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FOREST OWNERSHIP DISTINCTIVENESS ACROSS THE GLOBE: A REVIEW

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ABSTRACT: *Forest ownership is a significant issue affecting multiple stakeholders such as private landowners, indigenous communities, government agencies, and the general public. This study examines the FAO Global Forest Resources Assessment (FRA, 2020) and related literature to synthesise current knowledge on global forest ownership. It aims to explore various aspects of forest ownership, including legal frameworks, societal impacts, and environmental consequences. The review emphasises the importance of comprehending forest ownership to enhance effective forest management and conservation endeavours. The study finds that forest ownership is highly varied, differing significantly within and between countries. Public ownership is the most common form of forest ownership worldwide, while private ownership is more prevalent in Europe and the United States. On the other hand, regions like Africa and other developing areas have a higher number of publicly owned forests. The study also identifies critical influencers of forest ownership, encompassing cultural, social, economic, and political factors. Overall, the study stresses the necessity for extensive research into forest ownership especially in developing countries like Nigeria, and its implications for promoting sustainable forest management.*

KEYWORDS: Forest ownership, Forest Management and Conservation, FAO Global Forest Resources Assessment (FRA, 2020).

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INTRODUCTION

Different definitions of forests are employed worldwide, considering variables like their purpose, the activities they support, and characteristics such as tree density and height. According to Muhammad and Bello (2014), different groups such as hunters, farmers, and wood collectors perceive forests differently based on their uses. Rozikin *et al.* (2023) define a forest as an area predominantly populated by trees. The United Nations Food and Agriculture Organization (2020) specifies that a forest is a land spanning more than 0.5 hectares with trees taller than 5 meters and a canopy cover exceeding 10 per cent, excluding primarily agricultural or urban areas. Thus, a forest can be understood as a sizable piece of land covered mainly by trees and accessible to various users.

Forest ownership refers to the entity responsible for owning and managing forested land, which varies based on geographic region, country, state, or local area, influenced by legal systems and forest policies. Ownership can be held by private individuals, corporations, government bodies, or conservation organisations.

The concept of forest ownership is categorised broadly into two main types: Public ownership and Private ownership (White and Martin, 2002), with the 2015 Global Forest Resources Assessment introducing an additional category of Unknown/Other ownership (Whiteman *et al.*, 2015).

According to White and Martin (2002), public ownership encompasses lands owned by central, regional, or local governments. This category includes lands managed directly by government entities and lands designated or "reserved" for local communities, including indigenous groups, under conditional arrangements where the government retains ultimate ownership and the authority to revoke community rights over entire areas. Typically, local communities do not possess the rights to sell or mortgage land. This arrangement varies widely across countries, but governments generally maintain significant control over resource extraction and management. Examples include government-reserved lands for indigenous peoples in Brazil and the United States, joint-forest management initiatives in India, social forestry programs in Thailand, the Philippines, and Indonesia, and Zimbabwe's campfire program (White and Martin, 2002).

As defined by White and Martin (2002), private ownership refers to rights over forested areas that governments cannot unilaterally terminate without due process and compensation. This category is further divided into forest areas owned by indigenous and local community groups and private individuals and companies. Private landowners typically have rights to access, sell, manage, extract resources, and exclude external parties from their property.

According to the Global Forest Resources Assessment (2015), approximately one-third of the Earth's land area is covered by forests, totalling around 4.06 billion hectares. Notably, more than half of the world's forests are concentrated in just five countries: Russia (20%), Brazil (12%), Canada (9%), the United States (8), and China (5%). Forests in the Russian Federation play a critical role in global carbon cycling, sequestering vast amounts of carbon dioxide and mitigating climate change (Romanovskaya *et al.*, 2020). Russia's forests are diverse, ranging from the boreal forests, also known as taiga, which dominate Siberia, to temperate forests in the western part of the country.

