

# Historical Evolution of Access Regulations on Grasslands and Their Socio-Economic Impacts in Kenya: A Review

Lucy Chepkochei\*, Faith Karanja, David Siriba

Department of Geospatial and Space Technology, University of Nairobi, Nairobi, Kenya

Email: \*chepkocheilucy@students.uonbi.ac.ke

**How to cite this paper:** Chepkochei, L., Karanja, F., & Siriba, D. (2024). Historical Evolution of Access Regulations on Grasslands and Their Socio-Economic Impacts in Kenya: A Review. *Advances in Historical Studies*, 13, 255-276.

<https://doi.org/10.4236/ahs.2024.134013>

**Received:** July 11, 2024

**Accepted:** September 20, 2024

**Published:** November 20, 2024

Copyright © 2024 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

## Abstract

Kenya's laws and regulations have been transformed to address grazing land access since the pre-colonial period. The laws and regulations have been established throughout history to enhance administration, access, and utilization. Pastoral communities in Kenya have been governed by various laws and regulations relating to land use and access. Despite establishing multiple laws and regulations for grazing land management, there is limited literature on the socio-economic impacts. Therefore, this study reviews the existing literature on grazing land laws and regulations and their socio-economic impacts on Kenya. The study was implemented using a thematic review. During the pre-colonial period, there were no formal grassland management laws. However, the Government of Kenya has enhanced various laws to govern grassland access and utilization in Kenya since 1902. These laws, regulations and policies include Crown Lands Ordinance of 1902, National Land Policy of 2009, Land Act of 2012 and Community Land Act of 2016. Implementing grazing land laws, regulations and policies has led to marginalization of pastoral communities, tribal conflicts and sustainable land management. The study suggests an evaluation of the implementation of the Community Land Act of 2016 in terms of economic and environmental effects among pastoral communities in Kenya.

## Keywords

Land Governance, Land Rights, Communal Lands, Conservation, Access Regulations

## 1. Introduction

The global grasslands cover 61.2 million km<sup>2</sup>, approximately 45 percent of the

earth's surface (Reid et al., 2008). The global grasslands are a source of food for the human population, habitat for wildlife and act as carbon sinks (Teague & Kreuter, 2020; Chang et al., 2021). The grasslands are important for one billion poor people and comprise 80% of the agricultural land (Boval & Dixon, 2012). The grasslands provide nutritional foods to the livestock fed by the ever-growing population, thus enhancing food security and generating income (Nelson et al., 2017). Despite the benefits associated with grasslands, they face myriad challenges, including land use change, climate change, land degradation, overgrazing, invasive species, loss of biodiversity, drought, fire and conflicts (Koerner & Collins, 2014; Hendrickson et al., 2019). The challenges above are pronounced in most developing countries in Sub-Saharan Africa (SSA), such as Kenya (Ghosh & Mahanta, 2014; Nzau et al., 2018).

### 1.1. Historical Regulation on Grasslands

Regulations on grassland access (grassland laws) are enacted to promote sustainable utilization of grassland ecosystems (Haensel et al., 2023). The grassland laws can be traced to medieval Europe, where local authorities such as manorial lords or town councils enacted grazing rights to prevent overgrazing (Cameron, 2018). In the United States, grazing rights on public lands have been regulated since the late 19<sup>th</sup> century. The Homestead Act of 1862 encouraged settlement and land ownership, leading to the privatization of grazing lands (Gates, 1963). The Taylor Grazing Act of 1934 established a system of permits and fees for grazing on federal lands (Hurlburt, 1935). The Crown Lands Act of 1884, passed by the New South Wales government, provided tenure for grazing on crown lands in Australia (NSW Government, 2018; Australian Government, 2019). The Crown Lands Act introduced different levels of rights to the Crown lands, including conditional purchase, pastoral, and freehold leases, allowing utilization of pasture based on rules and regulations (Jenkins, 1999; Ivannikov et al., 2022). Also, the act provided rent or fees for the use of crown lands depending on the degree of improvement made on the land and the value of the land. This system enabled the government to obtain revenue from public land usage and encouraged the land owners to work on improving the land and putting the land to productive use.

In SSA and Asia, colonial governments promulgated several measures aimed at regulating access to the grasslands and protecting the forests. These are the Forest Act of 1865 in India (Gadgil & Guha, 1992) and grazing land access regulations in Mongolia (Lkhagvasuren & Dulam, 2007) to curb overgrazing and degradation of pastureland and timber removal. Zimbabwe's Land Apportionment Act of 1930 created native reserves for indigenous communities, limiting their access to grazing lands (Moyo, 1995). In Sudan, the Pastoral Land Ordinance 1910, which aimed to regulate access to grazing lands and water resources, established a system of permits for grazing and restricted access to water sources, effectively giving the colonial government control over pastoral resources (Salih, 1991).

Grasslands cover 83% of Kenya's land, supporting approximately 70 percent of livestock and 85 percent of wildlife, and over 10 million people live in these areas ([Government of the Republic of Kenya, 2021](#)). To enhance the sustainability of this essential resource, Kenya has historically focused on the management of grasslands and rangelands for sustainability. First, the British colonial administration enacted the Crown Lands Ordinance, also known as the Crown Lands Act of 1902, to control the usage of public lands, mainly grasslands ([Anderson, 2005](#)). This is because access to grazing lands was generally unregulated before the Ordinance's enactment. This led to conflicts between communities that depended on the same grazing lands for their livestock ([Kalande, 2008](#); [Koissaba, 2016](#)). The Ordinance's introduction was intended to resolve persistent disputes by establishing a legal framework for the administration of public lands. This respected the customary land ownership where the indigenous population had occupied and managed the land. The 1915 amendment of the Crown Lands Ordinance introduced a 999-year lease. The Land Tenure Commission, appointed in 1920, focused on pastoral land ([Future Agriculture, 2014](#)). Through the Native Trust Lands Ordinance of 1938, the native lands were expunged from crown land. At Independence, these native lands became trust lands and were vested in County Councils. Therefore, the Native Trust land was initiated to protect grazing lands in Kenya. Upon Independence, land management was transferred to the county council ([Future Agriculture, 2014](#)). The Constitution of Kenya 2010 gives powers to the central and county governments powers to protect grasslands ([Government of the Republic of Kenya, 2010a](#)). There are institutional and legal frameworks responsible for the management and protection of grasslands in Kenya, including the Government Land Act, Chapter 280, Land Adjudication Act, Chapter 284, The Wildlife (Conservation and Management) Act, Chapter 376, The Agriculture Act, Chapter 318 and The Water Act, Chapter 372. Therefore, Kenya has undergone significant reforms in grassland regulations, which could pose substantial socio-economic impacts.

