

Assessing Legal Frameworks and Stakeholder Perspectives on Integrating the Rights of Nature into Ghana's Environmental Governance

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Abstract

The study aimed to promote the Earth and its ecosystems as living organisms with existential rights. Ghana's environmental laws were analysed in light of the Rights of Nature (RoN). The study reviewed global RoN initiatives, assessed stakeholders' familiarity with them, identified opportunities and challenges for their integration, and proposed legal and policy measures to integrate nature's rights into Ghana's environmental governance. The study used a convergent parallel mixed-methods design. The quantitative survey established the statistical landscape of awareness, attitudes, and preferences among a broader stakeholder population. At the same time, the qualitative field research provided the contextual depth, lived experience, legislative specificity, and governance nuance that survey data alone cannot capture. The two strands were subsequently integrated in a merged analysis and interpretation, allowing quantitative distributions to be explained and qualified by qualitative evidence, and qualitative observations to be confirmed or contextualised by statistical patterns. The findings show that Ghana's environmental laws are anthropocentric, viewing nature as a resource rather than as living entities with inherent rights. Stakeholders across sectors massively support RoN reform (90.5% survey endorsement). Ghanaian traditional norms and rules already reflect RoN principles through practices such as fishing taboos and sacred groves, indicating strong local alignment with rights-of-nature concepts. Enforcement failure is cited as the dominant governance problem. The analysis reveals that, when the political-economic barriers are removed, Ghana will be ready for RoN reform. It is recommended that enshrining nature's rights in law, repealing conflicting regulations (e.g., L.I. 246), and strengthening environmental justice through education, litigation, and community engagement will smooth RoN integration and uphold environmental integrity.

Introduction

Human existence depends on nature's resources, which are either replaceable or irreplaceable. These resources provide humans with food, energy, medicines, and other essentials that bring comfort. Some of these resources are cultural goods that promote cultural heritage and identity. However, the IPBES Global Assessment Report on Biodiversity and Ecosystem Services (2019) reports that agricultural production has declined worldwide since 1970 due to land degradation. This decline is linked to three intertwined environmental crises ('Triple Planetary Crisis'): *biodiversity loss*, *climate change* and *pollution*, with Africa being described as "disproportionately vulnerable due to its geography and limited coping capacity" (United Nations Environment Programme, 2023, p. xv). About one million species are threatened with extinction due to increased global warming (1.1°C in 2011-2020, higher than in 1850-1900). The least responsible are those who suffer from impacts on food and water security, human health, and economies and societies, as well as related losses and damages to nature and people (IPCC, 2023).

The need to develop legal frameworks and agreements central to environmental governance and the sustainable management of ecosystems has become necessary. Globally, efforts are underway to encourage countries to adopt national laws and to establish the governing ecosystem. Among these

global frameworks are the Paris Agreement, adopted by 195 Parties at the UN Climate Change Conference (COP21), and currently having 194 parties as of January 27, 2026, and the Kunming-Montreal Global Biodiversity Framework. Ghana has enacted laws and regulations to ensure a safe environment. These key legal frameworks include the 1992 Constitution (Article 41(k)), which places a duty on citizens to protect and safeguard the natural environment and the Republic's territorial waters, and the Environmental Protection Agency Act, 2025 (Act 1124), which promotes carbon credit trading and climate action. These are complemented by other legal frameworks such as the *Minerals and Mining Act*, 2006 (Act 703), *Ghana Public Health Act*, 2012 (ACT 851), *Ghana Wildlife Resources Management Act* (2023), Ghana Environmental Assessment Regulations, 1999 (LI 1652) as amended by Environmental Assessment (Amendment) Regulations, (2001 and 2002), National Food Safety Policy(2022) and the *Ghana Land Act*, 2020. Under Ghana's *Minerals and Mining Act*, for instance, unlicensed artisanal and small-scale mining is criminalised unless it is undertaken with a license granted by the Minister. This Act also proposes sanctions, including prohibition, deportation of non-Ghanaians, imprisonment, fines, and penalties.

Artisanal and small-scale mining has been the backbone of Ghana's development as it is a source of employment for Ghanaians (Asori et al., 2023), with more than 85% of small-scale mining operations occurring in the informal and illegal sector (Kumah, 2022), accounting for about 35% of the nation's gold production (Adranyi et al., 2024).

However, its reported significant negative impact on human health and environmental hazards has been a cause of worry. These environmental impacts, such as water pollution, land degradation, forest destruction, mercury contamination, and cyanide poisoning (Stærfeldt & Stacey, 2025; Alves et al., 2023; Bansah, 2023), are due to improper handling and use of cyanide, leading to an increased exposure risk and endangering the health of miners (Bansah et al, 2018).

The Government of Ghana, therefore, since 2016, has equally implemented multiple reforms and police-military-led interventions such as *Operation Vanguard*, *Operation Halt*, and NAIMOS, to halt or mitigate the impact of illegal mining on the environment (Gyasi & Ametepe, 2026; Arthur-Holmes, Tomude & Damtar, 2026; Stærfeldt & Stacey, 2025; Tschakert, 2016).

Despite the existence of these legal frameworks, the continuous enactment of regulations and laws, and the amendment of existing regulations, the expected results are not visible (Bansah, 2023; Bansah et al., 2018). Research shows a gap in policy implementation (Gyasi & Ametepe, 2026), as illegal mining, indiscriminate contamination of water bodies, and the destruction of forest zones have become more pronounced in recent years, constituting a national crisis (Adu-Baffour, Daum & Birner, 2021). These suggest the core problem may not be the absence of a legal framework in Ghana, but rather a gap in a weak mining regulatory framework (Asumda et al., 2024), misinterpretation of governance laws, limited stakeholder participation, weak enforcement strategies, and insufficient attention to local livelihoods and cultural practices.

This has implications for Ghana's progress towards the 2030 Agenda for Sustainable Development, particularly in achieving safe drinking water under SDG 6 (Clean Water and Sanitation). The latest progress report shows that Ghana is unlikely to achieve SDG 6 by 2030 (SDG 6 Country Acceleration Case Studies). Access to clean water remains low as UN Water reports that, as of 2024, only 43% of the Ghanaian population has access to a safely managed drinking water service. Empirical studies such as Anyame et al. (2022) and Afriyie-Gyawu et al. (2017) list illegal mining in Ghana as a key driver of declining water quality, with higher water turbidity and heavy metal pollution reported across both mining communities and downstream areas. The Ghana Water Company has warned of possible disruptions in production due to rising treatment costs linked to turbidity and heavy metals. These impacts have spillover effects on other SDGs, including SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-Being). Reduced access to water undermines irrigation, food production, and good health. Progress on SDGs 7 (Affordable and Clean Energy), 11 (Sustainable Cities and Communities), 13 (Climate Action), 14 (Life Below Water), and 15 (Life on Land) remains uncertain without stronger environmental governance.