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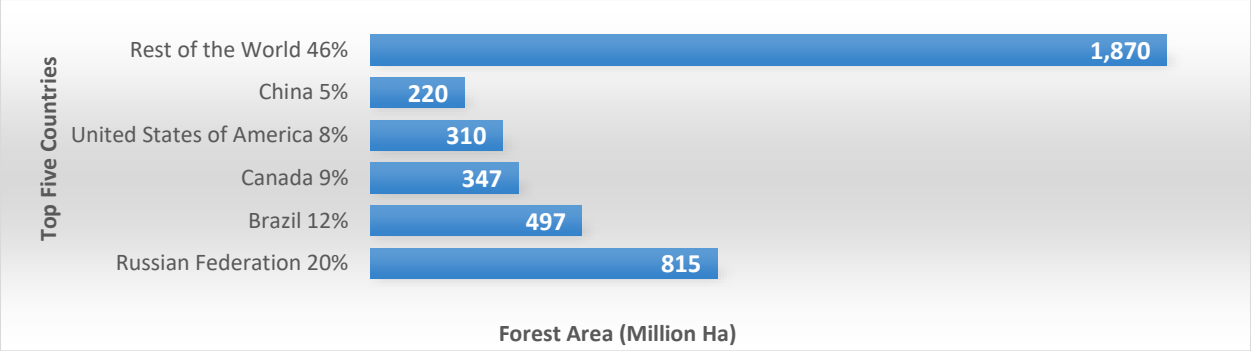

Figure 1: Top Five Countries with Highest Forest Area (million ha) in the World, Adapted from FRA, 2020

Of the four main global climatic regions, the tropical zone boasts the highest forest coverage at 45%. Tropical forests are indispensable for maintaining global biodiversity, regulating climate, and supporting human livelihoods. However, they face significant threats from deforestation, climate change, and illegal activities (Swamy, 2018). Continued conservation efforts, sustainable land use practices, and international cooperation are essential to protect and preserve these vital ecosystems for future generations. The Boreal region is the second highest forest coverage at 27%, followed by the Temperate region at 16%, and the Subtropical zones at just 11% (FRA, 2020).

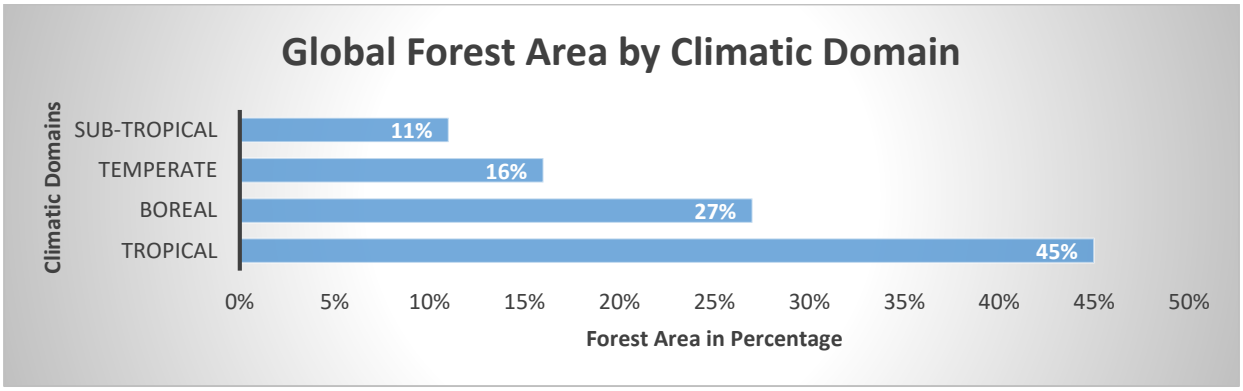

Figure 2: Proportion and Distribution of Global Forest Area by Climatic Domain, Adapted from FRA, 2020

Since 1990, approximately 178 million hectares of forest have been lost globally, roughly equivalent to the land area of Libya. However, the rate of net forest loss has significantly declined over time due to various factors. Some countries have reduced deforestation, while others have expanded their forest cover through afforestation and natural expansion. Between 1990 and 2000, the annual rate of net forest loss was 7.8 million hectares, which decreased to 5.2 million hectares per year from 2000 to 2010, and further to 4.7 million hectares per year from 2010 to 2020.