The Community Land Act 2016 is an Act of Parliament that recognizes and protects the utilization of communal hold lands ([Government of the Republic of Kenya, 2016](#)). The Act gives pastoral communities the right to access communal-held lands and use and transfer them according to their customary institutions ([GoK, 2016](#)). The Act provides adjudication and registration of community land. Notably, the Community Land Regulations of 2017 were affected to guide the implementation of the Community Land Act 2016 ([GoK, 2017](#)). This outlines the central and county "governments" use, protection and management of community land. Under these dynamics, there is heightened emphasis on evaluating the socio-economic effects of access on the regulation of grazing land.

## 1.2. The Effects of Access Regulations on Grasslands

The effects of grazing land access regulations have affected the societies that rely on animal farming. In Africa and Asia, these regulations have displaced

pastoralists and eradicated their past grazing land and means of sustenance. For instance, pastoralists have clashed with conservationists while creating national parks and game reserves that restrict access to grazing areas (Mkutu & Mdee, 2020; Paik & Shahi, 2022; Schetter et al., 2022). Such issues have been observed in other European countries, affecting the small-scale farmers and traditional herding communities of Romania (Bartkowski & Vorlauffer, 2017), environmental marginalization of small-scale ranchers in the United States (Sbicca, 2015) and overgrazing and degradation of the land in Australia (Race et al., 2016).

Measures for managing grassland access encourage positive effects such as optimizing resource allocation for grazing. The Taylor Grazing Act of 1934 has effectively formed grazing districts and used public grazing lands sustainably in the US. The laws in Europe, Asia and Australia have also played a vital role in encouraging the responsible use of land and protection of the environment (Lkhagvasuren & Dulam, 2007; Australian Government, 2019; European Commission, 2021). Similarly, community conservancies have offered other means of managing wildlife and grazing territories to support sustainable land utilization and environmental conservation across the African Continent (Opiyo et al., 2012). Access to the land for grazing has changed over time due to social, economic, and environmental changes. Governments and institutions must consider the regulation to be necessary while at the same time respecting the rights of the communities over grazing lands.

Access regulation of grasslands has severe social and economic effects in Kenya (Greiner et al., 2021; Løvschal & Gravesen, 2021). Previous studies in Kenya have revealed both negative and positive impacts of grassland access regulations (Mulinge et al., 2016; Wily, 2018a). Access regulation on community land leads to enhanced vegetation growth, increased tourism attraction, soil protection and improved agricultural productivity on protected lands (Okello et al., 2009; Verdoodt et al., 2010; Mganga et al., 2011). However, the access regulations of grasslands could lead to overgrazing, land degradation, invasive species, soil erosion and compaction (Kimiti et al., 2017; Bolo et al., 2019). However, there is scanty information on the social, economic and environmental impacts of access regulations on grasslands in Kenya.

### 1.3. Review Questions and Objectives

*The following review questions guided the study:*

- 1) What are the historical access regulations on grasslands in Kenya?
- 2) What are the socio-economic impacts of the access regulations on grasslands in Kenya?

*The study aimed to achieve the following review objectives:*

- 1) To determine the historical access regulations on grasslands in Kenya.
- 2) To evaluate the socio-economic impacts of access regulations on grasslands in Kenya.

## 2. Methodology

We collected secondary data from secondary sources, including peer-reviewed articles, books, and technical reports from Google, Google Scholar, and Web of Science. Specifically, we conducted a desktop review of the access regulation on grasslands in Kenya and its socio-economic impacts. The search study used in the study was “*grazing land access regulations*”, “*land tenure*”, “*land use*”, “*grazing rights*”, “*policy*”, “*livelihoods*”, “*Kenya*”, and “*socio-economic impacts*” using and Boolean operators. We captured the literature from pre-independence (1963) to 2022. We conducted a bibliometric analysis to select sources to be included in the study. The chosen articles provided a historical overview of the changes in grazing land access regulations and their impacts on the socio-economic conditions of the local communities in Kenya (Table 1).

**Table 1.** Number of journal articles extracted for the research before and after bibliometric analysis.

Keyword search	Number of articles before bibliometric analysis	Number of articles after bibliometric analysis
Grazing land access regulation	410	36
Land tenure	205	23
Land use	314	31
Grazing rights	170	22
Policy	124	19
Livelihoods	296	40
Kenya	160	23
Socio-economic impacts	542	46
<b>Total</b>	<b>1811</b>	<b>240</b>

This review critically evaluates the previous literature through description, summary, classification, and comparisons (Horstick et al., 2014). The information extracted from the sourced literature was paraphrased and presented as statements, figures, and tables. This paper is instrumental in highlighting the thematic literature review procedure. It is essential to highlight the gains of the access regulation on grasslands in Kenya. The information is necessary for minimizing negative impacts and capitalizing on the positive progress of access regulations on grasslands.

## 3. Results and Discussion

### 3.1. Grazing lands in Kenya

The grazing land in Kenya is approximately 61.9 million hectares, about 80% of the country's land area (Kandie et al., 2017). The expansive grazing land is characterized by increased land degradation, overgrazing, and low productivity (Karaya

et al., 2021). The proportion of grazing land highlighted the need to support livelihoods. Sustainable management should be practiced to increase productivity and enhance environmental quality.

Therefore, the availability of grazing lands in Kenya can be described as patchy. For instance, 70% of the livestock and 75% of the wildlife exist in grazing fields (REGLAP, 2012). In Kenya, the grazing countries range from the Maasai Mara ecosystem in the southwestern part of Kenya, which has a blend of grasslands and woodlands that can accommodate a large number of cattle, sheep, and goats, to the Tana River Delta in southeastern Kenya, where large scale commercial farming predominates. Conservation measures where there are often conflicts over rights of way and possession of grazing land (Musyimi et al., 2017). Grazing land is paramount to the pastoralist community's existence since it accounts for a large percentage of the population in the arid and semi-arid areas of the country (Kandie et al., 2017; Ameso et al., 2018). The grazing lands in Kenya are primarily used for communal pastureage. To provide for the livelihood of the pastoralists through grazing. The distribution of grasslands in Kenya is as follows in **Figure 1**.

