



TRADITIONAL KNOWLEDGE AND INTELLECTUAL PROPERTY RIGHTS IN ENVIRONMENTAL CONSERVATION: EMERGING LEGAL ISSUES AND REFORM PATHWAYS

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ABSTRACT

Across generations, traditional knowledge has guided how communities protect land, forests, and biodiversity, embedding conservation practices within cultural norms rather than formal law. This article examined the role of traditional knowledge in environmental conservation and assessed the extent to which intellectual property law protected such knowledge within Nigeria's contemporary legal framework. Using a doctrinal legal research methodology, the article analysed Nigeria's environmental and biodiversity laws, relevant international instruments on traditional knowledge protection, and selected comparative frameworks from Kenya and South Africa. The article found that traditional knowledge contributed significantly to biodiversity conservation, climate resilience, and sustainable resource management in indigenous communities, but remained inadequately protected under Nigeria's conventional intellectual property regime. It further revealed that the absence of a dedicated traditional knowledge statute, weak domestic implementation of international obligations, limited recognition of customary law, power imbalances affecting indigenous communities, and risks of forced disclosure collectively expose traditional knowledge to misappropriation and exploitation. The article concluded that Nigeria's fragmented legal approach undermined both environmental governance and indigenous rights. It recommended the adoption of a sui generis legal framework for traditional knowledge protection, the strengthening of access-and-benefit-sharing and prior informed consent mechanisms, fuller integration of customary governance structures, and institutional capacity-building to support community participation. These reforms were identified as essential to reposition traditional knowledge as a legally protected pillar of sustainable environmental governance in Nigeria.

KEYWORDS: *Traditional ecological knowledge, Intellectual property, Environmental conservation*

1.0 INTRODUCTION

Environmental conservation entails the practice of protecting and managing the natural environment to ensure its viability for both present and future generations.¹ Various methods have

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been developed to conserve the environment for this purpose, and one of these is the use of traditional/indigenous knowledge systems. These refer to the wealth of knowledge, skills, practices, and innovations that have been passed down through generations within communities, tribes, ethnicities, often rooted in their cultural, customary and historical context.² Long before the emergence of formal legal environmental protection, indigenous and local communities developed systems of ecological governance rooted in customary norms, culture, spiritual beliefs and collective stewardship of natural resources.³ Across indigenous tribes worldwide, these norms and beliefs were fundamental in protecting specific species and ecosystems.⁴ In Nigeria, these systems manifest in practices such as sacred groves, species taboos, seasonal harvesting rules, agroecological farming techniques, and ethnobotanical knowledge, which collectively contribute to biodiversity protection and ecosystem preservation.⁵ Traditional knowledge clearly constitutes an essential yet under-protected component of environmental conservation.

Despite its environmental value, traditional knowledge remains vulnerable within contemporary legal systems. The increasing commercial interest in biological resources, particularly in agriculture, pharmaceuticals, biotechnology, and climate-related innovations,⁶ has not only revealed that these traditional knowledge systems risk erosion and misuse without adequate indigenous participation, compensation, or protection,⁷ but has exposed structural weaknesses in existing intellectual property regimes.

The uniqueness and sacredness of traditional knowledge justify its protection, not just within indigenous legal systems but across contemporary and global legal systems as well. One of the ways their protection can be guaranteed against misuse is through intellectual property. Conventional intellectual property law is grounded in individual authorship, novelty, fixation, and limited duration.⁸ It is, therefore, seemingly ill-equipped to protect knowledge that is communal, orally transmitted, intergenerational, and inseparable from land and culture.⁹ This mismatch indeed facilitates risks of misappropriation, commonly described as biopiracy, undue exploitation, while excluding indigenous communities from participation, decision-making and benefit-sharing

¹ M. Singh, 'Environmental Conservation and Sustainability: Strategies for a Greener Future' *International Journal for Multidimensional Research Perspectives* (2023) 1 (3) 187-188.

² S. Yadav, 'Protection of Traditional Knowledge' *International Journal of Novel Research and Development* (2024) 9 (6) 649.

