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Legal and Policy Dimensions of Climate Governance in Tanzania: Implications for Environmental Protection and Public Health Resilience

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Abstract: *Climate change presents escalating threats to Tanzania's ecosystems, socio-economic systems and public health, demanding a governance framework that effectively integrates environmental protection with health resilience. This article provides a wide-ranging doctrinal analysis of the legal and policy instruments shaping climate governance in Tanzania, drawing on the Environmental Management Act (EMA) 2004, the National Climate Change Response Strategy (2021–2026), the National Environmental Policy (2021) and relevant sectoral laws. The study examines how these domestic frameworks interact with global and regional commitments under the UNFCCC, the Paris Agreement, African Union climate strategies and East African Community policies. Findings reveal that while Tanzania has established a robust formal architecture for climate governance, significant gaps remain in implementation, enforcement, institutional coordination and resource allocation. Insufficient mainstreaming of public health concerns into climate adaptation and mitigation strategies further constrains the nation's resilience, particularly for vulnerable populations such as smallholder farmers, women and residents of informal settlements. The article argues that enhancing climate governance requires clearer institutional mandates, strengthened judicial and regulatory capacity, improved climate finance utilization and systematic integration of public health considerations across all levels of planning. It concludes by proposing targeted legal and policy reforms to advance a more coherent, equitable and health-responsive climate governance regime capable of safeguarding environmental integrity and human well-being in a changing climate.*

Keywords: *Climate governance; Environmental law; Public health resilience; Climate policy; Tanzania*

1. Background Information

Climate change poses one of the most pressing and multidimensional challenges for Tanzania, with far-reaching implications for environmental sustainability, economic development, and public health. Over the past two decades, the country has experienced rising temperatures, recurrent droughts, more frequent and severe flooding, coastal erosion, declining water quality, and shifts in disease patterns. These risks are intensified by Tanzania's high dependence on climate-sensitive sectors, including rain-fed agriculture, livestock, fisheries, forestry, and hydro-based energy systems. As a result, climate variability threatens food security, rural livelihoods, and human health, particularly among communities whose adaptive capacity remains low (Kitogo, 2025; United Republic of Tanzania, 2021).

The Intergovernmental Panel on Climate Change (IPCC) identifies East Africa as a region highly vulnerable to climate-induced water stress, vector-borne diseases, and extreme weather events. Tanzania mirrors this pattern, with climate change contributing to increased malaria transmission in highland areas, heightened diarrheal disease outbreaks linked to contaminated water sources, and malnutrition in drought-prone regions (WHO, 2024). These health impacts demonstrate the need for governance frameworks that do not treat climate and health as siloed policy sectors, but as closely interconnected domains.

Recognizing these vulnerabilities, Tanzania has taken steps to institutionalize climate governance through several legal and policy instruments. The Environmental Management Act (EMA) 2004 provides the overarching legal foundation for environmental protection and climate action. It mandates environmental impact assessments, sets standards for pollution control, and establishes mechanisms for enforcement and public participation. Importantly, the EMA designates climate change as a matter requiring coordinated national intervention and empowers the Minister responsible for environment to collaborate with sector ministries in addressing climate-related risks (TanzLII, 2005; FAOLEX, 2021).

Building on this statutory foundation, the Government introduced the National Climate Change Response Strategy (NCCRS) 2021–2026, which outlines strategic priorities for adaptation, mitigation, resilience building, technology transfer, and climate finance. The NCCRS emphasizes mainstreaming climate change across sectors such as agriculture, water, energy, and health, while also strengthening institutional capacity and stakeholder participation (United Republic of Tanzania, 2021). Tanzania is also a signatory to key global frameworks, including the UNFCCC and the Paris Agreement, which further obligate the country to integrate climate resilience into national development planning.

Despite this evolving legal and policy landscape, Tanzania continues to face major governance challenges that undermine the effectiveness of climate action. Research highlights institutional fragmentation, overlapping mandates between regulators, weak horizontal coordination across ministries, and insufficient vertical coordination with local government authorities (Kitogo, 2025). Financial constraints, inadequate technical capacity, and limited enforcement mechanisms further hinder the operationalization of climate policies. Regulatory agencies often lack the resources to conduct environmental monitoring, inspect emission sources, or implement climate adaptation measures at scale (World Bank, 2023).

Moreover, while Tanzania's climate policies acknowledge the health implications of climate change, the mainstreaming of public health resilience remains inadequate. The NCCRS identifies major climate-sensitive health risks, such as malaria, cholera, respiratory infections, and malnutrition, yet health institutions are not consistently integrated into climate governance processes. The Public Health Act No. 1 of 2010 offers legal safeguards for disease surveillance and environmental health, but its operational alignment with climate legislation remains weak, resulting in fragmented responses during climate-induced health emergencies (WHO, 2024; Public Health Act, 2010).

These governance gaps underscore the need for a more coherent, integrated approach to climate governance, one that aligns legal frameworks, strengthens enforcement mechanisms, improves institutional coordination, and ensures systemic incorporation of public health in climate planning. Addressing these gaps is essential not only for meeting Tanzania's international climate obligations but also for protecting vulnerable populations and strengthening long-term resilience.

Against this backdrop, the present study provides a doctrinal and policy analysis of Tanzania's climate governance framework, focusing on the legal and institutional mechanisms shaping environmental protection and public health resilience. Henceforth, by examining key statutes, sectoral policies, and implementation arrangements, the paper highlights the strengths, weaknesses, and opportunities for reform within the current governance system. It argues that building a more integrated, equitable, and health-responsive climate governance framework is critical for safeguarding both ecosystems and human well-being in an era of accelerating climate change.

2. Theoretical, Conceptual, and Methodological Framework

2.1 Theoretical Framework

A comprehensive examination of climate governance requires an integrative theoretical foundation that connects legal structures, institutional dynamics, and adaptive capacities within socio-ecological systems. To achieve this, the study is anchored in three theoretical lenses—Environmental Governance Theory, Institutional Theory, and the Socio-Ecological Resilience Framework. These frameworks collectively illuminate how laws, policies, institutions, and environmental–health outcomes interact in Tanzania's climate governance landscape. They help explain both the structural strengths of existing frameworks and the systemic weaknesses that impede effective environmental protection and public health resilience.