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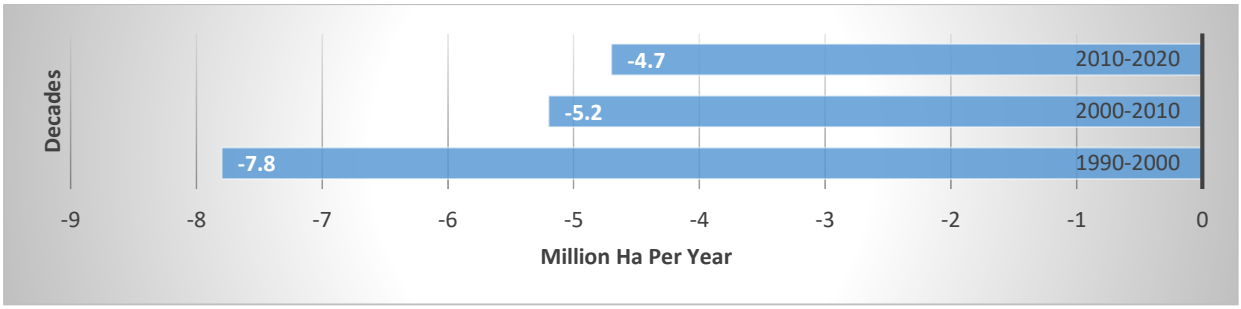

Figure 3: Global Annual Forest Area Net Change by Decade, 1990-2020 (Adapted: FRA, 2020)

This reduction can be attributed to global initiatives such as the Millennium Development Goals introduced in 2000 and their transformation into the Sustainable Development Goals in 2015. Goal 15 specifically focuses on terrestrial ecosystems, advocating for sustainable forest management and conservation. Increased global awareness has been instrumental in mitigating forest loss worldwide (Keenan *et al.*, 2015).

GLOBAL CONTEXT OF FOREST OWNERSHIP

White and Martin's 2002 report presents government-identified forest ownership data but overlooks unrecognized claims from indigenous and other local communities who often govern forest resources without official recognition. According to the Food and Agriculture Organization (FAO), as of 2015, approximately 73% of the world's forests are publicly owned, while 22% are privately owned. However, there are significant exceptions within specific countries. For instance, in the United States, private individuals and firms own over half of the forests, reported as 55% by White and Martin (2002) or 60% by the National Association of State Foresters in 2023. Similarly, in Sweden (70%), Finland (80%), and Argentina (80%), the majority of forest lands are privately owned. Notable exceptions include Mexico and Papua New Guinea, where indigenous and local communities own about 80% and 90% of forests, respectively (White and Martin, 2002). Conversely, forests in Russia are entirely publicly owned, while in Canada, 94% are publicly owned, contributing significantly to the global proportion of publicly owned forests, given these countries' substantial forest cover.

Nevertheless, it's crucial to highlight that land tenure issues remain unresolved in many regions. Forest tenure encompasses various ownership, tenancy, and usage arrangements for forest lands, incorporating legally defined rights and customary practices for managing and utilising forest resources.

Globally, public administrations manage 83% of publicly owned forest areas, with South America notably having 97% of its publicly owned forests managed by public administrations. Since 1990, there has been a decrease in the global share of forests managed by public administrations, with an increasing responsibility taken on by private businesses, entities, institutions, and indigenous and tribal communities (FRA, 2020).

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European Union

In the European Union (EU), there has been a decline in the proportion of forests owned by public entities since 1990, accompanied by an increase in privately owned forest areas (Linser and Wolfslehner, 2022). Across Europe, roughly 60% of forested land is privately owned, while the remaining 40% is under public ownership (Pulla, *et al.*, 2013). Europe's forests are managed by approximately 16 million owners, encompassing both private individuals and public entities, with publicly owned forests often referred to as "state forests" (Nabuurs *et al.*, 2018).