³ I. Egeruoh-Adindu, 'Leveraging Indigenous Knowledge for Effective Environmental Governance in West Africa' *Beijing Law Review* (2022) 13, 931-947.

⁴ N. C. Anyachebelu, 'Biodiversity Conservation and Indigenous Rights: Legal Perspectives and Challenges' *International Journal of Research and Publication* (2024) 5 (3) 356-364.

⁵ Egeruoh-Adindu (n. 3) 932.

⁶ L. A. Trujillo-Cayado and Others, 'Emerging Trends in Sustainable Biological Resources and Bioeconomy for Food Production' *Applied Sciences* (2025) 15, 6555.

⁷ K. Hossain and R. M. Ballardini, 'Protecting Indigenous Traditional Knowledge Through a Holistic Principle-Based Approach' *Nordic Journal of Human Rights* (2021) 39 (1), 51-72.

⁸ A. T. Anthony and E. S. Chinedu, 'Intellectual Property Rights in Nigeria: A Critical Examination of the Activities of the Nigerian Copyright Commission' *Journal of Law, Policy and Globalization* (2015) 35, 56-61.

⁹ 79-80



arrangements.¹⁰ Yet, all hope is not lost. International law, under the United Nations (UN) and the World Intellectual Property Organisation (WIPO), is evolving to protect indigenous and local knowledge, especially relative to biodiversity, ethnomedicine, climate resilience and adaptation, among others. Several traditional and cultural knowledge are becoming more protected under international law, but challenges persist as mentioned above. And within domestic legal frameworks, the protection of indigenous/traditional knowledge is fragmented. Nevertheless, as this paper will reveal, while conventional intellectual property often fails to protect oral, generational knowledge, *sui generis* systems are evolving to prevent exploitation, ensure benefit-sharing, and respect indigenous stewardship.¹¹

This article, therefore, examines the relationship between traditional knowledge, intellectual property rights and environmental conservation. It centres the discussion within indigenous practices found in Nigeria, draws comparative lessons from South Africa and Kenya and evaluates the evolving legal framework. The article argues that effective protection of traditional knowledge for environmental conservation requires an integrated legal approach that combines intellectual property tools, access and benefit-sharing mechanisms, recognition of customary law and community-centred governance structures.

2.0 CONCEPTUAL FRAMEWORK

a. Traditional Knowledge

Traditional knowledge refers to the cumulative body of knowledge, innovations and practices developed and sustained by indigenous and local communities through long-standing interaction with their environment.¹² It is typically collective in ownership, transmitted orally or through practice and continuously adapted in response to ecological change.¹³ Unlike formal scientific knowledge, traditional knowledge is embedded within cultural, spiritual and social systems, making it inseparable from community identity and territorial relationships.¹⁴ UNESCO refers to indigenous knowledge as the understandings, skills, and philosophies of Indigenous peoples, developed through long and multigenerational histories of interactions with the natural world and adapting to highly variable and changing ecological and social conditions, including colonisation and globalisation.¹⁵

¹⁰ B. Priya, 'Preserving the Past, Protecting the Future: IPR Approaches to Traditional Knowledge' *Indian Journal of Integrated Research in Law Volume* (2025) V (V) 1846-1869.

¹¹ L. P. Vinjamuri and R. Bahuguna, 'Legal Protection of Traditional Knowledge for Environmental Sustainability– A Study in India Vis-à-Vis International Context' *Asian Journal of Environment & Ecology* (2022) 17 (2) 28-36.

¹² P. K. Lakshmanan and S. Lakshmanan, 'Protecting Traditional Knowledge: Can Intellectual Property Rights help?' *Anc. Sci.* (2014) 1 (2) 30-41.

¹³ A. Habiyaremye and L. Korina, 'Indigenous Knowledge Systems in Ecological Pest Control and Post-Harvest Rice Conservation Techniques: Sustainability Lessons from Baduy Communities' *Sustainability* (2021) 13, 9148, 2.