2.1.1 Environmental Governance Theory

Environmental Governance Theory provides a foundational lens for analysing how various actors, norms, rules, and institutions shape environmental decision-making. It argues that addressing complex environmental challenges requires coordinated action among government agencies, private actors, civil society, and international bodies across multiple levels of governance (Lemos & Agrawal, 2006). In Tanzania, this theory is particularly relevant because climate governance is distributed across numerous institutions, including the Vice President's Office, sector ministries, regulatory authorities, and local government bodies, each playing a role in implementing laws such as the Environmental Management Act (EMA) 2004 and policies like the National Climate Change Response Strategy (NCCRS 2021–2026). Environmental Governance Theory helps explain the persistent gaps seen in the Tanzanian context, such as weak inter-ministerial coordination, insufficient stakeholder engagement, and uneven enforcement. It highlights the need for inclusivity, accountability, and transparency to ensure that legal instruments translate into meaningful action.

2.1.2 Institutional Theory

Institutional Theory complements this analysis by explaining how formal structures, norms, and routines shape policy implementation and governance outcomes. According to North (1990) and Scott (2014), institutions encompass both formal rules, such as legislation, regulations, and strategies, and informal norms that guide behaviour within and across organizations. In Tanzania, climate governance is characterized by overlapping mandates between

environmental, agricultural, water, health, and disaster management institutions (Kitogo, 2025). Such fragmentation can create inefficiencies, policy contradictions, and weak accountability, ultimately hindering the implementation of climate resilience measures. Institutional Theory thus provides insight into why progressive laws like the EMA and NCCRS may fail to produce desired outcomes when institutional arrangements lack coherence, adequate resourcing, or clear authority structures. It also draws attention to the need for strengthening institutional capacity, harmonizing mandates, and improving bureaucratic coordination.

2.1.3 Socio-Ecological Resilience Framework

Given that climate change directly influences public health, the Socio-Ecological Resilience Framework is used to analyse how systems absorb shocks, reorganize, and adapt to long-term stressors (Folke, 2016). This framework integrates ecological and social components, acknowledging that community health systems, environmental conditions, and governance structures are interdependent. In the Tanzanian context, resilience thinking is essential because climate-driven health risks, such as malaria, cholera, respiratory diseases, and malnutrition, are increasing in frequency and intensity (WHO, 2024). By applying this framework, the study assesses whether legal and policy instruments enhance the adaptive capacity of health systems and communities. It also evaluates whether climate governance in Tanzania supports long-term transformation toward sustainability, particularly for vulnerable populations.

Together, these three theoretical lenses form a holistic basis for examining the interplay between legal norms, institutional arrangements, ecological dynamics, and public health outcomes. They reinforce the argument that climate governance must be both legally sound and institutionally robust to enhance environmental protection and public health resilience.

2.2 Conceptual Framework

The conceptual framework guiding this study illustrates how legal instruments, institutional arrangements, governance processes, and resilience outcomes interrelate within Tanzania's climate governance system. It is built on four core constructs:

The first construct, *Legal and Policy Architecture*, encompasses statutory instruments such as the EMA 2004, the Public Health Act 2010, the National Climate Change Response Strategy (2021–2026), and international obligations under the UNFCCC and the Paris Agreement. These instruments provide the normative and regulatory foundation for environmental protection and climate resilience. They outline the rights, duties, and responsibilities of various actors while defining the procedural requirements for mitigation, adaptation, and environmental management.

The second construct, *Institutional Arrangements and Governance Practices*, considers the roles of governmental bodies, regulatory agencies, local government authorities, and multi-sectoral committees. Effective coordination across these institutions is essential for mainstreaming climate resilience into national planning. However, gaps in enforcement capacity, coordination challenges, and limited financial resources often undermine governance performance (Kitogo, 2025).

The third construct, *Climate Governance Processes*, refers to the operational components of climate action, including adaptation planning, mitigation initiatives, disaster risk reduction, climate financing, monitoring and evaluation systems, and stakeholder engagement. These processes determine how effectively legal mandates translate into actionable climate interventions.

The fourth construct, *Environmental Protection and Public Health Resilience Outcomes*, captures the impacts of governance on the ground. These include ecosystem health, disease burden trends, climate-related morbidity and mortality, water and food security, and community-level adaptive capacity. Improved outcomes are only possible when legal frameworks, institutional arrangements, and governance processes function effectively and cohesively.

The conceptual framework therefore assumes a sequential yet highly interactive pathway through which climate governance functions in Tanzania. At the foundation, legal and policy frameworks establish the normative direction, mandate institutional responsibilities, and provide the regulatory authority required for climate action, defining rights and obligations while shaping the scope and strength of institutional capacities, including coordination mechanisms, enforcement structures, technical expertise, and resource allocation. The effectiveness of these institutional arrangements directly influences the quality, coherence, and inclusiveness of climate governance processes such as adaptation planning, mitigation initiatives, disaster risk reduction, climate financing, and monitoring and evaluation systems. When institutions are adequately empowered, cross-sectoral coordination improves, procedural mandates are implemented more consistently, and governance processes become more responsive to emerging climate risks, ultimately enhancing environmental protection and public health resilience outcomes, including improved ecosystem stability, reduced climate-related health risks, strengthened community adaptive capacities, and greater national preparedness for climate-induced shocks. Conversely, weaknesses at any point in this chain, whether in the legal foundation, institutional architecture, or governance processes, create bottlenecks that diminish the effectiveness of climate action, as poorly aligned laws, fragmented institutions, limited enforcement capacity, inadequate

financing, or weak stakeholder engagement can significantly undermine resilience-building efforts. As such, vulnerabilities to climate change are amplified whenever one or more components of the governance system fail to function optimally, reaffirming the need for a harmonized, well-coordinated, and well-resourced climate governance architecture.