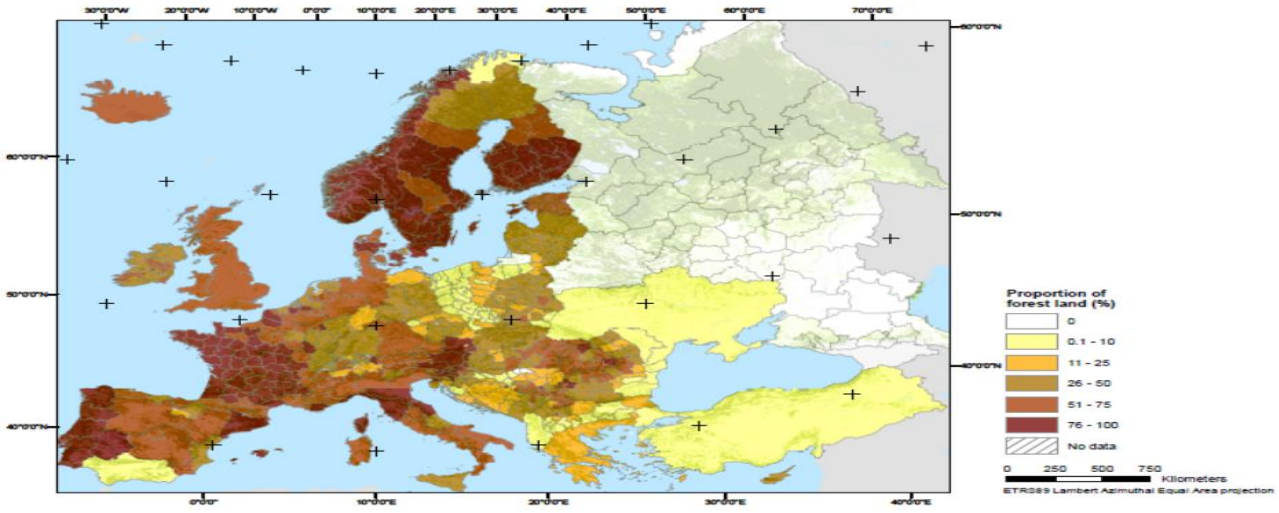

Figure 4: Distribution of Private Ownership across Europe (Adopted: Pulla, *et al.*, 2013)

United States of America

Approximately 8% of the world's forests are located within the United States, covering a total of more than 800 million acres. Forest ownership in the United States is categorized into three main sectors: Federal, State, and Private. Federal and state agencies oversee public lands for various purposes, including conservation, resource production, and recreational activities (Gray *et al.*, 2010).

The federal government administers 238.4 million acres (96.5 million hectares), comprising lands managed by the United States Department of Agriculture Forest Service (145.2 million acres or 58.7 million hectares), Bureau of Land Management (38.1 million acres or 15.4 million hectares), and other agencies such as the U.S. National Park Service and the Department of Defense (55.1 million acres or 22.3 million hectares).

State, county, and municipal governments collectively manage 82.7 million acres (33.4 million hectares). Private entities own and manage 445 million acres (180.1 million hectares), divided into corporate ownership (147.4 million acres or 59.2 million hectares) and non-corporate ownership (297.6 million acres or 120.4 million hectares).

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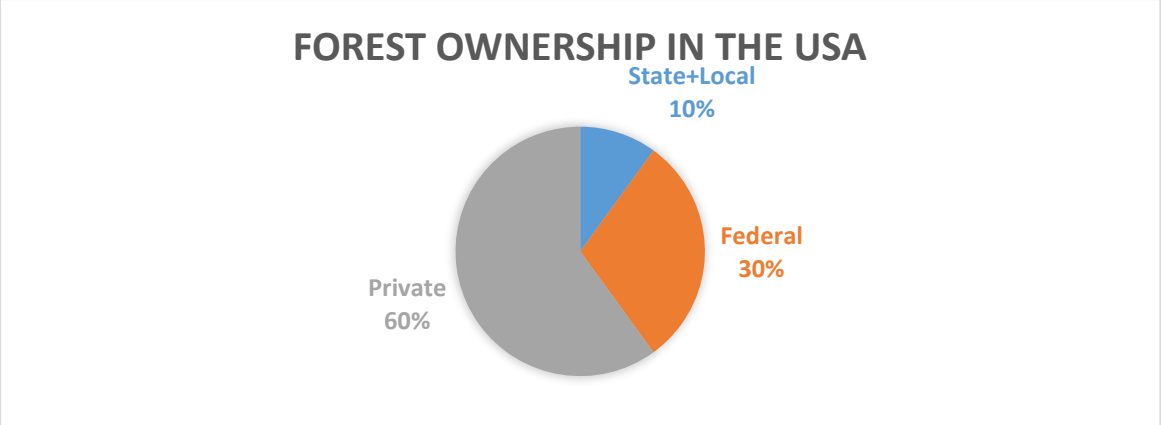

Figure 5: Forestlands Ownership in the United States of America (Oswalt, *et al.*, 2019)

Africa

In Africa and Asia, governments predominantly own forest land but often have limited effective authority over it, indicating that while they hold official ownership, their control is often weak (Charnley and Poe, 2007). African countries with available data typically lack officially reserved land for communities and have no privately owned forests, whether by communities or individuals. However, these findings may not fully represent all African nations, as some countries are beginning to revise their land laws to acknowledge customary forest resource use (FRA, 2020).