In response to the global environmental crisis, a growing body of scholarship has advanced the Rights of Nature (RoN) approach as a legal framework that recognises ecosystems as right-bearing entities entitled to protection and restoration (Adom, 2018; Tignino, 2022; Ikporukpo & Ikporukpo, 2025). Conceptually, Rights of Nature shifts nature from an object of regulation to a subject of law with enforceable rights. This means granting legal rights to non-human entities in the ecosystem, such as water bodies and forests, to exist, regenerate, and be restored.

At the 1992 Earth Summit in Rio de Janeiro, Brazil, more than 178 nations adopted Agenda 21, a comprehensive plan of action for sustainable development, to improve people's lives and protect the environment. Since then, rights of nature principles have emerged through constitutional provisions (Ecuador's constitutional recognition of nature's rights in 2008), statutes (Bolivia's law of Mother Earth in 2010 and Uganda's National Environment Act in 2019), negotiated settlement (New Zealand's Whanganui River Claims Settlement in 2017), judicial recognition, (river-personhood judgements in India and Colombia's Atrato River), and municipal ordinances (Tamaqua Borough in 2006). These developments aim to protect ecological accountability in environmental governance. However, experiences from countries show that funding constraints, resistance, judicial pushback, and limited enforcement capacity can be sources of setbacks in promoting RoN. This was the case of India, where judicial rulings stayed and overturned rulings on river-personhood.

Although land degradation is increasing in Ghana, the concept of the Rights of Nature remains largely absent from the statutory and policy framework. Current environmental law (e.g., Ghana's 1992 Constitution and the Environmental Protection Act, 2025, Act 1124) primarily regulates how citizens use the resources for sustainability rather than recognising nature's inherent rights. Limited institutional participation and low public awareness further inhibit transformative change. The challenge now is how Ghana can integrate indigenous ecological sensibilities into existing legal frameworks to operationalise stronger protection for ecosystems and better respond to current ecocide. This research, therefore, assesses how Ghana's existing environmental legal instruments and regulatory frameworks align or

conflict with the rights of nature principle, analyses influential rights of nature initiatives globally and their lessons for Ghana, and examines stakeholder awareness and perceptions among regulators, the judiciary, traditional authorities, local communities, civil society organisations, and industry.

Methods

Research Overview and Design

The study was designed to generate empirical evidence on three interrelated questions: how familiar Ghanaian environmental stakeholders are with rights of nature (RoN) frameworks both internationally and domestically; how they perceive the concept and its relevance to Ghana's ecological context; and what legal, institutional, and governance pathways they consider most viable for reform. To address these questions comprehensively, the study adopted a convergent parallel mixed-methods design, combining a structured quantitative survey with a series of qualitative field interviews conducted across five Ghanaian regions.

In the convergent parallel design, the quantitative phase and qualitative phase were conducted concurrently. The quantitative survey established the statistical landscape of awareness, attitudes, and preferences among a broader stakeholder population. At the same time, the qualitative field research provided the contextual depth, lived experience, legislative specificity, and governance nuance that survey data alone cannot capture. The two strands were subsequently integrated in a merged analysis and interpretation, allowing quantitative distributions to be explained and qualified by qualitative evidence, and qualitative observations to be confirmed or contextualised by statistical patterns.

Instrument Design and Constructs

The quantitative component of the study was a structured questionnaire administered via Google Form. Survey Instrument. The degree to which respondents were familiar with 13 international RoN provisions. Familiarity was rated on a 5-point Likert-type scale. These included landmark instruments such as:

- Ecuador's 2008 Constitution (Articles 71–74, which granted constitutional rights to Pachamama)
- Bolivia's Law of the Rights of Mother Earth (Law 71, 2010),
- New Zealand's Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 and Te Urewera Act 2014
- Colombia's Constitutional Court rulings on the Colombian Amazon and the Atrato River,
- India's High Court rulings,
- Panama Law 287,
- Uganda's National Environment Act 2019,
- Canada's Muteshekau Shipu (Magpie River) Resolution,
- the Lake Erie Bill of Rights (Ohio, USA), and

- Mexican subnational provisions.

The degree of respondent familiarity with 17 Ghanaian environmental and natural resource management legal instruments, including constitutional provisions, sector-specific Acts, and subordinate legislation, was similarly rated on a 5-point scale.

Sample and Sampling Procedure

The survey was administered to a purposive sample of 105 respondents. The sample profile is as follows:

Table 1: Sample Porfile

Characteristic	Distribution
Total respondents	105
Survey variables	89
Male	73 (69.5%)
Female	32 (30.5%)
Age 25–34 years	43 (41.0%)
Age 35–44 years	31 (29.5%)
Age 18–24 years	13 (12.4%)
Age 45–54 years	14 (13.3%)
Age 55+ years	4 (3.8%)
Postgraduate degree (Master's or PhD)	58 (55.2%)
Tertiary degree or diploma	44 (41.9%)
Secondary/primary education	3 (2.9%)
Ashanti Region	49 (46.7%)
Greater Accra Region	29 (27.6%)
Other regions (each <5%)	27 (25.7%)
1–5 years of work experience	36 (34.3%)
More than 10 years of work experience	33 (31.4%)
6–10 years of work experience	23 (21.9%)

Construct Validity Analysis

Construct validity was assessed using reliability analysis (Internal Consistency). The Cronbach's alpha (α) was calculated for each of the three primary constructs to assess the internal consistency of the scale items. The following interpretive thresholds were applied: $\alpha \geq 0.90$ = Excellent; $\alpha \geq 0.80$ = Good; $\alpha \geq 0.70$ = Acceptable.

Descriptive Statistics

Means, standard deviations, and frequency distributions were computed for all primary variables, including familiarity scores, attitude items, and demographic characteristics, to report awareness levels and attitude distributions across the full sample.

Qualitative Phase: Regional Field Interview Studies

Research Design and Instrument

The qualitative phase of the study comprised a series of socio-legal field interview studies conducted across five Ghanaian regions: Ashanti, Ahafo, Central, Eastern, and Western. The qualitative component was designed to elicit the contextual, experiential, and legally specific knowledge that a structured survey cannot capture.

Sampling and Respondent Recruitment

Respondents for each regional study were recruited using purposive and snowball sampling strategies targeting occupational and community diversity within each region. The sampling objective was to secure representation from three broad respondent categories. The first category was institutional actors, comprising staff from environmental governance agencies such as the EPA, Forestry Commission, Wildlife Division, Minerals Commission, Fisheries Commission, Water Resources Commission, and Land Commission. The second category was professional proximate respondents, including legal experts, civil society officers, teachers, students of natural resource management, and community development practitioners. The last category of respondents was community members, including farmers, traders, youth, community elders, hunters, fishers, and other grassroots participants. Across all five regions, the combined qualitative sample comprised approximately 150 respondents.

Data Collection Procedures

Interviews were conducted by trained field researchers who administered the structured interview guide in face-to-face settings. Interviews were conducted in English or, where necessary, in local languages with interpretation, particularly in community settings where respondents had limited formal education. The responses were recorded individually.