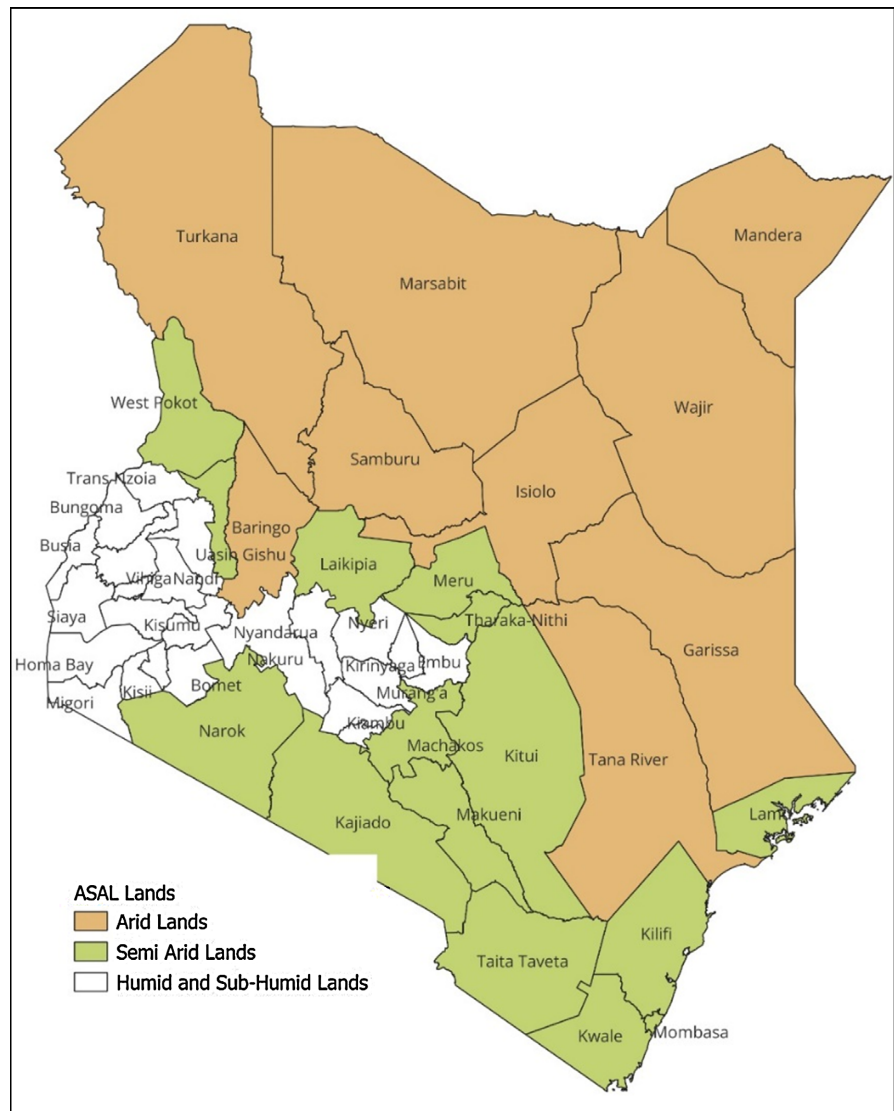
The grazing lands strategically support food security and the well-being of millions of people in Kenya (Bedelian & Ogutu, 2017). As stated by the MoALFC (2021), the livestock industry accounts for 11% of the country's gross domestic product and provides income to more than half of the rural populace. In particular, it is estimated that 10 million populations in ASALs are relying on livestock (MoALFC, 2021). However, human activities such as agricultural use, conservation, and settlement have placed pressure on the grazing areas and have changed these areas into several patches that people compete for the right to use and access (Kandie et al., 2017; Karaya et al., 2021). In as much as strategies for sustainable management of the grazing lands in Kenya are to be developed, the needs and perceptions of the communities, as well as the competing forces in using the land, must be considered.

### 3.2. The History of Grasslands Regulation in Kenya

The history of land management in Kenya can be divided into three broader eras, which include pre-colonial, colonial, and post-colonial periods. Kenyan grazing land laws, regulations, and policies have been influenced by social, political, environmental, economic, and gender factors since the pre-colonial period (Willy & Churi, 2010; Njoka et al., 2016). However, the regulations, policies, and laws have changed over time to adapt to the country's needs, such as political stability, environmental conservation, conflicts, and community needs, as postulated by Njoka et al. (2016).

#### 3.2.1. The Regulation of Grazing Land during Pre-Colonial Period

Initially, no laws concerned using pastures for grazing (Pas, 2018). The grazing land management in Kenya before colonization was under traditional systems and customs. Specific communities emerged and practiced certain customary laws to access the grazing land. In the pre-colonial period, land was owned by the



**Figure 1.** The distribution of Arid and Semi-Arid Lands (ASALs) in Kenya.

community with user rights as granted by the customary land tenure system (Wily, 2017). It is important to note that the land management and access regulations varied across communities. The community defined acceptable land usage based on various factors, including climate, culture, and socio-economic characteristics.

### 3.2.2. The Regulation of Grazing Land during the Colonial Period

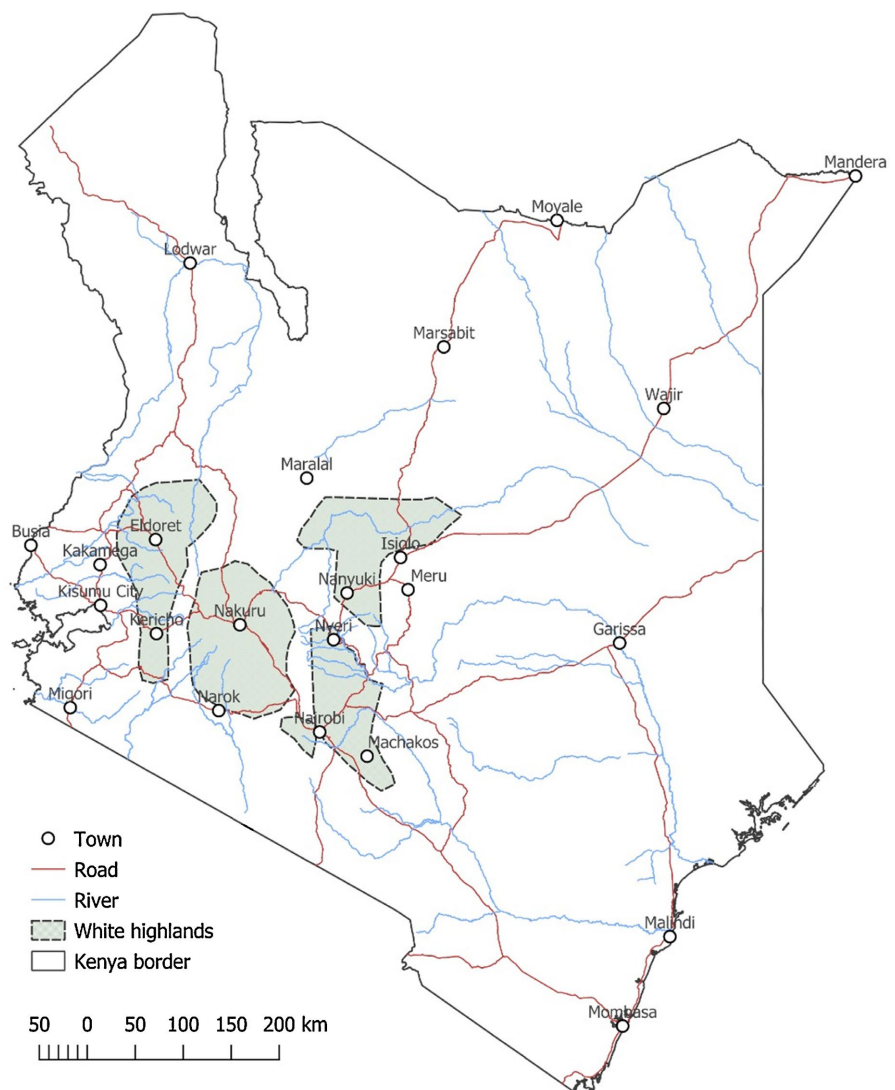
The British colonial government developed Formal grazing land regulations during the colonial period (Cherop, 2023). Though some of the laws were not specifically on grazing lands, their implementation significantly impacted grazing land management. The regulations were mainly enacted to protect the interests of the British Colonial Government. More so, during the implementation of the rules, local pastoral communities were forced to graze their livestock in marginal areas with poor grazing conditions. This section highlights the historical regulations on



grazing land during the colonial period.

