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A scoping review of national legislative frameworks governing rangelands in Kenya, with implications on community-based rangeland governance

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Rangelands in Kenya are significant ecosystems that encounter various challenges including increasing livestock, demand for land and changes to traditional governance systems. Governance plays an important role in environmental management and conservation with the implementation of policies at both national and county levels in Kenya, influencing the governance structures used in rangeland management. This review aimed at analyzing current policy, institutional and regulatory frameworks governing rangelands at the national level in Kenya, and provides a summary thereof. The review adopted PRISMA guidelines for conducting and reporting systematic reviews utilizing the PRISMA flow chart and the PRISMA reporting checklist. Policies were identified using searches of government online repositories and researchers' knowledge. The review is organized per rangeland thematic areas and types of rangeland resources, to illustrate relevant legislations, institutions and policies. Findings indicate that rangeland governance in Kenya is fragmented and operates under resource-specific policies and laws clustered in 10 broad aspects/themes of; national planning, land, forests, wildlife, pasture, water, climate change and carbon, crops, livestock, food security and rangeland management, rather than through a comprehensive approach. Additionally, the institutional framework functions at national, county, and community levels, with coordination among entities found to be limited. In total, besides the Constitution of Kenya, the Kenya Vision 2030, and the Executive Order No. 1 of 2023, there are 10 policies, 9 legislations, 14 regulations and strategies and plans, 30 national institutions and 9 community-based institutions, each providing for different aspects of rangeland management. The multiple institutions including the community-based natural resource management institutions function independently, and lack clarity regarding the integration of traditional governance systems. Some policies articulate varied objectives but lack supporting legislation for legal enforceability. The frameworks' fragmentation, multiplicity and absence of a

coordination framework occasions both cooperation and conflict. It undermines the sustainable management of resources, necessitating targeted reforms to enhance integration, incorporation of traditional systems and community engagement to safeguard rangeland resources and livelihoods. The article discusses options for enhancing the sustainability of rangelands through more integrated governance strategies.

KEYWORDS

ASALs, institutional frameworks, Kenya, policy and legal frameworks, rangeland governance

Introduction

Rangeland ecosystems in Kenya are facing challenges including increasing livestock population and demand for land, emergence of individual land tenure, weakening traditional institutions, climate change, the elites' influence on decision-making, and increasing conflict. Soil erosion is commonly increasing, water sources fluctuating, and biodiversity is declining. Availability of palatable and high-quality fodder is declining, and herds are encountering hunger and undernutrition, crowding in water points and increasing disease spread. These challenges affect livestock productivity and increase mortality (Robinson et al., 2021; Range management and pastoralist strategy, 2021–2031). The challenges are significant since rangelands cover over 83% of the land mass, supporting over 70% of the country's livestock and providing livelihoods to over 25% of the population (Government of Kenya, 2020c).

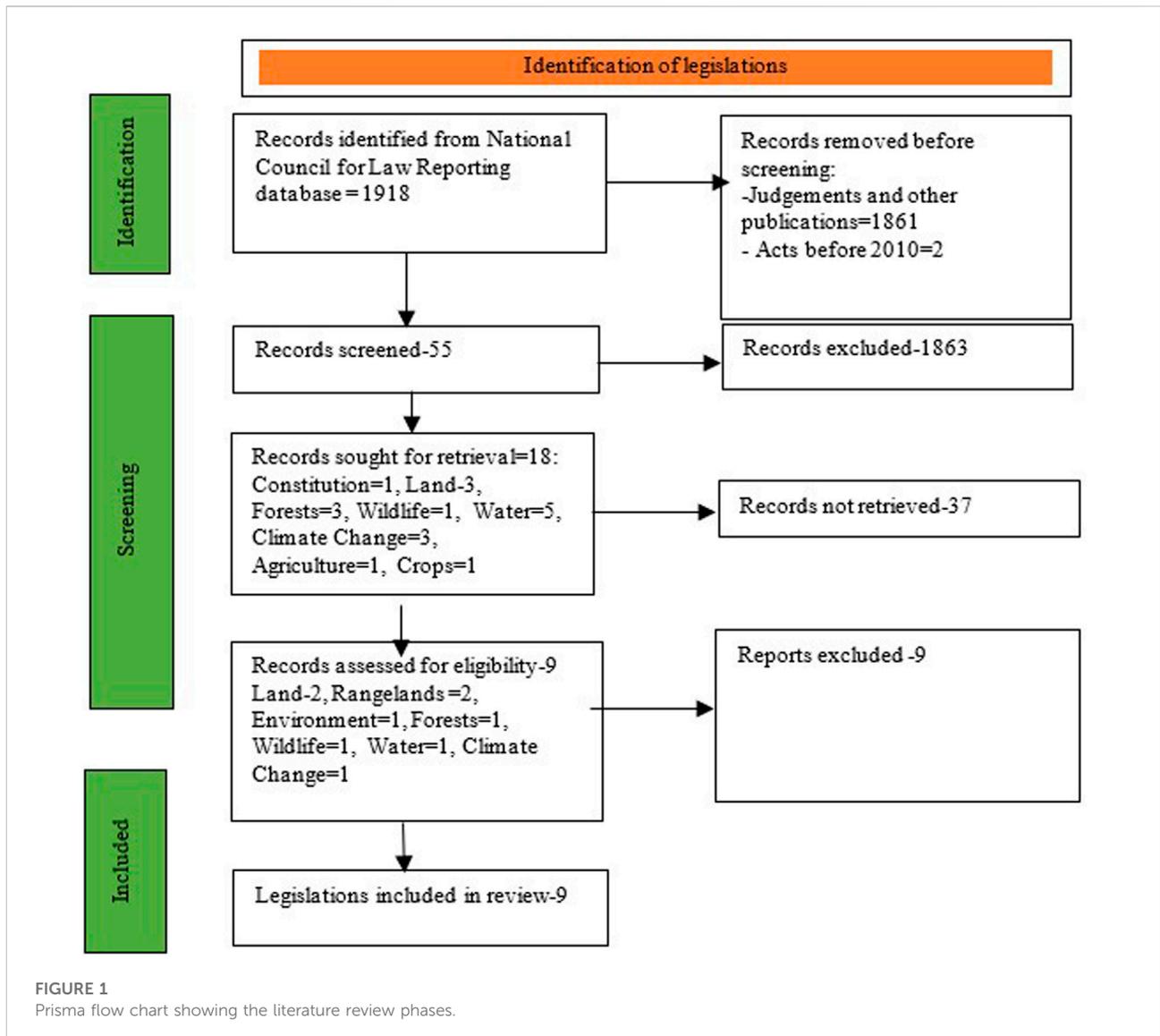
Governance is a critical factor that enable or undermine environmental management and conservation (Bennett and Satterfield, 2018; Lockwood, 2010; Tari and Pattison, 2014). Considering that rangelands encompass a range of resources including land, water, soil, biodiversity and other natural assets, Kenya has developed an array of policies, laws, regulations, strategies, and plans to guide the management of various facets of rangelands and Arid and Semi-Arid Lands (ASALs), at the National and County levels. Relevant policies and legislation include those about forests, water, pasture, livestock, crops, rangelands, as well as cross-cutting issues such as climate change and food security. These frameworks have established diverse institutions at national, county, and community levels, each mandated with the management of specific rangeland components. For instance, at the community level, the Wildlife Conservation and Management Act of 2013 provides for the conservancy model (Government of Kenya, 2013b), while the Constitution and the Community Land Act of 2016 introduced community land tenure systems, and establish community land management committees (Government of Kenya, 2016d; Robinson et al., 2021). Even with these policies, since the majority of rangelands are found on communal land and due to their uniqueness and uncertainty, communities have historically utilized Community-Based Natural Resource Management (CBNRM) to govern

rangelands (Herrera et al., 2014). Where communal governance is found, rangeland degradation has been scarce, and the approach has been linked to improved rangeland conditions and associated livestock productivity (Roba, 2014). The power of the customary institutions is, however, weakening as the model is being undermined by a lack of formal recognition by the government, changing customs, elite capture, and the introduction of government policies (Robinson et al., 2021).

The increasing land demand and livestock population, coupled with weakening traditional institutions and introduction of multiple formal frameworks in the advent of climate change, has resulted in dysfunctional institutions, shift in climatic patterns and limited pastoral mobility. This has resulted in degradation and unsustainable practices threatening rangeland resources, biodiversity and pastoral livelihoods (Lutta and Njiru, 2020; Mengisteb, 2019; Robinson et al., 2021; Tyrrell et al., 2022; Wasonga et al., 2003). Further, the effect of the formal governance frameworks on existing rangeland governance regimes and their resultant outcomes remains inadequately understood. This review analyses the rangeland frameworks deployed at the national and community level in Kenya, to provide an understanding of the functioning of the frameworks and their contribution to governance of rangeland resources.

Methods

The literature review was conducted following PRISMA guidelines for conducting and reporting systematic reviews, using the PRISMA flow chart and the PRISMA reporting checklist. A review of legislations published between 2010 and 2025 was conducted to identify the legislations used nationally to govern rangelands in Kenya. The legislation search was conducted in the Government of Kenya database found online in the National Council for Law Reporting (Government of Kenya, 2025a) database under the Laws of Kenya, as gazetted by the Government Printer, accessed at <https://new.kenyalaw.org/>. The database was selected since it is the official publisher of the Laws of Kenya and the Kenya Law Reports, and hosts the Online Kenya Gazette, the official publication of the Republic of Kenya. Further, considering that Acts of Parliament are creations of government policy direction, and since Kenya's Policies,



Strategies and Plans are not domiciled in a centralized repository, an online search guided by the researchers’ knowledge was conducted to identify the policies, regulations, strategies and plans associated with each of the Acts included in the review.

The legislations’ search on the online repository used the advanced search tool, utilizing the Boolean operator “AND” and “OR” to combine relevant terms depending on the subject area of focus. The key words combination and search algorithm used in the Laws of Kenya database was as follows; “Environment Conservation and Management” AND “Act” AND “Land” AND “Community Land” OR “Forests”, OR “Wildlife”, OR “Water” OR “Climate Change”, OR “Livestock” OR “Crops” OR “Food security”. Legislations relevant to rangeland governance, published by the National Government in English between 2010 and 2025 and available in full text, were eligible for

inclusion. The exclusion criteria include; legislations enacted before 2010, legislations not related to rangeland governance and legislations on rangeland governance enacted by County Governments. The search resulted in nine (9) legislations as shown in Figure 1.