Integration Strategy

Integration of the quantitative and qualitative strands was conducted during data interpretation, after analysis in each strand was completed. This method, called merging or triangulation in mixed-methods

research, involves comparing numerical data and thematic findings for each main topic. The goal is to find where they agree, disagree, complement each other, or add new insights.

Ethical Considerations

All survey and interview participants provided informed consent before participation. Respondents were informed of the study's purpose, the voluntary nature of their participation, their right to withdraw at any stage without consequence, and the intended use of the data. Participants were not offered financial incentives, though reimbursement for reasonable travel or time costs was provided in community-based interview settings when appropriate.

Anonymity and Confidentiality

Survey respondents were assured of anonymity: no personally identifiable data were reported in the study outputs. In the qualitative strand, respondents were offered the choice of anonymity. Community respondents are described by their community setting and occupational identity, without personal identification (e.g., 'farmer, Kenyasi area').

Results

Reliability Analysis

Internal consistency was assessed using Cronbach's alpha coefficient.

The following thresholds are used in interpretation:

- $\alpha \geq 0.90$** = Excellent reliability
- $\alpha \geq 0.80$** = Good reliability
- $\alpha \geq 0.70$** = Acceptable reliability

Table 2: Reliability Analysis

Construct	Cronbach's α	Items	N	Interpretation
Global RoN Familiarity	0.975	13	105	Excellent
Ghanaian Law Familiarity	0.971	17	105	Excellent
Perceived Challenges	0.919	6	25	Excellent

All three major constructs demonstrated excellent internal consistency ($\alpha > 0.90$), indicating that items within each scale are highly intercorrelated and measure the same underlying construct. This exceeds the minimum acceptable threshold of 0.70 and suggests the scales are highly reliable.

Demographic Dimensions: Integrated Interpretation

Gender

The study sample comprised 73 males (69.5%) and 32 females (30.5%), indicating a male-dominated respondent base. This gender distribution may reflect the composition of environmental and natural resource management professionals in Ghana.

Demographic Impact on Legal Familiarity

Table 3: Legal Familiarity by Gender

Gender	N	Mean Score	Std. Dev.
Female	32	1.92	0.72
Male	73	2.21	0.68

Males reported higher legal familiarity on average (2.21) than females (1.92).

Demographic Impact on Legal Familiarity

Legal familiarity peaks at age 45-54 (M=2.29) and is lowest among the youngest group, 18-24 (M=1.57). The qualitative data shows that the older respondents have accumulated professional experience within environmental governance institutions, while younger respondents- students and recent graduates -have formal education but less applied knowledge. However, the qualitative Eastern Region data reveal an interesting counterpoint: younger respondents were often the most receptive to rights-of-nature principles, framing them in terms of rights and future generations rather than loss and decline. Rights of nature education at the school level could transform youth from the least legally familiar to the most engaged constituency.

Table 4: Legal Familiarity by Age

Age Group	N	Mean Score	Std. Dev.
18–24 years	13	1.57	0.50
25–34 years	43	2.23	0.79
35–44 years	31	2.12	0.59
45–54 years	14	2.29	0.65
55 years and above	4	2.24	0.41

Education

Postgraduate respondents scored 2.35 on legal familiarity, compared with 1.86 for tertiary-only respondents. Both groups fall in the 'moderate' range. Even the most educated respondents are not highly familiar with environmental law as measured by the survey. Qualitatively, this is reflected in the observation that legal knowledge is domain-specific: a forestry officer with operational knowledge of the Forestry Commission Act may score lower on items about Fisheries or Energy law, even with significant professional experience.

Table 5: Legal Familiarity by Educational Level

Educational Level	N	Mean Score	Std. Dev.
Postgraduate (Master's, PhD)	58	2.35	0.65
Tertiary (Diploma, Degree)	44	1.86	0.67
Secondary / High school	2	1.37	0.28
Primary education	1	2.00	—

Familiarity with Global Rights of Nature Provisions

Respondents demonstrated very limited familiarity with international rights-of-nature provisions globally (Mean = 1.24/5.0). This suggests that despite the growing global movement, awareness in Ghana remains at an early stage. All 13 assessed global provisions scored below 1.30 on the 5-point scale, indicating that even well publicised cases such as Ecuador's constitutional provisions and New Zealand's Te Awa Tupua Act are largely unfamiliar to Ghanaian environmental professionals. The qualitative field research fully corroborates this finding. Across all five regions, respondents- even professionals with years of environmental governance experience -consistently reported unfamiliarity with specific international rights of nature instruments. A 26-year Forestry Commission veteran in the Eastern Region said he understood the concept '*from the experience side*' without knowing its formal legal framing. In the Eastern Region, a systematic familiarity check found near-universal ignorance of all 13 global provisions, with Ecuador's Constitution the only example that registered at the community level. The unfamiliarity with global RoN instruments is not a barrier to reform. It defines a critical gap in education and capacity-building. Any legislative reform will need to be preceded by targeted awareness programs for policymakers, regulators, and legal practitioners, using Ecuador's example as the most accessible and resonant reference point.

Familiarity with Ghanaian Environmental Laws

Familiarity with Ghana's domestic environmental legal framework was moderate (Mean = 2.80/5.0), significantly higher than global RoN awareness but still indicating room for improvement. Across all five

regions, legal familiarity followed a gradient primarily determined by professional exposure. For instance, EPA officers, Forestry Commission staff, and fisheries officers could cite specific Acts and provisions, while farmers, traders, and community members described laws in functional rather than formal terms.

Table 6: Domestic legal familiarity

Measure	Score / Stat	Qualitative Corroboration
Global RoN familiarity (mean)	1.24 / 5.0	universal in all 5 regions
Domestic legal familiarity (mean)	2.80 / 5.0	gradient by profession
Postgraduate vs. tertiary gap	2.35 vs 1.86	officers vs. community
Greater Accra > Ashanti (p=0.003)	$\eta^2=0.073$	capital-based policy access
18-24 yr group (lowest familiarity)	1.57 / 5.0	youth lack institutional exposure

Support for Recognition of RoN

There is overwhelming support for recognising nature's rights in Ghana's legal framework. The quantitative data registers overwhelming endorsement: 61.0% strongly agree, and 29.5% agree with recognising nature's rights in Ghana's legal framework - a combined 90.5% in favor, with only 5.8% expressing opposition. Qualitatively, there was a universal endorsement across all the regions, including among respondents who had never encountered the formal concept of rights of nature before the interview. The mechanism by which respondents arrived at endorsement was consistently intuitive and cultural rather than legalistic. Respondents drew on traditional stewardship values (*'our forefathers cared for the land'*), theological framings (*'protecting God's creation'*), intergenerational responsibility (*'the next generation will suffer'*), and immediate lived experience of ecological collapse.