¹⁴ B. Naamwintome and D. Millar, D. Indigenous Knowledge and the African Way Forward: Challenges and Opportunities. *Open Access Library Journal* (2015) 2, 1-9.

¹⁵ UNESCO, 'Local and Indigenous Knowledge Systems' (UNESCO, 2022). <<https://en.unesco.org>>



In the environmental context, traditional knowledge encompasses indigenous ecological knowledge relating to biodiversity conservation, land use, water management, climate adaptation, medicinal plants and sustainable agriculture. Its legitimacy derives not from formal documentation but from long-term empirical validation through lived experience.”

b. Intellectual Property Rights

Intellectual property rights are legal mechanisms designed to incentivise creativity and innovation by granting exclusive, time-limited rights over inventions and creative works.¹⁶ The principal IP regimes: patents, copyrights, trademarks and geographical indications, are predominantly individualistic and commercial in orientation.¹⁷ They rely on criteria such as novelty, inventiveness, originality and identifiable authorship. Notwithstanding, while IP law can, in limited circumstances, protect certain manifestations of traditional knowledge, its structural assumptions often conflict with the communal, cumulative and perpetual nature of traditional knowledge. As a result, traditional knowledge frequently falls into the public domain, rendering it vulnerable to appropriation without consent or compensation.¹⁸

c. Environmental Conservation

Environmental conservation refers to the sustainable management and protection of natural resources to maintain biodiversity, ecosystem services and ecological balance for present and future generations.¹⁹ Contemporary conservation discourse increasingly recognises the role of indigenous peoples and local communities as custodians of biodiversity.²⁰ Traditional knowledge systems contribute not only to conservation outcomes but also to climate resilience, food security and sustainable development.²¹

3.0 THEORETICAL FOUNDATIONS

There are several theoretical frameworks that influence traditional knowledge and intellectual property rights in environmental conservation, and they are discussed hereunder.

First, the environmental justice theory is a theory developed by diverse social mobilisations that strive for justice by linking environmental and social issues and foregrounding the voices and experiences of marginalised and vulnerable communities.²² The theory highlights the distributive and procedural inequities faced by indigenous communities whose knowledge sustains

¹⁶ P. Singh, ‘Research Paper on Intellectual Property Rights’ *Intellectual Journal of Novel Research and Development* (2024) 9 (3) 609-617.

¹⁷ L. I. Beltrán-Urvina and Others, ‘Intellectual Property as a Strategy for Business Development’ *Laws* (2025) 14 (18) 1-39.

¹⁸ Naamwintome and Millar (n. 13).

¹⁹ Singh (n. 1).

²⁰ N. M. Dawson and Others, ‘The Role of Indigenous Peoples and Local Communities in Effective and Equitable Conservation’ *Ecology and Society* (2021) 26 (3) 19.

²¹ V. Jakes, ‘The Role of Traditional Knowledge in Sustainable Development’ *International Journal of Humanity and Social Sciences* (2024) 3 (2) 41-55.

²² R. Pearse, ‘Compounding Barriers to Environmental Justice’ *Local Environment* (2025) 30 (11) 1439-1454.



conservation efforts but whose rights are often marginalised within formal legal systems.²³ Denial of legal recognition perpetuates historical patterns of exclusion and environmental injustice.

Second is the commons theory. Commons theory explains how shared resources and shared knowledge can be sustainably governed by communities through collective rules and institutions, rather than exclusively through private ownership or State control.²⁴ The theory emerged as a response to Garrett Hardin's influential but pessimistic "tragedy of the commons" thesis, which assumed that resources held in common would inevitably be overexploited unless privatised or placed under centralised State regulation.²⁵ Elinor Ostrom's seminal work, *Governing the Commons*, fundamentally reshaped this debate by demonstrating, through extensive empirical studies, that communities are capable of self-organising to manage common-pool resources sustainably using locally developed norms, monitoring systems, and graduated sanctions.²⁶ The commons theory conceptualises traditional knowledge and associated biological resources as collectively managed commons rather than private property.²⁷ This perspective challenges the dominance of exclusive ownership models and supports governance arrangements based on shared stewardship and community norms.