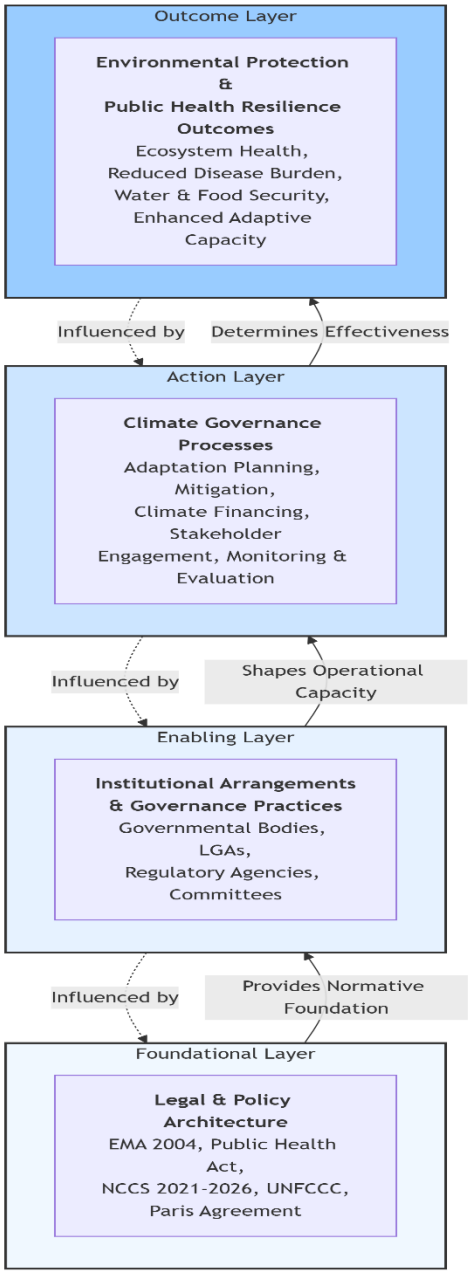

Figure 1: A Sequential-Interactive Framework for Climate Governance, Environmental Protection, and Public Health Resilience in Tanzania

3 Methodological Framework

3.1 Research Design

This study employs a doctrinal and policy analysis research design, a method widely used in legal scholarship to examine the content, coherence, and effectiveness of legal instruments and policy frameworks (Hutchinson & Duncan, 2012). Doctrinal research involves a systematic examination of statutes, case law, regulatory instruments, and policy documents to interpret their meaning, assess their consistency, and evaluate their implementation. This approach is particularly suitable for analysing climate governance in Tanzania because it allows for a detailed review of legal gaps, institutional weaknesses, and areas of misalignment between national and international obligations.

3.2 Data Sources

The study draws on a range of primary and secondary sources. Primary sources include legal documents such as the Environmental Management Act (EMA 2004), the Public

Health Act (2010), national climate strategies, environmental regulations, and international agreements such as the UNFCCC and the Paris Agreement. Secondary sources consist of peer-reviewed academic literature, government reports, WHO analyses, World Bank environmental assessments, and doctoral theses related to climate governance in Tanzania. All materials were accessed through official government portals, institutional repositories, and reputable international organizations, ensuring credibility and authenticity.

3.3 Analytical Procedures

The analysis uses a combination of content analysis, comparative legal analysis, thematic coding, and interpretive policy analysis. Content analysis enables a structured review of legal texts to identify obligations, rights, mandates, and institutional roles. Comparative legal analysis benchmarks Tanzania's frameworks against those of regional bodies such as the African Union (AU) and the East African Community (EAC), as well as global norms under UNFCCC instruments. Thematic coding is applied to identify recurring themes such as institutional fragmentation, enforcement challenges, policy coherence, and health mainstreaming. Interpretive policy analysis is used to understand governance practices, government behaviour, power dynamics, and stakeholder engagement across sectors.

3.4 Scope and Limitations

The analysis primarily focuses on national-level legal and policy frameworks, though it acknowledges the significant contribution of subnational authorities to environmental management and public health governance. Although district and ward-level implementation is beyond the direct scope of the study, the analysis considers institutional dynamics at these levels where they significantly influence the functionality of national climate governance systems. Limitations also arise from the evolving nature of climate legislation and the partial availability of government documents. However, triangulation using academic and institutional sources helps to mitigate these constraints.

4. Global and Regional Climate Governance Frameworks

Climate change is a quintessential global collective action problem, yet its impacts and responses are intensely local.

For Tanzania, climate governance is not a purely domestic affair but is deeply embedded within a multi-scalar architecture of international, regional, and sub-regional legal and policy frameworks. These frameworks provide the normative principles, institutional mechanisms, and financial conduits that shape national responses to climate risks. This section critically examines this multi-layered governance system, tracing its evolution from the foundational principles of the United Nations Framework Convention on Climate Change (UNFCCC) to the contemporary, hybrid model of the Paris Agreement, and contextualizing these global commitments within Africa-specific and East African Community (EAC) strategies. Understanding this intricate web of obligations and partnerships is crucial to appreciating the external pressures and opportunities that inform Tanzania's domestic climate action, particularly in bridging environmental protection with public health resilience.

4.1 Global Climate Governance: From Top-Down Prescription to Hybrid Multilateralism

The contemporary global climate regime was formally inaugurated with the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992. The Convention's ultimate objective, articulated in Article 2, is to achieve "*stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system*." This goal is operationalized through foundational principles that continue to guide international climate politics. Chief among these is the principle of "*common but differentiated responsibilities and respective capabilities*" (CBDR-RC) enshrined in Article 3(1), which acknowledges the historical responsibility of developed nations while recognizing the development imperatives and vulnerabilities of developing countries (Rajamani, 2021). This principle remains a cornerstone of equity in climate negotiations, particularly for African nations like Tanzania, which contribute minimally to global emissions yet face disproportionate impacts (Adeniran, 2022).

The Kyoto Protocol (1997) represented the first attempt to translate the UNFCCC's principles into binding emission reduction targets for Annex I (developed) countries under its Article 3. A significant innovation was the introduction of market-based mechanisms, most notably the Clean Development Mechanism (CDM) under Article 12. The CDM was designed to allow developed countries to invest in emission-reduction projects in developing nations, thereby earning certified emission reductions (CERs) while promoting sustainable development in the host country (Streck, 2020). In theory, this offered countries like Tanzania access to cleaner technologies and investment. However, critical scholarship has highlighted the mechanism's inequitable distribution, with the vast majority of CDM projects concentrated in rapidly industrializing economies like China, India, and Brazil, while Least Developed Countries (LDCs), especially in Sub-Saharan Africa, were largely bypassed (Agbonifo, 2017; Kreibich, Hermwille, Warnecke, & Arens, 2017). This "*CDM bias*" was attributed to weak investment climates, limited institutional capacity, and high transaction costs, revealing the limitations of market mechanisms in addressing structural global inequalities (Bumpus & Liverman, 2008).