Further, the search for Policies, Strategies and Plans was conducted using the google scholar engine using the advanced search function, utilizing the keywords combination and search algorithm as follows; “Kenya” AND “Land Policy”, “Kenya” AND “Environment Policy”, “Kenya” AND “Forest Policy”, “Kenya” AND “Water Policy”, “Kenya” AND “Wildlife Policy”, “Kenya” AND “Climate Change Policy”, “Kenya” AND “National Climate Change Action Plan”, “Kenya” AND “National Adaptation Plan”, “Kenya” AND “Livestock Policy”, “Kenya” AND “Food Security Policy”. The search resulted in ten (10) policies and 14 strategies, plans and regulations.

TABLE 1 Detailed description of Policy and legislative frameworks of national planning in Kenya.

| The constitution and national planning frameworks in Kenya | Role of the constitution and national planning frameworks in rangeland management |
|--|--|
| 1. The Constitution of Kenya | It establishes a framework for rangeland management by providing for environmental conservation, sustainable land use, food security, and devolving agricultural functions. It contains specific provisions on land, environment, forestry, water, food security, crops and livestock. It upholds community rights and encourages public participation in governance, particularly in regions dependent on natural resources for livelihoods. It devolves power to 47 interdependent county governments with divided national-county functions, requiring cooperation and consultation among the two levels of government |
| 2. The Kenya Vision 2030 | This is the national long-term development plan for the period 2008–2030, aimed at transforming Kenya into a newly industrializing, middle-income country with a high quality of life for all citizens. It is based on three pillars, economic, social, and political, and includes flagship projects across key sectors. It addresses rangeland issues through emphasis on sustainable land use, agricultural productivity, water conservation, environmental protection, equitable resource distribution, respect for property rights, social inclusion, and poverty reduction, especially in arid and semi-arid areas. The Vision 2030 Delivery Secretariat coordinates its implementation |
| 3. The Executive Order no. 1 of 2023 | The Executive Order No. 1 of 2023 on the Organization of the Government of the Republic of Kenya provides for Ministries and eight (8) State Departments with aspects of rangeland management and their respective mandates. It creates the State Department for Lands and Physical planning responsible for land, State Department for livestock development for livestock and range development and management, State Department for the ASALs and Regional Development responsible for ASAL development and livestock programs, State Department for Environment and Climate Change responsible for the environment and climate change, State Department for Forestry responsible for forestry, State Department for Wildlife responsible for wildlife, State Department for Water responsible for water, and State Department for crops responsible for crop development and food security |

For the review, the legislations were grouped into ten (10) broad aspects/themes of rangelands: national planning (Vision 2030, the Constitution of Kenya and the Executive Order No. 1 of 2023), land, conservation of natural resources (forests, wildlife, pasture, and water), climate change and carbon, agriculture (crops, livestock, and food security), and rangeland management.

The Criteria for analyzing the policy and legal frameworks was based on the policies' provision on the following aspects; the goals of the policy and/or acts, the national institutions created by the legislation, the community institutions created by the legislation, the strategies and plans used by the community-based institutions to manage the rangeland resource use particularly water and pasture, and the policy provisions on traditional natural resource management systems.

Results

This section presents the results of the literature review which established that, the rangeland policy, legal and institutional framework in Kenya is characterized by a lack of an overarching governance framework evidenced by no single policy, law, or institution addressing rangeland management in totality. Instead, considering that rangelands comprise diverse natural resources that include land, forests, water, wildlife, pasture, livestock, crops, and food, the current framework is

characterized by fragmentation and multiplicity of rangeland resource-specific policies, laws, plans, and institutions, and response actions to climate change and drought.

The first part presents a summarized description of the policy, legal and institutional frameworks (of the detailed description in the Annexures) for each of the ten (10) rangeland thematic areas divided into frameworks of; national planning (Vision 2030, the Constitution of Kenya and the Executive Order No. 1 of 2023), land, conservation of natural resources (environment, forests, wildlife, and water), climate change and carbon, agriculture (crops, livestock, and food security), and rangeland management. The second part (and its Annexures) presents a synthesis of the multiple frameworks governing rangelands in Kenya.

Description of the legislative, policy and institutional frameworks governing rangelands in Kenya per thematic area

The national planning frameworks governing rangelands in Kenya

The Constitution of Kenya, 2010 (Government of Kenya, 2010b), the Kenya Vision 2030 (Government of Kenya, 2007) and the Executive Order No. 1 of 2023 (Government of Kenya, 2025b), form the national planning frameworks that guide rangeland management in Kenya, as summarized in Table 1.

TABLE 2 Detailed description of Policy and legislative frameworks governing land in Kenya.

| Land policies, laws, and institutions in Kenya | Role of the land policies, laws, and institutions in rangeland management |
|---|---|
| 1. Constitution of Kenya | Mandates equitable, productive, and sustainable land use and classifies land as public, private, and community land. Community land comprises land held by communities based on ethnicity, culture, or shared interests and County governments holds unregistered community land in trust |
| 2. Recommended National Land Policy, 2023 | Promotes sustainable communal land use, recognizes customary tenure and supports pastoralism and traditional rangeland practices. It encourages rangeland planning and conservation, addresses natural resource conservation, benefit sharing, carbon markets, land rights and fragmentation and water access for food security |
| 3. The Land Act, 2012 | Provides for sustainable communal land management and enables enactment of the Community Land Act |
| 4. The Community Land Act, 2016 | Recognizes and protects community land rights, emphasizes community participation, and provides for communal land registration, adjudication, and management. It establishes Community Land Management Committees and Community Assemblies to oversee land use planning including designating land for grazing |
| 5. The Community Land Regulations, 2017 | Operationalizes the Community Land Act and defines structures and procedures for the Community Land Management Committees and Assemblies and provides the roles of the Registrar and Cabinet Secretary |
| 6. State Department for Lands and Physical planning | Develops and oversees national land policies and is responsible for the physical planning of communal and rangeland areas |
| 7. National Land Commission | Manages public land on behalf of the government, advises on land policy and participates in community land conversion and planning |
| 8. Community Assemblies | Established by the Act, as the highest decision-making body for community land, composed of all adult members of the community and approves land use and conservation decisions by two-thirds majority |
| 9. Community Land Management Committees | Established by the Act and operationalized by the regulations, it comprises of 7–15 elected members responsible for the daily management of registered community land and coordination of land use planning on behalf of the community |

Land governance in Kenya

The land sector in Kenya is characterized by various policies and laws, including the Constitution of Kenya, 2010 (Government of Kenya, 2010b), the Executive Order No. 1 of 2023 (Government of Kenya, 2025b), the recommended National Land Policy, 2023 (Government of Kenya, 2023d), the Land Act, 2012 (Government of Kenya, 2012b), the Community Land Act, 2016 (Government of Kenya, 2016d), and the Community Land Regulations, 2017 (Government of Kenya, 2017a). The frameworks provide for institutions governing land including, the State Department for Lands and Physical Planning and the National Land Commission at the national level, and the Community Assemblies and Community Land Management Committees at the community level, as summarized in Table 2.

Rangeland management in Kenya

Rangelands management in Kenya is governed by multiple laws, policies, plans, and institutions that include the Constitution of Kenya, 2010 (Government of Kenya, 2010b), Vision 2030 Development Strategy for Northern Kenya and other Arid Lands, 2012 (Government of Kenya, 2012c), the Executive Order No. 1 of 2023 (Government of Kenya, 2025b), the National Policy for the Sustainable Development of Arid and Semi-Arid Lands, 2012 (Government of Kenya,

2012a), the National Drought Management Authority Act, 2016 (Government of Kenya, 2016f), the Public Finance Management (National Drought Emergency Fund) Regulations, 2021 (Government of Kenya, 2021d), and the Ewaso Ng'iro North River Basin Development Authority Act, 1989, revised in 2012 (Government of Kenya, 2025c). The frameworks provide for institutions governing range management, including the State Department for Livestock Development, the State Department for Arid and Semi-Arid Lands and Regional Development, the National Drought Management Authority (NDMA), the National Drought Emergency Fund and the Ewaso Ng'iro North Development Authority as summarized in Table 3.

Conservation-related policies in Kenya

The Conservation sector in Kenya is characterized by a policy, legal, regulatory and institutional framework that focuses on specific sub-sectors that touch on rangelands, including the environment, forestry, wildlife, water, and climate change.

Environment governance in Kenya

The environment sector in Kenya is characterized by policies, legislations, regulations and institutions that govern rangelands which include: the Constitution of Kenya 2010 (Government of Kenya, 2010b), the Executive Order No. 1 of 2023 (Government

TABLE 3 Detailed description of Policies and legislative frameworks governing rangelands in Kenya.

