in extensive deforestation, destruction of wildlife habitats, loss of biodiversity, soil degradation and increased greenhouse gas emissions. Consequently, the sustainability of rainforest ecosystems is being undermined, reducing their ability to provide critical environmental services for present and future generations (Ambe & Onnoghen, 2019).

Beyond its environmental consequences, illegal logging poses significant socio-economic challenges to forest-dependent communities. The depletion of timber and non-timber forest resources has reduced income-generating opportunities, increased poverty levels, worsened food insecurity and weakened traditional livelihoods. In many cases, local communities are displaced from their ancestral lands, while conflicts over forest resources and land ownership continue to intensify. Although several policies and regulations have been introduced to curb illegal logging, the problem remains prevalent due to weak enforcement mechanisms, corruption, poverty and high demand for timber products. Therefore, there is a need to critically examine the effects of illegal logging on rainforest sustainability and community livelihoods in order to provide evidence-based recommendations for sustainable forest management and improved community welfare.

General Objective

To examine the effects of illegal logging on rainforest sustainability and the livelihoods of communities that depend on forest resources.

Specific Objectives

1. To assess the extent to which deforestation impact rainforest sustainability.
2. To examine the effects of illegal logging on biodiversity conservation and ecosystem stability.
3. To investigate the socio-economic impacts of illegal logging on the livelihoods of local communities.

4. To identify sustainable strategies for reducing illegal logging and promoting rainforest conservation while improving community livelihoods.

Literature review

Deforestation and rainforest sustainability.

Deforestation is the large-scale removal of forest cover, often through logging, agricultural expansion, infrastructure development and urbanization. It remains one of the most significant environmental challenges facing tropical regions, especially rainforests in Africa, South America, and Southeast Asia. As alluded to by Watson et.al. (2018), rainforest sustainability is the ability of forest ecosystems to maintain their ecological functions, biodiversity and productivity over time, while also supporting human needs without being degraded and exhausted. Community livelihoods, on the other hand, relate to the means by which local and indigenous populations depend on forest resources for survival, income, culture and overall wellbeing and as adumbrated by Singh et.al. (2026), rainforests play a crucial role in sustaining life on Earth; they regulate climate patterns, store carbon, maintain rainfall cycles and support rich biodiversity. They also provide essential resources such as food, medicine, fuelwood, timber and non-timber forest products that millions of people depend on for their daily survival. However, deforestation disrupts these ecological and socio-economic functions, creating a chain of environmental degradation and human hardship. One of the most significant impacts of deforestation is the loss of biodiversity and this distorts to a large extent the ecosystem. Indisputably, rainforests are home to a wide variety of plant and animal species, many of which are endemic and cannot survive elsewhere. When forests are cleared, habitats are destroyed, leading to species displacement and extinction. This loss of biodiversity weakens ecosystem stability and reduces the resilience of forests to environmental changes such as climate variability and disease outbreaks (Libalah, et.al, 2026). Deforestation also directly undermines rainforest sustainability by reducing forest cover and degrading ecosystem services. Trees act as carbon sinks, absorbing carbon dioxide from the atmosphere. When forests are cleared, not only is this capacity reduced, but the carbon stored in trees is released into the atmosphere, contributing to global warming and climate change. Additionally, it leads to soil erosion, reduced soil fertility, disruption of water cycles, automatically making it difficult for forests to regenerate naturally.

According to Patra, Kumar & Saikia (2022), the effects of deforestation extend deeply into community livelihoods as any rural and indigenous communities rely heavily on forests for their survival, implying that, they depend on forests for food, medicinal plants, building materials and income-generating activities such as harvesting and selling forest products. When forests are destroyed, these resources become scarce, leading to increased poverty and food insecurity. In many cases, communities are forced to abandon traditional livelihoods and migrate to urban areas in search of alternative means of survival. Furthermore, deforestation often leads to social and economic inequalities, because large-scale land conversion for agriculture, mining and commercial logging frequently displaces indigenous populations from their ancestral lands. This not only disrupts their cultural heritage but also exposes them to economic marginalization and social exclusion. Conflicts may also arise over land ownership and resource control, especially in regions where land tenure systems are weak or poorly enforced (Kumar, Kumar & Saikia, 2022). In countries like Nigeria, deforestation has become a major environmental concern due to rapid population growth, high demand for agricultural land, and weak enforcement of environmental regulations. The continuous loss of forest cover threatens both ecological balance and the livelihoods of forest-dependent communities. Dey, S. (2025), stressed further that it also reduces the potential for sustainable development, as forests are essential for climate regulation, agriculture and rural development. Addressing deforestation requires a holistic and sustainable approach. Strengthening environmental policies, promoting sustainable land-use practice.

