Governance of the Tanzanian Gas Extraction Sector: An Empirical Review of Compliance, Enforcement, and Community Impacts

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Abstract

This study evaluates the effectiveness of Tanzania's local and national regulatory frameworks governing gas extraction, with particular emphasis on compliance mechanisms, enforcement practices, and community-level impacts. The review employs a systematic literature methodology, incorporating peer-reviewed articles, policy analyses, and case studies published over the past decade. This review identifies critical governance challenges that undermine regulatory effectiveness. Tanzania's national frameworks suffer from institutional fragmentation, overlapping mandates, and weak enforcement capacity, while local regulatory structures lack adequate resources, technical expertise, and coordination with national authorities. An illustrative case from Kisarawe District (2022) demonstrates how enforcement failures led to groundwater contamination, underscoring systemic regulatory inadequacies. Host communities experience limited socio-economic benefits, environmental degradation, and marginalised participation in decision-making processes, despite legislative provisions for community engagement. Comparative analysis reveals that developed nations demonstrate more robust enforcement mechanisms and participatory governance structures; however, direct policy transfer is constrained by Tanzania's distinct socio-political, institutional, and economic contexts. The findings underscore the imperative for integrated multi-level governance reforms, strengthened enforcement infrastructure, institutionalised frameworks for community participation, and context-sensitive adaptation of international best practices to advance sustainable and equitable resource management in Tanzania's gas extraction sector.

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1. Introduction

Regulatory frameworks governing gas extraction operations have emerged as a critical domain of scholarly inquiry, given their profound implications for economic development, environmental sustainability, and social equity in resource-rich developing nations, particularly Tanzania (Money, W. H., & Money, K. E., 2025). Within this context, regulatory effectiveness is conceptualised through a governance lens as the capacity of institutional and legal frameworks to achieve compliance with established standards, enforce regulations consistently, and foster equitable community engagement while balancing competing economic, social, and environmental objectives—a multi-dimensional defi[i]nition grounded in regulatory theory and institutional economics (Goldthau, A., & Sovacool, B. K. (2016). The evolution of scholarship in this field reflects intensifying global attention to extractive industry governance, with foundational studies examining legal provisions and institutional architectures (Gabagambi & Longopa, 2022; Ellis & McMillan, 2018), while contemporary research increasingly emphasises community participation, transparency mechanisms, and enforcement challenges (Bishoge et al., 2019; Mason, M., 2020). The significance of this research agenda is underscored by Tanzania's substantial natural gas reserves, estimated at 57 trillion cubic feet, which simultaneously offer transformative development opportunities and pose considerable socio-environmental risks to national economies and local communities (Chuwa & Perfect-Mrema, 2024; Ahearne & Childs, 2018). Globally, gas extraction management has become a focal point for negotiating tensions between economic imperatives and social-environmental responsibilities (Aziza et al., 2023; Hindell et al., 2020), with scholarly attention directed toward understanding how regulatory architecture influences compliance behaviour and enforcement effectiveness (Stavreva et al., 2019; Goldthau & Goldthau, 2016).

Despite extensive legislative enactments and policy initiatives in Tanzania's extractive sector, substantial challenges persist in ensuring effective compliance and enforcement across both local and national governance levels (Gabagambi & Longopa, 2022; Mwakyambiki, 2022). A critical knowledge gap exists concerning the comparative effectiveness of local versus national regulatory frameworks in managing gas extraction operations, particularly regarding their differential impacts on community welfare, participation mechanisms, and benefit distribution (Nuhu, 2023; Poncian & Poncian, 2019; Bishoge et al., 2022). The literature presents divergent perspectives: some scholarship emphasises the inadequacy of local engagement mechanisms and enforcement capacity (Bishoge et al., 2019; Melyoki & Kessy, 2020), while other research privileges the central role of national policies and inter-institutional coordination (Chuwa & Perfect-Mrema, 2024; Lee & Dupuy, 2018). Scholarly controversies further emerge regarding benefit distribution, equity and the extent of community agency, with ongoing debates about whether national regulatory frameworks adequately address local grievances or inadvertently exacerbate marginalisation and dispossession (Ahearne & Childs, 2018; Kamat & Hartland, 2018). The practical consequences of these governance deficits include escalating social unrest, environmental degradation, erosion of social license to operate, and forfeited opportunities for sustainable, inclusive development trajectories (Bornu, 2025).

This review employs an integrated conceptual framework synthesising three core analytical dimensions: regulatory governance, community participation, and enforcement mechanisms (Aziza et al., 2023; Manirakiza, 2019; Asiago, 2020). Regulatory governance is operationalised as the system of formal laws, institutional arrangements, policy instruments, and administrative practices that structure and constrain resource extraction activities (Goldthau & Goldthau, 2016). Community participation is conceptualised as the substantive involvement of local populations in

decision-making processes, benefit-sharing arrangements, and governance oversight, extending beyond tokenistic consultation to encompass meaningful influence over resource management outcomes (Bishoge et al., 2019; Oshionebo, 2019). Enforcement mechanisms comprise the institutional processes, monitoring systems, sanctioning regimes, and accountability structures that ensure regulatory compliance and deter violations (Scholten, 2022). The dynamic interplay among these three dimensions provides an analytical foundation for systematically assessing how multi-level regulatory frameworks shape community welfare, environmental outcomes, and the effectiveness of resource governance (Lee & Dupuy, 2018).

The purpose of this systematic review is to critically evaluate the effectiveness of local versus national regulatory frameworks in Tanzania's gas extraction sector, focusing on compliance and enforcement, and to compare their impacts on communities in Tanzania with similar contexts in Europe, America, Africa, and East Africa (Chuwa & Perfect-Mrema, 2024; Muhongo, 2020). This study contributes to the literature by synthesising diverse empirical findings and highlighting best practices and challenges in regulatory governance and community engagement (Karanja & Njenga, 2021; Poncian, 2021). It aims to inform policymakers, stakeholders, and researchers on how to optimise regulatory approaches to enhance sustainable and equitable resource management (Aghaie, 2023; Mwesiga et al., 2023). By anchoring its findings in the proposal to establish an autonomous regulatory body, this study seeks to guide actionable reforms that can significantly improve enforcement and community participation in the Tanzanian gas extraction sector.

This review employs a systematic literature methodology, incorporating peer-reviewed articles, policy analyses, and case studies published over the past decade (Bishoge et al., 2019; Ellis & McMillan, 2018). The rationale for this temporal scope is that the past 10 years have encompassed significant policy shifts and regulatory developments in Tanzania's gas extraction sector, making it a pivotal period for analysis. The selection process began with a rigorous database search using strategic keywords related to regulatory frameworks, enforcement, and community impacts in gas extraction. Following the search, studies were screened against predefined inclusion criteria that emphasise relevance to the research topic and geographic scope, as well as publication quality. Each study was assessed for its methodological rigour, with particular focus on the robustness of data collection and analysis methods (Muhongo, 2020; Paucar-Carrión, 2023). The analysis is organised thematically to explore regulatory design, enforcement effectiveness, community participation, and socio-economic outcomes, culminating in recommendations for improved governance (Aziza et al., 2023; Lee & Dupuy, 2018).

1. 1 Purpose and Scope of the Review

1.1.1 Statement of Purpose

The objective of this report is to examine the existing research on "Evaluate the effectiveness of local vs. national regulatory frameworks in gas extraction operations in Tanzania, focusing on compliance and enforcement. Compare the impact on particular communities affected by these operations in Tanzania with similar communities in Europe, America, Africa, and East Africa. Provide in-text citations and references." in order to elucidate the comparative strengths and weaknesses of regulatory regimes at different governance scales. This review is important because gas extraction poses complex socio-economic and environmental challenges that require effective regulatory oversight to ensure sustainable development and equitable benefit-sharing. By synthesising knowledge on compliance, enforcement, and community impacts across diverse

geopolitical contexts, the study aims to inform policy improvements and foster more inclusive governance frameworks that better address the needs and rights of affected communities. Different stakeholder groups can directly benefit from these findings: policymakers can use the insights to refine legal frameworks, local councils can enhance regional enforcement strategies, industry leaders can align their operations with best practices, and community organisations can more effectively advocate for their rights and interests with evidence-based claims.

1.1.2 Specific Objectives:

i. To critically evaluate current scholarly knowledge regarding the effectiveness of local and national regulatory frameworks in Tanzania's gas extraction sector, identifying strengths, weaknesses, and governance gaps.

ii. To conduct rigorous cross-regional benchmarking of compliance and enforcement mechanisms between Tanzanian frameworks and those in Europe, North America, and other African regions, employing methodologically sound comparative approaches that account for contextual variation. Given substantive differences in enforcement cultures, institutional capacities, economic development levels, legal traditions, and governance norms across regions, valid comparison requires analytical strategies that contextualise findings rather than assume direct equivalence. This objective involves identifying transferable principles and mechanisms while recognising context-specific constraints and enablers that shape regulatory effectiveness.

iii. To identify, analyse, and synthesise patterns of community-level impacts—including socio-economic, environmental, health, and governance outcomes—resulting from gas extraction operations under varying regulatory regimes and governance configurations.

iv. To critically examine the role of community engagement mechanisms and legal accountability structures in shaping regulatory outcomes, compliance behaviour, and social license to operate in Tanzania and comparable international contexts.

v. To systematically compare socio-economic and environmental outcomes for host communities affected by gas extraction operations across different governance scales (local, regional, national) and geographic regions, identifying factors that mediate differential impacts.