### ***Crown Lands Ordinance of 1902***

The Crown Lands Ordinance of 1902 empowered the British Commissioner. The traditional community rights are ignored. For instance, the commissioner was granted rights to sell, or lease for 99 years, up to 1000 acres (Syagga, 2006). This enabled Europeans to settle in high-potential lands (white highlands) for agriculture while displacing the local communities. Though there were reserves set aside for local purposes, they were inadequate. Notably, most of the land was declared crown land, including parcels initially owned by pastoralists. More so, the land was allocated to the British for agricultural purposes, thus limiting available land for grazing (Musembi & Kameri-Bbote, 2013). The White Highlands policy was established purely by designating productive agricultural land for the white settlers. **Figure 2** shows the spread of white highlands in Kenya. The White Highlands policy was strengthened in 1935 by the Carter Land Commission, stating



**Figure 2.** Map of Kenya showing the distribution of white highlands.



that the highlands must only be occupied by whites. Colonialism. The White Highlands policy also brought territorialization of ethnicity, effectively creating the white highlands, which included areas with fertile soil for farming (Figure 2). The white highlands disrupted existing pastoral livelihoods and indigenous agricultural systems, aiding in expanding settler agriculture in significant towns (Enns & Bersaglio, 2024). Land territorialization also led to the establishment of native lands, which were less developed and less fertile, and the North-Western frontier was characterized by arid and semi-arid lands (Greiner, 2013).

#### ***Crown Lands Ordinance of 1915***

The Crown Lands Ordinance of 1915 was an amendment of the Crown Lands Ordinance. The amendment was introduced to address some deficiencies witnessed in the Crown Lands Ordinance of 1902, such as the introduction of new land tenure rights to cover land occupied by Kenyans (Syagga, 2006). Additionally, a 999-year lease was incorporated. Additionally, the amendment created the trust lands and Native Lands Trust Board (Letai, 2014). The communities were allowed to practice their ingenious activities on the trust lands. However, the Native Lands Trust Board offered colonial oversight and control of the trust lands. This provides the initials institutions to govern community land. Though excluding native reserves from the crown land and labeling them as trust land was a significant achievement for the pastoralists. This could have enhanced Indigenous land rights, it was under the colonial administration governed by the Native Lands Trust Board.

#### ***Native Lands Trust Ordinance of 1928***

The Native Lands Trust Ordinance-1928 was enacted to clarify and ratify the management and administration of native reserves or trust lands. The Ordinance introduced a legal framework for managing native reserves or trust lands within the confines of colonial rule. The Ordinance was established to ensure the native lands were managed and protected to meet the interests of the local people. The Native Lands Trust Ordinance-1928 created the Trust Board to enhance the management of native lands. The Trust Board was responsible for performing critical roles regarding native lands, such as administration roles, land use, allocation, and development activities. Secondly, the Trust Board was responsible for protecting the customary land rights of indigenous communities from external threats. Further, the board oversaw leases, permits, and other land use agreements. Finally, the board collected rents and fees from land users. Notably, the board was tasked to resolve disputes among native land uses, such as boundaries and ownership.

#### ***Crown Lands Ordinance-1960***

The Crown Lands Ordinance of 1960 was an essential legislation defining the land under the crown and the forest reserves (Leach, 1998). The Ordinance defines land administration, allocation transfer, and indigenous rights. Most of the pastoralists' rights were overlooked through the allocation and transfer. Given that pastoralists relied on vast grazing lands, they were displaced and experienced limited access to essential resources such as pasture and water (Lesorogol, 2008). Since

the implementation of the Ordinance focused on agricultural land, the pastoralists were marginalized, thus increasing poverty and conflicts. The Act enabled the eviction of indigenous communities from their lands and opened up opportunities for British settlers to develop commercial agriculture and settlements (Anderson, 2005; Kalande, 2008; Koissaba, 2016).

#### ***Land Planning Act of 1961***

This Land Planning Act of 1961 was established to regulate the use and development of lands in Kenya. The Act contains land use and development laws in Kenya. Though the land had no specific regulations on grazing lands, it established an Authority responsible for regulating land use and development in Kenya. This could include the grassing lands.

### **3.2.3. The Regulation of Grazing Land between Independence and 2010**

After Kenya gained Independence in 1963, the government introduced a series of land reforms to address the historical injustices of colonialism. The reforms included the creation of group ranches, which were communal grazing areas managed by local communities (Veit, 2019). The group ranches were intended to provide the pastoralists with secure access to grazing land and enable them to engage in more sustainable livestock production practices. However, the group ranches were poorly managed, often leading to conflicts between communities over grazing land access (Mwangi, 2007). The post-independence reforms were geared towards land adjudication and title deeds.

#### ***Land Control Act of 1967***

The Land Control Act of 1967 was established to avoid subdividing agricultural land into uneconomical units (GoK, 2012). Following the Act, responsible parties were supposed to obtain consent from the Land Control Board. The Act underscored the government's efforts to enhance sustainable land management practices.

#### ***Land Disputes Tribunals Act of 1990***

The Land Disputes Tribunals Act was established in 1990, creating the Land Dispute Tribunal and the Land Disputes Appeal Committee (GoK, 2010a). The Act limited the powers of the Magistrates Court by establishing the two systems. The Act was established to enhance sustainable land management in Kenya.

#### ***National Land Policy of 2009***

The policy establishes a framework for land management, administration, and ownership in Kenya (Ministry of Lands, 2009). The strategy calls for creating a comprehensive land information management system, which has aided in the improvement of land record accessibility and accuracy in Kenya. The policy has had a tremendous impact on promoting sustainable land use and management practices throughout the country (Di-Matteo, 2020; Nyangweso & Gede, 2022).

### **3.2.4. The Current State of Grazing Land Access Regulations in Kenya (2010-2024)**

The Kenyan Government has enacted various laws, policies, and regulations after promulgating the New Constitution in 2010. The 2010 constitution was followed

by the establishment of the Integrated National Land Use Guidelines (INLUG), Land Act 2012, Land Registration Act 2012, National Land Commission (NLC) Act 2012 and the Community Land Act 2016. The laws were established to enhance land administration, curb land grabbing, and empower Local and Government entities tasked with land management.