| Rangeland management policies, laws and institutions in Kenya | Role of the rangeland management policies, laws and institutions in rangeland management |
|---|--|
| 1. The Constitution of Kenya, 2010 | Provides the legal framework for sustainable land management, environmental conservation, and devolution. It classifies land, guarantees the right to food, and mandates Counties to execute agricultural functions including crop and livestock management (Government of Kenya, 2010b) |
| 2. The vision 2030 development strategy for Northern Kenya and other arid lands, 2012 | The Strategy targets development in historically marginalized ASALs by addressing insecurity, infrastructure, climate change, and land tenure issues that affect livelihoods, especially pastoralism which it recognizes as a major livelihood. It proposes institutional arrangements including: ASAL Cabinet Sub-Committee chaired by the President, ASAL Inter-Ministerial Committee, ASAL Stakeholders' Forum, ASAL Transformation Secretariat, National Drought Management Authority, National Drought and Disaster Contingency Fund, a Livestock Marketing Board and a Northern Kenya Investment Fund (Government of Kenya, 2012c) |
| 3. National Policy for the Sustainable Development of Arid and Semi-Arid Lands, 2012 | The Policy accelerates sustainable development in Northern Kenya and ASALs by increasing investment and aligning it with community needs focusing on malnutrition, insecurity, climate change, and weak infrastructure It promotes climate resilience, dryland farming, sustainable livelihoods and traditional resource management. Leverages on the institutional framework from the 2012 Development Strategy for implementation (Government of Kenya, 2012a) |
| 4. The National Drought Management Authority Act, 2016 | Establishes NDMA to lead drought preparedness, early warning systems, and policy integration for climate resilience (Government of Kenya, 2016f) |
| 5. The Public Finance Management (National Drought Emergency Fund) Regulations, 2021 | Operationalizes the National Drought Emergency Fund as a funding mechanism for drought response and appoints NDMA as the Secretariat for operations and reporting. Provides for a National Steering Committee chaired by the Deputy President for policy and oversight, an Inter-Governmental Technical Committee for resource mobilization and implementation, and County Committees to coordinate local drought plans and integrate them into government planning (Government of Kenya, 2021d) |
| 6. State Department for Livestock Development | Responsible for range development and management |
| 7. State Department for the ASALs and Regional Development | Coordinates development planning, livestock programs, drought response, and ASAL-specific livelihood initiatives |
| 8. National Drought Management Authority | Coordinates national and county drought plans, reports, and forums. Oversees drought preparedness and stakeholder collaboration (Government of Kenya, 2016d) |
| 9. National Drought Emergency Fund | Provides financial resources for drought response programs and supports NDMA operations (Government of Kenya, 2021d) |
| 10. Ewaso Ngiro North Development Authority | Implements integrated development programs in 10 counties, focusing on water, livestock, agriculture, forestry, and peacebuilding. Its' Strategic Plan (2023–2027) promotes sustainable resource use and improved livelihoods, though it faces legal gaps, including misalignment with the Constitution and the absence of a regional development policy (Ewaso Ngiro North Development Authority, 2023) |

of Kenya, 2025b), the National Environment Policy, 2013 (Government of Kenya, 2013a) and the Environmental Management and Coordination Act, 1999 (Government of Kenya, 1999). The frameworks create institutions with specified functions, including the State Department for Environment and Climate Change, the National Environment Management Authority (NEMA), the National Environment Trust Fund (NETFUND), the National Environmental Complaints Committee (NECC), the National Environment Tribunal (NET), and the County Environment Committee as summarized in Table 4.

Forest governance in Kenya

The forestry sector is characterized by policies, legislations, regulations and institutions that include the

Constitution of Kenya, 2010 (Government of Kenya, 2010b), the Executive Order No. 1 of 2023 (Government of Kenya, 2025b), the Forest Policy, 2023, (Government of Kenya, 2023b), the Forest Conservation and Management Act, 2016 (Government of Kenya, 2016e) and the National Landscape and Ecosystem Restoration Strategy 2023–2032 (Government of Kenya, 2023c). The frameworks create institutions with specified functions including the State Department for Forestry, the Kenya Forest Service (KFS), the Kenya Forestry Research Institute (KEFRI), the Kenya Forestry college (KFC), the Forest Conservation and Management Trust Fund, the Forest Conservation Committee, Community Forest Associations, and specified roles to the County Governments as summarized in Table 5.

TABLE 4 Detailed description of Policies and legislative frameworks governing environment in Kenya.

| Environment policies, laws and institutions in Kenya | Role of environment policies, laws and institutions in rangeland management |
|---|---|
| 1. The Constitution of Kenya, 2010 | Guarantees the right to a clean environment, mandates sustainable resource use, biodiversity protection, public participation, and maintaining a minimum 10% tree cover and ensuring benefit sharing. Counties are mandated to implement policies on soil, water, and forestry (Government of Kenya, 2010b) |
| 2. State Department for Environment and Climate Change | Responsible for national environment policy and management, and climate change policy and actions, including ASALs |
| 3. National Environment Policy, 2013 | Promotes sustainable management of ecosystems including ASALs, promotes development of management plans, tree planting, biodiversity conservation, invasive species control, soil and water protection, livestock policies providing mobility, water harvesting, and participatory conservation involving communities and counties (Government of Kenya, 2013a) |
| 4. Environmental Management and Coordination Act, 1999 Revised 2015 | EMCA is Kenya's framework and main environmental law. It establishes key institutions charged with diverse mandates including National Environment Management Authority (NEMA), National Environment Trust Fund (NETFUND), National Environmental Complaints Committee (NECC) and National Environment Tribunal (NET) and County Environment Committees and empowers counties to enact environmental laws and action plans (Government of Kenya, 1999). Whereas the Act provides the general provisions for environmental management, it has no specific provisions on rangelands, food security or adaptive capacity |
| 5. National Environment Management Authority (NEMA) | NEMA implements environmental policies and regulations, conserves ecosystems, controls pollution, manages biodiversity, and leads environmental planning including the National Environment Action Plan (Government of Kenya, 1999) |
| 6. National Environment Trust Fund (NETFUND) | Conducts environmental research and mobilizes resources to support conservation and management |
| 7. National Environmental Complaints Committee (NECC) | NECC is mandated to investigate environmental complaints and undertake public interest litigation on behalf of the citizens in environmental matters |
| 8. National Environment Tribunal (NET) | Investigates environmental complaints and undertakes public interest litigation on behalf of citizens |
| 9. County Environment Committee | Leads county-level environmental planning, develops County Environmental Action Plans every 5 years, and ensures local stakeholder involvement in environmental governance. It is chaired by the County Executive for Environment and includes representatives from government agencies, farmers, pastoralists, businesses, and local environmental organizations |

Wildlife governance in Kenya

The wildlife sector is characterized by policies, legislations, regulations and institutions that include the Constitution of Kenya, 2010 (Government of Kenya, 2010b), the Executive Order No. 1 of 2023 (Government of Kenya, 2025b) the Wildlife Policy, 2020 (Government of Kenya, 2020b), the Wildlife Conservation and Management Act, 2013 (Government of Kenya, 2013b), and the National Wildlife Strategy 2030 (Government of Kenya, 2018). The frameworks create institutions with specified functions, including the State Department for Wildlife, the Kenya Wildlife Service (KWS), the Wildlife Endowment Fund, Conservancies, and Community Wildlife Association, as summarized in Table 6.

Water governance in Kenya

The water sector is characterized by policies, legislations, regulations and institutions that include the Constitution of Kenya, 2010 (Government of Kenya, 2010b), the Executive Order No. 1 of 2023 (Government of Kenya, 2025b), the National Water Policy, 2021 (Government of Kenya, 2021a), the Water Act, 2016 (Government of Kenya, 2016g), and the National Water Resources Strategy 2020–2025 (Government of Kenya, 2021c). The frameworks create institutions with specified functions including the State

Department of Water, Water Resources Authority (WRA), Water Services Regulatory Board (WASREB), National Water Harvesting and Storage Authority (NWHSA), Water Works Development Agencies, Water Sector Trust Fund (WSTF) and the Water Tribunal at the national level, the Water Service Providers and the Basin Water Resources Committee at the county level, and the Water Resource Users Associations (WRUAs) at the community level, as summarized in Table 7.

Climate change governance in Kenya

Kenya contributes minimally to global emissions but faces severe climate impacts like rising temperatures, erratic rainfall, droughts, and floods, especially in ASALs where communities are highly vulnerable. These changes threaten key sectors such as agriculture, water, forestry, and tourism. To address the effect of climate change, Kenya has developed a robust policy, legislative, regulatory and institutional framework including being a party to the United Nations Framework Convention on Climate Change (UNFCCC). Nationally, it has introduced various frameworks including; the National Climate Change Framework Policy, 2016 (Government of Kenya, 2016b), the National Climate Change Response Strategy, 2010, (Government of Kenya, 2010a), the Climate Change Act, 2016 (Government of Kenya, 2016c), the

TABLE 5 Detailed description of Policies and legislative frameworks governing forestry in Kenya.

| Forest policies, laws, and institutions in Kenya | Role of forest policies, laws, and institutions in rangeland management |
|--|---|
| 1. The Constitution of Kenya, 2010 | Promotes forest conservation, mandates sustainable resource use, biodiversity protection, and public participation in conservation. Requires 10% tree cover and assigns counties' forestry policy implementation (Government of Kenya, 2010b) |
| 2. State Department for Forestry | Responsible for forest policy, management, and conservation, and supports climate change policies and actions |
| 3. Forest Policy, 2023 | Recognizes the country's diverse and rich forest types of rainforests, savannah woodlands, dryland forest, coastal forests and afro-montane forests, and their ecological and economic value. It addresses deforestation, land degradation, and climate change by promoting improved governance and participatory forest management, including strengthening Community Forest Associations (CFAs). With ASALs comprising 80% of Kenya and holding 45% of forest cover, the policy prioritizes sustainable dryland forest management, restoration, and climate-resilient practice (Government of Kenya, 2023b) |
| 4. The Forest Conservation and Management act, 2016 | Provides a legal framework for sustainable forest management and classifies forest types as public, private, or community forests, community forests being on registered community land or land held in trust by county governments. Establishes Kenya Forest Service, Kenya Forestry College, and Forest Conservation Fund, and recognizes the Kenya Forest Research Institute. Institutionalizes community participation through registered Community Forest Associations (CFAs) through Forest Management Agreements (Government of Kenya, 2016e) |
| 5. National Landscape and Ecosystem Restoration Strategy 2023–2032 | Targets restoration of 10.6M ha by 2032 by growing 15 billion trees in seven ecosystems, including 5.1M ha with 7.8 billion trees (49.38% of the total) in drylands. Promotes tree planting, sustainable land use, and rangeland protection. (Government of Kenya, 2023c) |
| 6. Kenya Forest Service (KFS) | Manages and protects public forests and implements forest policy and community partnerships (Government of Kenya, 2016e) |
| 7. Kenya Forestry Research Institute (KEFRI) | Conducts forestry research and supports innovation in forest restoration and management |
| 8. Kenya Forestry College (KFC) | Provides training and education in forestry for capacity building in forest and rangeland conservation |
| 9. Forest conservation and Management Trust Fund | Finances forest-related initiatives, including community forestry, reforestation, and ecosystem services |
| 10. County Governments | Implement national forest policies and support community forest management and dryland conservation |
| 11. Forest Conservation Committee | Advise KFS and counties on local forest conservation and include three community representatives, the County Executive Committee Member for Environment, and the local Forester |
| 12. Community Forest Associations | Enable community participation through agreements with KFS for forest conservation, management, implementation of forest programs, and user rights (Government of Kenya, 2016e) |

Climate Change (Carbon Markets) Regulations, 2024 (Government of Kenya, 2024b), the National Climate Change Action Plan (NCCAP) III, 2023–2027 (Government of Kenya, 2023a), Kenya National Adaptation Plan, 2015–2030 (Government of Kenya, 2016a), Kenya's Third National Greenhouse Gas Inventory Document, 1990–2022 (Government of Kenya, 2024a), Kenya's updated Nationally Determined Contribution, 2020–2030 (Government of Kenya, 2020a), and the Executive Order No. 1 of 2023 (Government of Kenya, 2025b) as summarized in Table 8.