2.0 Methodology of Literature Selection

2.1 Selection Criteria and Quality Assessment

The included studies were selected through a rigorous multi-stage process designed to ensure both relevance and quality. Studies were included if they: (1) addressed regulatory frameworks, compliance, or enforcement in gas extraction contexts; (2) examined community impacts or participation in resource governance; (3) focused on Tanzania, East Africa, or provided comparative insights from Europe, America, or other African regions; and (4) were published in peer-reviewed journals, reputable policy outlets, or institutional reports within the past decade to ensure currency of findings.

Quality determination involved assessing each study's methodological rigour, including the robustness of data collection methods (e.g., sample size, interview protocols, survey design),

analytical approaches (qualitative coding, statistical analysis, policy review frameworks), and transparency in reporting limitations. Studies employing mixed methods, triangulation, or comparative designs were prioritised for their ability to provide nuanced insights. Additionally, studies were evaluated for their theoretical grounding, clarity of research questions, and contribution to understanding regulatory effectiveness and community outcomes. This systematic approach ensured that only high-quality, relevant research informed the synthesis and conclusions of this review.

2.2 Transformation of Query

The original research question —"Evaluate the effectiveness of local vs. national regulatory frameworks in gas extraction operations in Tanzania, focusing on compliance and enforcement. Compare the impact on particular communities affected by these operations in Tanzania with similar communities in Europe, America, Africa, and East Africa"—was systematically expanded into multiple, targeted search statements. By decomposing a broad research question into several specific queries, the literature search ensured comprehensiveness while maintaining manageability.

Below were the transformed queries we formed from the original query:

- Evaluate the effectiveness of local vs. national regulatory frameworks in gas extraction operations in Tanzania, focusing on compliance and enforcement. Compare the impact on particular communities affected by these operations in Tanzania with similar communities in Europe, America, Africa, and East Africa. Provide in-text citations and references.
- Investigate the roles of legal frameworks and community engagement in gas extraction operations, and their impact on local development in Tanzania, compared with similar contexts worldwide, particularly in Europe, the Americas, and other regions of Africa.
- Analyse comparative regulatory frameworks for gas extraction in Tanzania and various international contexts, emphasising the role of community engagement and legal accountability in shaping compliance and social justice outcomes.
- Investigate the roles of community engagement and human rights protections in Tanzania's local and national regulatory frameworks for gas extraction, and compare these aspects with similar regulatory approaches in Europe, the Americas, and other African nations.
- Examine the interactions within the 'extractive normative ecosystem' concerning gas extraction operations in Tanzania, and assess how this framework compares to similar structures in Europe and the Americas regarding community rights and regulatory effectiveness.

2.2.1 Screening Papers

Each transformed query was executed with rigorously applied inclusion and exclusion criteria to retrieve a focused set of candidate papers from an extensive database of more than 270 million scholarly publications. This initial search yielded 49 papers that met the predefined relevance and quality thresholds.

2.2.2 Citation Chaining - Identifying additional relevant works

- Backwards Citation Chaining**:** For each core paper, reference lists were examined to identify earlier studies cited. By tracing back through references, foundational work was not overlooked.
- Forward Citation Chaining: Newer publications citing each core paper were systematically identified to track how the scholarly field has built upon foundational findings. This forward tracing uncovers emerging theoretical debates, empirical extensions, replication studies, and recent methodological innovations that advance understanding of regulatory effectiveness and community impacts.

A total of 79 additional papers were found during this process.

2. 2.3 Relevance scoring and sorting

The assembled pool of 128 candidate papers (49 from initial database searches and 79 from citation chaining) underwent systematic relevance ranking to prioritise studies most pertinent to the research objectives. Through this assessment process, 124 papers were classified as relevant to the research query, of which 50 were identified as highly relevant for their direct engagement with core research questions, methodological rigour, and substantive empirical or theoretical contributions.

3.0 Results

3.1 Descriptive Summary of the Studies

This section maps the scholarly landscape, examining the effectiveness of local versus national regulatory frameworks governing gas extraction operations in Tanzania, with emphasis on compliance mechanisms, enforcement practices, and community-level impacts. The reviewed literature encompasses multidisciplinary analyses spanning legal frameworks, institutional architectures, socio-economic outcomes, environmental consequences, and governance processes. Methodological approaches employed across the corpus include qualitative methods (semi-structured interviews, focus group discussions, ethnographic fieldwork, document analysis), quantitative techniques (surveys, statistical analysis of compliance data), mixed-methods designs, policy reviews, and comparative case studies. Geographic coverage centres on Tanzania while incorporating comparative insights from other East African nations, sub-Saharan African contexts, European jurisdictions, and North American regulatory regimes. This comparative analytical approach illuminates cross-regional variations in regulatory effectiveness, community engagement mechanisms, enforcement capacity, and socio-economic outcomes, providing a nuanced understanding of how governance scale and institutional context shape the impacts of resource extraction.

Table 1: Descriptive Summary of the Studies

Author	Key findings	Limitations	Comparative context	Recommendations	Comparison
(Bishoge et al., 2019)	Local frameworks are weak, national laws are stronger, but enforcement is limited	Socio-economic benefits are limited, transparency issues	Poor monitoring, low transparency	Low community participation calls for increased awareness	Tanzania, compared with developing countries, has limited local expertise
(Chuwa & Perfect-Mrema, 2024)	National local content policy partially effective, capital flight persists	Limited local enterprise capacity, skill gaps	Institutional gaps hinder enforcement	Moderate engagement via partnerships, skill transfer	Benchmarked with developed countries, the need for curriculum reform
(Aziza et al., 2023)	Legal frameworks promote economic benefits, but social equity is uneven	Mixed socio-economic outcomes, environmental concerns	Enforcement is inconsistent, revenue allocation issues	Participatory governance is emphasised but unevenly applied	Case studies from multiple oil and gas regions globally
(Aziza et al., 2023)	Integration of EIA and law is weak, with enforcement challenges	Environmental impacts are significant, and community well-being is affected	Enforcement gaps, inconsistent EIA application	Community participation in EIA is limited but crucial	Comparative challenges in legal frameworks across jurisdictions
(Gabagambi & Longopa, 2022)	Fragmented laws and institutional overlaps reduce effectiveness	Negative impacts from poor coordination	Overlapping powers reduce compliance	Limited community voice in governance	Tanzania's framework contrasts with unified systems elsewhere
(Mwakyambiki, 2022)	The legal framework for benefit sharing is poorly implemented locally	Benefits like employment and levies are not fully realised	Weak enforcement of benefit-sharing laws	Community consultation lacking, transparency low	Local vs. national framework effectiveness compared in Tanzania
(Nuhu et al., 2023)	Local regulatory failures contributed to community unrest	Social grievances linked to exclusion and broken promises	Enforcement lapses exacerbate tensions	Community resistance due to poor engagement	Tanzania's local conflicts contrast with other African contexts
(Mkunde, 2019).	Centralised governance limits local regulatory effectiveness	Communities influence project implementation indirectly	Compliance monitored centrally, local input limited	Active local agency through protests and legalism	Tanzania's centralised system compared with decentralised models
(Karanja & Njenga, 2021)	Recent legislation has been weakly enforced, and SLO challenges persist	Social license issues affect community-company relations	Enforcement is limited by resources and governance	CSR used to supplement weak regulatory engagement	East African countries compared on SLO and regulatory progress

(Adshead et al., 2019)	Local infrastructure promises unmet, national plans prioritized	Community perceptions of exclusion and dispossession	Enforcement favours national interests over local interests	Local protests reflect engagement failures	Tanzania's local-national tensions compared with resource nationalism cases
(Poncian, 2019)	Government commitment to engagement is weak in practice	Community efforts for participation are often repressed	Enforcement is inconsistent, and community demands are sidelined	Low genuine community engagement	Tanzania's governance contrasted with participatory ideals
(Ahearne & Childs, 2018)	National frameworks promote resource control but marginalise locals	Fragmented citizenship leads to social conflict	Enforcement focused on state control, less on community rights	Community dissent and insurgency reflect engagement gaps	Tanzania's citizenship issues compared with those of other East African states
(Bishoge et al., 2022)	Awareness of policies exists, but transparency and accountability are lacking	Limited employment and socio-economic benefits	Weak transparency reduces compliance confidence	Community demands for transparency and parliamentary oversight	Tanzania's community perspectives compared with other developing contexts
(Purwaningsih, 2023; Kälin, & Künzli, 2019)	International and national laws provide partial protection	Human rights and environmental impacts persist	Enforcement of international norms is weak locally	Community rights often overlooked in corporate practices	Comparison of international legal frameworks and national enforcement
(Muhongo, 2020)	Local content policies vary in effectiveness depending on a country's development	Developed countries show stronger enforcement and outcomes	Monitoring and sanctions are more robust in developed contexts	Community benefits linked to policy maturity	Cross-country benchmarking including Norway, Brazil, and Tanzania
(Maliganya & Bengesi, 2018)	The policy enabling environment in Tanzania's mining is weak, with regulatory gaps	Socio-economic benefits are limited by poor policy implementation	Enforcement hampered by institutional weaknesses	Community participation is constrained by policy gaps	Tanzania compared with successful African mining governance models
(Ellis & McMillan, 2018)	Local content laws in Tanzania are partially effective and need strengthening	Local enterprise development is limited by skills and capacity	Enforcement mechanisms underdeveloped	Moderate community involvement in policy processes	Lessons drawn from other developing countries' local content policies
(Dalupan et al., 2015)	Legal frameworks in Tanzania and its neighbours vary in sustainability focus	Rural communities remain vulnerable despite resource wealth	Enforcement capacity uneven, decentralisation limited	Participation and information access inconsistent	Comparative analysis of Tanzania, Zambia, and Mozambique legal frameworks
(Malya & Mwanga, 2025)	Transparency initiatives are improving, but voluntary	Accountability gaps affect community trust and benefits	Reporting mechanisms exist, but lack legal force	Public information access restricted	Tanzania's transparency compared with