The perceived inadequacies of the top-down Kyoto model paved the way for the landmark Paris Agreement (2015), which ushered in a new era of "hybrid multilateralism" (Hale, 2016). The Agreement represents a fundamental shift from a regime of differentiated commitments to one of universal participation. Its core mechanism is the Nationally

Determined Contributions (NDCs) under Article 4, wherein all Parties, developed and developing, are obliged to prepare, communicate, and maintain successive national climate pledges. This bottom-up approach fosters national ownership but relies on a robust transparency framework (Article 13) mand a global stocktake (Article 14) to ensure ambition and accountability (Bodansky, 2016).

For Tanzania, the Paris Agreement offers both opportunities and challenges. It provides the flexibility to define climate actions aligned with national development priorities, as seen in its updated NDC. Crucially, the Agreement elevates adaptation to a co-equal status with mitigation, mandating Parties to engage in adaptation planning and implementation (Article 7). This is directly relevant to building public health resilience against climate-sensitive diseases. Furthermore, Articles 9 (finance) and 11 (capacity-building) are critical, as they underpin access to financial mechanisms like the Green Climate Fund (GCF), which is essential for funding adaptation projects in health, water, and agriculture in vulnerable countries (Ahluwalia & Patel, 2023). However, the non-punitive nature of the NDC system and the persistent shortfall in climate finance from developed nations continue to pose significant challenges to effective implementation in resource-constrained contexts like Tanzania (Kweyu *et al.*, 2023).

4.2 Regional Climate Governance: Contextualizing Global Ambitions for the African Context

Global climate frameworks are interpreted and operationalized through regional lenses that reflect specific socio-economic and ecological realities. In Africa, the African Union (AU) has developed a coherent architecture to consolidate a continental position on climate change. The overarching vision is articulated in Agenda 2063: The Africa We Want, which aspires to an integrated, prosperous, and peaceful Africa, driven by its own citizens,

with climate-resilient economies and communities at its core (African Union, 2015).

Building on this, the African Union Climate Change and Resilient Development Strategy and Action Plan (2022-2032), often referred to as the African Strategy on Climate Change (ASCC), provides a comprehensive 10-year framework. Its objective is to "*enhance the implementation of AU Member States' adaptation and mitigation actions... through effective coordination, facilitation, and support for domestic and international resources*" (African Union, 2022, p. 12). The ASCC emphasizes thematic areas such as climate-resilient agriculture, sustainable energy, and nature-based solutions, all of which are central to Tanzania's own climate and development planning. The strategy acknowledges the need to bridge capacity and financing gaps, advocating for improved access to international climate funds and the promotion of regional knowledge-sharing platforms (Chevallier & Chesterman, 2022).

Complementing the ASCC is the African Adaptation Initiative (AAI), launched by African Heads of State at COP21. The AAI aims to significantly scale up adaptation efforts across the continent by focusing on enhancing climate information services, building institutional capacity, and channelling finance to concrete projects (UNFCCC, n.d.). For Tanzania, these continental frameworks provide a legitimizing narrative and strategic direction, aligning national efforts with a collective African voice that emphasizes adaptation finance, technology transfer, and loss and damage (Amha & Demissie, 2024).

At the sub-regional level, the East African Community (EAC) has been proactive in fostering a harmonized approach to climate change. The EAC Climate Change Policy (2011) and its implementing tool, the EAC Climate Change Master Plan (2011-2031), are designed to promote collaborative action among partner states (East African Community, 2011). These instruments prioritize areas of shared vulnerability, such as transboundary water management (e.g., Lake Victoria Basin), sustainable land management, renewable energy development, and the establishment of regional early warning systems for climate extremes. Tanzania's active participation in these EAC initiatives is crucial for managing shared ecosystems, facilitating cross-border data exchange, and attracting investment in regional green infrastructure projects (Ampaire *et al.*, 2020). This sub-regional cooperation is vital for addressing transboundary climate risks that single nations cannot manage alone, thereby reinforcing the resilience of the entire region.

The governance of climate change in Tanzania is not a purely national endeavor but is fundamentally shaped by a multi-scalar and interdependent system of international law and policy. This system operates across global, continental, and sub-regional levels, creating a complex yet essential ecosystem of norms, obligations, and support mechanisms. Global agreements, such as the UNFCCC and the Paris Agreement, establish the overarching objectives, including emission reduction and global temperature goals—and foundational principles like Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC). These frameworks provide the universal architecture for action and are crucial for mobilizing financial and technological support from developed nations.

However, the translation of these global commitments into contextually relevant and actionable strategies occurs primarily at the regional level. Continental bodies, notably the African Union (AU) through its Agenda 2063 and the African Strategy on Climate Change (ASCC), perform a critical function by adapting global norms to Africa's unique developmental challenges and acute vulnerability. They foster the political solidarity necessary to amplify a collective African voice in international negotiations, advocating for equitable finance and justice. Furthermore, sub-regional organizations like the East African Community (EAC) provide an even more granular layer of governance. By harmonizing climate policies, promoting cross-border ecosystem management, and facilitating joint early warning systems, the EAC addresses transboundary climate risks that no single nation can resolve alone.

This layered governance structure creates a vital funnel of guidance and support for Tanzania. While global frameworks set the ultimate destination, regional and sub-regional bodies help chart the specific course, aligning international ambitions with local realities and shared regional priorities. The following table synthesizes these multi-level frameworks, delineating their distinct yet complementary roles and their direct implications for advancing Tanzania's national climate action and public health resilience agenda.