Agricultural and food security governance in Kenya

The agriculture and food security sector is characterized by policies, legislations regulations and institutions that include; the Constitution of Kenya, 2010, the Executive Order No. 1 of 2023 (Government of Kenya, 2025b), the Agricultural Sector Transformation and Growth Strategy (ASTGS), 2019–2029 (Government of Kenya, 2019), the Agricultural Policy, 2021 (Government of Kenya, 2021b), the National Livestock Policy,

2020 (Government of Kenya, 2020c), the National Food and Nutrition Security Policy, 2023 (Government of Kenya, 2023e) and the National Food and Nutrition Security Policy Implementation Framework (FNISP-IF), 2017–2022 (Government of Kenya, 2017b). The frameworks establish institutions with specified functions, including the State Department for Agriculture and State Department for Livestock, as summarized in Table 9.

Synthesis of the policy, legislative, regulatory and institutional frameworks governing rangelands in Kenya

Number and distribution of policy, legislative and institutional frameworks governing rangelands

The review established that in total, besides the Constitution of Kenya, the Kenya Vision 2030, and the Executive Order No.

TABLE 6 Detailed description of policies and legislative frameworks governing wildlife in Kenya.

| Wildlife conservation policies, laws, and institutions in Kenya | Role of wildlife policies, laws and institutions in rangeland management |
|---|--|
| 1. The Constitution of Kenya, 2010 | Provides a foundation for wildlife conservation by guaranteeing environmental rights, mandating sustainable management of natural resources, requiring public participation and benefit-sharing and assigns responsibilities to the national and county governments |
| 2. Wildlife Policy, 2020 | Provides a framework for sustainable wildlife conservation on rangelands through inclusive governance, equitable benefit-sharing, and community-based approaches. Focuses on managing protected areas, conserving wildlife on community and private lands, addressing human-wildlife conflict, climate adaptation, and enhancing security and research |
| 3. The Wildlife Conservation and Management Act, 2013 | Legal framework for the protection, conservation, sustainable use, and management of wildlife in public, community, and private land. It mandates a National Wildlife Strategy every 5 years and creates institutions such as Kenya Wildlife Service and County Wildlife Conservation and Compensation Committees. It grants wildlife user rights for communities and landowners to form conservancies and use wildlife sustainably. It also provides for ecosystem management plans, conflict mitigation measures, and the Wildlife Endowment Fund to support conservation and community programs |
| 4. State Department for Wildlife | Develops wildlife policies, oversees national parks and reserves, and leads biodiversity protection including in rangeland areas |
| 5. National Wildlife Strategy 2030 | Guides long-term wildlife conservation goals with pillars including resilient ecosystems, inclusive participation, sustainable use, and integrated planning. Supports restoration of priority parks and ecosystems, conflict mitigation, and development of a national conservation master plan |
| 6. Kenya Wildlife Service (KWS) | Responsible for managing national parks, wildlife conservation areas, and enforcement, and developing benefit-sharing mechanisms with communities |
| 7. Wildlife Endowment Fund | Provides financial support for wildlife conservation and community-based programs |
| 8. Conservancies | Established by the Act, providing for set up of Conservancies on community or private land to support wildlife conservation |
| 9. Community Wildlife Association | Facilitate cooperative management, local participation, and conflict resolution in areas where people and wildlife coexist |

1 of 2023, there are 10 policies, 9 legislations, 14 regulations, strategies and plans, 30 national institutions, and 9 community-based institutions, each providing for different aspects of rangeland management, as summarized in Table 10 and Figure 2.

The ten (10) Policies include; the Recommended National Land Policy, 2023 (Government of Kenya, 2023d) dealing with land, the National Policy for the Sustainable Development of Arid and Semi-Arid Lands, 2012 (Government of Kenya, 2012a) dealing with rangelands and Arid and Semi-Arid Lands (ASALs), the National Environment Policy, 2013 (Government of Kenya, 2013a) addressing the environment, the Forest Policy, 2023 (Government of Kenya, 2023b) covering forests, the National Water Policy, 2021 (Government of Kenya, 2021a) covering water, the Wildlife Policy, 2020 (Government of Kenya, 2020b) covering wildlife, the Agricultural Policy, 2021 (Government of Kenya, 2021b) covering agriculture, the National Livestock Policy, 2020 (Government of Kenya, 2020c) covering livestock, the National Food and Nutrition Security Policy (Government of Kenya, 2023e) covering food security, and the National Climate Change Framework Policy (Government of Kenya, 2016b) dealing with climate change issues.

The nine (9) legislations include; the Land Act, 2012 (Government of Kenya, 2012b) and the Community Land Act, 2016 (Government of Kenya, 2016d) dealing with land; National Drought and Management Act, 2016 (Government of Kenya, 2016f) dealing with drought and Ewaso Ng'iro North River Basin Development Authority Act, 1989 Revised 2012 (Government of Kenya, 2025c) dealing with ASALs regional development; the Environmental Management and Coordination Act, 1999 Revised 2015 (Government of Kenya, 1999) dealing with environmental issues; the Forest Conservation and Management Act, 2016 (Government of Kenya, 2016e) covering forests; the Water Act, 2016 (Government of Kenya, 2016g) for management of water resources, the Wildlife Conservation and Management Act, 2013 (Government of Kenya, 2013b) governing wildlife, and the Climate Change Act, 2016 Revised 2023 (Government of Kenya, 2016c) providing for climate change aspects. The Food Security Bill, 2017 which has remained without enactment provide for food security.

Besides the eight (8) Regulations and Plans, the six (6) Strategies include; the Vision 2030 Development Strategy for Northern Kenya and other Arid Lands, 2012 for ASALs (Government of Kenya, 2012c), the National Landscape and Ecosystem Restoration Strategy, 2023–2032 (Government of

TABLE 7 Detailed description of Policies and legislative frameworks governing water in Kenya.

| Water policies, laws, and institutions in Kenya | Role of water policies, laws, and institutions in rangeland management |
|--|--|
| 1. The Constitution of Kenya, 2010 | It grants the right to clean water and mandates counties to manage water and sanitation services at the county level and implement national policies on water conservation in the fourth schedule |
| 2. State Department for Water | Develops policies and oversees conservation of water catchment areas |
| 3. National Water Policy, 2021 | Promotes sustainable management of all water resources, addressing challenges like declining <i>per capita</i> freshwater, overreliance on surface water, pollution, catchment degradation, and climate change. It prioritizes resource mapping, water quality, harvesting, storage, and climate-resilient supply systems. Implementation involves national and county governments, the private sector, civil society, and communities, with a focus on clarifying county roles and strengthening WRUAs and basin-level coordination, though gaps in community engagement remain (Government of Kenya, 2021a) |
| 4. The Water Act, 2016 | Establishes institutions at the national, county, and community levels including: Water Resources Authority (WRA), the National Water Harvesting and Storage Authority (NWHSA), Water Works Development Agencies (WWDA), Water Services Regulatory Board (WASREB), Water Service Provider (WSPs) by County Governments, Water Sector Trust Fund (WSTF), Water Tribunal, a Basin Water Resources Committee, and Water Resource Users Associations. Mandates the development of a national water resource strategy and a water services strategy every 5 years to guide conservation and management (Government of Kenya, 2016g) |
| 5. The National Water Resources Strategy (2020–2025) | The strategy promotes sustainable water use and conservation in water-scarce Kenya, highlighting water's role in poverty reduction and development. It addresses scarcity, pollution, degradation, and climate change, prioritizing rehabilitation, improved access, efficiency, and governance through WRUAs and sub-catchment plans. It outlines activities involving governments, water agencies, and non-state actors, and is implemented through an Intergovernmental Forum (Government of Kenya, 2021c) |
| 6. Water Resources Authority (WRA) | Regulates water resource use and protects critical water catchments |
| 7. Water Services Regulatory Board | Sets water service standards, issues licenses, and safeguards consumer rights |
| 8. National Water Harvesting and Storage Authority | Develops and manages public water works for storage and flood control |
| 9. Water Works Development Agencies | Builds and manages national public water infrastructure |
| 10. Water Sector Trust Fund | Finances water service development in marginalized and underserved areas |
| 11. Water Service Providers by County Governments | Established by County Governments to provide water services and develop assets for water provision |
| 12. The Water Tribunal | Resolves water-related disputes and appeals |
| 13. Basin Water Resources Committee | Manage designated basin areas, advise on water protection, permits, and allocation. Appointed by WRA, they support WRUAs and include 4–7 local representatives from government, communities, and stakeholders |
| 14. Water Resource Users Associations (WRUAs) | Community-based associations at the basin level that promote participatory water management, resolve conflicts, and represent community water interests |

Kenya, 2023c) for landscapes and ecosystems, the National Water Resources Strategy, 2020–2025 (Government of Kenya, 2021c) for water, the National Wildlife Strategy, 2030 (Government of Kenya, 2018) for wildlife, the Agricultural Sector Transformation and Growth Strategy (ASTGS), 2019–2029 (Government of Kenya, 2019) for crops, and the National Food and Nutrition Security Policy Implementation Framework 2017–2022 (FNSP-IF) (Government of Kenya, 2023e) for food security.

Multiplicity of rangeland management institutions involved in rangeland governance in Kenya

The nine (9) legislations establish 30 institutions at the national level and 9 at the community level tasked with rangeland resource management as shown in Table 11. The national institutions excludes six (6) relevant ministries and

include; line State Departments; the National Land Commission for land; for environment, National Environment Management Authority (NEMA), National Environment Trust Fund (NETFUND), National Environmental Complaints Committee (NECC) and National Environment Tribunal (NET) (Government of Kenya, 1999); for water, Water Resources Authority (WRA), Water Services Regulatory Board (WASREB), National Water Harvesting and Storage Authority (NWHSA), Water Works Development Agencies, Water Sector Trust Fund (WSTF) and the Water Tribunal; for forests, Kenya Forest Service (KFS), Kenya Forestry Research Institute (KEFRI) and Kenya Forestry college (KFC) (Government of Kenya, 2016e); for wildlife, Kenya Wildlife Service (KWS); for climate change, Climate Change Directorate; National Drought Management Authority (NDMA) for drought management, and Ewaso Ng'iro North Development Authority for regional development.