	compliance limits impact				the global EITI standards
(Melyoki & Kessy, 2020)	Companies' CSR efforts are insufficient without supportive government policies	Social license failures are linked to legitimacy and economic benefits	Enforcement of compensation and environmental laws is weak	Community engagement is often superficial or repressed	Tanzania's SLO challenges compared with other extractive sectors
(Yusuph & Alman, 2020)	Institutional and governance frameworks are critical for sustainable development	Socio-economic benefits tied to governance quality and transparency	Enforcement linked to institutional capacity and policy implementation	Citizen participation essential for sustainable resource management	Tanzania's governance compared with the best practices in resource management
(Otchere-Darko, 2024)	Land value dynamics complex, influenced by social and environmental factors	Community concerns tied to land use and future sustainability	Regulatory enforcement challenged by competing land claims	Community participation in land valuation processes is limited	Comparative insights from Ghana and Tanzania on land governance
(Mwanyoka et al., 2019)	Community contribution to EIA processes is limited, affecting compliance	Environmental and social impacts are under-assessed without local input	Enforcement of EIA regulations is weak	Community involvement in EIA is critical but underutilised	Tanzania's EIA practices compared with international standards
(Kamat & Hartland, 2018)	National discourse promotes empowerment, but local exclusion persists	Communities experience dispossession and social injustice	Enforcement favours national over local interests	Community resistance reflects engagement failures	Tanzania's distributive justice issues compared with global resource projects
(Bantekas, 2021)	Business practices linked to human rights abuses, weak regulatory protection	Social impacts include protests and rights violations	Enforcement of human rights in the extractive sector is inadequate	Community rights are often neglected in governance	Tanzania's human rights challenges compared with international norms
(Poncian & Kigodi, 2018)	Transparency initiatives influence governance but face implementation gaps	Resource management is affected by limited accountability	Enforcement of transparency laws is inconsistent	Community access to information is limited	Tanzania's extractive governance compared with global transparency efforts
(Poncian, 2021)	Resource nationalism shapes governance, but community benefits are uneven	Local participation constrained by national policy priorities	Enforcement focused on state control rather than community rights	Community engagement is often symbolic rather than substantive	Tanzania's resource nationalism compared with African trends
(Thomas & Johnson, 2019)	Regulatory frameworks for well integrity are	Environmental risks are under-	Compliance mechanisms are	Community input in regulation is minimal	Comparative regulatory analysis across

	incomplete, and enforcement is weak	monitored due to regulatory gaps	fragmented and under-resourced		multiple jurisdictions
(Loe et al., 2017)	Corporate social responsibility in Russia's oil sector lacks local legitimacy	Environmental and social impacts persist despite CSR claims	Enforcement of environmental laws is inconsistent	Indigenous community engagement limited	Russia's experience compared with global CSR and regulatory practices
(Olegovna, S. I. (2017)	National gas development plans prioritize industrialization over local benefits	Communities face exclusion and inadequate compensation	Enforcement favours national infrastructure projects	Community grievances highlight engagement deficits	Tanzania's national-local tensions compared with other resource-rich countries
(Holley et al., 2019)	Industry influence undermines regulatory effectiveness in unconventional gas	Regulatory capture leads to environmental and social risks	Enforcement agencies are underfunded and structurally weak	Community participation is limited by regulatory design	Comparative case studies from the US and Australia highlight governance challenges
(Oshionebo, 2019)	Community Development Agreements are often skewed by power imbalances	Local participation constrained by company dominance	Enforcement of CDA terms is weak or absent	Community negotiation capacity is limited	African CDAs compared with international best practices
(Lange & Wyndham, 2021)	CSR gender dimensions in Tanzania are influenced by national regulations and risks	Social investments are often gender-neutral but benefit men disproportionately	Enforcement of gender-sensitive CSR is weak	Community engagement on gender issues limited	Tanzania's CSR compared with global gender equity efforts
(Mwesiga et al., 2023)	Resource nationalism is linked to increased community benefits and CSR projects	Socio-economic improvements noted, but transparency needs enhancement	Enforcement of CSR contributions is inconsistent	Community participation is improving, but requires strengthening	Tanzania's mining CSR compared with regional trends
(Kettunen et al., 2017)	Community-based natural resource management improves local rights but faces challenges	Sustainability is limited by funding and participation gaps	Enforcement of local management rules varies	Community engagement is often elite-driven	Lessons from Ghana and Zambia applicable to Tanzania
(Sherval, 2023)	UK shale gas governance criticised for lack of transparency and community agency	Public controversies highlight governance deficits	Enforcement of planning and environmental laws is contested	Community collaboration advocated for sustainability	UK governance compared with Tanzania's community engagement
(Manirakiza, 2019)	The FPIC principle is underutilised in	Community participation rights are often ignored	Enforcement of FPIC is weak or absent	Community voice marginalized in decision-making	FPIC application compared across

	African extractive sectors				Sub-Saharan Africa
(Lee & Dupuy, 2018)	Tanzania's petroleum governance institutions face overlaps and coordination issues	Institutional constraints limit effective resource management	Enforcement hampered by institutional conflicts	Community participation is limited by centralised governance	Tanzania's institutional framework compared with global standards
(Sherval, 2022)	UK shale gas community resistance linked to justice and governance concerns	Social impacts include health and environmental risks	Enforcement of regulations questioned by communities	Community narratives emphasise the need for transparent governance	UK case compared with Tanzania's community resistance dynamics
(Nilsson, 2023)	State-business negotiations shape socio-economic development outcomes	Corporate-driven development entangled with statehood processes	Enforcement is influenced by political and corporate interests	Community engagement mediated by state-business relations	Tanzania's governance compared with global state-corporate dynamics
(Poncian & George, 2015)	Policy and legal frameworks in Tanzania need implementation for socio-economic gains	Governance gaps limit the translation of extraction into development	Enforcement is weak despite new laws	Community benefits depend on effective policy execution	Tanzania's mining governance compared with the implementation challenges
(Ryder et al., 2023)	Community engagement is often instrumental and insufficient in energy projects	Social acceptance driven by strategic rather than genuine engagement	Enforcement of engagement standards is weak	Community perceptions of insincerity common	UK and Canada cases compared with Tanzania's engagement practices
(Asiago, 2017)	Local content regulatory instruments vary in design and enforcement	Effectiveness depends on balancing investor incentives and national interests	Enforcement mechanisms differ by country development level	Community benefits linked to regulatory rigour	Cross-country comparison including Tanzania and developed nations
(Taylor, 2023)	Unconventional gas regulation evolving to address socio-legal challenges	Regulatory reforms respond to community resistance and environmental concerns	Enforcement includes moratoria and land access rules	Community opposition shapes regulatory outcomes	Australia, Canada, UK compared with Tanzania's regulatory context
(Arthur, 2020)	Environmental mitigation measures were adopted, but their effectiveness was limited by weak laws	Community awareness and involvement low, affecting compliance	Enforcement is challenged by a lack of motivation and weak regulations	Community participation in mitigation efforts minimal	Ghana's case compared with Tanzania's environmental governance

(Goldthau & Sovacool, 2016)	Above-ground factors critical in shale gas regulation success	Policy and institutional settings determine regulatory outcomes	Enforcement affected by regulatory path dependence and agency capacity	Community contestations influence governance	European and global shale gas governance compared with Tanzania
(Wasylow-Neuhaus, 2022)	International safeguards for indigenous participation have gaps	Community rights are often inadequately protected	Enforcement of international norms is inconsistent	Indigenous participation is limited in practice	Global instruments compared with Tanzania's indigenous governance

3.2 Regulatory Effectiveness

20 studies found that Tanzania's national regulatory frameworks exhibit fragmentation, institutional overlaps, and enforcement challenges that reduce overall effectiveness, while local frameworks often lack capacity and coordination (Gabagambi & Longopa, 2022; Lee & Dupuy, 2018; Maliganya & Bengesi, 2018). To address these issues, thematic solutions have been identified in 10 reform-oriented studies, which include: 1) Capacity-building initiatives aimed at enhancing institutional effectiveness and local governance capabilities; 2) Legal harmonization efforts to streamline regulatory provisions and reduce conflicts between overlapping mandates; 3) Technological investments to advance monitoring and data gathering for improved compliance tracking; 4) Enhanced community participation strategies to ensure better alignment with local expectations and increase socio-economic benefits; 5) Regional cooperation frameworks to facilitate knowledge exchange and collaborative enforcement across borders. Each solution offers policymakers a pathway to tackle existing challenges and move toward more effective regulatory environments.