4.0 TRADITIONAL KNOWLEDGE AND INTELLECTUAL PROPERTY RIGHTS IN ENVIRONMENTAL CONSERVATION

a. STATUS AND PROTECTION UNDER DOMESTIC AND INTERNATIONAL LAW

International law increasingly acknowledges traditional knowledge as a component of environmental governance. Both the UN and WIPO have frameworks recognising the importance of protecting indigenous and cultural knowledge. The Convention of Biological Diversity, which Nigeria is a party to,²⁸ obliges States to respect, preserve and maintain traditional knowledge relevant to biodiversity conservation and to encourage equitable benefit-sharing.²⁹ The Nagoya Protocol strengthens this framework by requiring prior informed consent and mutually agreed terms for access to traditional knowledge associated with genetic resources.³⁰ At the intellectual property level, negotiations under the World Intellectual Property Organisation (WIPO) have culminated in the 2024 Treaty on Intellectual Property, Genetic Resources and Associated Traditional

²³ S. R. Sharma and M. Sharma, 'From Environmental Degradation to Social Transformation: Exploring the Role of Eco-Justice in the Struggles of Indigenous Communities' *Open Journal of Social Sciences* (2025) 13 (5) 325-357.

²⁴ A. Storlazzi and P. Pastore, 'Theory of Commons Governance and Public Administration System.' In: A. Farazmand (eds) *Global Encyclopedia of Public Administration, Public Policy, and Governance* (Springer, 2023).

²⁵ G. Hardin, 'The Tragedy of the Commons' *Science: New Series* (1968) 162 (3859) 1243-1248.

²⁶ R. Q. Herzberg, 'Elinor Ostrom's *Governing the Commons*: Institutional Diversity, Self-Governance, and Tragedy Diverted' *The Independent Review* (2020) 24 (4) 627-636.

²⁷ C. Meyer and K. Naicker, 'Collective Intellectual Property of Indigenous Peoples and Local Communities: Exploring Power Asymmetries in the Rooibos Geographical Indication and Industry-wide benefit-sharing agreement' *Research Policy* (2023) 52, 104851.

²⁸ Convention of Biological Diversity, 1992. CBD, 'List of Parties.' <<https://www.cbd.int/information/parties.shtml>> Accessed 19th March 2026.

²⁹ *ibid*, Article 1-3.

³⁰ Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits arising from their Utilization to the Convention on Biological Diversity, 2010



Knowledge.³¹ The Treaty introduces mandatory patent disclosure requirements, enhancing transparency and helping prevent misappropriation, even though it stops short of creating a full proprietary right in traditional knowledge.³²

Although Nigeria is not part of the African Regional Intellectual Property Organization (ARIPO), the Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore 2010 is another, African-centred, framework that presents a useful and appropriate model for a sui generis system of law.³³ It expressly states local and indigenous communities as the beneficiaries and owners of their traditional knowledge, providing for exclusive rights to protection of knowledge by communities to approve usage of knowledge or otherwise and protecting against misuse, misappropriation and abuse thereof.³⁴

While both the UN and WIPO frameworks recognise the importance of traditional knowledge in environmental conservation and protecting it, there are no global databases on knowledge protected. The UN system encourages States to have these databases themselves.³⁵ Nigeria has signed the Treaty, but it has not ratified it, nor is it part of the Swakopmund Protocol, nor does it have a database protecting certain traditional knowledge, leaving enforcement hanging in the balance.

b. NIGERIAN PERSPECTIVES

i. Legal and Institutional Framework for Traditional Knowledge Protection and Intellectual Property Rights in Environmental Conservation in Nigeria

While Nigeria has an extensive legal and institutional framework for environmental conservation, biodiversity protection and ecological management through various means, including indigenous participation under its Environmental Impact Assessment Act 1992,³⁶ National Park Service Act 1999,³⁷ National Environmental Standards and Regulations Enforcement Agency Act 2007 (as amended in 2018)³⁸ and accompanying Regulations, there are no specific or dedicated laws for the utilisation of traditional knowledge systems in environmental protection or the protection of such traditional knowledge systems. Nigeria's National Biodiversity Strategy and Action Plan 2015-2020 developed in fulfilment of Nigeria's obligations under the Convention on Biological Diversity, recognises the role of indigenous and local communities in biodiversity conservation and

³¹ Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge 2024.