Table 7: Support for Recognising Nature's Rights

Response	N	Percentage
Strongly agree	64	61.0%
Agree	31	29.5%
Strongly disagree	5	4.8%
Neutral / Not sure	4	3.8%
Disagree	1	1.0%

Legal Pathways and Reform Preferences

The survey reveals a clear hierarchy of preferred reform pathways: constitutional provision (51.4%), statutory provision (35.2%), and guardian models (13.3%). The preference for constitutional recognition

signals that stakeholders view rights of nature as requiring fundamental legal transformation, not incremental amendment. Qualitatively, this preference is confirmed, but with an important nuance. In the Ashanti Region, a multi-track reform strategy was proposed: constitutional recognition, statutory integration across existing environmental Acts, institutional reform, and educational campaigns, all to be implemented simultaneously. In the Central Region, a standalone Rights of Nature Act was proposed. In the Eastern Region, an 'amendment-first' approach targeting specific legislative gaps was preferred by more technically oriented respondents. The Western Region supported a two-track (constitutional + statutory) approach alongside an EPA task force.

The integrated picture is that constitutional recognition is the aspirational endpoint. However, the reform agenda must be pursued across multiple tracks simultaneously because constitutional amendment is a long-term process that requires sustained political support. Statutory amendments - including the repeal of Section 18 of the Minerals and Mining Act (Central, Ahafo), LI 246 (Ahafo), and the expansion of the EPA Act - represent shorter-term, tractable legislative targets.

Table 8: Legal Pathway Preferences

Legal Pathway	N	Percentage
Constitutional Provision	54	51.4%
Statutory Provision	37	35.2%
Guardian Models	14	13.3%

The qualitative research provides legislative specificity that the quantitative data cannot capture. For instance, the Ahafo Region data named the LI 246 Legislative Instrument as enabling environmental destruction; hence, its repeal or amendment is the region's flagship legislative priority. The Central Region data proposed the repeal of sections 17 and 18 of the Minerals and Mining Act because it issues water rights permits that, paradoxically, allow the diversion of water bodies, contradicting the Water Resources Commission Act, and explicitly allow mining in forest reserves. Further, the Western Region proposes the expansion of Act 29, Section 303, which prevents cruelty to animals like livestock, to cover fish, aquatic life, and plants - a more tractable short-term reform than a constitutional amendment.

Guardian Model Preferences

The quantitative data show a strong preference for hybrid guardian models: 37.1% prefer legal + cultural legitimacy hybrids, and 17.1% prefer hybrid co-governance structures. Combined, hybrid approaches account for 54.2% of preferences. The qualitative data explains why hybrid models dominate. Across all five regions, traditional authorities - chiefs, elders, and customary governance structures - are identified as indispensable partners in environmental governance because they command community legitimacy that state agencies lack. The Ahafo Region data adds a legal accountability dimension absent from the

framings of other regions. An '*accountable guardian*' statutory provision could be a distinguishing feature of any Rights of Nature Act.

Table 9: Guardian Model Preferences

Guardian Model	N	Percentage
Hybrid (legal + cultural legitimacy)	39	37.1%
Hybrid co-governance structures	18	17.1%
Public agency guardianship	15	14.3%
Indigenous or customary guardianship	15	14.3%
Citizen standing models	9	8.6%
Direct environmental legal personality (ELP)	8	7.6%

Benefits of Recognition

The survey identifies improved "environmental conservation" as the near-unanimous primary benefit (96.2%), followed by "enhanced legal protection for ecosystems" (80.0%), "improved ecosystem services" (75.2%), and "climate change mitigation" (73.3%)

Table 10: Perceived Benefits

Benefit	Mentions	% of Respondents
Improved environmental conservation	101	96.2%
Enhanced legal protection for ecosystems	84	80.0%
Improved ecosystem services	79	75.2%
Climate change mitigation	77	73.3%
Enhanced public awareness of nature's importance	73	69.5%
Sustainable development	71	67.6%
Long-term economic benefits	66	62.9%
Community empowerment	61	58.1%

The qualitative research adds depth to each of these quantitative benefit categories:

- Conservation benefits: Uniformly endorsed across all regions, grounded in specific ecological losses - disappearance of crabs and small animals from streams in Ahafo (traditional ecological

knowledge indicators), destruction of cocoa farms in Western Region, contamination of water bodies in Central and Eastern Regions.

- Ecosystem services economic valuation: The Ashanti Region timber licensing officer's proposal to quantify ecosystem services and link them to carbon finance mechanisms (REDD+, Green Climate Fund) is the most economically sophisticated argument in the qualitative data. This reframes rights of nature from a conservation cost to an investment opportunity - crucial for attracting economically-focused policymakers.
- Community empowerment: Strongly endorsed qualitatively, particularly in terms of giving communities legal standing to challenge mining activities and hold operators accountable. Currently, communities feel powerless – 'sometimes backed by security forces' is how the Central Region describes the challenge.
- Intergenerational justice: The most universally expressed qualitative theme, present in virtually every interview across all regions. The phrase 'the next generation will suffer' appears in many forms. This cultural value of intergenerational stewardship provides a powerful advocacy frame.

The Ashanti Region's carbon finance frame - linking rights of nature recognition to existing international mechanisms (REDD+, carbon markets) - could transform the political economy of the reform debate. Ghana's participation in carbon markets creates financial incentives for forest conservation that could fund RoN implementation.

Implementation Challenges: Integrated Findings

The quantitative ranks implementation challenges as follows: insufficient funding (2.48/5.0), economic pressures (2.46/5.0), limited political will (2.39/5.0), weak enforcement capacity (2.25/5.0), lack of public awareness (2.14/5.0), and conflicts with existing laws (1.96/5.0). All scores are in the 'minor to moderate' range, and the lowest-ranked challenge is legal incompatibility - suggesting stakeholders believe rights of nature can be integrated without fundamental legal conflict.

Table 11: Quantitative and qualitative challenges

Challenge	Survey Mean	Qualitative Interpretation
Insufficient funding	2.48 (1st)	Confirmed: under-resourced enforcement agencies across all regions
Economic pressures	2.46 (2nd)	Qualitatively expanded: galamsey-unemployment nexus (Ahafo) - enforcement fails without alternative livelihoods
Limited political will	2.39 (3rd)	Qualitatively elevated: ministerial conflict of interest (Ashanti); electoral calculus; security force complicity (Central)
Conflicts with existing laws	1.96 (6th)	Qualitatively confirmed: existing framework can accommodate RoN without fundamental conflict; specific gaps (LI 246, S.18) are tractable

The qualitative data present a somewhat different priority ordering that deepens the interpretation of quantitative findings:

- **Political will:** While ranked third quantitatively, political interference is among the most fundamental barriers qualitatively. Political actors actively undermine enforcement for electoral interests and to maintain relationships with illegal operators.
- **The galamsey-unemployment:** The Ahafo Region articulates most clearly the fundamental political economy challenge: enforcement will fail if it generates unemployment without providing alternatives. Any quantitative challenge category does not capture this and represents a dimension of the reform challenge that the survey instrument did not measure.
- **Institutional corruption** (qualitatively prominent, not quantitatively distinct): The complicity of security forces and enforcement officers - prominently documented in the Central Region - is a qualitative finding without a precise quantitative equivalent.