Table 1: Global and Regional Climate Governance Frameworks Relevant to Tanzania

Level	Framework / Instrument	Key Features / Objectives	Implications for Tanzania
Global	*UNFCCC (1992)*	• Stabilize GHG concentrations. • Principle of Common but Differentiated Responsibilities (CBDR-RC). • Reporting & transparency obligations.	Provides the foundational legal basis for climate action; recognizes Tanzania's vulnerability and right to development; obligates developed country support.
	Kyoto Protocol (1997)	• Binding emission targets for developed nations. • Clean Development Mechanism (CDM) for project-based investment in developing countries.	Offered a theoretical pathway for technology transfer and sustainable investment, though limited practical benefits due to structural inequities in distribution (Agbonifo, 2017).
	Paris Agreement (2015)	• Nationally Determined Contributions (NDCs) from all parties. • Elevates adaptation (Art. 7) and climate finance (Art. 9). • Enhanced transparency framework (Art. 13).	Enables Tanzania to set context-specific climate targets; provides a framework to access finance (e.g., GCF) for adaptation and mitigation projects crucial for public health resilience.
Regional / Continental (Africa)	*Agenda 2063 (2015)*	• Africa's long-term strategic framework for inclusive and sustainable development. • Prioritizes climate-resilient economies and communities.	Aligns Tanzania's national development plans (e.g., Vision 2050) with continental aspirations, mainstreaming climate change into long-term economic transformation.
	African Strategy on Climate Change (ASCC, 2022-2032)	• A coordinated continental roadmap for mitigation and adaptation. • Focuses on capacity building, finance mobilization, and knowledge sharing.	Guides national policy (e.g., NCCRS) and strengthens Tanzania's position in international negotiations by providing a unified African position (Chevallier & Chesterman, 2022).
	African Adaptation Initiative (AAI, 2015)	• A Africa-led initiative to scale up adaptation action. • Aims to address the continent's adaptation financing and capacity gaps.	Potentially channels additional resources and technical support for community-based adaptation, climate-smart agriculture, and health resilience projects in Tanzania.
Subregional (East Africa)	*EAC Climate Change Policy & Master Plan (2011-2031)*	• Harmonizes climate action across member states. • Promotes joint projects in renewable energy, sustainable land management, and early warning systems.	Facilitates Tanzania's participation in cooperative management of shared ecosystems (e.g., Lake Victoria), enhancing regional disaster preparedness and resource management (Ampaire et al., 2020).

5. National Legal and Policy Framework for Climate Governance in Tanzania

While international and regional frameworks set the stage, the ultimate efficacy of climate action is determined at the national level. Tanzania's domestic response to the climate crisis is articulated through a complex, multi-layered architecture of laws, policies, and institutions. This framework is not static; it is a dynamic system that has evolved to reconcile the imperatives of environmental sustainability, socio-economic development, and public health protection. At its core lies the Environmental Management Act (EMA) of 2004, which serves as the legislative cornerstone. This section provides a critical analysis of this national framework, examining its institutional design, key legal instruments, and sectoral applications, with a particular focus on its capacity, and limitations, in fostering public health resilience against climate impacts.

5.1 The Cornerstone: Environmental Management Act (EMA), 2004

The EMA (2004) represents a paradigm shift in Tanzanian environmental law, moving from a fragmented, sector-specific approach to an integrated and participatory model of governance. The Act's foundational principles, enshrined in Sections 3 to 7, establish a rights-based and ecocentric foundation for climate action. These include the right to a clean, safe, and healthy environment; the precautionary principle, which mandates preventive action in the face of scientific uncertainty; and the principles of sustainable development and intergenerational equity (United Republic

of Tanzania [URT], 2004). These principles are not merely aspirational; they provide a normative lens through which all development projects and government actions, including those impacting climate vulnerability and public health, must be evaluated.

The Act's significance for climate governance is twofold. First, it provides the legal basis for key regulatory tools like Environmental Impact Assessments (EIAs) and Strategic Environmental Assessments (SEAs), which are critical for evaluating the climate and health implications of major projects (Pauline & Lema, 2024). Second, it establishes a comprehensive institutional framework designed to implement these principles, though the effectiveness of this structure is often challenged in practice, as discussed in Section 5.

5.2 National Institutional Architecture for Climate Governance

The EMA establishes a multi-tiered institutional system aimed at ensuring coordinated, scientifically informed, and participatory environmental governance. The functionality of these institutions is paramount for translating climate policy into tangible action.

i. ***National Environment Management Council (NEMC):*** Established under Sections 16-29 of the EMA, the NEMC is the primary enforcement and compliance body. It is responsible for conducting EIAs, environmental audits, and enforcing national standards. For climate governance, NEMC's role in monitoring industrial emissions and promoting cleaner production technologies is crucial for mitigation, while its oversight of EIA processes is a frontline defense against maladaptive development that could exacerbate public health risks, such as projects that degrade water catchments or increase air pollution (Jodoin, 2019).

ii. ***The Minister and Director of Environment:*** The Minister (Section 13) provides high-level policy direction and can intervene in cases of imminent environmental harm, operationalizing the precautionary principle. The Director of Environment (Sections 14-15) acts as the technical arm, coordinating environmental management across sectors and ensuring reporting on international commitments like the Paris Agreement. This role is vital for maintaining policy coherence and ensuring climate change is integrated into national development planning (Kitogo, 2025).

iii. ***Sectoral Integration (Sections 30-33):*** A key innovation of the EMA is its mandate for all sector ministries to establish Environmental Sections and appoint Sector Environmental Coordinators. This "mainstreaming" approach is designed to embed climate and environmental considerations into the core functions of ministries responsible for agriculture, health, energy, and water. However, the effectiveness of this mechanism is often hampered by institutional fragmentation and capacity gaps, leading to a persistent disconnect between climate policy and sectoral implementation (Mabhuye & Yanda, 2020).

iv. ***Decentralized Governance (Sections 34-41):*** The Act devolves environmental management to Regional Secretariats and Local Government Authorities (LGAs), with provisions for Environmental Management Officers (EMOs) and local environmental committees at the district, village, and *mtaa* (street) levels. This decentralized structure is theoretically ideal for fostering community-based adaptation and building local resilience. It empowers communities to address context-specific climate threats, such as managing village forests for carbon sequestration and landslide prevention or protecting local water sources. Yet, as Roy et al. (2018) note, this potential is frequently unrealized due to severe capacity and financial constraints at the local level, leaving communities vulnerable.

To coordinate this complex institutional landscape for climate-specific action, Tanzania has established the National Climate Change Steering Committee (NCCSC) and the National Climate Change Technical Committee (NCCTC) under the National Climate Change Response Strategy (NCCRS). These bodies are tasked with providing overarching policy direction and technical coordination, respectively. While this represents a significant step forward, their operational effectiveness is often constrained by weak secretariat support and overlapping mandates with existing EMA structures (Kweyu *et al.*, 2023).