### ***The Constitution of Kenya 2010***

The Constitution of Kenya 2010 contains regulations on land use, planning and ownership (GoK, 2010b). Chapter Five of the Constitution is dedicated to land and the environment. These include Community land (Article 63), Regulation on land use and property (Article 66), Legislation on Land (Article 68), Agreements relating to natural resources (Article 71), and Legislation regarding the environment (Article 72). The Constitution tasks the parliament to enact laws to ensure investment in land benefits the locals and their economies.

### ***Integrated National Land Use Guidelines (INLUG) of 2011***

According to NEMA (2011), the INLUG points out the policies concerning land use planning and management in Kenya. The INLUG was developed to enhance awareness of land degradation, land-use competition, and sustainable land management. In the pastoral land, the INLUG gives policy leadership in managing rangelands, ownership and utilization rights, climate change, land use, and conservation.

### ***Land Act of 2012***

The Act addresses some of the country's and ownership, management and administration issues. This Act introduced reforms in several respects: the measures for reasonable land utilization and management, the sections that provide equal access to the land, and the portion that minimizes the land conflict (Gichenje et al., 2019).

Kenya has a matrix of legal and policy frameworks that regulates access to grazing land, which comprises Kenya Vision 2030, the 2010 Constitution of Kenya (The Land Act of 2012, the National Land Policy of 2009, the Community Land Act of 2016, the National Livestock Policy of 2008) whereby the rights of the community to govern as well as control the land and natural resources have been acknowledged and the procedures for establishment of the community. Further, most of the counties have developed policies and strategies of how they want to deal with matters concerning access to the grazing land for example the Baringo County Livestock Policy. However, translating these laws and policies into actions is a challenge since capacity and resources are limited, corruption is rampant, and there is a lot of political interference. In this regard, the different government departments and other involved parties often have ambiguous interests and goals, hence confusing and contradictory land management practices (Di Matteo, 2022).

### ***Land Registration Act of 2012***

This Act was developed mainly to facilitate land registration and show that the land was put to productive use. It has developed primarily in the areas of accountability of

land registration and many other matters related to land ownership (Gichenje et al., 2019).

#### ***National Land Commission (NLC) Act 2012***

The NLC Act is among the most essential bills to address the country's land administration and management problems. The Act has also attracted significant interest in enhancing good land administration and equitable distribution of government land in the country (Gichenje et al., 2019; Nyangweso & Gede, 2022).

#### ***Community Land Act of 2016***

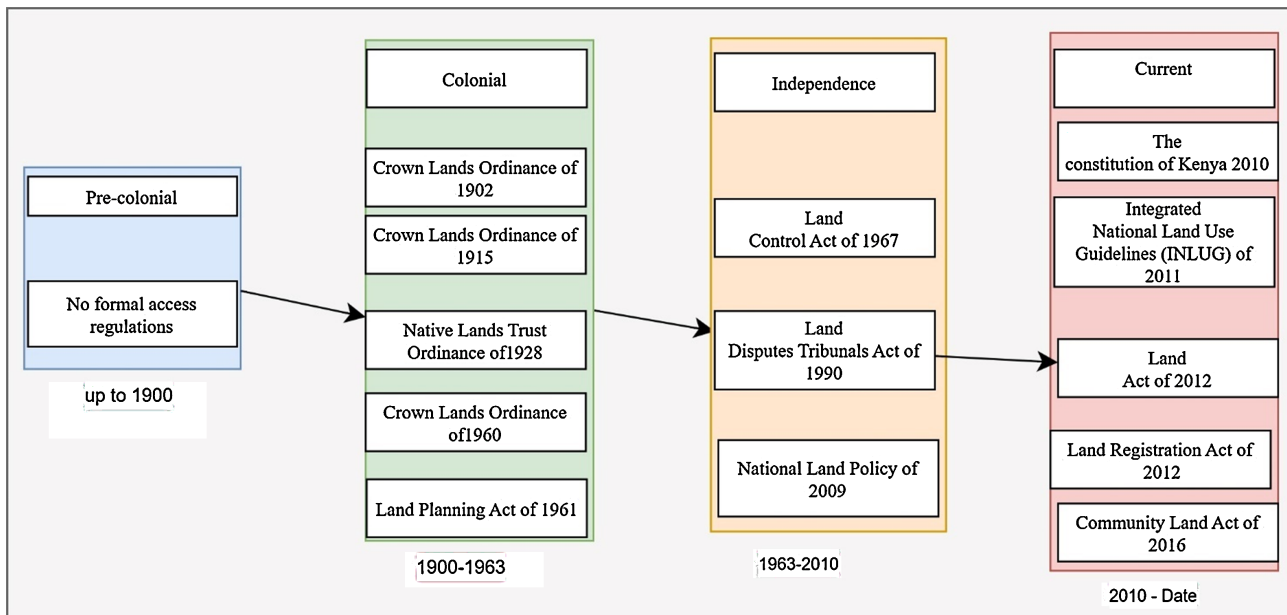
The Act regarding the Communal Land is Kenyan law that aims to register, protect, and provide for communal rights within Kenyan territory. Another realized the realization of the Act is Sample that Indigenous people cannot be removed from their original place of aboriginality by the social opportunities of development in their place. (Oloo et al., 2021; Mkutu & Mdee, 2020). Therefore, this has required upgrading the land adjudication system to put in place the provisions of the Community Land Act (Matende-Omwoma, 2021). According to the Act, there are ways in which the rights in communal land can be recognized, protected, and transferred to the Kenya registry (Oloo et al., 2021). The Act seeks to provide information on how the communal land mainly used for the rearing of livestock, including cattle, can be used, controlled and governed. Instead of giving land ownership to individuals, this is expected to enhance collective responsibility and accountability of the public resources (Di Matteo, 2017). Recognizing community land rights has been done internationally and falls under democracy and environmentalism. Community landholding is widely practiced in most countries, which has strengthened decentralized conservation and management to a considerable extent.

Financial organizations and investors are starting to realize the importance of community land and are trying to seize these opportunities (Di Matteo, 2017). The laws that confer legal personality to communities have made registration easier regarding the need to form costly legal entities (Githu et al., 2022). The Kenyan Constitution has also made land zoning possible, distinguishing between communal and private lands more straightforward. Community lands have been utilized in climate change mitigation strategies for conservation and community adaptation (Matende-Omwoma, 2021). Nevertheless, despite acknowledging the value of community lands, these communities continue to be weak and risk losing their rights. To institutionalize community-based land rights at the local, national, and international levels, it is crucial to have the appropriate political goodwill and formations (Di Matteo, 2022).