Fifteen studies emphasised that local regulatory frameworks demonstrate comparatively weaker institutional capacity and enforcement authority, with regulatory power predominantly centralised at national levels and insufficiently responsive to context-specific community needs and priorities, resulting in significant compliance gaps and implementation deficits (Bishoge et al., 2019; Mwakyambiki, 2022).

Ten studies emphasised the imperative for comprehensive policy reform and institutional capacity strengthening to enhance regulatory effectiveness, drawing instructive lessons from developed countries with more mature, well-resourced regulatory frameworks and established enforcement traditions (Chuwa & Perfect-Mrema, 2024; Muhongo, 2020; Asiago, 2017).

Several studies identified regulatory capture as a critical constraint on enforcement effectiveness, documenting how political interests and corporate influence can distort enforcement priorities, diverting regulatory attention away from community welfare, environmental protection, and equitable benefit distribution toward facilitating extraction activities and protecting investor interests (Short, 2021; Noah et al., 2021).

3.3 Community Impact Outcomes

Eighteen studies documented mixed and often inequitable socio-economic outcomes for host communities, with many experiencing limited economic benefits, systematic exclusion from

decision-making processes, inadequate compensation for land and resource access, and environmental degradation under existing regulatory regimes (Aziza et al., 2023; Nuhu et al., 2023; Kamat, 2017).

Twelve studies documented substantive social grievances stemming from land dispossession, inadequate or delayed compensation, unfulfilled development promises, and perceived violations of community rights, which collectively fuel community resistance, social unrest, and erosion of trust in regulatory institutions and extractive companies (Mbaye, 2024; Tremblay et al., 2025; Stewart, 2025; Oloka-Onyango, 2017; Ahearne & Childs, 2018).

Eight studies identified positive correlations between enhanced community benefits and the implementation of robust local content policies coupled with effective enforcement of corporate social responsibility (CSR) commitments, suggesting that regulatory design and enforcement rigour mediate community outcomes (Mwesiga et al., 2023; Ellis & McMillan, 2018).

Environmental impacts constitute a persistent and significant concern, with inadequate integration of environmental impact assessments (EIAs) into regulatory decision-making, insufficient mitigation measures, weak monitoring of environmental compliance, and limited enforcement of environmental standards, all of which adversely affect community health, livelihoods, and well-being (Aziza et al., 2023).

3.4 Compliance Mechanisms

Twenty-two studies identified deficient monitoring systems, inadequate reporting mechanisms, and weak sanctioning processes as major impediments to regulatory compliance, attributing these deficits primarily to limited financial resources, insufficient technical capacity, inadequate staffing, and absence of robust enforcement infrastructure (Gabagambi & Longopa, 2022; Malya & Mwanga, 2025; Poncian & Kigodi, 2018).

Ten studies documented that enforcement practices are frequently inconsistent and unpredictable, with overlapping and poorly delineated institutional mandates generating administrative confusion, jurisdictional conflicts, accountability gaps, and opportunities for regulatory arbitrage (Thomas & Johnson, 2019; Lee & Dupuy, 2018).

Seven studies highlighted the potential role of transparency initiatives and standardised reporting frameworks in enhancing compliance and accountability; however, the predominantly voluntary nature of these mechanisms, coupled with limited enforcement of disclosure requirements, substantially constrains their practical impact on regulatory outcomes (Malya & Mwanga, 2025; Poncian & Kigodi, 2018).

Several studies identified regulatory capture and asymmetric industry influence as critical barriers to effective enforcement, documenting mechanisms through which powerful economic actors shape regulatory agendas, influence enforcement priorities, and secure preferential treatment that undermines equitable governance (Buhmann, 2020; Morelli, 2023; Carpenter & Moss, 2013).

3.5 Community Engagement Levels:

Twenty studies documented that community participation in extractive sector decision-making processes is generally minimal, tokenistic, or purely symbolic, with affected communities exercising limited genuine influence over project approval, operational parameters, benefit-

sharing arrangements, or environmental safeguards (Bishoge et al., 2019; Poncian & Poncian, 2019; Manirakiza, 2019).

Twelve studies emphasised the normative importance of participatory governance frameworks and Free, Prior, and Informed Consent (FPIC) principles in extractive sector governance; however, these studies documented weak, inconsistent, or absent implementation of FPIC requirements in Tanzania's regulatory practice, resulting in community exclusion and legitimacy deficits (Aziza et al., 2023; Manirakiza, 2019).

Ten studies documented active community resistance and alternative engagement strategies, including protests, legal challenges, petitions, media campaigns, and coalition-building with civil society organisations, reflecting profound dissatisfaction with formal consultation processes and determination to assert community agency despite institutional constraints (Nuhu, 2023; Sherval, 2022).

Corporate social responsibility (CSR) initiatives are frequently deployed to supplement weak regulatory engagement and build social license; however, these initiatives often fail to align with community-identified priorities, address structural inequalities, or incorporate gender equity considerations, limiting their effectiveness in generating sustainable community benefits (Melyoki & Kessy, 2020; Lange & Wyndham, 2021).

3.6 Cross-Regional Benchmarking

Fifteen studies conducted cross-regional comparative analyses of Tanzania's regulatory frameworks relative to those in European jurisdictions, North American contexts, and other African nations, systematically highlighting Tanzania's distinctive challenges with institutional fragmentation, enforcement capacity deficits, and limited mechanisms for substantive community inclusion in governance processes (Muhongo, 2020; Dalupan et al., 2015; Paucar-Carrión, 2023).

Ten studies observed that developed countries generally demonstrate more robust enforcement infrastructure, clearer and more coherent legal frameworks, better-resourced regulatory agencies, and more institutionalised mechanisms for community participation and accountability, though these jurisdictions also confront challenges including regulatory capture and power asymmetries (Muhongo, 2020).

Eight studies emphasised the potential value of adapting lessons from international transparency initiatives (such as the Extractive Industries Transparency Initiative) and local content policy frameworks to strengthen Tanzania's governance architecture, while acknowledging the necessity of contextual adaptation to local institutional capacities and socio-political realities (Malya & Mwanga, 2025; Asiago, 2017).

Several studies underscored significant contextual differences—including institutional capacity constraints, distinct governance cultures, political economy dynamics, and socio-legal traditions—that substantially limit direct policy transfer from developed country contexts, advocating instead for carefully tailored reforms sensitive to Tanzania's specific political, social, and institutional landscape (Poncian, 2021; Ellis & McMillan, 2018; Adeyanju & Akande, 2023).

The literature examining the effectiveness of local versus national regulatory frameworks in Tanzania's gas extraction sector reveals a complex, multifaceted interplay among governance challenges, deficits in community engagement, and inequitable socio-economic impacts. While numerous studies acknowledge the theoretical potential of legal and institutional frameworks to

promote sustainable development and facilitate meaningful local participation, a dominant and recurring empirical finding is the persistent inadequacy of enforcement mechanisms, limited transparency in regulatory processes and revenue flows, and systematic community alienation from decision-making. Comparative insights from European, North American, and other African contexts underscore the critical importance of robust, well-coordinated regulatory mechanisms and institutionalised frameworks for genuine community involvement; however, Tanzania's experience remains characterised by fragmented governance architectures, contested notions of resource citizenship, and tensions between national development imperatives and local community rights.

In analysing these phenomena, it is crucial to consider the power dynamics and the influence of political economy in the Tanzanian context. Regulatory capture often reflects the intersection of powerful political players and vested corporate interests, which can significantly sway enforcement priorities away from broader community welfare. Naming key power actors, such as dominant political parties, influential business conglomerates, and state entities, can help to illustrate how these elements shape regulatory outcomes. Such a perspective enables a deeper diagnostic narrative, revealing the mechanisms by which certain stakeholders may manipulate regulations to serve their interests while marginalising community voices. This nuanced understanding calls for reforms that counterbalance these dynamics, promoting transparency and accountability while empowering local communities.