Discussion

The Cronbach's alpha values of the study were very high, ranging from 0.919 to 0.975. This reveals excellent internal consistency. It is widely recognised that alpha values above 0.7 are acceptable, and that values approaching 1.0 are rare (Tavakol & Dennick, 2011). Male respondents dominated the study (69.5%), revealing the gendered nature of those managing Ghana's natural resources by profession. This finding is consistent with the existing literature (Maliganya et al., 2025). Since women are most vulnerable, it stands to reason that they experienced the brunt when the 19,000 hectares of cocoa farms were destroyed by illegal farming (Gyasi & Ametepe, 2026). To address this disparity and protect their livelihood, the provision of a Guardian women's group under the proposed Rights of Nature Act will ensure they have legal standing to challenge mining activities that threaten their economic security. Respondents aged 45-54 were the most familiar with Ghanaian domestic environmental laws (M=2.29), whereas those aged 18-24 reported the lowest familiarity (M=1.57). This implies that the young, educated Ghanaian population has not yet applied legal knowledge. This is in harmony with a report by Addo (2026), who found that the Ghanaian secondary and tertiary education system emphasizes mathematics, science, and literature at the expense of the existing legal framework. This implies the need to strengthen the formal education system to sensitise the youth on the domestic legal framework, which lays the basis for nature-based studies. Nonetheless, the Eastern Region qualitative data revealed that the youthful population is most receptive to rights-based principles. This aligns with the concept of "Afrofuturist Governance," which emphasises youth-led visions of climate justice (Sonko, 2025). The study revealed that 97.1% of the 105 degree-educated EPA, forestry, legal, and NGO professionals were only moderately familiar with Ghana's existing environmental laws. The postgraduate and tertiary legal familiarity scores were 2.35 and 1.86, respectively. This indicates that even the highest levels of formal education in Ghana do not provide adequate education in environmental law. This explains why Darkwa (2011) recommended strengthening environmental justice and policy enforcement at Ghanaian universities.

The study showed almost universal support (90.5%) for recognising Nature's rights as a legal part of the Ghanaian law, even though the global Rights of Nature framework is not widely known. The mean RoN familiarity score of 1.24 is quite shocking, given that the sample included senior EPA officers and legal experts. Despite the low RoN familiarity, the qualitative data suggest that the concept was intuitively applied. For instance, a 26-year veteran of the Forestry Commission in the Eastern Region confirms that, although the concept of inherent rights was not known, he understood and applied it through experience.

The foregoing implies a structural failure in integrating international environmental norms into the Ghanaian legal and academic spheres. The fact that all thirteen international provisions assessed - including landmark cases such as Ecuador's 2008 Constitution, the Te Awa Tupua Act in New Zealand, and Bolivia's Law of Mother Earth - scored below 1.30 corroborates the foregoing. Officials and communities both agreed that the core problem was enforcement failure, not the content of existing law. In practice, this enforcement crisis comes from political capture, corruption, and resource gaps, and these findings echo recent analyses of Ghana's illegal mining troubles (Botchwey & Crawford, 2025; Stærfeldt & Stacey, 2025). The study strongly favours a hybrid governance that combines formal law and customary authority. Traditional chiefs, clan heads, and local elders are widely recognised as indispensable custodians of ecosystems, consistent with the literature on Ghana's customary conservation (Osei & Asantewa, 2025).

Table 12: Stakeholders who can potentially advance Rights of Nature

Demographic	Role in RoNAG Reform	Recommended Policy Intervention
Youth (18-24)	The Rights of Nature Generation	Curriculum integration and youth environmental task forces.
Women	Livelihood Defenders	Formal legal standing for women’s community groups.
Traditional Authorities	Local Enforcers	Accountable Guardian model with legal liability.

Respondents were nearly evenly divided on whether existing laws adequately address conservation. Of the 105 respondents, 35.2%, 32.4%, and 32.4% reported "yes", "no", and "unsure", respectively. This ambivalence supports that the laws themselves are not the primary problem, but rather their enforcement. Qualitative interviews add a layer of evidence: regulators freely admitted Ghana's laws are comprehensive in theory, but everyone, from EPA officers to village chiefs, described systemic failures in application. Although people ranked "weak enforcement capacity" as the fourth major challenge in the quantitative data, the qualitative data across regions revealed in detail that enforcement failure is the biggest problem. A Ghanaian study found that one cause of weak enforcement is that environmental institutions do not rigorously enforce the laws (Mensah et al., 2022). The findings of our study also revealed something very troubling in the Central Region. Some participants said that security officers are protecting illegal miners instead of stopping them. This aligns with a study by Asamani (2026), which, using the Principal–Agent theory, showed that illegal mining persists not because Ghana lacks policies,

but because the people responsible for enforcing the rules often have interests or incentives that differ from those assigned by the government. This inhibits their strict enforcement of the laws. This evidence corroborates the view that even military action was unsuccessful in the fight against illegal mining (Aziabah & Ayelazuno, 2024). Enforcement also carries another political cost for governments. For instance, in 2025, President Akufo-Addo stated that his strict campaign against illegal mining (galamsey) cost his party some parliamentary seats in 2020 (Nyagamago, 2025). This explains why the government is hesitant to act forcefully, creating a policy paralysis in which protecting the environment takes a back seat to fears of losing votes.

The study identifies specific legislative instruments that facilitate environmental degradation. The qualitative data from the Ahafo Region identified LI 246 as the single most destructive Legislative Instrument in Ghana because it explicitly enables mining in forest reserves. The Ahafo Region data strongly recommended and prioritised the repeal of LI 246 to protect and enhance conservation. This aligns with the Atewa Range Forest Reserve study, which recommended amending mining laws to prevent encroachment into forest reserves for conservation purposes (Mensah-Odum et al., 2025). The qualitative data from the Central Region indicated that sections 17 and 18 of the Minerals and Mining Act, which allow the diversion of water bodies and the entry of mining into forest reserves, respectively, should be repealed. A 2020 performance audit report at six mining districts reveals that the EPA frequently fails to collect the required reclamation costs from small-scale miners (Ghana Audit Service, 2010). This authenticates the law's failure and corroborates its repeal. The Western Region data proposed expanding Act 29, Section 303, which prohibits cruelty toward livestock, to include fish, aquatic life, and plants. This reform builds the case for ecocentric rights without the need for an immediate constitutional amendment. This is consistent with the study of May and Baber (2023), which recommends substantive environmental rights (ecocentric approaches) in legal systems.

Table 13: Summary of Specific Statutory Reform Targets

Statutory Instrument	Proposed Action	Reasons
LI 246	Repeal / Complete Revocation	Enables mining in forest reserves; identified as a "forest destroyer".
Section 18, Act 703	Repeal	Removes the legal pathway for mining entry into forest reserves.
Section 17, Act 703	Amendment	Resolves contradictions regarding water diversion permits.
Act 29, Section 303	Expansion	Extends legal protection to non-livestock species (fish, plants).