Effects of Illegal Logging on Biodiversity Conservation and Ecosystem Stability

Illegal Logging has become one of the most significant threats to biodiversity conservation and ecosystem stability across tropical rainforest regions of the world. Biodiversity as posited by Cooke,et.al,(2026), shows the variety of plant and animal species that exist within an ecosystem, while ecosystem stability describes the ability of an ecosystem to maintain its structure, functions, and resilience despite environmental disturbances. Rainforests are among the richest ecosystems on earth, hosting more than half of the world's terrestrial species. However, the increasing rate of illegal logging has severely undermined their ecological integrity. Empirical studies consistently demonstrate a strong relationship between illegal logging and biodiversity loss. According to the Food and Agriculture Organization (FAO, 2023), illegal logging contributes significantly to global deforestation, resulting in habitat destruction and fragmentation. When trees are illegally harvested, many wildlife species lose their breeding grounds, shelter, and food sources. Research conducted by Gibson et al. (2019) in tropical forests revealed that areas affected by illegal logging recorded substantial declines in mammal, bird and amphibian populations compared to protected forest areas. Similarly, Areo et al. (2024) observed that illegal logging in Nigerian rainforests has contributed to the decline of endangered species such as the Cross River gorilla and the Nigeria-Cameroon chimpanzee due to habitat degradation and increased human encroachment.

Beyond biodiversity loss, illegal logging disrupts ecosystem stability by altering the natural balance of forest ecosystems. Forest ecosystems depend on complex interactions among plants, animals, microorganisms, soil and climatic conditions. The indiscriminate removal of trees weakens these interactions and reduces ecosystem resilience. Empirical evidence from a study by Leblois, Damette, and Wolfersberger (2017) found that logged forests exhibit lower ecological productivity and reduced regenerative capacity compared to undisturbed forests. The removal of key tree species often interrupts nutrient cycling, seed dispersal, and pollination processes, making ecosystem recovery difficult. Furthermore, illegal logging contributes significantly to climate change, which further threatens biodiversity conservation. Forests function as major carbon sinks by absorbing carbon dioxide from the atmosphere. However, when trees are illegally harvested or burned, large quantities of stored carbon are released into the atmosphere. According to the Intergovernmental Panel on Climate Change (IPCC, 2022), deforestation and forest degradation account for a substantial proportion of global greenhouse gas emissions. Rising temperatures and changing rainfall patterns resulting from climate change have adverse effects on species survival and ecosystem functioning.

Socio-Economic Impacts of Illegal Logging on the Livelihoods of Local Communities

Illegal logging has far-reaching socio-economic consequences for local communities, particularly those whose livelihoods depend directly on forest resources. In many rural areas of Nigeria and other developing countries, forests serve as a major source of income, food, medicine, fuelwood and raw materials. Consequently, the depletion of these resources through illegal logging negatively affects the welfare and economic stability of forest-dependent populations. Empirical studies indicate that illegal logging contributes significantly to poverty and livelihood insecurity. According to the Food and Agriculture Organization (FAO, 2023), communities living near degraded forests often experience reduced access to timber and non-timber forest products, resulting in declining household incomes. Similarly, Areo et al. (2024) found that the destruction of forest resources in Nigeria has reduced employment opportunities in forestry-related activities, forcing many households into economic hardship. As valuable tree species become scarce, community members who depend on forest products for trade and subsistence struggle to sustain their livelihoods.

Illegal logging also contributes to food insecurity. Forests provide fruits, nuts, mushrooms, bush meat, and other resources that supplement household nutrition. Research by Ogundele and Oladipo (2016) revealed

that the depletion of forest resources reduces agricultural productivity and limits access to alternative food sources, thereby increasing vulnerability to hunger among rural households. In many cases, families are forced to spend more money on food and basic necessities, leading to a higher cost of living. Furthermore, illegal logging often generates social conflicts and displacement. Competition over shrinking forest resources frequently results in disputes among communities, logging operators, and government agencies. Studies have shown that some indigenous and forest-dependent populations lose access to ancestral lands due to uncontrolled logging activities, disrupting traditional lifestyles and cultural practices. The resulting economic pressures often encourage rural-urban migration, particularly among youths seeking alternative employment opportunities.