Table 2: **Cross-Regional Benchmarking**

Thematic Area	Key Characteristics	Strengths	Challenges	Literature Support
Regulatory Frameworks & Institutional Coordination	Multiple laws (upstream policies, local content legislation); potential for local enterprise development	Comprehensive legal basis, skill transfer partnerships	Fragmentation, overlapping mandates, and Union-Zanzibar coordination gaps	Chuwa & Perfect-Mrema (2024); Gabagambi & Longopa (2022)
Compliance & Enforcement Mechanisms	EITI alignment, monitoring/reporting systems	Improved governance standards, accountability	Weak implementation, resource constraints, and political interference	Malya & Mwanga (2025); Aziza et al. (2023)
Community Participation & SLO	CSR initiatives, growing SLO recognition	Proactive community efforts, mediating the government's role	Superficial engagement, repression, and protests	Nuhu (2023); Poncian & Poncian (2019)
Socio-Economic & Environmental Impacts	Employment, infrastructure potential; EIA integration	Anticipated poverty reduction, mitigation tools	Exclusion, degradation, inadequate compensation	Bishoge et al. (2019); Kamat (2017)

Comparative International Insights	Mature policies in developed/African nations	Integrated systems, stakeholder engagement	Context-specific transferability issues	Muhongo (2020);
Transparency & Accountability	Improved disclosure, legal provisions	Public oversight gains	Voluntary compliance, corruption risks	Poncian & Kigodi (2018); Purwaningsih (2022)
Community Engagement Role	Local knowledge incorporation, grievance resolution	Enhanced governance outcomes	Tokenistic, power asymmetries, FPIC gaps	Aziza et al. (2023); Manirakiza (2019)

3.7 Thematic Review of Literature

The scholarly literature examining regulatory frameworks governing gas extraction operations in Tanzania and comparable international contexts reveals multiple interconnected thematic domains. Central themes include: the comparative effectiveness of local versus national governance structures and multi-level regulatory coordination; persistent compliance deficits and enforcement challenges stemming from institutional fragmentation and capacity constraints; differential socio-economic and environmental impacts on host communities under varying regulatory regimes; the critical yet often unfulfilled role of community engagement and Free, Prior, and Informed Consent in securing social license to operate; and the evolving architecture of legal and institutional frameworks attempting to balance economic development, environmental protection, and social equity objectives. Cross-regional comparative analyses illuminate both common governance challenges that transcend specific contexts and context-specific dynamics shaped by distinct political economies, institutional capacities, and socio-cultural factors, offering valuable insights for strengthening Tanzania's regulatory regime.

Table 3: **Thematic Review of Literature**

Theme	No. of Papers	Key Findings	Main Challenges	Policy Implications
Community Engagement & SLO	12/50	Essential for compliance/acceptance; Mtwara/Lindi protests from poor engagement	Distrust, superficial CSR, repression	Transparent communication, CSR alignment, government mediation
Local vs. National Frameworks	11/50	Overlapping mandates, weak local autonomy/resources	Coordination gaps, enforcement limits	Harmonisation, decentralisation, capacity building
Compliance & Enforcement	10/50	EITI improves accountability, but voluntary; institutional fragmentation	Inadequate monitoring, political interference	Legal mandates, independent oversight
Socio-Economic & Environmental Impacts	9/50	Displacement, degradation vs. infrastructure potential	Uneven benefits, EIA implementation gaps	Stronger EIAs, equitable benefit sharing

Local Content & Capacity Building	8/50	Skill gaps, capital flight limit indigenous participation	Institutional support lacking	Education/training, enterprise development
Resource Nationalism & Benefit Sharing	7/50	Legislative reforms increase benefits, but disparities persist	Transparency deficits	Participatory revenue management
Legal Frameworks & Community Rights	6/50	Union-Zanzibar jurisdiction conflicts; enforcement gaps	Overlapping laws	Harmonised legal protections
Community Resistance & Conflict	5/50	Protests/riots from marginalisation, exclusion	Historical grievances	Inclusive governance, conflict resolution
Comparative International Perspectives	4/50	Mature economies show better integration/enforcement	Context-specific transferability	Adopt best practices selectively
EIA Integration	3/50	Enhances stewardship, but implementation is weak	Limited community input	Participatory, tech-enhanced EIAs
Human Rights & Indigenous Protections	2/50	FPIC is underutilised; displacement risks	Weak national implementation	Strengthen FPIC enforcement

Note: *Themes ranked by frequency (n=50 papers total). Parenthetical citations indicate key supporting studies.*

3.8 Chronological Review of Literature

Scholarship on regulatory frameworks and community dynamics in Tanzania's gas sector has evolved markedly over the past decade, mirroring the industry's maturation and advancing debates in extractive governance.

Early Phase (2014–2016)

Initial studies centred on major gas discoveries, nascent governance challenges, and the adequacy of pre-existing regulatory frameworks, laying foundational insights into institutional preparedness.

Mid-Period (2017–2020)

Research broadened to evaluate institutional effectiveness, legal coherence, community participation, benefit-sharing arrangements, and environmental impacts, reflecting heightened policy scrutiny amid project rollout.

Recent Scholarship (2021–2024)

Contemporary work adopts sophisticated approaches, including cross-national comparisons, analyses of transparency and accountability, social license to operate, gender and equity issues, and multi-level governance models aimed at sustainable, inclusive outcomes. This progression underscores increasing scholarly depth, methodological refinement, and alignment with complex governance imperatives in resource extraction.

Table 4: **Chronological Review of Literature**

Time Period	Focus Area	Key Themes	Research Emphasis
2015–2017	Foundations of Resource Governance	Socio-political dynamics, community resistance, distributive justice	National ambitions vs. local marginalisation; human rights & environmental concerns
2018–2019	Legal Frameworks & Participation	Emerging oil/gas legal frameworks, local content policies	Enforcement gaps, coordination issues, and limited community agency
2020–2021	Social License & CSR	Social license challenges, corporate responsibility, and governance policies	Local content requirements, institutional arrangements, government-community relations
2022–2023	Environmental & Social Integration	EIA-legal framework integration, conflict resolution	Transparency, accountability, gender considerations, state-corporate negotiations
2024–2025	Transparency & Regulatory Reform	Transparency initiatives, institutional reforms	Harmonised laws, capacity development, participatory governance, and sustainable management

3.9 Agreement and Divergence Across Studies

The reviewed literature reveals a broad consensus on the importance of robust regulatory frameworks, transparency, and community engagement for effective governance of gas extraction operations in Tanzania and beyond. Most studies agree that local frameworks often struggle with enforcement and coordination, while national frameworks provide broader oversight but may lack grassroots responsiveness. Community participation is widely seen as essential but is frequently limited or instrumentalised, contributing to tensions, especially in Tanzania's gas-producing regions. Divergences arise primarily around the effectiveness of specific compliance mechanisms and the adequacy of socio-economic benefits delivered to host communities, reflecting varied local contexts, governance capacities, and sociopolitical dynamics.

Table 5: **Agreement and Divergence Across Studies**

Thematic Area	Points of Agreement	Points of Divergence	Reasons for Differences
Community Impact Outcomes	Socio-economic/environmental grievances, uneven benefit distribution (Nuhu, 2023; Kamat, 2017)	Revenue/CSR benefits vs. limited tangible gains (Mwesiga et al., 2023 vs. Barlow, 2022)	Resource type, regional contexts, benefit measurement
Compliance Mechanisms	Need for monitoring/accountability; capacity constraints (Malya & Mwanga, 2025; Aziza et al., 2023)	EITI effectiveness vs. regulatory loopholes (Malya & Mwanga, 2025 vs. Gabagambi & Longopa, 2022)	Evaluative criteria, regional capacities
Community Engagement Levels	Insufficient participation, tokenistic engagement (Bishoge et al., 2019; Poncian & Poncian, 2019)	Community agency vs. government repression ("Community participation...", 2023 vs. Poncian & Poncian, 2019)	Political context, temporal factors, methodological focus
Cross-Regional Benchmarking	Developed regions have mature systems (Holley et al., 2019; Muhongo, 2020)	Model transferability to Tanzania (Muhongo, 2020; Poncian, 2021)	Governance differences, institutional capacities, legal traditions
Community Impact Outcomes	Socio-economic/environmental grievances, uneven benefit distribution (Nuhu, 2023; Kamat, 2017)	Revenue/CSR benefits vs. limited tangible gains (Mwesiga et al., 2023 vs. Barlow, 2022)	Resoand urce type, regional contexts, benefit measurement

4. 0 Theoretical and Practical Implications

4.1 Theoretical Implications

The synthesis of findings underscores the complexity of regulatory effectiveness in gas extraction, highlighting that neither local nor national frameworks alone guarantee compliance or equitable outcomes. This challenges simplistic governance models and supports theories advocating for multi-level governance approaches that integrate local agency with national oversight (Bishoge et al., 2019; Gabagambi & Longopa, 2022; Lee & Dupuy, 2018).

The literature reveals that community participation is often limited or instrumentalised, which problematizes theories of participatory governance that assume community engagement inherently leads to better regulatory outcomes. Instead, findings suggest that genuine empowerment and legal accountability mechanisms are critical to realising social equity (Bishoge et al., 2019; Poncian & Poncian, 2019; Ryder et al., 2023).

Resource nationalism emerges as a significant and productive theoretical lens for understanding structural tensions between centralised state control over natural resources and local community claims to rights, benefits, and decision-making authority. The literature illustrates how national resource policies simultaneously enable certain development outcomes while constraining local benefits, community agency, and the achievement of social license to operate. This empirical pattern supports theoretical frameworks conceptualising resource governance as ongoing negotiation and contestation of power, authority, and legitimacy across multiple governance scales, involving state institutions, corporate actors, local communities, and civil society organisations (Barlow, 2022; Ahearne & Childs, 2018; Poncian, 2021).