### **3.3. The Implementation of Grazing Land Regulations and Policies in Kenya**

The Government of Kenya has several grazing land regulations ranging from pre-colonial to post-colonial periods. Evaluating the performance of the grazing land regulations is essential for the effective management of grasslands, including

sustainable land management. A limited understanding of grazing land regulation on access and utilization led to conflicts among pastoral communities (Pas Schrijver, 2019). More so, land grabbing threatened the survival of pastoral communities that relied on the land for grazing (Kariuki & Ng'etich, 2016). This necessitated the establishment of the Community Land Act of 2016. Kenyan land administration has undergone several changes, including the demarcation of reserves, the creation of native councils, the Trust Land Act, and the current Community Land Act (CLA) (Wily, 2018b). **Figure 3** shows a historical timeline of Kenya's land-based policies relevant to access to grazing lands.



**Figure 3.** Historical timeline of Kenya's land-based policies.

During the pre-colonial period, there were no formal regulations for access and management of the grazing land in Kenya. During the colonial period, established access regulations were established and implemented. These regulations included the Crown Lands Ordinance of 1902, Crown Lands Ordinance of 1915, Native Lands Trust Ordinance-1928, Crown Lands Ordinance-1960, and Land Planning Act of 1961. Implementing the regulations led to the occupation of productive agricultural land by the white and unproductive land left to the Kenyans.

Upon gaining Independence, various regulations were established to enhance access and sustainable management of land. The Kenyan Constitution 2010 introduced elaborate land and environmental reforms. This culminated in establishing the Land Act 2012 and the Community Land Act 2016. Studies highlight that over 60% of Kenya's land area is considered communal land, and the CLA aims to implement Article 63 of the Constitution, which categorizes community land and gives local communities ownership and control. The CLA also seeks to compensate men and women equally for compulsory land acquisition and recognize, protect, and record community land rights.

According to Wily (2018a), the CLA has had challenges being implemented. For instance, communities risk losing their priceless land parcels due to legal flaws, and the Act's implementation has been delayed. A relevant gap in the CLA is the exclusion of community forests and rangelands in its provisions as it only applies to lands termed as occupied, i.e. farms and houses. While acknowledging the existence of customary/community lands, the Act requires that they be reclassified as freehold parcels and in ways that reduce the existing qualities of held lands and limit community jurisdiction, a fundamental component of community-based tenure. Consequently, the government's reluctance to grant communities access to land and their lack of sufficient power to define and register themselves has been termed a major gap in the legal framework. The system for adjudicating land disputes has not been developed to involve communities rather than individual land-owners (Matende-Omwoma, 2021). Concretizing the land adjudication system, providing clear steps for state claims to presumed public lands, and increasing and mainstreaming awareness of the Act among relevant actors is necessary to close these gaps. The CLA has the potential to offer the majority of communal land-owners' land security and provide significant benefits to communities, but only if these issues are resolved (Wily, 2018a). To ensure that the Act is implemented and fulfills its promise to the communities and the nation, deliberate action must be taken (Di Matteo, 2022).

### 3.4. The Socio-Economic Impact of Grazing Land Regulations in Kenya

The evolution of access regulations on grazing land in Kenya has significantly impacted the local communities' socio-economic conditions. During the colonial period, the strict rules on grazing land access led to the marginalization of the local pastoral communities (Pas, 2018). Due to the search for pasture and water, the pastoralists were forced to graze their livestock in areas with poor conditions. The establishment of white highlands necessitated this. Whites occupied the most productive regions. The marginalization of the pastoral communities led to limited ability to engage in profitable production practices (Davies, 1986). Therefore, the communities practised nomadic activities. That is moving from one place to another in search of pasture and water.

The marginalization of grazing communities in Kenya resulted in conflicts. The movement of pastoral communities from one place to another has led to tribal conflict. Due to harsh climatic conditions such as drought, hunters' cross boundaries in search of pasture and water resources, which leads to increased conflict (Pas, 2018). Resource scarcity increases competition among pastoral communities, leading to increased conflicts (Cheserek et al., 2012; Njiru, 2012).

"It is getting hard because the cattle takes you to a place where it is hot and fights with people. You go to Kom, you fight, you go to Baragoi, you fight, you go to Laikipia, it is a problem too. We do not know now what to do with the cows." (Pas, 2018)



Introducing the Community Land Act (CLA) 2016 is essential in enhancing the registration of community land just as private land (Wily, 2018b). Precisely, the community will own the title once registered without needing a corporative (Wily, 2018b). However, the privatization of communal land threatens access by the pastoral communities (Hassan et al., 2023). Thus, land registration under the community will enable them to undertake conservation practices and sustainable management (Kenrick et al., 2023).

Establishing community conservancies in the 1990s has successfully promoted sustainable land use practices and reduced conflicts over grazing land access. The community conservancies have also had significant socio-economic benefits for the local communities, including increased income from tourism and improved access to social services (Mbaiwa, 2010). Pastoralism is changing dramatically in the drylands of Kenya, sparking territorial disputes (Greiner, 2013). Reasons including sedentarization, population growth, Fragmentation of common grazing land, extension of wildlife areas, and the growing importance of agriculture are causing increased strain on land inside and between communities. Political leaders and other influential individuals are filling the power gap left by breaking traditional governance structures and renegotiating land access and boundary rights. They now know that ethnic mobilization can be a potent weapon in political fights, and they are bringing these dynamics into even the most remote pastoralist communities, emphasizing the struggle for land. Livestock raiding has evolved into a violent management method in this setting, acting as a well-suited, harmful, and politically effective weapon (Greiner, 2013).

Privatizing communal property once owned by territorial groups, as proposed by agencies like the World Bank and USAID, has left a poor pastoral area (Achiba & Lengoiboni, 2020). Despite the difficulties, pastoralists have shown their ability to adapt by coming up with various responses to new situations, such as rotating between pastoralism and agriculture, hunting, gathering, and, more recently, wage labor. As Githu et al. (2022) noted, pastoralist grazing land is also threatened by challenges such as political marginalization and climate change. While pastoralists are expected to be prepared for fluctuations in weather conditions, this flexibility is threatened by diminishing dryland resources.

This indicates that regulating grazing lands and environmental factors has made the pastoralists change and possibly adapt to modernity and its challenges. As Githu et al. (2022) pointed out, there are new strategies among the pastoralists, such as their mobility patterns. While cattle-based nomadism has transformed into a transhuman system, in which cattle feed nearby pastures during the rainy season and distant ones during the dry season, flocks of sheep and goats now feed near permanent dwelling places. As a result, the identified grazing areas have been heavily utilized and are degraded with little prospect for revitalization. This degradation is due to the integration of traditional management of the size and movement of the herds, as well as the modern method of movement restrictions. The lower survival of pastoral herds in Baringo is attributed to reduced quality and

availability of pastures (Githu et al., 2022).

#### 4. Limitations of the Study

We implemented a bibliometric analysis on the evolution of grassland regulation in Kenya. Advanced review approaches such as systematic maps, scoping reviews, or meta-analyses were not implemented to assess the socio-economic effects of grassland management. Therefore, implementing a scoping review and systematic map could be accentuated to enhance Kenya's knowledge of grassland regulations.