TABLE 8 Detailed description of policies and legislative frameworks governing climate change in Kenya.

| Climate change policies, laws, and institutions in Kenya | Role of climate change policies, laws and institutions in rangeland management |
|---|--|
| 1. National Climate Change Response Strategy, 2010 | Kenya's first framework to address climate risks, aiming to build a climate-resilient nation by integrating climate action into all planning. It focused on both adaptation and mitigation, with priority sectors including water, forestry, agriculture, tourism, health, and infrastructure. It also emphasized governance, public awareness, vulnerability monitoring, and the need for strong policies, legislation, and a dedicated Climate Change Secretariat (Government of Kenya, 2010a) |
| 2. National Climate Change Framework Policy, 2016 | Acknowledges the country's vulnerability to climate change due to its reliance on natural resources and aims to build resilience, enhance adaptive capacity and promote low-carbon, sustainable development in response to climate risks of droughts and floods, especially in arid and semi-arid regions. It targets vulnerable sectors including agriculture, water, energy, and tourism, by promoting sustainable resource use, improved land management, and emission reductions through practices like agroforestry. The policy commits to integrating climate change into all levels of planning, supporting research and public awareness, creating a centralized climate information hub, mobilizing climate finance, and ensuring inclusive implementation through five-year National Climate Change Action Plans |
| 3. State Department for Environment and Climate Change | Leads national climate change policy and action |
| 4. The Climate Change Act, 2016 | Provides a legal framework for Kenya's climate response, promoting low-carbon, climate-resilient development. It mandates integration of climate change into all government sectors, emphasizes public participation, and establishes key institutions including the Climate Change Council chaired by the President, the Climate Change Directorate and the Climate Change Fund. The Act requires development of a five-year National Climate Change Action Plan (NCCAP) and alignment of county plans with national goals. The 2023 Amendment introduces a carbon market framework, including a national carbon registry, emissions tracking systems, and mandatory impact assessments. It mandates Community Development Agreements, allocating 40% of earnings to communities from land-based and 25% from non-land-based carbon projects |
| 5. Climate Change (Carbon Markets) Regulations | Enacted under the Climate Change Act, it establishes a framework for voluntary and compliance carbon markets in Kenya. It defines the role of the Designated National Authority (DNA), which oversees carbon projects and manages the National Carbon Registry. The regulations require Community Development Agreements (CDAs) for projects on public or community land and mandate community involvement in planning and implementation. It also outlines the responsibilities of project proponents and set procedures to ensure transparency, inclusivity, and accountability in carbon market operations |
| 6. The National Climate Change Action Plan (NCCAP) III 2023–2027 | The National Climate Change Action Plan (NCCAP) 2023–2027 is Kenya's third five-year action plan under the Climate Change Act, guiding the country toward low-carbon, climate-resilient development. It prioritizes adaptation while targeting a 32% GHG emission reduction by 2030, aligning with national and international commitments like the NDC and National Adaptation Plan and the Long-Term Low Emission Development Strategy (2022–2050). The plan promotes inclusive stakeholder participation and targets eight key sectors, focusing on resilience-building through climate finance, carbon markets, and interventions like climate-smart agriculture, forest restoration, and flood control. In forestry, wildlife, and tourism, it prioritizes deforestation reduction, rangeland restoration, invasive species control, and habitat protection, engaging CFAs and conservancies. For livestock, it supports climate smart agriculture practices, vaccination, market access, rangeland reseeded, feed banks, and aims to expand livestock insurance coverage (Government of Kenya, 2023a) |
| 7. Kenya national adaptation plan 2015–2030 | Kenya's National Adaptation Plan (NAP) 2015–2030 adopted in 2016 is the country's first comprehensive strategy focused on adapting to climate change. It provides a framework to strengthen climate resilience and reduce vulnerability across 20 key sectors, and promotes integration of adaptation into national and county planning, disaster risk reduction, and alignment with mitigation efforts. Key actions include climate-smart agriculture, ecosystem rehabilitation, early warning systems, livestock resilience, and land tenure security, with a focus on vulnerable groups. The NAP emphasizes county-level implementation, capacity building, and mobilization of adaptation finance (Government of Kenya, 2016a) |
| 8. Kenya's Third National Greenhouse Gas Inventory Document 1990–2022 | Kenya's 2024 Greenhouse Gas (GHG) Inventory, details emissions by sector to meet Paris Agreement requirements and track progress on the 2020 Nationally Determined Contribution (NDC). It shows carbon dioxide (59%) and methane (37%) as the main GHGs, with agriculture contributing 32% of total emissions in 2022, a 31% increase from 1990. Enteric fermentation from livestock is the largest methane source, accounting for 87% of agricultural methane emissions. The inventory notes Kenya's 2022 livestock included 15.8 million indigenous beef cattle, 5.1 million dairy cattle, 30.6 million goats, and other owned species include sheep, camels, pigs, poultry, and donkeys. Emissions are influenced by livestock type, diet, and physiology, with cattle being the highest emitters due to methane-producing digestion (Government of Kenya, 2024a) |

(Continued on following page)

TABLE 8 (Continued) Detailed description of policies and legislative frameworks governing climate change in Kenya.

| Climate change policies, laws, and institutions in Kenya | Role of climate change policies, laws and institutions in rangeland management |
|---|---|
| 9. Kenya's Updated Nationally Determined Contribution 2020–2030 | Kenya's 2020 NDC commits to reducing GHG emissions by 32% by 2030 from a business-as-usual level of 143 MtCO ₂ e, at an estimated cost of USD 62 billion. It prioritizes adaptation while promoting low-carbon development. Agriculture is the largest emissions source, contributing about 40%, mainly from enteric fermentation, manure, and fertilizers. Guided by the NCCAP, NAP, and the Mitigation and Adaptation Technical Analysis Reports (MTAR and ATAR), the NDC focuses on renewable energy, 10% tree cover, climate-smart agriculture, and land restoration, for mitigation targets. It emphasizes food security, enhancing adaptive capacity, climate resilience, and ecosystem rehabilitation, with a strong focus on community empowerment and multi-level governance. The NDC positions Kenya on a path towards low-carbon, climate-resilient development, balancing environmental sustainability with socioeconomic needs (Government of Kenya, 2020a) |

Further, the nine (9) institutions at the community level include; the Community Assemblies and Community Land Management Committee for land; the County Environment Committees for environment; Water Resource Users Associations (WRUAs) for water; the Forest Conservation Committees and Community Forest Association (CFAs) for forests; Community Wildlife Associations and Community Conservancies for wildlife and Ward Climate Change Planning Committees (WCCPCs) for climate change. These formal community-based rangeland management institutions add on to the traditional institutions historically used by communities to manage their rangelands.

Areas of conflict and cooperation across rangeland policies, laws and institutional frameworks

The policies, laws and institutional frameworks portend areas of cooperation relating to commonality of their focus and guiding principles. However, there exist areas of disharmony in the various resource-specific rangeland policies, legislations, and national and community institutions, occasioned by the multiplicity of policy, legislative and institutional frameworks, and the associated individual management plans deployed by each, as shown in Table 12.

Areas of cooperation relating to commonality in rangeland policies, laws and institutional frameworks

The existing rangeland policies, legislations, strategies and the institutions portend a degree of cooperation as they all address aspects of land-based natural resources. The ten (10) Policies and nine (9) legislations and strategies all address various land-based resources and their conservation and include; the Recommended National Land Policy, 2023 and the land Act 2012 and the Community Land Act 2016 and respective institutions providing for the management of land resources; the National Policy for the Sustainable Development of Arid and Semi-Arid Lands, 2012 and the Vision 2030 Development Strategy for Northern Kenya and other Arid Lands, 2012 dealing with ASALs; the National Environment Policy, 2013 and the Environmental Management and Coordination

Act 1999 and respective institutions addressing the environment; the Forest Policy, 2023 and the National Landscape and Ecosystem Restoration Strategy 2023–2032 and respective institutions covering forests and environment; the National Water Policy, 2021 and the National Water Resources Strategy (2020–2025) and the Water Act 2016 and respective institutions providing for management of water resources; the Wildlife Policy, 2020 and the National Wildlife Strategy 2030 and the Wildlife Conservation and Management Act, 2013 and respective institutions providing for wildlife; the Agricultural Policy and the Agricultural Sector Transformation and Growth Strategy, 2019–2029 and respective institutions providing for crops; the National Livestock Policy providing for livestock; the National Food and Nutrition Security Policy and the National Food and Nutrition Security Policy Implementation Framework 2017–2022 focusing on food security; and the National Climate Change Framework Policy and the Climate Change Act, 2016 and the National Drought and Management Act 2016 and respective institutions provide for climate change adaptation and mitigation, with a focus on ASALs. Albeit sectoral, the legislation provide for the management of various land based natural resources, and contribute to the conservation and management of rangelands.