The quantitative data revealed that 54.2% of respondents proposed a hybrid governance approach to effectively protect the environment. This was validated by the qualitative data, which revealed that all five

regions indicated the traditional authorities are indispensable partners because they command a level of community legitimacy that state agencies lack. In the Central Region, the qualitative data revealed that chiefs are trusted as primary governance actors. This agrees with a systematic review of customary authorities in sub-Saharan Africa, which revealed that traditional authorities play more positive than negative roles in the enforcement and management of the ecosystem (Schwaiger et al., 2024). A Tamale hybrid model combines traditional authority with state-led institutions to effectively address flooding in northern Ghana, making it a compelling case study (Agyei-Mensah et al., 2024). While many advocate for chiefs as guardians, data from the Ahafo region suggests that traditional authorities should be held accountable when destructive environmental activities occur on their land with their permission. When this transpires, it will help quash the criticism that traditional leaders are "not democratic and not accountable" and can be prone to "elite capture" (Schwaiger et al., 2024). By legally recognising the foregoing guardianship, local chiefs inevitably become an unfathomable frontline of enforcement for conservation. The extant literature on "Legal Pluralism 2.0" identifies hybrid legal systems as "spaces of innovation" rather than as barriers to integration. In Ghana, traditional courts combine with formal ones to enhance "legal certainty" while respecting "local knowledge" (Sonko, 2025).

The qualitative data emanating from the Ashanti Region reframes the Rights of Nature from a "conservation cost" to an "investment opportunity." The Ashanti Region's timber licensing officer proposed quantifying ecosystem services and linking them to international financing mechanisms such as REDD+. This aligns with scientific and policy reports confirming that Ghana is a global leader in this area. For instance, according to the UN-REDD Program (2023), Ghana finalised its first monitoring report to the Carbon Fund in August 2022 and received its first emission-reduction payment in January 2023. Linking the Rights of Nature to carbon credit revenues helps achieve "high environmental integrity" and addresses the study's top-ranked qualitative RoN implementation challenge: "insufficient funding" (M=2.48).

Conclusion

The purpose of the study is to advance the architecture of Ghana's domestic environmental laws by integrating the RoN paradigm. At present, Ghana's environmental laws place undue emphasis on the sustainable use of resources rather than recognising natural entities as possessing inherent rights that must be respected. Put differently, nature is treated as a usable resource rather than a rights holder. This explains why biodiversity loss and speedy land degradation are rampant in Ghana. To concurrently benefit humans in the long run and safeguard environmental integrity, an ecocentric approach is recommended.

Key findings for each objective are as follows:

The analysis showed that Ghana's environmental laws are anthropogenic in nature. The 1992 constitution and the Environmental Protection Act (2025, Act 1124) treat nature as a resource rather than an entity with inherent rights. Moreover, many are not aware of how the laws function and operate,

thereby weakening enforcement. It is recommended that domestic laws be amended to recognise natural entities as right-holders.

The international review shows that Ecuador's constitutional amendment, Bolivia's Mother Earth law, and New Zealand's river personhood settlement serve as a model for Ghana's domestic environmental laws. To successfully amend Ghana's environmental laws to integrate the international RoN paradigm, there should be significant political support, funding, and enforcement capacity. This explains why India's river-personhood rulings were unsuccessful. The court ruled that legislative authorisation is required for the contested rivers to be given legal personhood (Eco Jurisprudence Monitor, n.d.). We recommend that environmental laws be aligned with the foregoing and that barriers that may impede the implementation of the RoN paradigm be overcome before its implementation.

Quantitatively, the study found that the RoN support level among stakeholders was 90.5%. Furthermore, the acceptance of the RoN concept was universally and intuitively endorsed across the five regions, from senior EPA officers to community farmers to secondary school students. This massive support for the integration of RoN into Ghana's legal system reveals that Ghana is ready for a fundamental legal transformation. The high level of culturally grounded, cross-sectoral support shows that, if properly implemented, granting legal standing to nature is more likely to be accepted.

The study found that many traditional laws and practices already reflect RoN principles, providing fine opportunistic grounds for integrating the concept into Ghana's domestic environmental laws. For example, customary laws use taboos and sacred groves to protect the environment, a taboo system that bans fishing on specific days and designates certain forests as 'sacred groves' where cutting is not permitted. This belief naturally assigns legal personhood to natural entities. Hence, we recommend recognizing these belief systems and building on them.

The analysis further revealed that enforcement failure is the problem, not the existing environmental laws. Ghana's environmental degradation crisis is worsening largely because violators are unfazed and carry on with impunity, and security forces sometimes connive with them to advance their personal interests. We recommend integrating the RoN principles into Ghana's environmental law, with much stronger enforcement capacity and clear roles for all stakeholders.

Recommendation

Based on the above conclusion, we recommend that the following actors and agencies undertake the following enactment and implementations to integrate RoN into Ghana's Legal System:

- Government and Regulatory Agencies.

We recommend that the Ministry of Environment, Science, Technology, and Innovation, in consultation with Parliament, draft a RoN Act or undertake steps to amend the Constitution to give legal personhood to natural entities. In addition, such Acts as the Environmental Protection Act (EPA Act), Forestry Commission Act, and others should be amended to uphold nature's right to exist, live, and thrive. For

instance, Act 2022 L.I. 2462, which allows mining in forest reserves, should be amended to recognise nature's existential rights. Moreover, the Municipal and District Assemblies (MMDAs) and District Chief Executives (DCEs) should be drawn into the implementation processes. For instance, the District Environmental Committees should be made to consider ecosystem rights when doing land-use planning.

- Education and Academia

The Ministry of Education and the Ghana Education Service should add RoN and environmental ethics curricula into Ghanaian schools at all levels. The curricula should emphasise local environmental laws, climate change, and local conservation practices at an early age. Universities and research institutes should develop courses and degree programs in environmental law that include the Rights of Nature. Additionally, research institutes and funding agencies should fund graduate studies and research projects that assess RoN implementation.

- Non-Governmental Organisations and Civil Society

NGOs should create public awareness through community training and public education on nature's rights. Further, they should use the law courts to promote the RoN principle as A Rocha did with Atewa/Ayensu. Moreover, NGOs should train EPA staff, judges, and local officials on Rights-of-Nature concepts in partnership with the government and international donors.

- Traditional Authorities and Local Communities

The government and NGOs should document the traditional taboos, sacred groves, and other local practices that align with RoN. District Assemblies should draft bylaws to protect natural entities legally. Highly respected local figures, such as queen mothers, Chiefs, and others, should be appointed as Guardians of Nature for specific entities, such as trees or rivers. These local guardians should work with the police to protect nature's interests.

Declarations

Conflict of Interest

The authors declare no conflict of interest.

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Ethics Approval and Consent to Participate

Ethical approval for this study was obtained from the Kwame Nkrumah University of Science and Technology, Research Ethics Committee College of Humanities and Social Science, Institutional Review Board (KNUST, IRB), which reviewed and approved all study protocols. All procedures involving human

participants were conducted in accordance with the ethical standards of the KNUST -IRB and with the relevant national guidelines and regulations governing research involving human participants in Ghana.