#### 5. Conclusion and Future Direction

The change in the regulations governing access to grazing lands has profound socio-economic implications. Lack of access to grazing land during colonization resulted in the subjugation of the pastoralist communities. Thus, they restricted themselves from practicing profitable production in the livestock production sector. The concept of group ranches was introduced to address the insecure access to grazing land during the post-independence period, but as shown above, it became a source of conflict. It greatly affected the livelihoods of the affected communities. The formation of community conservancies in the 1990s has served well in encouraging sustainable practices in land use and reduced conflict on the use of pastures for grazing, hence improving the socio-economic status of the people. We recommend reasonable implementation of the grassland regulations for enhanced sustainability. However, more research has to be done to determine the future viability of the community conservancies and their effects on the socio-economic status of the locals. Therefore, there is a need for policies that seek to find the root causes of the emergent conflicts and seek to right the wrongs in the access to natural resources by all the parties.

#### Funding

The authors received no direct funding for this research.

#### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

#### References

- Achiba, G. A., & Lengoiboni, M. N. (2020). Devolution and the Politics of Communal Tenure Reform in Kenya. *African Affairs*, 119, 338-369.  
<https://doi.org/10.1093/afraf/adaa010>
- Ameso, E. A., Bukachi, S. A., Olungah, C. O., Haller, T., Wandibba, S., & Nangendo, S. (2018). Pastoral Resilience among the Maasai Pastoralists of Laikipia County, Kenya. *Land*, 7, Article 78. <https://doi.org/10.3390/land7020078>
- Anderson, D. M. (2005). *Histories of the Hanged: The Dirty War in Kenya and the End of Empire*. W.W. Norton & Company.
- Australian Government (2019). *National Landcare Program 2014-2023*.  
<https://www.agriculture.gov.au/sites/default/files/documents/aus-govt-response->

[national-landcare-program.pdf](#)

- Bartkowski, B., & Vorlaufer, K. (2017). The Socio-Economic Effects of EU Agricultural and Environmental Policies in Romania. *Land Use Policy*, 68, 179-186.
- Bedelian, C., & Ogutu, J. O. (2017). Trade-Offs for Climate-Resilient Pastoral Livelihoods in Wildlife Conservancies in the Mara Ecosystem, Kenya. *Pastoralism*, 7, 1-22. <https://doi.org/10.1186/s13570-017-0085-1>
- Bolo, P. O., Sommer, R., Kihara, J. M., Kinyua, M., Nyawira, S., & Notenbaert, A. M. O. (2019). *Rangeland Degradation: Causes, Consequences, Monitoring Techniques and Remedies*. CIAT Publication.
- Boval, M., & Dixon, R. M. (2012). The Importance of Grasslands for Animal Production and Other Functions: A Review on Management and Methodological Progress in the Tropics. *Animal*, 6, 748-762. <https://doi.org/10.1017/s1751731112000304>
- Cameron, A. (2018). Regulating the Commons: Grazing Rights in Medieval England. *The Economic History Review*, 71, 3-28.
- Chang, J., Ciais, P., Gasser, T., Smith, P., Herrero, M., Havlík, P. et al. (2021). Climate Warming from Managed Grasslands Cancels the Cooling Effect of Carbon Sinks in Sparsely Grazed and Natural Grasslands. *Nature Communications*, 12, Article No. 118. <https://doi.org/10.1038/s41467-020-20406-7>
- Cherop, C. K. (2023). The Impact of Colonial Land Tenure Policies on the Keiyo Agro-Pastoral Economy, 1895-1963. *Journal of African Interdisciplinary Studies*, 7, 269-285.
- Cheserek, G. J., Odenyo, V. A. O., & Omondi, P. (2012). Nature and Causes of Cattle Rustling among Some Pastoral Communities in Kenya. *Journal of Emerging Trends in Economics and Management Sciences*, 3, 173-179.
- Davies, O. (1986). The Growth of Administrative Control in Baringo District. *Canadian Journal of African Studies/La Revue Canadienne des Études Africaines*, 20, 397-410.
- Di Matteo, F. (2017). *Community Land in Kenya: Policy Making, Social Mobilization, and Struggle over Legal Entitlement*. <http://hdl.handle.net/10419/224811>
- Di Matteo, F. (2022). Imagining the Kenyan Commons: The Stakes of State Control over Land in the Formulation of the Community Land Act (2011-2016). *The Journal of Development Studies*, 58, 1550-1568. <https://doi.org/10.1080/00220388.2022.2043279>
- Di-Matteo, F. (2020). The Politicization of Land Policy Reform in Contemporary Kenya. In M.-A. Fouéré et al. (Eds.), *Kenya in Motion (2000-2020)* (pp. 199-222). Africae.
- Enns, C., & Bersaglio, B. (2024). *Settler Ecologies: The Enduring Nature of Settler Colonialism in Kenya*. University of Toronto Press.
- European Commission (2021). *The Common Agricultural Policy (CAP)*. [https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy\\_en](https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy_en)
- Future Agriculture (2014). *Kenya's Land Reform Agenda: Pastoralism within the Current Land Debate*. Policy Brief.
- Gadgil, M., & Guha, R. (1992). *This Fissured Land: An Ecological History of India*. University of California Press.
- Gates, P. W. (1963). *Free Homesteads for All Americans: The Homestead Act of 1862* (Vol. 75). Civil War Centennial Commission.
- Ghosh, P. K., & Mahanta, S. K. (2014). Carbon Sequestration in Grassland Systems. *Range Management and Agroforestry*, 35, 173-181.
- Gichenje, H., Muñoz-Rojas, J., & Pinto-Correia, T. (2019). Opportunities and Limitations for Achieving Land Degradation-Neutrality through the Current Land-Use Policy Framework