Historically, African states have asserted significant rights, as evidenced by a survey showing that governments claimed ownership of 98% of forests; by 2013, this figure had reduced to 93.7% (Sunderlin *et al.*, 2008).

While securing rights to forest resources is crucial, it alone is insufficient to enhance livelihoods and ensure sustainable forest and natural resource management. Rural communities require support to manage their lands and forests sustainably and engage competitively in the market for forest products and services, either independently or in partnership. This necessitates institutional and policy backing, moving beyond mere tenure and forest management plans to promote sustainable forest management by rural communities (Siry *et al.*, 2005).

In contrast, Eastern and Southern Africa are shifting natural resource rights and management to local levels, decentralising authority (Selebalo and Webster, 2017).

West Africa

New forest and land laws in West Africa acknowledge ownership by the State, individuals, communities, and local authorities. Owners of community and private forests must adhere to specific restrictions to ensure forest protection functions, but they also have some autonomy in decision-making, particularly concerning commercial plantations. The significant changes involve transferring management and utilisation rights to local groups. For instance, Benin's forest law allows for the transfer of forest management to nearby local populations through management agreements, even though the forest areas remain under state ownership. These

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agreements outline management practices and the allocation of income from forest resources (Barrow *et al.,* 2016).

In Burkina Faso, there is an emphasis on forest management within conservation areas, which can subsequently transfer management and utilisation rights to local groups. Similarly, Senegal's legislation mandates the transfer of management of non-state-owned forest areas to local communities (Barrow *et al.,* 2016).

Nigeria

According to the most recent Forest Resource Assessment (FRA) Nigeria country report from 2020, all forests within Nigeria are under public ownership, with no private ownership recorded. Nigeria has approximately 9,041,000 hectares of forested land, constituting around 9.9% of the total land area of the country (Elisha and Felix, 2021). Additionally, Nigeria boasts 382,000 hectares of planted forests (Gasu, Gasu, and Ntemuse, 2021). Between 1990 and 2010, Nigeria saw an average annual loss of 409,650 hectares of forest cover, representing about 2.38% of its forested area. During this same period, Nigeria experienced a total loss of approximately 8,193,000 hectares of forest cover, amounting to a decrease of 47.5% (Azeez, Mushunje, and Taruvinga, 2017).

Nigeria's forests being entirely publicly owned is a significant factor contributing to the substantial annual forest loss, largely influenced by rural populations residing near forest reserves and other natural wooded areas. As of 2006, Nigeria had 1,160 forest reserves (Ayeni, 2013). According to the 1978 Land Use Act, all forest reserves, except National Parks and federal government or agency-owned lands, fall under the control and management of state governors. Since the adoption of a policy in 1988 that aimed to designate approximately 25% of Nigeria's forests as reserves, there has been limited community involvement despite the pivotal role of community leaders in this policy. This shift has resulted in reduced traditional forestry education, hindering sustainable forest management practices and awareness of the importance of community-based forest resource management. Addressing these issues is crucial to enhance community participation in forest resource management.

Local communities heavily depend on trees and other forest resources for their livelihoods (Adam and El Tayeb, 2014). Currently, involving local communities in the conservation and management of native forest species is considered a leading practice in natural resource management. Globally, one-third of forests are managed through community-based forestry, promoting tree conservation, carbon storage, community empowerment, development, and poverty alleviation (Gnacadja and Wiese, 2016). However, this model is not widely adopted in Nigeria and across Africa, highlighting the need for a new national policy approach, as outlined in the National Forest Policy of 2020.

Despite the importance of involving local communities in forest resource management, it is crucial to acknowledge potential conflicts between communities regarding forest resources when transferring management rights. There is also a risk of corruption within local communities, which could result in mismanagement of forest resources. Furthermore, there are concerns that local communities might prioritise short-term economic gains over long-term forest conservation goals. Additionally, communities may lack the expertise and resources needed for effective forest management and conservation. Therefore, emphasis should be placed on private-sector investment in forestry instead of community-based approaches, as

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privatising certain forested areas could potentially enhance conservation efforts and ensure sustainable forest management.