5.3 Key Policy Instruments and Sectoral Integration

The institutional framework is animated by a suite of policy instruments that translate legislative intent into actionable strategies. The National Climate Change Response Strategy (NCCRS) 2021-2026 is the central policy document, outlining Tanzania's approach to building resilience and pursuing low-carbon development (URT, 2021). It works in tandem with the revised National Environmental Policy (2021) and is operationalized through the Nationally Determined Contributions (NDCs), which detail Tanzania's specific commitments under the Paris Agreement.

The true test of this framework lies in its application across key sectors, particularly those with direct implications for public health. The table below provides a critical synthesis of how national laws and policies address climate challenges in

these sectors, highlighting both the legal provisions and the persistent gaps in protecting public health.

Table 2: National Legal and Policy Framework for Climate Governance in Tanzania: A Sectoral Analysis

Sector	Key Legal/Policy Instruments	Climate Governance Provisions & Objectives	Implications for Environmental Protection & Public Health Resilience
Overarching Framework	*Environmental Management Act (EMA), 2004* *National Climate Change Response Strategy (NCCRS), 2021-2026* *National Environmental Policy (NEP), 2021*	Establishes integrated, participatory environmental governance; enshrines precautionary principle and right to a healthy environment; provides strategy for mainstreaming climate action, enhancing coordination, and implementing NDCs.	Provides the legal basis for health-protective environmental action. The NCCRS explicitly aims to reduce climate-induced health risks, but implementation is hindered by weak mainstreaming of health considerations into sectoral plans (WHO, 2015; Lokotola *et al.*, 2023).
Agriculture & Food Security	*EMA (Ss. 50-55); Land Act, 1999; Village Land Act, 1999; NCCRS.*	Promotes sustainable land management, protects sensitive ecosystems, and advocates for climate-smart agriculture (CSA) and agroforestry.	Aims to secure food production and livelihoods, directly combating climate-induced malnutrition. However, limited farmer access to CSA technologies and insecure land tenure for smallholders can undermine adaptive capacity and food security (Smucker *et al.*, 2015).
Water Resources	*EMA (Ss. 56-60); Water Resources Management Act, 2009; NCCRS.*	Institutionalizes Integrated Water Resources Management (IWRM); protects wetlands and catchments; establishes buffer zones for water bodies.	Critical for ensuring water quality and quantity during droughts and floods, preventing waterborne disease outbreaks. Inadequate enforcement of buffer zones and catchment protection leads to pollution and scarcity, heightening health risks (Mabhuye & Yanda, 2020).
Health & Human Settlements	*Public Health Act, 2009; Urban Planning Act, 2007; EMA (Ss. 76-79) on pollution control; NCCRS.*	Addresses sanitation, waste management, and pollution; aims to develop climate-resilient health infrastructure and disease surveillance systems.	Directly targets climate-sensitive health outcomes. Weak enforcement in informal settlements increases exposure to floods, heat stress, and waterborne diseases like cholera. The health sector remains inadequately integrated into climate adaptation planning (Lokotola *et al.*, 2023).
Forests & Biodiversity	*EMA (Ss. 66-68); Forest Act, 2002; Wildlife Conservation Act, 2009; NCCRS.*	Promotes biodiversity conservation, community-based forest management, reforestation, and REDD+ initiatives.	Forests are vital for carbon sequestration, regulating water cycles, and preventing landslides. Deforestation disrupts these ecosystem services, increasing community vulnerability to climate shocks and degrading natural resources essential for health (Kitogo, 2025).
Energy & Industry	*EMA (Ss. 63-64); Energy and Water Utilities Regulatory Authority Act, 2001; NCCRS.*	Promotes renewable energy, energy efficiency, and cleaner production technologies; encourages transition to low-carbon energy.	Mitigation efforts reduce air pollution, with co-benefits for respiratory and cardiovascular health. Slow transition to clean energy and limited regulation of industrial emissions perpetuate pollution-related health burdens (Ahluwalia & Patel, 2023).
Coastal & Marine Ecosystems	*EMA (S. 59); Fisheries Act, 2003; Marine Parks and Reserves Act, 1994; NCCRS.*	Provides for Integrated Coastal Zone Management (ICZM); protects mangroves, coral reefs, and marine biodiversity.	Protects coastal communities from sea-level rise and storm surges; mangroves are critical carbon sinks and breeding grounds for fish, supporting nutrition and livelihoods. Coastal erosion and degradation threaten these vital protective and food-provisioning services.

5.4 Synthesis: Bridging Law and Practice for Health Resilience

Tanzania's national climate governance framework is, on paper, strong and progressive. The EMA and the NCCRS create a comprehensive system that integrates environmental sustainability with development planning and acknowledges the importance of public health. The decentralized, participatory model is particularly well-suited for building locally relevant resilience.

However, a critical gap persists between this sophisticated legal architecture and its implementation. The framework often treats public health as a cross-cutting issue rather than a central pillar of climate resilience. For instance, while the NCCRS mentions health, there is no mandatory requirement for Health Impact Assessments (HIAs) to accompany EIAs for climate-sensitive projects. Furthermore, the capacity of the Ministry of Health to engage meaningfully in climate policy processes and to implement the health components of the NCCRS remains limited (Lokotola *et al.*, 2023).

The subsequent section will delve deeper into these implementation challenges, including institutional fragmentation, financing shortfalls, and enforcement deficits, which collectively undermine the potential of Tanzania's legal and policy framework to fully safeguard environmental integrity and public health in the face of a changing climate.

6. Challenges, Gaps, and Limitations in Climate Governance

The existence of a sophisticated legal and policy architecture, as outlined in the previous section, does not automatically translate into effective climate action on the ground. Tanzania's journey towards climate-resilient development is fraught with persistent and interconnected implementation challenges. These gaps create a critical disconnect between policy ambition and tangible outcomes, ultimately undermining environmental integrity and leaving the population, particularly the most vulnerable, exposed to escalating public health risks. This section provides a critical analysis of these systemic barriers, moving beyond mere identification to explore their root causes and synergistic effects.

6.1 Institutional Fragmentation and Coordination Deficits

A primary obstacle is the pervasive institutional fragmentation within Tanzania's climate governance system. Despite the elaborate framework established by the EMA (2004) and the coordinating role envisaged for bodies like the National Climate Change Steering Committee (NCCSC), operational realities tell a different story. Key ministries, including the Vice President's Office (Environment), Ministry of Agriculture, Ministry of Energy, and Ministry of Health—often operate in silos, with overlapping mandates and poor information sharing (Kitogo, 2025; Mabhuye & Yanda, 2020).