Areas of conflict and cooperation attributed to multiplicity of institutions

Besides the thirty (30) national and nine (9) community institutions created by legislations shown in Table 11, the ten (10) policies, and strategies and plans establish structures and frameworks to be used in their implementation. Some policies recommend the use of existing institutions, while some propose the formation of entirely new structures for their implementation. The following policies and strategies set up new frameworks for use in their implementation; the Recommended National Land Policy, 2023 sets up the National Land Policy Implementation Unit; the Vision 2030 Development Strategy for Northern Kenya and other Arid Lands, 2012 sets up the ASAL Cabinet Sub-Committee chaired by the Presidency, other Committees for coordination, and the ASAL Transformation Secretariat; the National

TABLE 9 Detailed description of Policies and legislative frameworks governing agriculture and food security in Kenya.

| Agricultural policies, laws, and institutions in Kenya | Role of agricultural policies, laws, and institutions in rangeland management |
|---|---|
| 1. Agricultural Sector Transformation and Growth Strategy (ASTGS), 2019–2029 | Its implementation involves coordinated governance, including a Steering Council led by the Agriculture Cabinet Secretary, an Advisory Subcommittee of non-state actors, the Ministry of Agriculture, other sector ministries, and county governments. The Agricultural Transformation Office acts as the national secretariat to ensure effective coordination and performance monitoring (Government of Kenya, 2019) |
| 2. Agricultural Policy, 2021 | Kenya's 2021 Agricultural Policy is the first comprehensive strategy for the sector, aiming to transform agriculture into a commercially viable and sustainable driver of food and nutrition security. It emphasizes the role of livestock in ASALs, promotes productivity, diversification, agribusiness, and climate resilience, while prioritizing gender and youth inclusion. Institutional arrangements involve the Ministry of Agriculture leading implementation, county governments executing strategies locally, and an intergovernmental secretariat ensuring coordination. Partners, private sector, regulators, farmer groups, non-state actors, and international agencies support implementation, capacity-building, and resource mobilization (Government of Kenya, 2021b) |
| 3. State Department for Agriculture | Develops national agricultural policy, national food policy, crop regulation, and resource management |
| 4. State Department for Livestock | Responsible for livestock policy, development of the livestock industry, livestock insurance, and range development and management |
| 5. The National Livestock Policy, 2020 | It aligns with Kenya's Constitution and Agricultural Policy, aiming to modernize and commercialize livestock production, particularly in ASALs, which host over 60% of the national herd. It seeks to enhance food security, livelihoods, and environmental sustainability by improving rangeland management, animal health, research, extension services, and value addition. The policy recognizes intensive, semi-intensive, and extensive production systems, with extensive systems dominant among rural communities. Key priorities include combating overgrazing, land degradation, and climate change, supporting drought recovery, promoting sustainable land use, and expanding affordable livestock insurance with private sector support. It also emphasizes climate adaptation through improved grazing, commercial fodder production, feed reserves, and public awareness. Implementation is led by the national Ministry in charge of livestock, with county governments handling local delivery. However, it does not address greenhouse gas emissions from the livestock sector (Government of Kenya, 2020c) |
| 6. The National Food and Nutrition Security Policy | The 2011 Food and Nutrition Security Policy provides a framework addressing the four dimensions of food security: availability, accessibility, stability, and nutritional adequacy, and to ensure all Kenyans have access to safe, nutritious food and water. It targets chronic food insecurity, malnutrition, and environmental challenges, especially in ASALs. The policy promotes good nutrition, increases food quantity and quality, sustainable, climate-resilient agriculture, food safety, and support for vulnerable groups. It also includes emergency responses to climate shocks, including fodder reserves, re-stocking, and climate adaptation strategies to protect food and nutrition security. The policy ensures coordinated implementation through national and county food security committees, supported by stakeholder technical teams for cross-sector collaboration and monitoring (Government of Kenya, 2023e) |
| 7. The National Food and Nutrition Security Policy Implementation Framework 2017–2022 (FNSP-IF) | Operationalizes the 2011 Food and Nutrition Security Policy to ensure coordinated, practical action. It aims to guarantee all Kenyans access to safe, adequate, and nutritious food by addressing availability, accessibility, stability, and nutrition. The framework links food security to poverty reduction and outlines interventions in production, access, food safety, nutrition education, and crisis response. It sets up a multi-sectoral structure led by a high-level Council under the Presidency, with national and county governments, steering committees, secretariats, and advisory groups coordinating implementation and resource mobilization (Government of Kenya, 2017a) |
| 8. Food Security Bill | Introduced in 2014 and 2017, the bill sought to enforce the constitutional right to adequate food and aimed to support food production, ensure access to nutritious food for all, and guide national food policies. However, since it has not been enacted, Kenya still lacks a legal framework to implement this constitutional right |

Landscape and Ecosystem Restoration Strategy 2023–2032 introduces the National Governance Committee and committees at the ministerial, county, subcounty and ward level with a Secretariat; the National Water Policy,

2021 and the National Water Resources Strategy (2020–2025) establishes the policy implementation unit within the Ministry responsible for water; the Agricultural Sector Transformation and Growth Strategy, 2019–2029 establishes a Steering Council;

TABLE 10 Summary of the number of national policy and legislative frameworks governing rangelands in Kenya.

| Rangeland resource | Policies | Laws/ Acts | Regulations strategies and plans | National institutions | Community based institutions |
|-----------------------------------|----------|------------|----------------------------------|-------------------------------------|------------------------------|
| 1. Land | 1 | 2 | 1 | 2 | 2 |
| 2. Rangeland & drought Management | 1 | 2 | 1 | 5 | 0 |
| 3. Environment | 1 | 1 | 1 | 5 | 1 |
| 4. Forest | 1 | 1 | 1 | 5 | 2 |
| 5. Water | 1 | 1 | 1 | 9 | 1 |
| 6. Wildlife | 1 | 1 | 1 | 3 | 2 |
| 7. Agriculture-Crops | 1 | 0 | 1 | 1 | 0 |
| 8. Food Security | 1 | 0 | 1 | 0 | 0 |
| 9. Agriculture-Livestock | 1 | 0 | | 1-Accounted in rangeland management | 0 |
| 10. Climate Change | 1 | 1 | 6 | 1-Accounted in rangeland management | 1 |
| Total | 10 | 9 | 14 | 30 | 9 |

the National Food and Nutrition Security Policy establishes steering and technical committees and secretariats; and the National Food and Nutrition Security Policy Implementation Framework 2017–2022 introduces the National Food and Nutrition Security Council chaired by the Presidency. All the thirty (30) national, nine (9) community institutions alongside the multiple implementation structures created by policies and plans, manage aspects of rangelands and operate independent of each other as there exist no coordination framework to align their activities in the management of rangelands. Further, the formal institutions created by the legislations at the community level receive no budgetary allocation and relies on communities to offer voluntary conservation efforts, with no incentives resulting in marginal conservation benefits.

On the contrary, some of the policies utilize the existing institutions, mostly the ministries and state departments for policy implementation, presenting opportunities for cooperation. The policies utilizing existing institutions for their implementation include; the National Environment Policy, 2013 and the National Climate Change Framework Policy, 2016 providing for the State Department of Environment and Climate Change; the Forest Policy, 2023 providing for the Cabinet Secretary responsible for forestry; the Wildlife Policy, 2020 providing for the Cabinet Secretary responsible for wildlife; the National Wildlife Strategy, 2030 providing for the State Department for wildlife; the Agricultural Policy, 2021 providing for the Ministry responsible for Agriculture; the National Livestock Policy, 2020 providing for the ministry in charge of livestock, and the National Policy for the Sustainable Development of Arid and

Semi-Arid Lands, 2012 utilizing the structures established by the Vision 2030 Development Strategy for Northern Kenya and other Arid Lands, 2012. The utilization of existing institutions and frameworks to implement policy, avoids creation of new institutions and associated inefficiencies, creating synergies in the management of rangelands, and portends areas of policy cooperation.

Areas of conflict and cooperation attributed to multiplicity of rangeland management plans at national and community level

Each of the thirty (30) institutions at the national level comprising state departments and its' Agencies develop strategic plans detailing their planned and budgeted activities with diverse provisions on rangeland management. Additional to these national institutional strategic plans, the policies and strategies develop their individual management plans used for management of the rangeland resources that include; land use plans by the Recommended National Land Policy, 2023; the Ecosystem specific management plan including Integrated Land Use Master (Development) Plan for the ASALs under the National Environment Policy, 2013; the Forest and Landscape Restoration Implementation Plan 2023–2027 by the Forest Policy, 2023 and the National Landscape and Ecosystem Restoration Strategy 2023–2032; the National Water Master Plan by the National Water Resources Strategy (2020–2025); the Ecosystem Plans and Conservation Master Plan by the Wildlife Policy 2020 and National Wildlife Strategy 2030; the National Climate change Action Plan by the National Climate Change Framework