In Nigeria, private entities might participate in illegal logging within forest reserves, while local communities engage in unsustainable resource exploitation. The lack of community involvement could stem from insufficient incentives or compensation. Additionally, cultural and societal factors may make community-based forest management impractical in Nigeria. Strengthening forest management policies and enforcement could potentially reduce the vulnerability of forest reserves to exploitation and degradation. Furthermore, in Northern Nigeria, the main drivers of forest degradation and exploitation appear to be poverty, (Ogundele, 2016) and the absence of alternative livelihoods for local communities, rather than inadequate management policies.

There is no evidence linking banditry to forest degradation. However, the Boko Haram insurgency did result in the destruction of vegetation in places like Sambisa (Olaniyan, 2021). The 2020 National Forest Policy cited weak institutional capacity as a significant factor contributing to the decline in forest resources. It identified inadequate manpower, resources, policies, and weak law enforcement in the forestry sector at all levels of governance. This weak management of forests by the Nigerian government makes forest reserves more susceptible to unsustainable exploitation of resources, deforestation, and subsequent degradation. Recently, groups such as Boko Haram insurgents and bandits have turned forests into bases for their activities (Ladan, 2014; Rufai, 2021).

CONCLUSION

Public ownership remains the global predominant form of forest ownership, while private ownership is notably more widespread in Europe and the United States of America. Conversely, regions such as Africa and other developing areas exhibit a higher prevalence of publicly owned forests. The disparity underscores the diverse approaches to forest management and conservation across different continents.

Given this context, countries like Nigeria are urged to consider revising their national forest policies to recognise the potential benefits of privatising forest reserves. This strategic shift aims to bolster sustainable forest management practices by encouraging more efficient resource allocation and fostering local stakeholder engagement.

Moreover, there is a compelling need for extensive research into forest ownership dynamics in African nations. Such research would serve as a critical foundation for developing tailored policies and legislative frameworks that promote effective forest conservation and management strategies. By integrating empirical findings and local insights, policymakers can better address the complex challenges facing forest ecosystems while harnessing the economic and environmental benefits that sustainable forest management can offer.

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REFERENCES

Adam, Y. O., and El Tayeb, A. M. (2014). Forest dependency and its effect on conservation in Sudan: A case of Sarf-Saaid Reserved Forest in Gadarif state. *Agriculture and Forestry/Poljoprivreda i Sumarstvo, 60*(3).

Ayeni, A. O. (2013, November 8). Forestry in Nigeria: A brief historical overview, phases of development and present. *African Association of Remote Sensing of the Environment (AARSE) Special Publication.*

Azeez, F. A., Mushunje, A., and Taruvinga, A. (2017). A. Forest extraction income participation and return analysis in south-western Nigeria. *International Journal of Development and Sustainability, 6*(6), 260-277.

Barrow, E., Kamugisha-Ruhombe, J., Nhantumbo, I., Oyono, R., and Savadogo , M. (2016). Who owns Africa's forests? Exploring the impacts of forest tenure reform on forest ecosystems and livelihoods. *Forests, Trees and Livelihoods, 25*(2), 132-156.

Charnley, S., and Poe, M. R. (2007). Community forestry in theory and practice: Where are we now? *nnu. Rev. Anthropol., 36*, 301-336.

Elisha, O. D., and Felix, M. J. (2021). Destruction of coastal ecosystems and the vicious cycle of poverty in Niger Delta Region. *J. Glob. Agric. Ecol, 11*(2), 7-24.

European Forest Institute. (2023). *Connecting Knowledge To Africa.* Joensuu, Finland.

Food and Agricultural Organisation. (2020). *Global Forest Resources Assessment.* Rome: United Nations.

FRA. (2020). *Forest Resources Assessment Country Report, Nigeria.* Nigeria: Food and Agricultural Organisation of the United Nations.

FRA. (2020). *Global Forest Resource Assessment.* Rome: United Nations.

Gasu, M. B., Gasu, G. N., and Ntemuse, U. E. (2021). A review of biodiversity loss and climate change: Policy measures and adaptation strategies in Nigeria. *Malaysian Journal of Tropical Geography (MJTG), 47*(1 and 2), 100-122.

Gnacadja, L., and Wiese, L. (2016). Land degradation neutrality: will Africa achieve it? Institutional solutions to land degradation and restoration in Africa.