Illegal logging and rainforest sustainability

Illegal logging is one of the most persistent environmental crimes threatening rainforest sustainability across the globe, particularly in tropical regions such as the Amazon Basin, Central Africa, and Southeast Asia. It refers to the harvesting, processing, transportation, or trade of timber in violation of national extant laws (Ahmed & Hasan, 2026). This includes logging protected species, harvesting beyond permitted quotas, operating without licenses, falsifying documentation, and encroaching into protected forest reserves. Beyond being an environmental issue, illegal logging is also deeply connected to economic, governance, and social challenges that undermine sustainable development. Rainforests play a critical role in maintaining ecological balance and supporting life on earth. They serve as major carbon sinks, absorbing large amounts of carbon dioxide and helping to regulate global climate patterns. They also harbour over half of the world's terrestrial biodiversity and provide essential ecosystem services such as soil conservation, water regulation, and oxygen production. However, illegal logging disrupts these vital functions by destroying forest structure, reducing canopy cover, and fragmenting habitats. As trees are indiscriminately removed, the forest loses its ability to regenerate naturally, leading to long-term ecological decline (Kabutey-Ongor, et.al, 2026; Gupta, et.al, 2026).

One of the most serious consequences of illegal logging is biodiversity loss. Many rainforest species depend on specific habitats for survival, and when these habitats are destroyed, species become vulnerable to extinction. Endangered animals such as primates, birds, and insects lose their natural environment due to uncontrolled deforestation. Over time, this leads to ecosystem imbalance, where the interdependence between species is broken. The disappearance of key species also affects pollination, seed dispersal and nutrient cycling, further weakening rainforest resilience. Illegal logging also contributes significantly to climate change. Trees store carbon, and when they are cut down or burned, this stored carbon is released into the atmosphere as carbon dioxide, a major greenhouse gas. This increases global warming and alters rainfall patterns, leading to more frequent droughts, floods, and extreme weather events. In addition, deforestation reduces the forest's capacity to act as a climate regulator. It is estimated that deforestation and forest degradation contribute a substantial percentage of global greenhouse gas emissions, making illegal logging a major driver of environmental change.

Soil degradation is one of the most serious consequences of illegal logging because tree roots naturally bind the soil and prevent erosion, while the forest canopy shields the ground from heavy rainfall. When trees are removed indiscriminately and unlawfully, the soil is left exposed, making it highly vulnerable to erosion. This leads to reduced soil fertility, declining agricultural yields, and an increased risk of desertification. Over time, degraded land becomes unsuitable for farming and natural forest regeneration (Sahoo, et.al, 2025). In Nigeria and other rainforest regions, illegal logging remains a major obstacle to sustainable forest management. Its persistence is driven by high demand for timber, poverty, weak enforcement of environmental laws, and corruption. As a result, vast forest areas are cleared annually, accelerating environmental degradation and biodiversity loss. It also undermines climate stability and weakens national conservation efforts. Additionally, illegal logging distorts timber markets by introducing cheap, illegally

sourced wood, reducing government revenue and discouraging investment in legal forestry. Weak monitoring systems and poor institutional coordination further worsen the situation (Beuchle, et.al,2021).

Consequences

Biodiversity Loss and Species Extinction: Illegal logging destroys ecosystems, leading to the loss of both plant and animal species, including endangered species like the Cross River gorilla and Nigeria-Cameroon chimpanzee. The leading cause of biodiversity loss is deforestation. Illegal logging is one of the most considerable driving forces behind this. Many species are threatened with extinction because their vital habitat is being destroyed. The richness of forest ecosystems is seriously threatened by the clearing of forests for illicit logging purposes. Widespread biodiversity loss results from the disturbance of natural environments, which impairs the interconnectedness necessary for the existence of several species. Many plant and animal species are in danger of going extinct due to the massive deforestation and fragmentation that has occurred in these areas. According to current estimates, the pace of species extinction is alarming and ranges from one to ten species every year (Poore, 1989).