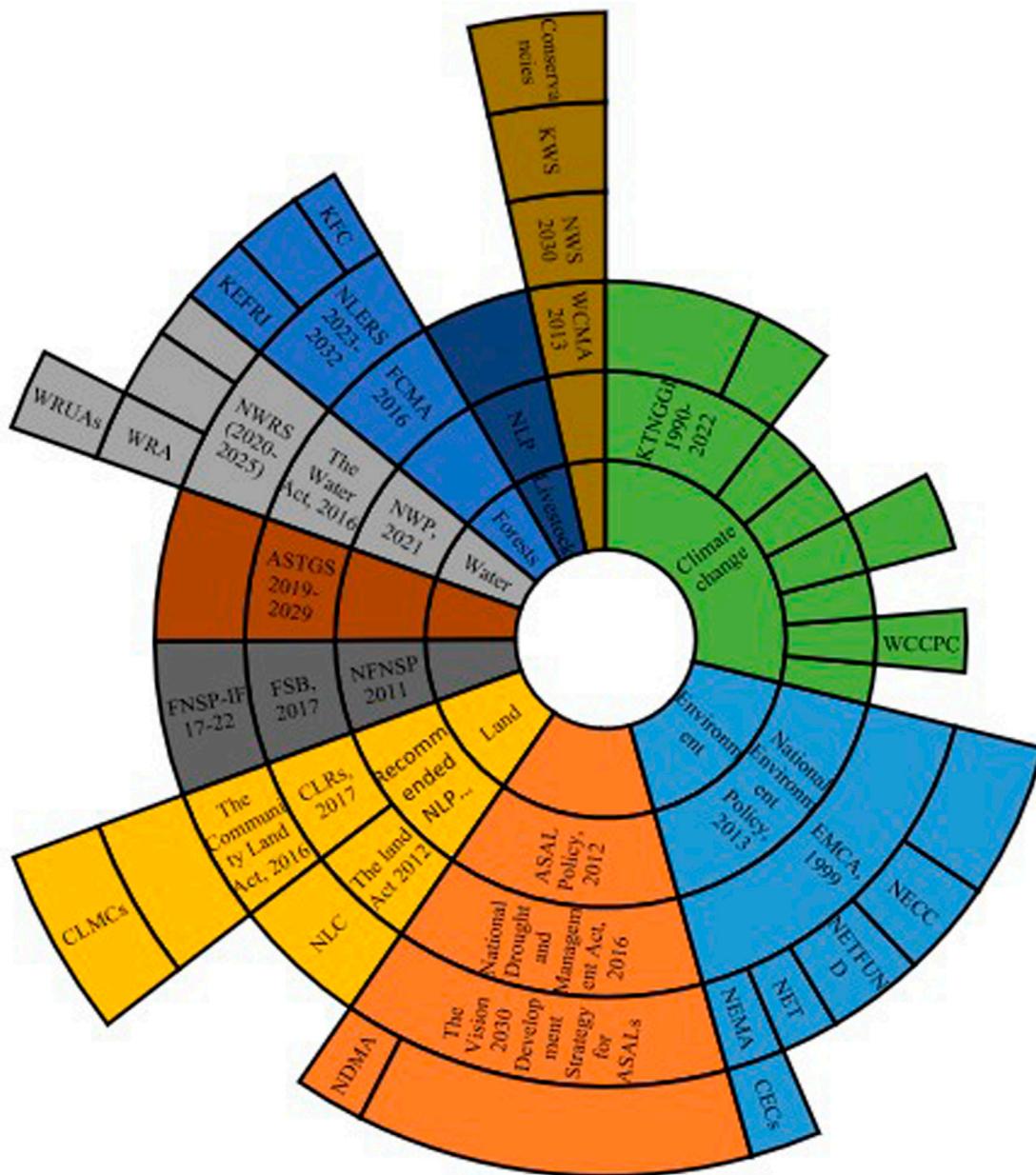


FIGURE 2
Summary of resource-specific policy and legislative framework governing rangelands at the national level in Kenya.

Policy, 2026; Annual implementation plans by the Agricultural Policy, 2021; and the Agriculture Sector Development Plans by the Agricultural Sector Transformation and Growth Strategy, 2019–2029.

Further, more management plans providing for various aspects of rangelands are developed by each community-based institution created by the legislations. The management plans include; the community land use plans by the Community Land Management Committees involved in community land

management; the County Environmental Action Plans by County Environment Committees for environmental management; Participatory Forest Management Plans by the Community Forest Associations concerned with forest conservation; Catchment and Sub-Catchment Plans by Water Resource Users Associations to address water management; Grazing Management Plans by the Conservancies for wildlife, environment, water and pasture management; and the County and Ward Climate Change Action Plans by the Ward Climate

TABLE 11 National and community Institutions involved in rangeland management in Kenya.

| Rangeland resource | Laws/Acts | National institutions | Ministry responsible | Community based institutions |
|-----------------------------------|---|---|---|---|
| 1. Land | <ul style="list-style-type: none"> The land Act 2012 The Community Land Act, 2016 (2) | <ul style="list-style-type: none"> State Department for Lands and Physical planning National Land Commission (2) | Ministry of Lands, Housing, Public Works and Physical Planning | <ul style="list-style-type: none"> Community Assemblies Community Land Management Committees (2) |
| 2. Rangeland & drought management | | <ul style="list-style-type: none"> State Department for livestock development (1) | Ministry of Agriculture and Livestock Development | 0 |
| | | <ul style="list-style-type: none"> State Department for the ASALS and Regional Development (1) | Ministry of East Africa Community, the ASALS and Regional Development | 0 |
| | <ul style="list-style-type: none"> The National Drought Management Authority Act, 2016 (1) | <ul style="list-style-type: none"> National Drought Management Authority National Drought Emergency Fund (2) | | 0 |
| | <ul style="list-style-type: none"> Ewaso Ng'iro North River Basin Development Authority Act, 1989 Revised 2012 (1) | <ul style="list-style-type: none"> Ewaso Ng'iro North Development Authority (1) | | 0 |
| 3. Environment | <ul style="list-style-type: none"> Environmental Management and Coordination Act, 1999 revised 2015 (1) | <ul style="list-style-type: none"> State Department for Environment and Climate Change National Environment Management Authority (NEMA) National Environment Trust Fund (NETFUND) National Environmental Complaints Committee (NECC) National Environment Tribunal (NET) (5) | Ministry of Environment, Climate Change and Forestry | County Environment Committee (1) |
| 4. Forest | <ul style="list-style-type: none"> The Forest Conservation and Management Act, 2016 (1) | <ul style="list-style-type: none"> State Department for Forestry Kenya Forest Service (KFS) Kenya Forestry Research Institute (KEFRI) Kenya Forestry college (KFC) Forest Conservation and Management Trust Fund (5) | | <ul style="list-style-type: none"> Forest Conservation Committee Community Forest Association (2) |
| 5. Water | <ul style="list-style-type: none"> The Water Act, 2016 (1) | <ul style="list-style-type: none"> State Department of Water Water Resources Authority (WRA) Water Services Regulatory Board National Water Harvesting and Storage Authority Water Works Development Agencies Water Sector Trust Fund Water Service Providers The Water Tribunal Basin Water Resources Committee (9) | Ministry of Water, Sanitation and Irrigation | Water Resource Users Associations (WRUAs) (1) |
| 6. Wildlife | <ul style="list-style-type: none"> The Wildlife Conservation and Management Act, 2013 (1) | <ul style="list-style-type: none"> State Department for Wildlife Kenya Wildlife Service (KWS) Wildlife Endowment Fund (3) | Ministry of Tourism and Wildlife | <ul style="list-style-type: none"> Conservancies Community Wildlife Association (2) |
| 7. Agriculture-crops | | State Department for Agriculture (1) | Ministry of Agriculture and Livestock Development | 0 |
| 8. Agriculture-Livestock | | State Department for Livestock | | 0 |

(Continued on following page)

TABLE 11 (Continued) National and community institutions involved in rangeland management in Kenya.

| Rangeland resource | Laws/Acts | National institutions | Ministry responsible | Community based institutions |
|--------------------|----------------------------------|---|--|---|
| 9. Food Security | Food Security Bill | 0 | 0 | 0 |
| 10. Climate Change | The Climate Change Act, 2016 (1) | State Department for Environment and Climate Change | Ministry of Environment, Climate Change and Forestry | Ward Climate Change Planning Committees (1) |
| Total | 9 | 30 | 6 | 10 |

Change Planning Committees. The multiple plans at the national and community which individually provide for aspects of rangeland management, are independently developed with no reference or coordination to the other institutions and players.

Additionally, the multiplicity of management plans by the community-based institutions created by legislations, adds to the existing unwritten customary management practices and rules, that have been traditionally used by pastoralists to manage pasture and water. Further, the management plans by the formal institutions do not expressly provide for inclusion of the traditional practices and may be divergent to traditional approaches, often occasioning conflict, and results in cross purposes in resource management.

Policies lacking the force of law in rangeland governance

Policies carry the intent of Government whereas legislations provide the force of law for executing the intention, which further paves way for planning and budgeting for the government intentions. The resources of land, forests, wildlife, water and climate change have Acts of Parliament which gives effect to the respective policies. However, regarding rangeland management, livestock and food security, there only exists policies and strategies with no Acts of Parliament to operationalize the policy aspirations as shown in Table 13. The absence of a law on rangeland management, livestock and food security, leaves a gap in the management of these resources especially rangeland management. For rangelands, the situation is compounded by the lack of a dedicated institution that wholistically addresses rangeland issues coupled with subsequent inadequate of resources for rangeland management.

Discussion

This section presents the discussion of the review and contains an overall summary of the results, strengths and weaknesses of the review, contextualizes the findings to existing literature, provides policy implications, recommendations and conclusion.

Since the review scope focused on reviewing policies as they exist, considering the number of policies reviewed and with the

limitation of time, it was impossible to extend the review to include an analysis of policy implementation or obtain expert views. Further, due to limitations of time and scope, the review did not cover the evolution of the frameworks, and the frameworks used at the county level in light of devolved governance. This review has however pioneered a wholistic view of all the policy frameworks touching on rangeland management, clustering them to ten (10) thematic areas, a divergence from past reviews that focused on a single thematic area. The review has also enumerated in detail, the spread of the frameworks across the thematic areas and clearly demonstrated the multiplicity and sheer numbers of multi-level frameworks that can inform reflections on policy effectiveness. The review has also given prominence to community-based rangeland governance giving emphasis to community participation in natural resource governance.

Review findings and implications on rangeland resources

The review established that there is lack of an overarching policy and legislative framework governing rangelands in Kenya. Instead, the landscape is characterized by a litany of fragmented resource specific policies, laws, strategies and plans spread across ten (10) thematic areas of national planning, land, forests, wildlife, pasture, water, climate change and carbon, crops, livestock, food security, and rangeland management. The findings concur with Ndiritu et al. (2025), which established the lack of an overarching governance framework for rangelands, and instead pastoral laws and policies are spread across themes of disaster-risk, environment, water, wildlife, land, and climate, characterized by inconsistent objectives and weak cross-referencing.