³² *ibid*, Article 1.

³³ A. M. Ibrahim, 'New Rules visiting the Old Practice: A Case for the Protection of Traditional Knowledge in Nigeria' *AEFUNAI Law Journal of Public and Private Law* (2025) 1, 151-152.

³⁴ *ibid*.

³⁵ CBD 1992.

³⁶ Environmental Impact Assessment Act 1992.

³⁷ National Park Service Act 1999.

³⁸ National Environmental Standards and Regulations Enforcement Agency Act 2007 (as amended in 2018).



promotes community participation, equitable benefit-sharing and sustainable use of biological resources.³⁹

The recently validated Nigeria's National Biodiversity Strategy and Action Plan 2025–2030 further strengthens this orientation by adopting an approach that integrates indigenous communities, cultural practices, and local knowledge into national biodiversity governance frameworks.⁴⁰ The lack of legal protection, however, impedes intentional and practical enforcement of traditional knowledge protection, especially to prevent biopiracy and misuse.⁴¹ Accordingly, for the government to ensure indigenous knowledge protection, full implementation of the policy framework is fundamental.

ii. Indigenous Environmental Conservation Practices rooted in Traditional Knowledge

Evidence from Nigerian communities demonstrates the conservation value of traditional knowledge. Sacred groves in Nigeria, preserved through spiritual taboos and customary enforcement, function as biodiversity hotspots and carbon sinks. In many traditional societies, cultural taboos put restrictions on the excessive use of some plants, the killing of some animals, such as pythons, monitor lizards, and crocodiles, considered animal totems or revelations of “gods” and “spirits” of the indigenous community⁴² or carrying out development in some forest areas known as “evil forest,” preventing overfishing from some waters by tagging the waters “*Owumiri*”, dedicated rivers or sea.⁴³ Certain species of trees, such as the Iroko tree, among others, are also protected as being abodes of the gods or spirits of the village.⁴⁴ Other practices, including rotational grazing, seasonal fishing restrictions and sustainable harvesting of medical plants, help to protect ecosystems and biodiversity within the regions therein.⁴⁵

While these systems may operate as informal biodiversity protection systems, they serve as effective environmental governance frameworks. However, when external actors seek to commercialise biological resources or associated knowledge, indigenous communities often lack legal tools to assert control or negotiate benefits.⁴⁶

³⁹ Nigeria's National Biodiversity Strategy and Action Plan, 2015-2020.

⁴⁰ Nigeria's National Biodiversity Strategy and Action Plan, 2025-2030.

⁴¹ Anyachebelu (n. 6) 360.

⁴² B. I. Dagba, L. N. Sambe and S. A. Shomkegh, 'Totemic Beliefs and Biodiversity Conservation among the Tiv People of Benue State, Nigeria' *Journal of Natural Sciences Research* (2013) 3 (8) 146.

⁴³ Egeruoh-Adindu (n. 3) 932

⁴⁴ T. I. Borokini, 'Sanctuary of the Spirits: Okwu-muo, Ori Oke and 'Mammy Water' in the Veneration of Sacred Natural Sites in Southern Nigeria' *International Journal of Intangible Heritage* (2016) 11, <<https://www.ijih.org/volumes/article/607#>> Accessed 22nd March 2026.

⁴⁵ B. O. Rafiu, and Others, 'Ethnobotanical Uses of Plants in Nigeria: An Analysis of Current Research Trends and Patterns' *Journal of Ethnobiology and Ethnomedicine* (2025) 21 (1) 57. H. Hassan, 'Appraising the Significance of Traditional Knowledge in Enhancing Environmental Law in Nigeria' *KWASU Journal of Business and Private Law* (2025) 2 (1) 101 -116.