This fragmentation leads to policy incoherence, duplicated efforts, and contested jurisdictional boundaries. For instance, a climate-smart agriculture project led by the Ministry of Agriculture may inadvertently impact water resources managed by a different ministry, without adequate inter-sectoral consultation. This lack of a "whole-of-government" approach critically weakens the integration of climate change into national planning and budgeting processes. As Kweyu *et al.* (2023) observe, while Tanzania has established formal coordination structures akin to Kenya's Climate Change Directorate, these bodies are often hamstrung by weak secretariat functions, insufficient authority to mandate action across line ministries, and limited human resource capacity. The consequence is a dissipated response that fails to match the cross-sectoral nature of climate threats, directly impeding the implementation of the National Climate Change Response Strategy (NCCRS).

6.2 The Implementation Chasm in Local Governance

The EMA's principle of decentralization, which devolves environmental and climate responsibilities to Local Government Authorities (LGAs), is laudable but has proven difficult to execute. LGAs are the frontline for implementing adaptation initiatives, from enforcing land-use plans to promoting community-based forest management. However, they are severely hampered by a triad of constraints: inadequate funding, limited technical expertise, and a lack of appropriate technology (Roy *et al.*, 2018).

This "*implementation chasm*" is starkly visible in rapidly urbanizing areas like Dar es Salaam and Mwanza, where LGAs struggle to manage climate risks such as flooding in informal settlements. The decentralization of responsibilities has not been matched by a commensurate decentralization of resources and decision-making power. This creates a continued dependence on central government directives, which are often slow and not context specific. In contrast, Rwanda's approach of providing dedicated budgets and technical support to district environmental officers has demonstrated more effective local climate action (Ministry of Environment, Rwanda, 2019). The failure to adequately capacitate LGAs means that community-level resilience, which is fundamental to protecting public health from climate impacts like waterborne diseases and heat stress, remains more an aspiration than a reality.

6.3 Financial and Technical Capacity Shortfalls

Mobilizing and effectively utilizing climate finance remains a monumental challenge. Tanzania is eligible for international funding mechanisms like the Green Climate Fund (GCF) and the Global Environment Facility (GEF).

However, access is constrained by cumbersome application procedures, weak project preparation capacities, and stringent donor requirements (Kitogo, 2025). Furthermore, domestic budget allocations for climate action are often overshadowed by other pressing developmental priorities, leading to chronic underinvestment in critical areas such as renewable energy, early warning systems, and climate-resilient health infrastructure.

Even when funds are secured, weak absorption capacity at the institutional level often leads to delays and inefficiencies in implementation (Sumari, Pauline, & Mabhuye, 2025). Technical limitations exacerbate these financial shortfalls. Limited access to modern, climate-resilient agricultural technologies, renewable energy systems, and advanced climate modeling tools restricts the country's ability to pursue a technologically sophisticated low-carbon and adaptive pathway. This financial-technical gap perpetuates a cycle of vulnerability, hindering investments that are crucial for both environmental sustainability (e.g., clean energy) and public health protection (e.g., disease surveillance systems).

6.4 Socio-Economic Inequities and Marginalization

Climate impacts are not felt equally. Pre-existing socio-economic inequalities act as force multipliers of vulnerability. Women, smallholder farmers, pastoralists, and residents of informal urban settlements often face structural barriers that limit their adaptive capacity, including restricted access to land, credit, climate information, and decision-making forums (Techera & Mlay, 2024; Roy *et al.*, 2018).

Although the NCCRS (2021-2026) promotes gender-responsive and inclusive approaches, the translation of these principles into practice is limited. Deep-seated cultural norms and a lack of targeted interventions often leave the most vulnerable behind. For example, women, who are primarily responsible for water and food security in many households, bear the brunt of climate-induced resource scarcity but are frequently excluded from community-level planning. This failure to center equity in climate governance not only perpetuates social injustice but also undermines the effectiveness and legitimacy of adaptation strategies, as it ignores the knowledge and needs of those most affected.

6.5 Weak Enforcement and an Immature Climate Justice Landscape

A critical gap lies in the weak enforcement of environmental and climate laws. While statutes like the EMA, the Forest Act, and the Public Health Act provide for compliance mechanisms and penalties, enforcement is often lax due to limited personnel, inadequate training, logistical constraints, and, at times, political interference (Jodoin, 2019).

The judicial system, a crucial pillar for accountability, is not yet fully equipped to handle the complexities of climate litigation. There is insufficient expertise in environmental law among the judiciary and legal practitioners, and procedural barriers often limit access to justice for marginalized communities. The 2023 dismissal of the East African Crude Oil Pipeline (EACOP) case by the East African Court of Justice on procedural grounds, without engaging the substantive environmental and human rights claims, is a telling example (Natural Justice, 2023; *Monitor*, 2023). While the recent request for an advisory opinion on climate obligations from the African Court on Human and Peoples' Rights (Lawyers of Africa, 2025) signals a growing engagement, it also highlights the current legal vacuum and the need for stronger domestic judicial mechanisms to enforce climate accountability and protect the right to a healthy environment (Majamba, 2023).

The Table 3 below synthesizes these core challenges, illustrating their manifestations and direct implications for environmental and public health resilience. The challenges delineated above are not isolated; they interact in ways that create a synergistic drag on Tanzania's climate resilience. Institutional fragmentation undermines coordinated action, which is exacerbated by financial and capacity constraints at the local level. This, in turn, deepens socio-economic inequities, as the most vulnerable lack the safety nets to cope with governance failures. The weak enforcement of laws provides a permissive environment for environmental degradation, which directly harms public health. Ultimately, this nexus of governance gaps means that the strong legal and policy framework analyzed operates in a context where its potential is systematically undercut, leaving both the environment and the population's health unnecessarily vulnerable to the escalating climate crisis.