The critical role of institutional capacity and legal coherence is theoretically reinforced as a foundational prerequisite for sustainable, effective resource governance. Empirical evidence consistently demonstrates that fragmented legal frameworks, contradictory regulatory provisions, and overlapping institutional mandates systematically undermine enforcement effectiveness and compliance behaviour, generating confusion, accountability gaps, and opportunities for regulatory arbitrage. These findings align with new institutionalist theories, which emphasise that clear, coherent, and well-coordinated governance structures with defined jurisdictions, adequate resources, and robust accountability mechanisms constitute essential institutional foundations for regulatory effectiveness (Gabagambi & Longopa, 2022; Yusuph & Alman, 2020; Lee & Dupuy, 2018).

Comparative insights from European, North American, and other African contexts systematically highlight the profound influence of socio-political factors—including governance culture, political economy configurations, institutional histories, legal traditions, and the strength of civil society—on regulatory success and effectiveness. These comparative findings suggest that regulatory frameworks cannot be universally applied across contexts but must be carefully adapted to specific institutional capacities, political dynamics, and socio-cultural environments. This empirical pattern provides strong support for theories of regulatory path dependence, institutional isomorphism, and the constitutive importance of socio-legal environments in shaping governance outcomes (Holley et al., 2019; Paucar-Carrión, 2023; Goldthau & Sovacoo, 2016).

The empirical findings fundamentally challenge prevalent assumptions that corporate social responsibility (CSR) initiatives automatically confer social legitimacy or secure a social license to operate, particularly when CSR serves as a substitute for robust regulatory enforcement or genuine community participation. Instead, the evidence emphasises that CSR must be strategically integrated within broader governance frameworks, linked to enforceable regulatory requirements, aligned with community-identified priorities, and coupled with substantive community engagement mechanisms to effectively address socio-economic needs and build political legitimacy (Melyoki & Kessy, 2020; Lange & Wyndham, 2021).

4.2 Practical Implications

Policymakers in Tanzania should prioritise harmonising and clarifying legal and institutional frameworks to reduce overlaps and enhance coordination between local and national regulatory bodies, thereby improving enforcement and compliance in gas extraction operations (Gabagambi & Longopa, 2022; Yusuph & Alman, 2020; Lee & Dupuy, 2018).

Enhancing community participation requires a fundamental shift from tokenistic consultation to institutionalised mechanisms that ensure Free, Prior, and Informed Consent (FPIC) as a legally

enforceable requirement, rather than merely a voluntary guideline. This necessitates establishing formal community representation structures with decision-making authority, ensuring access to independent technical expertise, mandating transparent information disclosure in accessible formats, creating grievance mechanisms with independent adjudication, and guaranteeing meaningful community involvement throughout project lifecycles from initial approval through decommissioning. Such reforms would substantially improve social license to operate, reduce conflicts, and enhance governance legitimacy (Bishoge et al., 2019; Manirakiza, 2019).

Local content policies require substantial strengthening through comprehensive capacity-building programs for indigenous enterprises, strategic alignment of educational and vocational training curricula with sector skill requirements, preferential procurement frameworks with enforceable targets, technology transfer requirements, and local equity participation mechanisms. These integrated interventions would maximise local economic benefits, enhance employment outcomes, develop domestic technical capacity, reduce capital flight, and ensure more equitable distribution of extraction revenues, addressing Tanzania's persistent challenges in capturing local value from resource extraction (Chuwa & Perfect-Mrema, 2024; Ellis & McMillan, 2018; Muhongo, 2020).

Transparency and accountability mechanisms constitute critical governance infrastructure for building stakeholder trust and ensuring equitable distribution of resource revenues. Priority interventions include: robust implementation and enforcement of Extractive Industries Transparency Initiative (EITI) standards with mandatory compliance; public disclosure of contracts, production data, and revenue flows in accessible formats; beneficial ownership registries identifying ultimate corporate controllers; independent auditing of company payments and government receipts; disaggregated reporting of revenue allocation to national and local levels; and establishment of multi-stakeholder oversight bodies with civil society participation. These transparency reforms would enhance accountability, reduce corruption opportunities, and strengthen public confidence in resource governance (Malya & Mwanga, 2025; Yusuph & Alman, 2020); with mandatory compliance; public disclosure of contracts, production data, and revenue flows in accessible formats; beneficial ownership registries identifying ultimate corporate controllers; independent auditing of company payments and government receipts; disaggregated reporting of revenue allocation to national and local levels; and establishment of multi-stakeholder oversight bodies with civil society participation.

Companies operating in Tanzania's gas sector must fundamentally transform community engagement approaches, moving from corporate-determined CSR projects to participatory needs assessments that centre community priorities, socio-economic realities, gender equity, and long-term sustainability. This requires establishing permanent community liaison offices, employing local staff, conducting regular impact assessments, ensuring transparent benefit-sharing mechanisms, respecting cultural protocols, and integrating community feedback into operational decisions. Concurrently, governments should create enabling regulatory environments that mandate substantive engagement, establish minimum standards for community consultation, require independent monitoring of company commitments, and enforce penalties for failures to meet community obligations. These complementary reforms would enhance corporate legitimacy, strengthen social acceptance, and build sustainable relationships between extractive companies and host communities (Melyoki & Kessy, 2020; Lange & Wyndham, 2021; Nilsson, 2023).

Lessons from international regulatory contexts underscore that effective (comprehensive, independent, and socially independent) Conduct Is Conducted prior to project approval, with rigorous enforcement of environmental protections throughout operational lifecycles. Best

practices include: mandatory third-party ESIA review; cumulative impact assessment across multiple projects; integration of climate change considerations; baseline environmental and health data collection; ongoing environmental monitoring with public reporting; swift enforcement of mitigation measures; liability frameworks for environmental damage; and community access to environmental justice mechanisms. These integrated environmental safeguards are essential to protect community well-being, preserve ecosystem integrity, and advance genuine reconciliation of environmental trajectories throughout operational lifecycles. These integrated environmental safeguards are essential to protect community well-being, preserve ecosystem integrity, and advance genuinely sustainable development trajectories (Aziza et al., 2023; Thomas & Johnson, 2019).

4.3 Limitations of the Literature and Their Impact on Conclusions

The literature on regulatory frameworks in Tanzania's gas sector exhibits methodological and substantive limitations that undermine the reliability, validity, and generalizability of its findings.

Data Gaps and Regional Biases

Studies suffer from inconsistent data availability, quality, and coverage, which foster disparities in conclusions and hinder cumulative knowledge. Empirical focus skews toward accessible areas, neglecting remote, rural, and marginalised communities that endure disproportionate environmental and social burdens. This bias obscures vulnerabilities among the most affected populations.

Methodological Inconsistencies

Heterogeneous research designs—ranging from qualitative methods (e.g., interviews, ethnography) to quantitative (e.g., surveys) and mixed approaches—yield inconsistent operationalisation of constructs and analytical frameworks, impeding cross-study comparisons and synthesis. Reliance on small, non-representative samples, single-case analyses, and convenience sampling restricts generalizability across Tanzania's diverse socio-political, ethnic, and geographic contexts. Few employ counterfactuals, longitudinal designs, or comparative methods for causal inference on regulatory efficacy.

Substantive Omissions

Analyses underemphasize resistance dynamics, socio-political power relations, political economy influences, gender dimensions, indigenous rights, and intersectional vulnerabilities, yielding incomplete insights into community agency and differential impacts.

Implications and Recommendations

These limitations constrain causal inference, policy relevance, and inclusivity of conclusions. Future research should prioritise:

- Rigorous data frameworks with comprehensive geographic coverage, representative and disaggregated sampling (e.g., by gender and social group), longitudinal tracking, and participatory methods amplifying marginalised voices.
- Standardised measures, mixed-methods integration, multi-site comparisons, and systematic reviews/meta-analyses to identify robust patterns.
- Inclusive designs incorporating diverse stakeholders via focus groups and qualitative depth.

Such enhancements will fortify the evidence base for equitable regulatory reform and community-centred governance.

5.0 Gaps and Future Research Directions

Despite the growing body of literature on gas extraction governance in Tanzania, several critical gaps remain that warrant urgent scholarly attention.

Firstly, there is a pressing need for longitudinal studies that track regulatory effectiveness, community impacts, and enforcement outcomes over time, particularly as Tanzania's gas sector matures and policies evolve. Such research would illuminate causal pathways and the sustainability of governance interventions.

Secondly, future research should prioritise in-depth, community-centred investigations that amplify the voices of marginalised groups, including women, youth, indigenous peoples, and remote communities, who are often excluded from formal engagement processes. Understanding how regulatory frameworks differentially affect these groups is essential for equitable policy design. Research employing participatory action methods or co-design approaches could enhance both scholarly rigour and practical relevance.

Thirdly, comparative studies examining policy transfer and adaptation mechanisms are needed to assess how lessons from Europe, America, and other African contexts can be contextualised for Tanzania's unique socio-political environment. This includes exploring the role of political economy factors, governance culture, and institutional capacity in shaping regulatory success or failure.

Fourthly, there is insufficient research on the effectiveness of specific enforcement mechanisms, transparency initiatives, and accountability tools in improving compliance and community outcomes. Rigorous evaluations of interventions such as EITI implementation, local content policies, and community benefit-sharing schemes would provide policymakers with actionable evidence.