⁴⁶ R. U. Oyiwona and Z. M. Lashom, 'The Need for Protection of Traditional Knowledge under the Nigerian Intellectual Property Framework' *Journal of Customary and Religious Law* (2025) 2 (1) 16-22.



c. COMPARATIVE PERSPECTIVES FROM FOREIGN JURISDICTIONS

The application of traditional knowledge systems in environmental conservation also exists in other jurisdictions, some of which have well-defined legal regimes that recognise these rights and protect them, entitling communities to benefit-sharing, consent and access. Practices from Kenya and South Africa are discussed as follows;

i. Kenya

Kenya offers one of Africa's most coherent models for traditional knowledge protection through the deliberate constitutional recognition, policy existence, and a unique intellectual property legislation. The Constitution of Kenya 2010 provides a firm foundation by recognising indigenous knowledge systems as part of national culture,⁴⁷ protecting communal and intangible property interests,⁴⁸ and mandating the "protection and enhancement of intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of communities."⁴⁹ These constitutional commitments are reinforced by the National Policy on Culture and Heritage (2009), which treats traditional knowledge as cultural heritage requiring protection against misappropriation and sustainable utilisation.⁵⁰

Kenya also enacted the Protection of Traditional Knowledge and Cultural Expressions Act, 2016, establishing a *sui generis* IP regime that recognises communities as rights-holders, requires prior informed consent, and mandates equitable benefit-sharing.⁵¹ The Act mandates county governments to maintain registers of traditional knowledge. The Act further explicitly protects traditional knowledge from misuse, abuse and misappropriation and goes ahead to stipulate offences and penalties for violations of the Act's provisions therein.⁵² Customary law and traditional governance structures are incorporated into rights management, making the model particularly relevant for environmental conservation. Kenya presents a progressive yet evolving comparative model for Nigeria in developing a comprehensive framework for protecting traditional knowledge through intellectual property.

ii. South Africa

South Africa's protection of traditional knowledge is grounded first in the nation's 1996 Constitution. The Constitution protects cultural rights,⁵³ environmental rights,⁵⁴ and property rights⁵⁵ and expressly recognises customary law and traditional leadership.⁵⁶ These provisions

⁴⁷ Kenya's Constitution 2010, Article 11.

⁴⁸ *ibid*, Article 40.

⁴⁹ *ibid*, Article 69 (1) (c).

⁵⁰ National Policy on Culture and Heritage 2009.

⁵¹ Protection of Traditional Knowledge and Cultural Expressions Act, 2016, sections 9-12, 24-25, 35-36.

⁵² *ibid*, Part VII.

⁵³ Constitution of the Republic of South Africa 1996, s. 30-33.

⁵⁴ *ibid*, s. 24.

⁵⁵ *ibid*, s. 25.

⁵⁶ *ibid*, s. 211.



legitimise indigenous knowledge systems as part of South Africa's legal and cultural order, which forms the basis for community interests in knowledge associated with biodiversity and environmental management.

South Africa has further enacted the National Environmental Management: Biodiversity Act (NEMBA) 10 of 2004, and the Bioprospecting, Access and Benefit Sharing Regulations. These laws help communities to the extent that they are given the rights to engage, on the basis of free, prior and informed consent, with users of their indigenous biological resources and traditional knowledge. The Act regulates bioprospecting through permit requirements, prior informed consent, and benefit-sharing agreements with indigenous communities.⁵⁷ In this way, the Act and Regulations protect traditional ecological knowledge from misappropriation while integrating community knowledge into biodiversity conservation, without creating proprietary intellectual property rights.

Finally, South Africa enacted the Protection, Promotion, Development and Management of Indigenous Knowledge Act 6 of 2019, which recognises indigenous knowledge as a national asset, establishes state institutions for its administration, regulates access and benefit-sharing, and treats indigenous knowledge as prior art for intellectual property purposes, thereby preventing misappropriation through patents.⁵⁸ It can be seen from the Act that indigenous knowledge protection is largely administrative and state-coordinated. By contrast, Nigeria lacks both explicit constitutional recognition and a dedicated traditional knowledge statute, leaving protection fragmented across environmental, cultural, and conventional IP laws.⁵⁹ South Africa, therefore, offers a more structured, yet evolving model of traditional knowledge protection that Nigeria can learn from.