Table 3: Synthesis of Key Governance Challenges and Their Implications

Governance Challenge	Manifestation	Implications for Environmental Protection & Public Health Resilience
Institutional Fragmentation	Overlapping mandates between ministries (e.g., VPO, Agriculture, Energy); weak authority of NCCSC/NCCTC; siloed planning and budgeting.	Leads to incoherent policies (e.g., agricultural policy undermining water conservation); inefficient use of resources; failure to implement integrated health-and-environment strategies.
Local Government Capacity Gaps	LGAs lack funds, skilled personnel, and equipment; weak enforcement of local bylaws; slow and centralized decision-making.	Results in maladaptive urban development (increasing flood risk); poor management of natural resources (e.g., village forests); inability to respond to local health crises like cholera outbreaks.
Financial & Technical Limitations	Difficulties accessing international climate finance (GCF/GEF); low domestic climate budgeting; weak project absorption capacity; limited technology transfer.	Restricts investments in renewable energy (prolonging air pollution) and climate-resilient infrastructure (e.g., health clinics); hinders adoption of climate-smart agriculture, worsening food insecurity.
Socio-Economic Inequities	Women, farmers, and urban poor lack access to resources, information, and decision-making power; gender-responsive policies not implemented.	Increases vulnerability of marginalized groups to climate-health impacts (e.g., heat stress, malnutrition); undermines social legitimacy of climate actions; overlooks valuable local knowledge.
Weak Enforcement & Legal Barriers	Inadequate monitoring and enforcement of EMA and other laws; limited judicial capacity on environmental issues; procedural hurdles to climate litigation.	Allows environmentally damaging projects to proceed; fails to deter pollution, degrading air and water quality; denies communities a legal pathway to seek redress for climate harms.

7. Conclusion and Recommendations

This analysis has delineated the complex legal and policy architecture governing climate change in Tanzania, revealing a system poised for transformative impact yet constrained by significant implementation deficits. The foundational Environmental Management Act (EMA) of 2004, complemented by the National Climate Change Strategy (NCCS) 2021-2026 and a suite of sectoral laws, provides a robust normative framework that aligns with international and regional commitments. This framework ambitiously seeks to integrate climate resilience with sustainable development, public health safeguards, and participatory governance. However, the transition from legislative intent to tangible outcomes, particularly in enhancing environmental protection and public health resilience, remains incomplete.

The principal impediments are systemic: institutional fragmentation weakens policy coherence, capacity constraints at the local government level stifle decentralized action, and inadequate financing curtail investments in critical adaptation infrastructure. Furthermore, the weak mainstreaming of public health within climate planning leaves populations vulnerable to climate-induced diseases, while socio-economic inequalities and rapid urbanization exacerbate exposure and limit adaptive capacity. The nascent state of climate litigation, as seen in regional court cases, further underscores the challenges in enforcing accountability and accessing justice for climate-vulnerable communities.

To bridge these gaps and fortify Tanzania's climate governance, a strategic and multi-pronged approach is imperative. The following recommendations, which also delineate critical avenues for future research, are proposed to translate policy aspirations into measurable resilience, particularly at the nexus of environmental and public health.

First, institutional coordination must be strengthened through the establishment of a high-level, statutory National Climate Change Council. This body, endowed with executive authority and cross-sectoral representation, should be mandated to harmonize climate actions, resolve jurisdictional conflicts, and oversee the implementation of the NCCS. Empowering Local Government Authorities (LGAs) is equally critical. This requires not only capacity-building but also the institutionalization of dedicated climate resilience grants and technical support to integrate climate and health considerations into local development plans. Future empirical research is urgently needed to diagnose the precise points of coordination failure within and between institutions, and to evaluate the performance of existing committees like the NCCSC and NCCTC, providing an evidence base for structural reforms.

Second, closing the climate finance gap demands innovative and sustainable financing mechanisms. Tanzania should streamline its access to international funds like the Green Climate Fund (GCF) by enhancing project preparation capabilities and fostering public-private partnerships for renewable energy and climate-smart agriculture.

Domestically, embedding climate financing within national budgetary processes and exploring instruments like green bonds are essential. Concurrently, research should focus on conducting rigorous economic analyses of the co-benefits of climate action, particularly the cost savings from preventing climate-sensitive public health crises, to build a more compelling investment case for policymakers.

Third, the governance framework must be rendered more equitable and inclusive through the deliberate integration of gender-responsive and rights-based approaches. Policies must be designed to specifically address the vulnerabilities of women, smallholder farmers, and urban informal settlers by ensuring their access to resources, information, and decision-making forums. This necessitates participatory vulnerability assessments that incorporate indigenous and local knowledge to ensure adaptation strategies are contextually appropriate and socially legitimate. Future studies should employ mixed-methods approaches to document the differentiated health impacts of climate change on these vulnerable groups and evaluate the effectiveness of gender-responsive interventions in building resilience.

Fourth, enhancing the legal enforcement of climate and environmental laws is non-negotiable. This involves bolstering the technical and logistical capacity of enforcement agencies like the National Environment Management Council (NEMC) and building judicial expertise in environmental law through specialized training and support. The emerging field of climate litigation presents a critical area for scholarly inquiry. Future research should empirically track the impact of climate-related lawsuits, both domestic and in regional courts, on policy reform, corporate behavior, and the protection of community rights, examining the barriers that impede access to climate justice.

Finally, a paradigm shift towards evidence-based and health-centric climate governance is required. This entails the systematic integration of climate data and public health surveillance to create robust early warning systems for diseases like malaria and cholera. Mandating Health Impact Assessments (HIAs) as part of Environmental Impact Assessments (EIAs) for major development and climate projects would proactively identify and mitigate health risks. A paramount research priority is to investigate the operational nexus between climate and health institutions, assessing the extent to which public health agencies are engaged in climate planning and how health outcomes are monitored within the framework of the NCCS and NDCs.

In conclusion, while Tanzania's legal and policy foundations for climate governance are commendable, their potential to foster environmental sustainability and public health resilience will only be realized through decisive action on these fronts. Henceforth, by strengthening institutions, securing finance, ensuring equity, enforcing laws, and embedding science and health at the core of decision-making, Tanzania can navigate the complexities of climate change. This integrated approach will not only fulfill its international commitments but also secure a healthier, more resilient, and equitable future for its citizens. The recommendations and concomitant research agenda outlined here provide a roadmap for policymakers and scholars alike to contribute to this vital endeavor.

Declaration of Conflict of Interest

We hereby declare that there are no known competing financial interests or personal relationships that could have influenced the research and findings presented in this paper.

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