Informed consent was obtained from all individual participants prior to their participation in the study. Participants were fully informed about the purpose of the study, the data collection procedures, the anticipated use of the findings, and any potential risks and benefits. Due to low literacy levels among many traditional potters, informed consent was obtained orally, as permitted by the KNUST -IRB approval. Participants were reminded throughout the research process that their participation was voluntary and that they could withdraw at any time without consequence.

No participant names or identifying details appear anywhere in this manuscript. However, in the event that images or descriptions had the potential to reveal participant identity, informed consent to publish identifying information/images in an online open-access publication was explicitly obtained from the participants or their legal guardians.

Consent to Publish declaration

All the authors declare their consent to publish the research.

Consent to Participate and Consent to Publish

Informed consents were obtained from all participants. All participants were above the age of 18 and as such were asked to sign informed consents.

Data availability statement

All data supporting the findings of this study are available within the paper and its Supplementary Information.

References

1. Addo, J. N. (2026, February 3). *Ignorance of the law is no excuse: Teaching criminal law in Ghana must not be reserved for law students alone*. Modern Ghana.
<https://www.modernghana.com/news/1468759/ignorance-of-the-law-is-no-excuse-teaching-of.html>
2. Adom, D. (2018). Traditional cosmology and nature conservation at the Bomfobiri Wildlife Sanctuary of Ghana. *Nature Conservation Research*, 3(1), 35–57.
3. Adranyi, E., Stringer, L. C., & Altink, H. (2024). Artisanal and small-scale gold mining governance and cross-sectoral policy coherence in Ghana. *Resources Policy*, 96, 105235.
4. Adu-Baffour, F., Daum, T., & Birner, R. (2021). Governance challenges of small-scale gold mining in Ghana: Insights from a process net-map study. *Land use policy*, 102, 105271.
5. Afriyie-Gyawu, E., Apenteng, B. A., Opoku, S. T., Awuah, J., & Suobogbiree, J. (2017). Impact of Illegal Mining Activities on the Cost of Water Treatment in Ghana.

6. Agyei-Mensah, S., Owusu, G., Awuni, C., Howard, B., Fuseini, I., Buytaert, W., & Berkhout, F. (2024). Chiefs and floods: hybrid governance and co-production of flood risk adaptation in Tamale, Ghana. *Journal of Environmental Policy & Planning*, 26(6), 1–17.
<https://doi.org/10.1080/1523908x.2024.2410899>
7. Alves, F., Costa, P. M., Novelli, L., & Vidal, D. G. (2023). The rights of nature and the human right to nature: an overview of the European legal system and challenges for the ecological transition. *Frontiers in Environmental Science*, 11, 1175143.
8. Anyame, B. S., Antwi-Agyei, P., & Domfeh, M. K. (2022). Impact of the ban on illegal mining activities on raw water quality: A case-study of Konongo Water Treatment Plant, Ashanti Region of Ghana. *Journal of Sustainable Mining*, 21(2), 80–92.
9. Arthur-Holmes, F., Tomude, E. S., & Damtar, D. (2026). Is a license for small-scale mining a means, an end, or both? Politics of ASM formalization and environmentally responsible mining in Ghana. *Environmental Science & Policy*, 175, 104290.
10. Asamani, M. (2026). Uncovering the whys behind the prevalence of galamsey despite regulatory efforts: A principal-agent model analysis. *Resources Policy*, 113, 105854.
<https://doi.org/10.1016/j.resourpol.2026.105854>
11. Asori, M., Mpobi, R. K. J., Morgan, A. K., Apoanaba, T. A., Katey, D., Ampofo, S. T., ... & Appiah, D. O. (2023). Is illegal mining socio-politically entrenched? An opinion piece on the interaction between formal politics and chief dominance in mineral governance, and its influence on fighting Galamsey in Ghana. *GeoJournal*, 88(2), 1953-1963.
12. Asumda, D. A., Situma, F. S., & Muigua, K. M. (2024). Ghana's Regulatory Framework and Sustainability in the Mining Sector. *UCC Law Journal*, 4(1), 158–189.
13. Aziabah, M. A., & Ayelazuno, J. A. (2024). The failure of the militarised fight against “Galamsey” in Ghana: A critical overview of the class and political dynamics. *Journal of Planning and Land Management*, 3(2), 38–51. <https://doi.org/10.36005/jplm.v3i2.78>
14. Bansah, K. J. (2023). Artisanal and small-scale mining formalization in Ghana: the government's approach and its implications for cleaner and safer production. *Journal of Cleaner Production*, 399, 136648.
15. Bansah, K. J., Dumakor-Dupey, N. K., Kansake, B. A., Assan, E., & Bekui, P. (2018). Socioeconomic and environmental assessment of informal artisanal and small-scale mining in Ghana. *Journal of Cleaner Production*, 202, 465–475.
16. Botchwey, G., & Crawford, G. (2025). Small-scale mining, environmental destruction, and democracy capture: the Government of Ghana's failed "war on galamsey." *Democratization*, 1–22.
<https://doi.org/10.1080/13510347.2025.2489018>
17. Darkwa, S. (2011). Research Article: Environmental Justice Education: Empowering Ghanaian Students to become Environmental Citizens. *Environmental Practice*, 13(4), 314–324.
<https://doi.org/10.1017/s1466046611000342>

18. Ghana Audit Service. (2010). *Performance Audit Report Of The Auditor-General On Regulating Reclamation Activities At Small-Scale Mining Sites, Republic Of Ghana*.
19. Gyasi, E., & Ametepe, P. E. K. (2026). Assessing shortcomings of Ghana's anti-illegal mining reforms and drawing policy alternatives from Peru's Operation Mercury. *Elem Sci Anth*, 14(1). <https://doi.org/10.1525/elementa.2025.00040>
20. Ikporukpo, C., & Ikporukpo, N. (2025). Rights of Nature: Theory and Practice. *Journal of Law and Sustainable Development*. <https://doi.org/10.55908/sdgs.v13i6.4434>
21. IPCC (2023). Sections. In: *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II, and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115, doi: 10.59327/IPCC/AR6-9789291691647
22. Kumah, R. (2022). Artisanal and small-scale mining formalization challenges in Ghana: Explaining grassroots perspectives. *Resources Policy*, 79, 102978.
23. Maliganya, W., Mubofu, C., & Jesse, A. M. (2025). The implications of gender-based violence on access to land for rural women's empowerment in patrilineal societies in Tanzania. *Cogent Social Sciences*, 11(1). <https://doi.org/10.1080/23311886.2025.2516077>
24. May, J. R., & Baber, W. F. (2023). Conclusion. *Environmental Human Rights in the Anthropocene*, 213–221. <https://doi.org/10.1017/9781009039642.012>
25. Mensah, J., Amoah, J. O., Mattah, P. A. D., & Mensah, A. (2022). Causes and effects of weak enforcement of environmental sanitation laws in Ghana. *Journal of Human Behavior in the Social Environment*, 33(5), 1–22. <https://doi.org/10.1080/10911359.2022.2080146>
26. Mensah-Odum, N., Sarfo-Mensah, N., & Fredua-Antoh, E. (2025). Legal and Regulatory Evidence on Mining in Ghana Forest Reserves: A Qualitative Perspective on the Atewa Range Forest Reserve. *Advances in Image and Video Processing*, 13(03), 421–434. <https://doi.org/10.14738/aivp.1303.18806>
27. Nyagamago, M. (2025, January 3). *SONA: Galamsey fight negatively impacted my second term as President – Akufo-Addo*. Pulse Ghana. <https://www.pulse.com.gh/story/sona-galamsey-fight-negatively-impacted-my-second-term-as-president-akufo-addo-2025010312024038521>
28. Osei, B. K., & Asantewa, J. (2025). Traditional Leadership, Indigenous Knowledge and Environmental Conservation in Ghana: A Content Analysis. *Open Journal of Social Sciences*, 13(06), 136–156. <https://doi.org/10.4236/jss.2025.136009>
29. Schwaiger, J., Tas, M., Auch, A., Bosker, T., & Ehrhardt, D. (2024). Customary Authorities and Environmental Governance in Africa: A Systematic Review. *Society & Natural Resources*, 37(8), 1199–1217. <https://doi.org/10.1080/08941920.2024.2338781>
30. Sonko, B. S. (2025). From Colonial Statism to Regional Solidarity: ECOWAS and the Remaking of Governance, Law, and Justice in West Africa. *International Journal of Research and Innovation in Social Science*, IX(VIII), 3304–3319. <https://doi.org/10.47772/ijriss.2025.908000268>