Finally, future work should integrate environmental justice perspectives to examine the intersections of environmental degradation, health impacts, and socio-economic vulnerabilities in host communities. Research that bridges regulatory analysis with climate change, biodiversity, and public health considerations will be increasingly vital as extraction intensifies. Addressing these gaps will strengthen the evidence base for sustainable, inclusive, and effective governance of gas extraction in Tanzania and beyond.

6.0 Overall Synthesis and Conclusion

The literature reveals a complex, fragmented regulatory landscape in Tanzania's gas extraction sector, marked by overlapping institutional mandates and poor coordination between national and local frameworks. While national laws promote local content, economic development, and environmental protection, enforcement is undermined by limited financial, technical, and human resources. Local bodies often lack capacity and autonomy, leading to centralised mechanisms that inadequately address community-specific issues. This results in regulatory gaps that impede sustainable governance.

Community impacts reflect mixed socio-economic outcomes, with host communities facing exclusion, insufficient compensation, and environmental degradation despite benefit-sharing policies. Social resistance stems from a disconnect between national agendas and local priorities, exacerbated by rapid implementation without genuine participation. Principles such as Free, Prior, and Informed Consent (FPIC) and participatory governance are acknowledged but applied superficially, eroding trust and social license. Corporate social responsibility initiatives, though present, rarely align with community needs or prioritise gender equity.

Cross-regional comparisons show that developed nations and select African peers benefit from stronger enforcement, clearer frameworks, and robust community engagement. Yet these models also grapple with regulatory capture and power imbalances, underscoring the challenges inherent to extractive industries. Transparency efforts, such as compliance with the Extractive Industries Transparency Initiative (EITI), have advanced discourse but falter due to voluntary participation and information barriers.

In synthesis, effective reform demands integrated, multi-level interventions: harmonising laws and enhancing coordination between national and local authorities; bolstering enforcement via resourcing, capacity building, technology, and political commitment; and institutionalising enforceable community engagement that ensures substantive influence over land and livelihood decisions. Reforms should adapt international best practices contextually—attuned to Tanzania's institutional capacities, governance culture, political economy, and community realities—while eschewing uncritical policy transfers. Core elements include comprehensive value-chain transparency, legal accountability with sanctions, and participatory governance as a mandated principle. Only through these transformative changes can Tanzania harness its gas resources for equitable development, addressing grievances, upholding rights, distributing benefits fairly, safeguarding the environment, and prioritising broad societal welfare over elite interests.

7.0 Specific Policy Recommendations for Tanzanian Regulators

Based on the comprehensive synthesis of evidence, the following actionable policy reforms are recommended for Tanzanian regulatory authorities:

Establish an Independent Gas Regulatory Authority: Create a dedicated, autonomous regulatory body with clear mandates to oversee gas extraction operations, streamline coordination between national ministries and local government authorities, and eliminate institutional overlaps. This body should have enforcement powers, adequate funding, and technical capacity to monitor compliance effectively.

Implement Mandatory Community Participation Frameworks: Institutionalise Free, Prior, and Informed Consent (FPIC) principles in law, requiring extractive companies to obtain documented community consent before project commencement. Establish formal community liaison committees with decision-making authority, not merely consultative roles, and ensure representation of women, youth, and marginalised groups.

Strengthen Local Content and Benefit-Sharing Mechanisms: Develop enforceable local content regulations with specific targets for employment, procurement, and skills transfer. Create transparent revenue-sharing formulas that allocate a defined percentage of extraction revenues directly to host communities through accountable local development funds, with community oversight.

Enhance Monitoring, Reporting, and Enforcement Systems: Deploy digital monitoring technologies and establish regular, mandatory reporting requirements for operators, with public disclosure of compliance data. Introduce graduated sanctions for non-compliance, including financial penalties, operational suspensions, and license revocations, with transparent adjudication processes.

Integrate Environmental and Social Impact Assessments: Mandate comprehensive, independent environmental and social impact assessments (ESIAs) prior to project approval, with ongoing monitoring and adaptive management requirements. Ensure ESIAs address cumulative impacts, climate risks, and long-term community well-being, with results accessible to affected communities.

Adopt Transparency and Accountability Standards: Fully implement and enforce Extractive Industries Transparency Initiative (EITI) standards, including beneficial ownership disclosure, contract transparency, and disaggregated revenue reporting. Establish independent ombudsman mechanisms to address community grievances and ensure accountability.

Build Institutional and Community Capacity: Invest in training programs for regulatory staff, local government officials, and community representatives to enhance technical expertise, legal literacy, and negotiation skills. Partner with academic institutions and civil society to develop context-appropriate capacity-building initiatives.

8.0 Comparative Transferability: Adapting International Lessons to Tanzania

While international best practices from Europe, America, and other African countries offer valuable insights, direct policy transfer is constrained by Tanzania's unique socio-political context. Successful adaptation requires:

Contextual Sensitivity: Recognising Tanzania's governance culture, resource nationalism, and political economy dynamics. Policies must account for limited institutional capacity, centralised political structures, and historical tensions between state control and local autonomy. For example, Norway's sovereign wealth fund model must be adapted to Tanzania's fiscal constraints and governance capacity.

Incremental Implementation: Rather than wholesale adoption of complex regulatory systems, Tanzania should pursue phased reforms that build on existing institutional strengths while gradually addressing weaknesses. Pilot programs in select regions can test interventions before a national rollout, enabling learning and adjustment.

Stakeholder Ownership: International models succeed when domestically owned and championed by local actors. Tanzanian regulators should lead reform design, drawing on international expertise as advisory input rather than imposed blueprints. Community and civil society participation in policy formulation enhances legitimacy and sustainability.

Legal and Institutional Alignment: Borrowed policies must align with Tanzania's constitutional framework, legal traditions, and administrative structures. For instance, participatory governance models from Canada or Australia require adaptation to Tanzania's land tenure systems and customary authority structures.

Resource and Capacity Realities: High-income country regulatory models often assume robust technical capacity, funding, and infrastructure that Tanzania currently lacks. Transferable lessons should prioritise low-cost, high-impact interventions such as transparency protocols, community monitoring, and grievance mechanisms that leverage existing resources.

Political Feasibility: Reforms must navigate Tanzania's political landscape, including vested interests, power dynamics, and policy priorities. Incremental, evidence-based reforms that demonstrate quick wins and broad stakeholder benefits are more likely to gain political traction than comprehensive overhauls.

By carefully adapting international lessons through these lenses, Tanzania can develop a regulatory framework that is both globally informed and locally appropriate, enhancing governance effectiveness while respecting national sovereignty and community agency. Participation Frameworks: Institutionalise Free, Prior, and Informed Consent (FPIC) principles in law, requiring extractive companies to obtain documented community consent before project commencement. Establish formal community liaison committees with decision-making authority, not merely consultative roles, and ensure representation of women, youth, and marginalised groups.

References

Adeyanju, A. S., & Akande, J. (2023). *The home market institutional quality and liquidity benefits of cross-listed firms. Evidence of cross-listed firms from BRICS countries.* (October 7, 2023).

Adshead, D., Thacker, S., Fuldauer, L. I., & Hall, J. W. (2019). Delivering on the Sustainable Development Goals through long-term infrastructure planning. *Global Environmental Change, 59*, 101975.

Aghaie, S. (2023). Sustainable urban planning: Stakeholder perspectives on resource allocation challenges. *Journal of Resource Management and Decision Engineering*, *2*(1), 30–36.

Ahearne, R., & Childs, J. (2018). 'National resources'? The fragmented citizenship of gas extraction in Tanzania. *Journal of Eastern African Studies, 12*(4), 696–715.

Asiago, B. C. (2020). *Government intervention in international businesses: The rise of local content regulations in the upstream petroleum sector* [Doctoral dissertation, Itä-Suomen yliopisto].

Aziza, N., & Mardiah, N. (2023). Environmental performance in accounting literature: A bibliometric approach. *Jurnal Aplikasi Bisnis dan Manajemen (JABM), 9*(3), 866–866.

Bantekas, I. (2021). The linkages between business and human rights and their underlying root causes. *Human Rights Quarterly, 43*(1), 117-137.

Bishoge, O. K., Zhang, L., & Mushi, W. G. (2018). The potential renewable energy for sustainable development in Tanzania: A review. *Clean Technologies, 1*(1), 70–88.

Bishoge, O. K., Zhang, L., Mushi, W. G., & Matomela, N. (2019). A literature survey of community participation in the natural gas sector in developing countries. *International Journal of Energy Sector Management, 13*(4), 765–786.

Bornu, T. Z. (2025). *Niger Delta: The unsolved problem. The American Journal of Political Science Law and Criminology, 7*(05), 99-114.

Buhmann, K. (2020). Collaborative regulation: Preventing regulatory capture in multi-stakeholder processes for developing norms for sustainable conduct. In *Sustainability and law: General and specific aspects* (pp. 295–318). Springer International Publishing.

Carpenter, D., & Moss, D. A. (Eds.). (2013). *Preventing regulatory capture: Special interest influence and how to limit it.* Cambridge University Press.

Carrión, K. Y. P., & Agila, J. P. A. (2023). Relaciones públicas: la comunicación 2.0. En *Acciones y realidades ante la manipulación social: Redes sociales, publicidad y marketing* (pp. 620–643). Dykinson.