Deforestation, global warming and climate change: Large areas of natural forests are fragmented or converted into grasslands, reducing the overall forest cover and ruining the structural integrity of the forest. Unauthorized logging destroys over 500,000 hectares annually, contributing significantly to global carbon emissions and accelerating climate change. Illegal logging exacerbates global warming and climate change by destroying trees, which are essential carbon sinks and climate regulators. This practice increases global temperatures and reduces the amount of forest cover, making large areas more vulnerable to extreme weather. Unauthorized forest clearing for the purpose of logging contributes around 11% of carbon emissions, which worsens the effects of global warming. Illegal logging exacerbates global warming and climate change by cutting trees, which are essential carbon sinks and climate regulators. This practice increases global temperatures and reduces the amount of forest cover, making large areas more vulnerable to extreme weather. The unauthorized cutting down of forests for the purpose of extracting timber is responsible for roughly 11% of carbon emissions (Areo, Omole, Amoo-Onidundu & Adejoba, 2024). Climate change is increased by forest loss. An intact forest absorbs carbon dioxide and is a prime defence against rising global temperatures. Greenhouse gas emissions have skyrocketed in modern times due to the increased burning of fossil fuels (Anna, 2024) **Ecological Imbalance:** The unregulated removal of valuable timber reduces soil fertility, increases vulnerability to extreme weather, and alters the local climate. Degradation reduces the forest's capacity for regeneration, increasing vulnerability to fire, drought, and desertification. **Damaging Young Stands:** Indiscriminate logging operations often destroy immature trees and non-wood forest products in the process of extracting mature trees. **Soil Erosion:** Removal of tree cover leads to erosion and reduced soil fertility.

Effects of illegal logging on Community Livelihoods

The effects of logging on local communities are so alarming and Boyapati & Muthukumarappan (2025), buttressed that, is responsible for lose access to resources necessary for survival, such as firewood, traditional medicine, and food sources. Communities that rely on forests for non-timber forest products (like fruits, herbs, and materials) suffer as these resources are destroyed. illicit logging causes financial losses that affect the employment and profit prospects that could arise from the forest's resources, which include plants, animals, timber, natural resources, and medicinal herbs. According to Ogundele & Oladipo (2016), illegal logging poses the risk of depleting high-value timber species if access to these resources is

not effectively regulated by mandated institutions. The forest holds significant potential for revenue generation, and its destruction translates to government revenue deprivation. Without addressing the issues of illegal exploitation, efforts to promote sustainable forest management investments are likely to remain ineffective, resulting in economic losses (FAO, 2023).

The destruction of forest resources has reduced agricultural output and exacerbated food insecurity for approximately 71% of rural households. As forest resources disappear, communities face economic hardship and lower living standards (John, et.al, 2024). Accordingly leading to increased in the cost of Living. Generally scarcity of wood and other forest products has led to a significant increase in the cost of living in communities near logging areas because indigenous peoples in many timber-producing nations have long relied on forests for their livelihoods and according to Oldekop, et.al, (2020), illegal tree cutting is now severely impacting these communities, causing human rights violations and violent clashes with illicit loggers who encroach on their reservations. The native residents have little control over the ownership of their land or its management and have little leverage to solve the problem alone (Anna, 2024). Hence, indigenous groups and people living nearby frequently confront a variety of difficult circumstances which has damage their cultural legacy in addition to upsetting their customs and means of subsistence. Furthermore, some people's only source of income is the forest; these forces them into a cycle of reliance on illicit logging, which is similar to modern-day slavery and further isolates them from their cultural roots (Gutman, 2021; Izursa *et al.*, 2015; Nazir & Olabisi, 2017).

Sustainable Strategies for Reducing Illegal Logging and Promoting Rainforest Conservation While Improving Community Livelihoods

Awazi (2025), agreed that addressing the problem of illegal logging requires a combination of environmental, economic and social strategies that not only protect rainforest ecosystems but also improve the livelihoods of local communities. Sustainable conservation efforts are most effective when they balance ecological protection with human development needs. One of the most important strategies is strengthening forest governance and law enforcement. Empirical studies have shown that weak regulations, corruption, and inadequate monitoring systems contribute significantly to illegal logging activities (Awazi, 2025). Governments should enhance surveillance through modern technologies such as satellite monitoring, geographic information systems and forest patrol units. Strict penalties for offenders and improved transparency in forest management can also deter illegal exploitation of forest resources. According to Amado & Coelho (2025), community participation is another critical strategy for sustainable rainforest conservation and he further opined that, forests managed with the active involvement of local communities experience lower rates of illegal logging and deforestation. Community-based forest management empowers residents to protect forest resources while benefiting from their sustainable use. By involving local people in decision-making processes, conservation efforts become more effective and socially acceptable.