31. Stærfeldt, L. K., & Stacey, P. A. (2025). Environmental governance and political contestation in contexts of illegal small-scale gold mining in Ghana. *Geoforum*, 160, 104221.

32. Tavakol, M., & Dennick, R. (2011). Making Sense of Cronbach's Alpha. *International Journal of Medical Education*, 2(2), 53–55. <https://doi.org/10.5116/ijme.4dfb.8dfd>

33. Tignino, M. (2022). Rights of Nature and the Rights to Nature: Emerging Trends in International Law. *Desafíos Medioambientales*, (4), 53-69.

34. Tschakert, P. (2016). Shifting discourses of vilification and the taming of unruly mining landscapes in Ghana. *World Development*, 86, 123–132.

35. United Nations Environment Programme (2023). Africa Environment Outlook for Business: Our Environment Our Wealth. Nairobi: United Nations Environment Programme. <https://doi.org/10.59117/20.500.11822/43127>

Figures

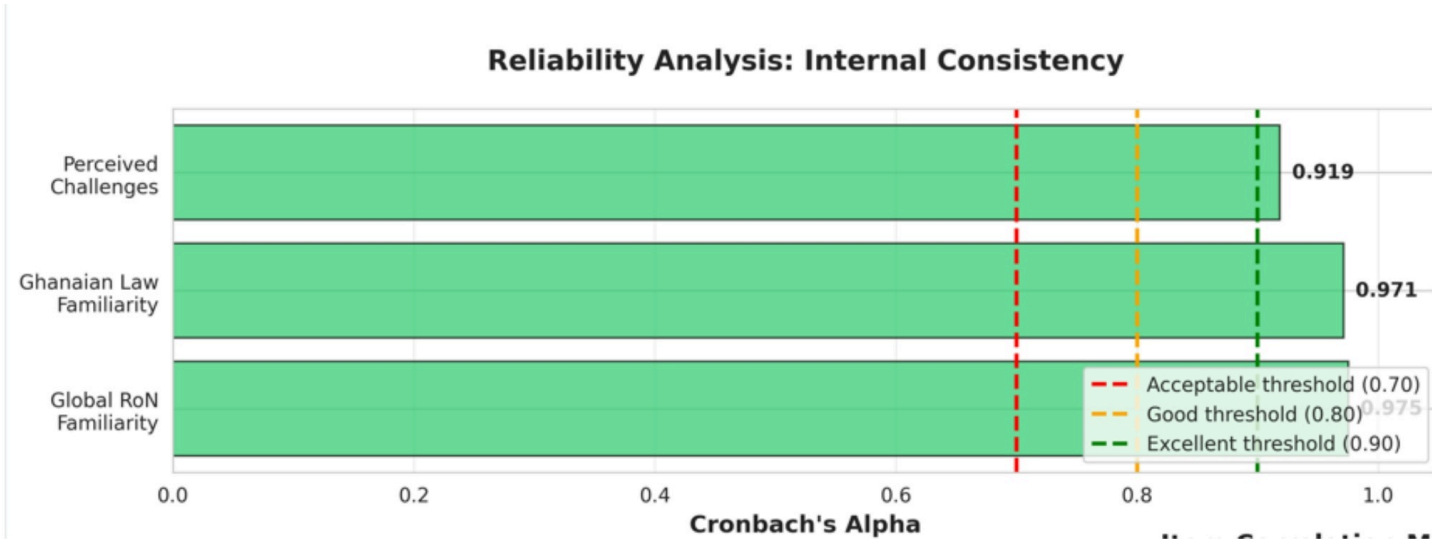


Figure 1

Internal Consistency

Gender Distribution (N=105)

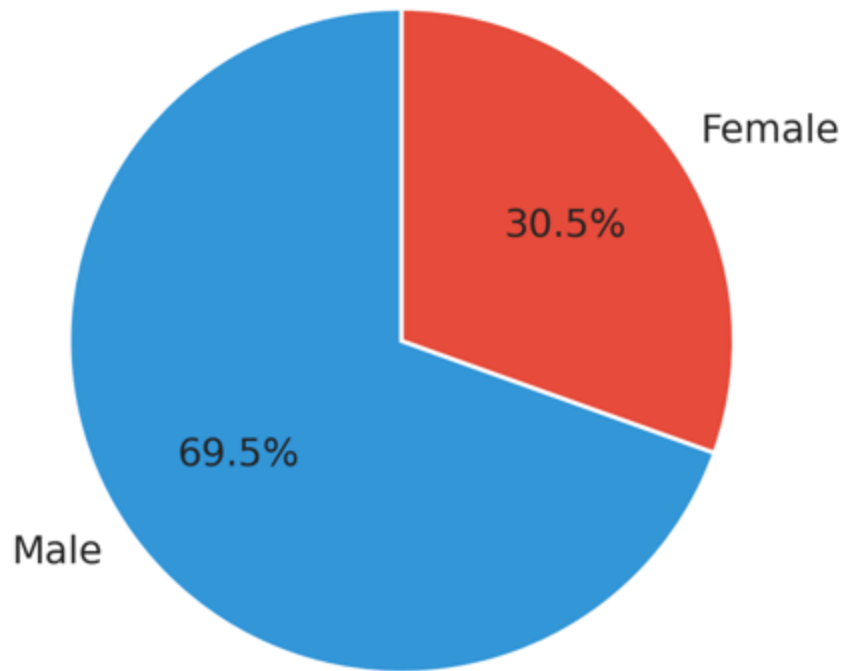


Figure 2

Gender Distribution