The review findings of multiplicity of frameworks comprising 10 policies, 9 legislations, 14 regulations and strategies and plans, 30 national institutions, and 9 community-based institutions, each providing for different aspects of rangeland management, and developing independent plans and budgets have been underscored in literature. Waweru et al. (2021), demonstrated this multiplicity

TABLE 12 Areas of cooperation and conflict by rangeland policies, laws and institutional frameworks in Kenya.

| Rangeland resource | Policies/Act/Strategies | Community-based institutions | Management plans |
|----------------------|---|--|--|
| Land | Recommended National Land Policy 2023 | | Land use plans |
| | The Land Act 2012 The Community Land Act, 2016 | Community Land Management Committees Community Assemblies | Community land use plans |
| Rangeland Management | The Vision 2030 Development Strategy for Northern Kenya and other Arid Lands, 2012 | | |
| | National Policy for the Sustainable Development of Arid and Semi-Arid Lands, 2012 | | |
| Environment | National Environment Policy, 2013 | | Ecosystem specific management plan including ASALs Integrated Land Use Master Plan |
| | Environmental Management and Coordination Act, 1999 | County Environment Committees | County Environmental Action Plans |
| | Forest Policy, 2023 | | Forest and Landscape Restoration Implementation Plan 2023–2027 |
| Forest | The Forest Conservation and Management Act, 2016 | Community Forest Associations (CFAs) | Participatory Forest Management Plans |
| | National Landscape and Ecosystem Restoration Strategy 2023–2032 | | Forest and Landscape Restoration - Implementation Plan 2023–2027 |
| Water | National Water Policy, 2021 | | |
| | The Water Act, 2016 | Water Resource Users Associations | Catchment and sub-catchment plans |
| | The National Water Resources Strategy (2020–2025) | | National water master plan |
| Wildlife | Wildlife Policy, 2020 | | Ecosystem Management Plans |
| | The Wildlife Conservation and Management Act, 2013 | Community Conservancies | Grazing management plans |
| | National Wildlife Strategy 2030 | | Ecosystem Plans and Conservation Master Plan |
| Climate Change | National Climate Change Framework Policy | | National Climate change Action Plan |
| | The Climate Change Act, 2016 | | |
| | County Climate Change Acts | Ward Climate Change Planning Committee | County Climate Change Action Plans |
| Agriculture-Crops | Agricultural Policy | | Annual implementation plans |
| | Agricultural Sector Transformation and Growth Strategy (ASTGS), 2019–2029 | | Agriculture Sector Development Plans |
| | The National Livestock Policy | | |
| | The National Food and Nutrition Security Policy | | |
| | The National Food and Nutrition Security Policy Implementation Framework 2017–2022 (FNISP-IF) | | |

of community based institutions, detailing that the participatory rangeland management structures were being introduced alongside existing institutions comprising of conservancies, group ranches and county governments. Further, private sector players, Non-Governmental Organizations and County Governments were found to introduce a layer of new governance arrangements on top of existing pastoral institutions, creating

“diffuse” systems (Unks et al., 2023). The multiplicity and layers of institutions produces a dense institutional landscape with overlapping mandates and planning processes with multiple uncoordinated management plans, creating blurred responsibilities and contested authority over rangelands, complicating implementation and community engagement (Unks et al., 2023; Waweru et al., 2021).

TABLE 13 Policies used in rangeland management lacking the backing of the law in Kenya.

| Rangeland resource | Policies | Laws/Acts |
|-----------------------------------|---|---|
| 1. Land | Recommended National Land Policy 2023 | <ul style="list-style-type: none"> • The land Act 2012 • The Community Land Act, 2016 |
| 2. Rangeland & drought management | National Policy for the Sustainable Development of Arid and Semi-Arid Lands, 2012 | 0 |
| | | The National Drought Management Authority Act, 2016 |
| | | Ewaso Ng'iro North River Basin Development Authority Act, 1989 |
| 3. Environment | National Environment Policy, 2013 | Environmental Management and Coordination Act, 1999 revised 2015 |
| 4. Forest | Forest Policy, 2023 | The Forest Conservation and Management Act, 2016 |
| 5. Water | National Water Policy, 2021 | The Water Act, 2016 |
| 6. Wildlife | Wildlife Policy, 2020 | The Wildlife Conservation and Management Act, 2013 |
| 7. Agriculture-crops | Agricultural Policy | 0 |
| 8. Agriculture-livestock | The National Livestock Policy | 0 |
| 9. Food security | The National Food and Nutrition Security Policy | Food Security Bill |
| 10. Climate change | National Climate Change Framework Policy | The Climate Change Act, 2016 |

Further, studies concurs with the review findings that multiple institutions at the national level execute linear and specific mandates on rangeland management, with each of the institutions provided resources to execute rangeland management activities, with no linkages and coordination with the other institutions. Ndiritu et al. (2025) highlights that sectoral ministries and agencies, plan and budget independently and separately, resulting in scattered action, forfeiting of synergies and in duplication of effort, and unconsolidated impact to the communities. Unks (2022) aligns with the review finding that the multiple community-based institutions develop independent management plans, that add on to the traditional institutions historically used by communities to manage their rangelands without express provision for inclusion of the traditional practices. The study shows that formal governance arrangements marginalize customary institutions and its' unwritten rules, through symbolic appropriation with no real decision-making powers. The marginalization and weakening of customary institutions forfeit useful indigenous technical knowledge, calling for its integration in policies especially in conflict resolution, since sustainable land management is more successful where customary institutions are recognized, benefit-sharing is equitable and local dispute-resolution mechanisms are strong (Robinson et al., 2021; Tari and Pattison, 2014).

The review findings of areas of conflict among policies attributed to multiplicity of un-coordinated frameworks and plans, and the absence of a dedicated institution that wholistically addresses rangeland issues have concurrence from past studies. Calvo (2024) demonstrates the lacking

synergy among actors and low adoption of management plans, as key management obstacles, proposing inclusion of communities, national and county coordination frameworks and multi-stakeholder platforms as a way out of the current conflicting approaches in rangeland management. Lutta et al. (2020) linked weak governance stemming from poorly functioning institutions and lack of landscape wide planning to rangeland degradation while Ndiritu et al. (2025) established that implementation gaps, competing land-use objectives and policy incoherence serve as drivers of pastoral vulnerability and conflict. Conflict in pastoral areas has also been linked to unclear rangeland boundaries and weak, overlapping institutions and dispute-resolution mechanisms (Chelang'a and Chesire, 2020; Penu and Paolo, 2021).

Fragmentation and multiplicity of policy frameworks established by the review has been shown as a driver of degradation of rangeland resources including water, pasture, soil and biodiversity exacerbating vulnerability in pastorals ASALs. In Southern Kenya, Tyrrell et al. (2022) demonstrated that policy driven institutional overlaps and disregard of customary institutions and systems occasioned subdivision and fencing of pastoral lands, resulting in overgrazing, vegetation destruction and tree felling, occasioning herd undernutrition and mortality and rangeland degradation. In Northern Kenya, overlapping and disjointed pasture and water use plans created by uncoordinated policy frameworks and subsequent exclusion of traditional systems, led to loss of soil productivity, siltation and fluctuation of water points attributed to overgrazing near water sources without

coordinated catchment management plans (Nzau et al., 2018). Further, multiple community based institutions including conservancies and community forest associations have resulted in habitat fragmentation and biodiversity decline (Tyrrell et al., 2022). The resultant impact of these effects on livelihoods has been shown to be far reaching as weak governance reduces livestock holdings *per capita*, erodes drought resilience compounded by climate change, perpetuating poverty among pastoral households (Nzau et al., 2018; Tyrrell et al., 2022).

Policy implications

The review findings that fragmented and multiple resource specific frameworks governing rangelands in Kenya undermine the sustainable management of resources, necessitate targeted reforms to enhance integration and community engagement, to safeguard rangeland resources and livelihoods. The policy implications are on bridging the existing silos, formalizing hybrid governance, and prioritizing coordination to address degradation of ASALs. While a rangeland policy and strategy exist, the absence of a corresponding legal framework alongside ten thematic policies and nine related laws, creates a legislative gap that entrenches fragmented governance. This situation calls for the enactment of an integrated Rangeland Management Act that brings together all thematic areas under a single coordinating institution. Such an Act and a corresponding Institution would rationalize the roles of approximately 30 national and 9 community-level institutions, minimizing institutional overlaps.

In addition, a dedicated legal framework would facilitate budgetary support for community institutions, moving away from reliance on voluntary arrangements, and would promote conservation through structured benefit-sharing mechanisms envisaged in current existing frameworks. In addition, the findings indicate the need for a National Rangeland Coordination Framework to enhance institutional coherence and address the proliferation of sector-specific management plans. Such a framework would support devolved, integrated planning at the county level while linking national and community institutions through joint action plans. The resulting policy shift should formalize hybrid governance systems by legally recognizing customary institutions within legislation and allocating sectoral budgets to community entities. This approach would strengthen community participation in conservation, reduce elite capture, and mitigate social exclusion. Furthermore, persistent tensions with pastoral traditions underscore the need for policies that systematically integrate indigenous knowledge across all frameworks and promote equity through mechanisms such as gender quotas in community-based institutions.

Conclusion

Kenya's rangelands, covering 83% of the landmass and supporting 25% of the population predominantly through pastoralism, are experiencing degradation driven by various factors including governance fragmentation spread across 10 policies, 9 legislations, 14 strategies and regulations and plans, 30 national institutions, and 9 community-based institutions. This PRISMA literature review demonstrates the resource-specific frameworks evidenced by uncoordinated frameworks and management plans and marginalization of customary systems, occasioning resultant overgrazing and biodiversity decline, negatively impacting pastoral livelihoods. The absence of an overarching framework perpetuates institutional multiplicity, policies with no force of law on livestock and rangelands, and conflict between formal management plans and traditional systems resulting in scattered conservation impacts amid rising pressures like climate variability and elite capture. To address these challenges, the review proposes enacting a National Rangeland Management Act to consolidate frameworks, set up a rangeland dedicated institution, formalize hybrid governance, integrate traditional systems and operationalize a Presidency-led coordination framework adapting Vision 2030 ASAL structures for joint national-county planning and budgeting for rangelands.

Recommendations

For harmonization and effective management of rangelands, the review recommends enactment of a National Rangeland Management Act to unify Kenya's 10 fragmented policies, 9 legislations, and 40 institutions, provide legal force to the rangeland policy and strategy while establishing a dedicated Rangeland Institution as the ASAL Transformation Secretariat domiciled in the Presidency to overcome ministry silos. The review further recommends formalizing hybrid governance systems by integrating customary institutions and systems into formal plans under key legislations, with sector budgets allocated for community incentives and monitoring.

Additionally, the review recommends the introduction of a coordination framework to bring together the current resource specific policies and institutions adapting the Vision 2030's ASAL Transformation structures with modifications: a high-level ASAL Cabinet Sub-Committee chaired by the Presidency for policy direction and political support; an ASAL Inter-Ministerial Committee providing leadership across key sector Ministries, including the Council of Governors for joint planning and budgeting; an ASAL Technical Coordination Committee; an ASAL Stakeholders' Forum uniting government, private sector, development partners, civil society and all ASAL Counties, and the ASAL Transformation Secretariat (Rangeland Institution) to champion ASAL development, and ensure equitable resource allocation. This framework will harmonize resource-specific

policies and institutions, including county governments for consolidated delivery, synergizing, cooperation while resolving conflicts.

Future research work could focus on assessing the evolution of the policy frameworks to the current state, the implementation progress of these policies, the policy frameworks at the county level and expert perspectives on the frameworks.

Data availability statement

All data generated or analyzed during this study are available for sharing when an appropriate request is directed to the corresponding author.

Author contributions

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