Gray, A. N., Brandeis, T. J., Shaw, J. D., McWilliams , W. H., and Miles, P. D. (2010). *Forest Inventory and Analysis Database of the.* Long Database Report.

Keenan, R. J., Reams, G. A., Achard, F., de Freitas, J. V., Grainger, A., and Lindquist, E. (2015). Dynamics of global forest area: Results from the FAO Global Forest Resources Assessment 2015. *Forest Ecology and Management*, 9-20.

Ladan, S. I. (2014). Forests and forest reserves as security threats in northern Nigeria. *European Scientific Journa, 10*(35).

Linser, S., and Wolfslehner, B. (2022). National implementation of the forest europe Indicators for sustainable forest management. *Forests, 13*(2), 91.

Muhammad, A., and Bello, A. G. (2014). *Fundamentals of Forestry.* Samaru, Zaria , Kaduna, Nigeria: Ahmadu Bello University Press Ltd.

Article DOI: 10.52589/AJENSR-GN3WOOFI
DOI URL: https://doi.org/10.52589/AJENSR-GN3WOOFI

Nabuurs, J. G., Verkerk, P. J., Schelhaas, M., González-Olabarria, J. R., Trasobares, A., and Cienciala, E. (2018). Climate-Smart Forestry: mitigation implact in three European regions. *European Forest Institute, 6*.

National Forest Policy. (2020). *Federal Ministry of Environment.* Abuja: Federal Republic of Nigeria.

Ogundele, A. T., Oladipo, M. O., & Adebisi, O. M. (2016). Deforestation in Nigeria: The needs for urgent mitigating measures. *International Journal of Geography and Environmental Management*, *2*(1), 15-26.

Olaniyan, A. O., & Okeke-Uzodike, U. (2021). When two elephants fight: insurgency, counter-insurgency and environmental sufferings in northeastern Nigeria. *Journal of Contemporary African Studies*, 39(3), 437-453.

Oswalt, S. N., Smith, W. B., Miles, P. D., and Pugh, S. A. (2019). *Forest Resources of the United States: A Technical Document Supporting the Forest Service 2020 RPA Assessment.* Washington, DC: U.S. Department of Agriculture, Forest Service. doi:10.2737/wo-gtr-97

Pulla, P., Schuck, A., Verkerk, P. J., Lasserre, B., Marchetti, M., and Green, T. (2013). *Mapping the Distribution of Forest Ownership in Europe.* Joensuu: European Forest Institute. Retrieved 2013

Romanovskaya, A. A., Korotkov, V. N., Polumieva, P. D., Trunov, A. A., Vertyankina, V. Y., & Karaban, R. T. (2020). Greenhouse gas fluxes and mitigation potential for managed lands in the Russian Federation. *Mitigation and Adaptation Strategies for Global Change*, 25, 661-687.

Rozikin, M., Andy, F. W., and Bambang, S. R. (2023). Sustainable Development: Disaster Risk Reduction of Forest and Land Fire in Indonesia. *International Journal of Membrane Science and Technology, 10*(3), 329-339.

Rufai, M. A. (2021, September Thursday 9th). I AM A BANDIT: A Decade of Research in Zamfara State. *15 University Seminar Series, Usmanu Danfodiyo University*.

Selebalo, H., and Webster, D. (2017). Monitoring the right of access to adequate housing in South Africa. *Studies in Poverty and Inequality Institute (SPII)*.

Siry, J. P., Cubbage, F. W., and Ahmed, M. R. (2005). Sustainable forest management: global trends and opportunities. *Forest policy and Economics, 7*(4), 551-561.

Sunderlin, W. D., Hatcher, J., and Liddle, M. (2008). *From exclusion to ownership? Challenges and opportunities in advancing forest tenure reform.* Rights and Resources Initiative.

Swamy, L., Drazen, E., Johnson, W. R., & Bukoski, J. J. (2018). The future of tropical forests under the United Nations Sustainable Development Goals. *Journal of sustainable forestry*, 37(2), 221-256.

White, A., and Martin, A. (2002). *Who Owns The World's Forests? Forest Tenure And Public Forests In Transition.* Washington, D.C.: Forest Trends.

Whiteman, A., Wickramasinghe, A., and Piña, L. (2015). Global trends in forest ownership, public income and expenditure on. *Forest Ecology and Management*, 99-108.

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