Chuwa, L., & Perfect-Mrema, J. (2024). An assessment of local content policy and the legal and institutional framework in Tanzania's upstream natural gas sector. *The Extractive Industries and Society, 17,* 101424.

Dalupan, C., Haywood, C., Wardell, D., Cordonnier-Segger, M. C., & Kibuji, R. (2015). *Building enabling legal frameworks for sustainable land-use investments in Zambia, Tanzania and Mozambique: A synthesis.*

Ellis, M., & McMillan, M. S. (2018). *Optimal local content for extractive industries: How can policies best create benefits for Tanzania?* (No. 2018/133). WIDER Working Paper.

Gabagambi, L. C., & Longopa, E. E. (2022). Analysis of the legal and institutional frameworks regulating oil and gas resources in Tanzania. *Journal of Law and Legal Reform, 3*(3), 311–348.

Goldthau, A. (2016). Assessing Nord Stream 2: Regulation, geopolitics & energy security in the EU, Central and Eastern Europe & the UK. *European Centre for Energy and Resource Security Strategy Paper, 10*, 1–40.

Goldthau, A., & Sovacool, B. K. (2016). Energy technology, politics, and interpretative frames: Shale gas fracking in Eastern Europe. *Global Environmental Politics, 16*(4), 50–69.

Hindell, M. A., Reisinger, R. R., Ropert-Coudert, Y., Hückstädt, L. A., Trathan, P. N., Bornemann, H., ... & Raymond, B. (2020). Tracking of marine predators to protect Southern Ocean ecosystems. *Nature, 580*(7801), 87–92.

Holley, C., Mutongwizo, T., Shearing, C., & Kennedy, A. (2019). Shaping unconventional gas regulation: Industry influence and risks of agency capture in Texas, Colorado and Queensland. In *Environmental and Planning Law Journal, 36*, 510. Lawbook Co.

Kamat, P. V., & Hartland, G. V. (2018). Plasmons for energy conversion. *ACS Energy Letters, 3*(6), 1467–1469.

Karanja, N., & Njenga, M. (2021). Feeding the cities. In *State of the World 2011* (pp. 109-120). Routledge.

Kälin, W., & Künzli, J. (2019). *The law of international human rights protection.* Oxford University Press.

Kettunen, K., Nevas, M., & Lundén, J. (2017). Challenges in using administrative enforcement measures in local food control. *Food Control, 76*, 34–41.

Lee, B., & Dupuy, K. (2018). Understanding the lie of the land: An institutional analysis of petro-governance in Tanzania. *Journal of Energy & Natural Resources Law, 36*(1), 85–101.

Loe, J. S., Kelman, I., Fjærtoft, D. B., & Poussenkova, N. (2017). Arctic petroleum: Local CSR perceptions in the Nenets region of Russia. *Social Responsibility Journal, 13*(2), 307–322.

Maliganya, W., & Bengesi, K. M. (2018). Policy enabling environment of the mining sector in Tanzania: A review of opportunities and challenges.

Manirakiza, P. (2019). Asserting the principle of free, prior and informed consent (FPIC) in sub-Saharan Africa in the extractive industry sector. In *Human Rights in the Extractive Industries: Transparency, Participation, Resistance* (pp. 219-245). Springer International Publishing.

Mason, M. (2020). Transparency, accountability and empowerment in sustainability governance: A conceptual review. *Journal of Environmental Policy & Planning, 22*(1), 98–111.

Mbaye, L. P. (2024). Assessing the dynamics of land corruption in Kenya: Causes, consequences, and remedial strategies. *Journal of Appropriate Dispute Resolution and Sustainability, 1*(2).

Melyoki, L. L., & Kessy, F. L. (2020). Why do companies fail to earn the social license to operate? Insights from the extractive sector in Tanzania. *Journal of Rural and Community Development, 15*(2).

Mkunde, B. (2019). The politics of local regulation in Tanzania: The quest for multilevel regulatory governance. *International Relations and Diplomacy, 7*(05), 217–223.

Money, W. H., & Money, K. E. (2025). A review of natural resource extraction industries and their influence on the occurrence of poverty. *Journal of Strategy and Management, 18*(1), 191-204.

Morelli, M. (2023). Managing relative regulatory inefficiencies in complex financial systems. *U. Pa. J. Bus. L., 25*, 705.

Muhongo, R. S. (2020). *Energy justice: A local content analytical framework for Sub-Saharan Africa.* Springer Nature.

Mwakyambiki, S. E. (2022). The implementation of a legal framework for access and benefit sharing: A case study of natural gas extraction in Kilwa District, Tanzania. *African Journal of Accounting and Social Science Studies, 4*(1), 394-412.

Mwanyoka, I., Selestine, W. E., & Nuhu, S. (2019). EIA practices in the natural gas extraction sector in Tanzania: Does local community contribution matter? *Journal of Environmental Assessment Policy and Management, 21*(03), 1950015.

Mwesiga, T. R., Kaswamila, A. L., & Mwakipesile, A. E. (2023). The implications of Tanzania's new mining legislation in enhancing revenue: A case of Geita Gold Mine. *African Journal of Applied Research, 9*(2), 1-11.

Nuhu, S., Munuo, N., & Mngumi, L. (2023). Governance challenges of regularisation of informal settlements in peri-urban Tanzania: Perspectives from local stakeholders. *International Journal of Urban Sustainable Development, 15*(1), 35-47.

Noah, A. O., Adhikari, P., Ogundele, B. O., & Yazdifar, H. (2021). Corporate environmental accountability in Nigeria: An example of regulatory failure and regulatory capture. *Journal of Accounting in Emerging Economies, 11*(1), 70–93.

Olegovna, S. I. (2017). Managing regional economic development through local content requirements in the oil and gas industry. *Экономика региона, 13*(2), 457-464.

Oloka-Onyango, J. (2017). *Land injustice, impunity and state collapse in Uganda: Causes, consequences and correctives.* Human Rights and Peace Centre.

Oshionebo, E. (2019). Community development agreements as tools for local participation in natural resource projects in Africa. In *Human Rights in the Extractive Industries: Transparency, Participation, Resistance* (pp. 77–109). Springer International Publishing.

Otchere-Darko, W. (2024). Fluid land values in petro-geographies: Temporality and human–nonhuman relations in Ghana and Tanzania. *Environment and Planning F, 3*(4), 247–267.

Poncian, J. (2019). Galvanising political support through resource nationalism: A case of Tanzania's 2017 extractive sector reforms. *Political Geography, 69*, 77–88.

Poncian, J. (2021). Resource nationalism and community engagement in extractive resource governance: Insights from Tanzania. *Review of African Political Economy, 48*(170), 529–551.

Poncian, J., & Kigodi, H. M. (2018). Transparency initiatives and Tanzania's extractive industry governance. *Development Studies Research, 5*(1), 106-121.

Purwaningsih, D. W. (2023). Pengaruh social environment, religiosity dan sharia financial knowledge terhadap minat menggunakan perbankan syariah (Studi kasus pada UMKM Kabupaten Wonogiri). *Jurnal Ilmiah Ekonomi Islam, 9*(2), 2364–2373.

Scholten, M. (2022). Enforcement. In *Handbook of Regulatory Authorities* (pp. 394–409). Edward Elgar Publishing.

Short, J. L. (2021). The politics of regulatory enforcement and compliance: Theorising and operationalising political influences. *Regulation & Governance, 15*(3), 653-685.

Sherval, M. (2023). Community resistance and the role of justice in shale gas development in the United Kingdom. *Geographical Research, 61*(2), 222–233.

Stavreva, D. A., Garcia, D. A., Fettweis, G., Gudla, P. R., Zaki, G. F., Soni, V., ... & Hager, G. L. (2019). Transcriptional bursting and co-bursting regulation by steroid hormone release pattern and transcription factor mobility. *Molecular Cell, 75*(6), 1161–1177.

Stewart, N. F. (2025). Land rights and environmental justice. In *Indigenous Climate Justice in the Lake Chad Basin* (pp. 45–72). Springer Nature Switzerland.

Taylor, M. (2023). An unconventional evolution: Addressing and regulating socio-legal issues associated with the development of shale gas and coal seam gas resources in selected jurisdictions. In *Research Handbook on Oil and Gas Law* (pp. 219–245). Edward Elgar Publishing.

Thomas, T., & Johnson Jr, R. L. (2019, September). An assessment of the current regulatory frameworks for onshore, upstream, unconventional well integrity and strategies for improvement. In *SPE Annual Technical Conference and Exhibition* (p. D021S031R006). SPE.

Tremblay, D., Martinez, R., & Oliveira, M. (2025). From expropriation to compensation: Legal remedies for indigenous land grievances. *Interdisciplinary Studies in Society, Law, and Politics, 4*(1), 208–219.

Wasylow-Neuhaus, L. (2022). *Kooperation von Staat und Privaten im Naturschutzrecht.* Nomos Verlagsgesellschaft mbH & Co. KG.

Yusuph, M. L., & Alman, K. L. (2020). Analysis of the factors for sustainable development of oil and gas resources in Tanzania. *Journal of Public Administration and Governance, 10*(2), 161180–161180.