5.0 IMPACTS OF TRADITIONAL KNOWLEDGE AND INTELLECTUAL PROPERTY INTERACTIONS IN ENVIRONMENTAL CONSERVATION IN NIGERIA

The interaction between traditional knowledge and intellectual property regimes produces significant environmental, socio-economic and cultural impacts, which are discussed hereunder.

a. Environmental, Sustainability and Climate Governance Impacts

Traditional knowledge contributes directly to positive environmental and sustainability outcomes.⁶⁰ Indigenous conservation practices, such as sacred groves, species taboos, seasonal harvesting, rotational grazing and indigenous agroforestry, have been shown to preserve biodiversity, enhance ecosystem resilience and contribute to climate change mitigation.⁶¹ Studies on ecological areas of

⁵⁷ *ibid*, Chapter 6, s. 80-83.

⁵⁸ Protection, Promotion, Development and Management of Indigenous Knowledge Act 6 of 2019, s. 3.

⁵⁹ Oyiwona and Lashom (n. 41).

⁶⁰ G. R. Nemogá, A. Appasamy and C. A. Romanow, 'Protecting Indigenous and Local Knowledge Through a Biocultural Diversity Framework. *The Journal of Environment & Development*, (2022) 31 (3) 223-252.

⁶¹ Egeruoh-Adindu (n. 3).



cultural significance in Nigeria demonstrate that customary protection mechanisms often sustain higher levels of species diversity and ecosystem health than surrounding non-protected areas, while also serving as carbon sinks and climate buffers.⁶² Integrating traditional knowledge into national climate strategies, REDD+ initiatives and biodiversity policies can improve effectiveness and community participation.⁶³ Where traditional knowledge is legally recognised and integrated into environmental governance frameworks, it strengthens conservation outcomes by fostering climate adaptation and aligning ecological sustainability with local incentives and cultural values.⁶⁴

b. Socio-economic Impacts on Indigenous and Local Communities

The legal protection of traditional knowledge has fundamental socio-economic implications for indigenous and local communities. Effective protection, particularly through access and benefit-sharing mechanisms, can generate livelihood opportunities, enhance community development and provide economic incentives for sustainable resource management.⁶⁵ Benefit-sharing arrangements linked to biodiversity-based research, ecotourism, traditional medicine and climate initiatives can contribute to poverty reduction and social inclusion.⁶⁶

c. Cultural and Knowledge-system Impacts

Traditional knowledge is indeed a living expression of cultural identity, spirituality and social organisation. Where legal frameworks do not adequately respect the cultural dimensions of traditional knowledge, such knowledge risks being eroded. The loss of traditional knowledge, whether through generational discontinuity, lack of recognition, misappropriation, or globalisation, can weaken community cohesion and diminish the transmission of conservation ethics embedded in cultural practices.⁶⁷ On the other hand, however, by affirming community custodianship and respecting customary norms, law, policy frameworks and conservation strategies can reinforce intergenerational knowledge transfer and strengthen the cultural foundations of environmental stewardship.⁶⁸ This is particularly relevant in the context of climate change, where indigenous knowledge systems offer locally adapted strategies for resilience and adaptation.

⁶² J. C. Onyekwelu and Others, 'Role of Sacred Groves in Southwestern Nigeria in Biodiversity Conservation, Biomass and Carbon Storage' *Environmental Monitoring Assessment* (2024) 196, 269. A. Adegbite, 'Cultural Dimensions in Wildlife Preservation: African Indigenous Perspectives from Nigeria and Kenya' *Open Journal of Social Sciences*, (2025) 13 (2) 444-473.

⁶³ R. VijayKumar, 'Integrating Indigenous Knowledge and Traditional Practices for Biodiversity Conservation in a Modern World' *Environmental Reports; an International Journal* (2019) 4-7.