Furthermore, providing alternative livelihood opportunities can reduce dependence on illegal logging. Many rural households engage in illegal forest activities due to poverty and limited economic options. Sustainable income-generating activities such as agroforestry, beekeeping, ecotourism, fish farming and the cultivation of non-timber forest products can improve household incomes while reducing pressure on forests (Amado & Coelho, 2025). Studies by Al Mubarak, et.al (2024); Teku (2025) and Hamza, et.al, (2023), have shown that communities with diversified sources of income are less likely to participate in environmentally destructive activities. Environmental education and public awareness campaigns are equally important, because educating communities about the ecological and economic value of rainforests can encourage responsible resource utilization and conservation behaviour. In addition,

partnerships between governments, non-governmental organizations, private sectors, and international agencies can provide financial and technical support for sustainable forest management initiatives.

Methodology

This study uses a qualitative analytical approach, drawing insights from existing literature, policy reports, and empirical studies on illegal logging and forest degradation in Nigeria and other developing regions. By reviewing and combining findings from different sources, the study develops a clearer and more comprehensive understanding of the issue, particularly its patterns, causes, and impacts on forests and the environment

Theoretical Framework

Tragedy of the Commons Theory

Tragedy of the Commons Theory was first introduced by Garrett Hardin in 1968, in his seminal essay *The Tragedy of the Commons*. Hardin argued that when individuals have open and unrestricted access to shared resources, they tend to act in their own self-interest, ultimately leading to the depletion of those resources, even when it is clear that such behaviour is harmful in the long run. Other scholars, including William Forster Lloyd, laid the early intellectual foundation for this idea in the 19th century by illustrating how common grazing lands could be overused when individual herders prioritize personal gain over collective sustainability. Together, their works shaped modern understanding of environmental governance and resource management. The theory is built on several key assumptions. First, it assumes that individuals are rational and self-interested, meaning they will seek to maximize personal benefit even at the expense of collective welfare. Second, it assumes that common resources are open-access and weakly regulated, with limited enforcement mechanisms to control usage, and that each user receives direct benefits from exploiting the resource, while the negative consequences of overuse are shared by everyone. This imbalance creates a strong incentive for overexploitation. Finally, the theory assumes that environmental resources are finite and can be degraded or exhausted if overused.

The theory states that illegal logging continues unabated, because forests are viewed as common-pool resources that are vulnerable to unrestricted exploitation. Illegal loggers, driven by economic gain, harvest timber without regard for regeneration cycles and long-term ecological balance. Because enforcement is often weak in many rainforest regions, especially in developing countries like Nigeria, illegal logging becomes widespread and difficult to control. Over time, this leads to deforestation, loss of biodiversity, soil erosion, and disruption of ecosystem stability. From a community livelihood perspective, the tragedy becomes even clearer. While individuals and groups may gain short-term income from logging, entire communities suffer long-term consequences such as reduced access to forest products, declining agricultural productivity, and increased poverty. Thus, the theory suggests that if illegality goes unchecked, it can undermine both environmental sustainability and human well-being. A key criticism of the Tragedy of the Commons theory is that it overemphasizes individual self-interest while ignoring the capacity of communities to self-regulate shared resources. It also assumes weak governance and inevitable resource depletion, neglecting cases where collective action, cultural norms, and effective institutions successfully prevent overexploitation.

Conclusion and Recommendations

The findings unequivocally demonstrate that illegal logging contributes a significant and multifaceted threat to both rainforest sustainability and the livelihoods of communities dependent upon these vital ecosystems. The ecological consequences including widespread deforestation, biodiversity loss and degradation of essential ecosystem services are profound and long-lasting. Moreover, the impact on local communities are devastating often leading to poverty, exploitation and the erosion of traditional ways of life. The

pervasiveness of illegal logging is further exacerbated by weak governance, corruption and lack of effective enforcement mechanisms. These contribute to deforestation from illegal logging to climate change underscores the global significance of the issue.

Addressing the problem of illegal logging is not merely an environmental imperative, it is also a matter of social justice and economic stability. Failure to effectively combat this practice will result in irreversible damage to rainforest ecosystems, jeopardizing the well-being of countless communities. Hence the following recommendations.

1. Government and law enforcement should be strengthened
2. There should be improvement in forest management and policies
3. There should be supports for community empowerment and livelihood
4. International cooperation and funding should be enhanced
5. There should be public awareness to educate the public about the environmental and social impacts of illegal logging.

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