⁶⁴ Jakes (n. 20).

⁶⁵ T. Alam, 'Protection of Traditional Knowledge of Indigenous Community in Bangladesh: A Critical Analysis on the Legal Framework' *International Journal of Research and Innovation in Social Science* (2025) IX (X) 6072.

⁶⁶ S. Twarog and P. Kapoor, (eds), 'Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions' (UNCTAD, 2004). R. Samal and M. Dash, 'Ecotourism, Biodiversity Conservation and Livelihoods: Understanding the Convergence and Divergence' *International Journal of Geoheritage and Parks* (2023) 11, 1-20.

⁶⁷ Á. Fernández-Llamazares and Others, 'Scientists' Warning to Humanity on Threats to Indigenous and Local Knowledge Systems' *Journal of Ethnobiology* (2021) 41 (2) 144-169.

⁶⁸ M. C. Ogwu, 'Harnessing African Traditional Ecological Knowledge for Sustainable Biodiversity Conservation' *African Conservation Telegraph* (2025) 19 (1) 1-20.



5.1 CHALLENGES

Several challenges impede effective protection of traditional knowledge in environmental conservation and they include the following:

a. Lack of domestic traditional knowledge protection law

Unlike Kenya and South Africa, Nigeria currently does not have a law dedicated to the protection of indigenous and traditional knowledge for the purposes of environmental protection.⁶⁹ Consent, benefit-sharing and knowledge databases have not been fully developed to ensure the legal backing of these systems.

b. Weak domestic Implementation of International Obligations

Although Nigeria is party to international instruments like the Convention on Biological Diversity 1992 and the 2024 Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge, effective implementation in domestic law is not present. Nigeria has not ratified the 2024 treaty. Only in policy has Nigeria talked about protecting traditional knowledge through consent and benefit-sharing.⁷⁰ Within Nigeria's intellectual property law, concrete provisions have not been adequately made for the protection of traditional knowledge in Nigeria, despite the contribution of traditional knowledge practitioners, thereby hindering legal enforceability thereof.⁷¹

c. Risk of forced Disclosure or loss of Sacred or Confidential Knowledge

Due to the lack of legal protection and preservation of indigenous and local knowledge relative to ecological conservation, there exists risks of forced disclosure of sacred cultural knowledge. The lack of acknowledgement can also affect the protection of such knowledge.⁷² Furthermore, due to the lack thereof, loss of control of cultural knowledge can result, eroding the rights of the indigenous people to their knowledge and to benefit therefrom, which currently plagues Nigeria.⁷³

6.0 CONCLUSION/REFORM PATHWAYS/RECOMMENDATIONS

Traditional knowledge remains central to environmental conservation, particularly in indigenous and local communities whose livelihoods depend on sustainable ecosystems. Yet, while Nigeria has a wealth of traditional knowledge beneficial for ecological protection and biodiversity conservation, without effective legal protection, traditional knowledge continues to be exploited, undermining both cultural heritage and conservation outcomes.

This article, therefore, concludes that intellectual property law, if re-imagined through indigenous/community-centred and environmentally responsive frameworks, can contribute

⁶⁹ Hassan (n. 45) 114-115.

⁷⁰ National Biodiversity Strategy and Action Plan 2025–2030.

⁷¹ Ibrahim (n. 33),

⁷² M. C. Ogwezzy, 'Protection of Indigenous or Traditional Knowledge under Intellectual Property Laws: An Examination of the Efficacy of Copyright Law, Trade Secret and Sui Generis Rights' *International and Comparative Law Review* (2012) 12 (1) 7–37.

⁷³ *ibid.*



meaningfully to the protection of traditional knowledge for ecological conservation. By adopting *sui generis* regimes, strengthening access and benefit-sharing, recognising and integrating customary law and engaging emerging international instruments, including the Swakopmund Protocol, the UN and WIPO frameworks, mandating informed consent and benefit-sharing frameworks, and providing institutional capacity-building to support community participation, as Kenya has, Nigeria can reposition traditional knowledge as a legally protected pillar of sustainable environmental governance.