- in Kenya. *Land*, 8, Article 115. <https://doi.org/10.3390/land8080115>
- Githu, D. W., Fehmi, J. S., & Josephson, A. (2022). Pastoralist Herd Size Maintenance during Drought with the Use of Reseeded Fields near Lake Baringo, Kenya. *Pastoralism*, 12, Article No. 21. <https://doi.org/10.1186/s13570-022-00238-4>
- GoK (2012). *Land Control Act. Chapter 302*. The National Council for Law Reporting. [https://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/LandControlAct\\_Cap302.pdf](https://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/LandControlAct_Cap302.pdf)
- Government of Kenya (GoK) (2010a). *The Land Disputes Tribunals Act Chapter 303A*. The National Council for Law Reporting. <https://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/LandDisputesTribunals-Cap303A.pdf>
- Government of Kenya (GoK) (2017). *The Community Land Regulations*. Government Printer.
- Government of the Republic of Kenya (GoK) (2010b). *The Constitution of Kenya*. <https://www.refworld.org/docid/4c8508822.html>
- Government of the Republic of Kenya (GoK) (2016). *The Community Land Act*. Government Printer.
- Government of the Republic of Kenya (GoK) (2021). *Range Management and Pastoralism Strategy 2021-2031*. Ministry of Agriculture, Livestock, Fisheries and Cooperatives.
- Greiner, C. (2013). Guns, Land, and Votes: Cattle Rustling and the Politics of Boundary (Re)making in Northern Kenya. *African Affairs*, 112, 216-237. <https://doi.org/10.1093/afraf/adt003>
- Greiner, C., Vehrs, H., & Bollig, M. (2021). Land-Use and Land-Cover Changes in Pastoral Drylands: Long-Term Dynamics, Economic Change, and Shifting Socioecological Frontiers in Baringo, Kenya. *Human Ecology*, 49, 565-577. <https://doi.org/10.1007/s10745-021-00263-8>
- Haensel, M., Scheinpflug, L., Riebl, R., Lohse, E. J., Röder, N., & Koellner, T. (2023). Policy Instruments and Their Success in Preserving Temperate Grassland: Evidence from 16 Years of Implementation. *Land Use Policy*, 132, Article ID: 106766. <https://doi.org/10.1016/j.landusepol.2023.106766>
- Hassan, R., Nathan, I., & Kanyinga, K. (2023). Will Community Rights Secure Pastoralists' Access to Land? The Community Land Act in Kenya and Its Implications for Samburu Pastoralists. *The Journal of Peasant Studies*, 50, 1735-1756. <https://doi.org/10.1080/03066150.2022.2119847>
- Hendrickson, J. R., Sedivec, K. K., Toledo, D., & Printz, J. (2019). Challenges Facing Grasslands in the Northern Great Plains and North Central Region. *Rangelands*, 41, 23-29. <https://doi.org/10.1016/j.rala.2018.11.002>
- Horstick, O., Jaenisch, T., Martinez, E., Kroeger, A., See, L. L. C., Farrar, J. et al. (2014). Comparing the Usefulness of the 1997 and 2009 WHO Dengue Case Classification: A Systematic Literature Review. *The American Society of Tropical Medicine and Hygiene*, 91, 621-634. <https://doi.org/10.4269/ajtmh.13-0676>
- Hurlburt, V. (1935). The Taylor Grazing Act. *The Journal of Land & Public Utility Economics*, 11, 203-206. <https://doi.org/10.2307/3158670>
- Ivannikov, I., Dollery, B., & Bayerlein, L. (2022). The Crown Land Accounting Dilemma in New South Wales Local Government. *Journal of Public Budgeting, Accounting & Financial Management*, 34, 430-445. <https://doi.org/10.1108/jpbafm-01-2021-0014>
- Jenkins, J. (1999). Politics and Management of Recreational Lands: A Case Study of Crown Land Policy-Making in NSW, 1856-1980. *Annals of Leisure Research*, 2, 1-27. <https://doi.org/10.1080/11745398.1999.10600869>
- Kalande, W. (2008). Kenyan Land Disputes in the Context of Social Conflict Theories. In *FIG*

- Commission 7 Annual Meeting and Open Symposium on Environment and Land Administration “Big Works for Defence of the Territory”* (pp. 1-16).  
[https://www.fig.net/resources/proceedings/2008/verona\\_am\\_2008\\_comm7/papers/13\\_sept/kalande\\_paper.pdf](https://www.fig.net/resources/proceedings/2008/verona_am_2008_comm7/papers/13_sept/kalande_paper.pdf)
- Kandie, S., Maitima, J., & Dossou-Yovo, E. R. (2017). Characterization and Mapping of Land Degradation Risk Areas Using Remote Sensing and GIS in Baringo County, Kenya. *Journal of Arid Environments*, 138, 42-52.
- Karaya, R. N., Onyango, C. A., & Ogendi, G. M. (2021). A Community-Gis Supported Dry-land Use and Cover Change Assessment: The Case of the Njemps Flats in Kenya. *Cogent Food & Agriculture*, 7, Article ID: 1872852.  
<https://doi.org/10.1080/23311932.2021.1872852>
- Kariuki, F., & Ng’etich, R. (2016). Land Grabbing, Tenure Security and Livelihoods in Kenya. *African Journal of Legal Studies*, 9, 79-99. <https://doi.org/10.1163/17087384-12340004>
- Kenrick, J., Rowley, T., & Kitelo, P. (2023). “We Are Our Land”—Ogiek of Mount Elgon, Kenya: Securing Community Tenure as the Key Enabling Condition for Sustaining Community Lands. *Oryx*, 57, 298-312. <https://doi.org/10.1017/s003060532300008x>
- Kimiti, D. W., Hodge, A. C., Herrick, J. E., Beh, A. W., & Abbott, L. E. (2017). Rehabilitation of Community-Owned, Mixed-Use Rangelands: Lessons from the Ewaso Ecosystem in Kenya. *Plant Ecology*, 218, 23-37. <https://doi.org/10.1007/s11258-016-0691-9>
- Koerner, S. E., & Collins, S. L. (2014). Interactive Effects of Grazing, Drought, and Fire on Grassland Plant Communities in North America and South Africa. *Ecology*, 95, 98-109. <https://doi.org/10.1890/13-0526.1>
- Koissaba, B. O. (2016). Elusive Justice: The Maasai Contestation of Land Appropriation in Kenya: A Historical and Contemporary Perspective. In M. M. Kithinji, M. M. Koster, & J. P. Rotich (Eds.), *Kenya after 50: Reconfiguring Historical, Political, and Policy Milestones* (pp. 189-219). Palgrave Macmillan US. [https://doi.org/10.1057/9781137558305\\_9](https://doi.org/10.1057/9781137558305_9)
- Leach, A. (1998). Land Reform and Socioeconomic Change in Kenya. *East African Journal of Peace and Human Rights*, 4, 41-69.
- Lesorogol, C. (2008). *Contesting the Commons: Privatizing Pastoral Lands in Kenya*. University of Michigan Press. <https://doi.org/10.3998/mpub.300488>
- Letai, J. (2014). *Kenya’s Land Reform Agenda: Pastoralism within the Current Land Debate*. Policy Brief—Future Agricultures.  
<https://www.cabidigitallibrary.org/doi/full/10.5555/20163008530>
- Lkhagvasuren, B., & Dulam, J. (2007). Management of Grazing Lands in Mongolia. *Journal of Arid Environments*, 70, 458-467.
- Løvschal, M., & Gravesen, M. L. (2021). De-/Fencing Grasslands: Ongoing Boundary Making and Unmaking in Postcolonial Kenya. *Land*, 10, Article 786.  
<https://doi.org/10.3390/land10080786>
- Matende-Omwoma, R. (2021). *The Story of Land Adjudication in Kenya: Paradoxes, Uncertainties and Reversionary Tendencies*. Institution of Surveyors of Kenya (ISK).  
<https://isk.or.ke/2021/01/26/the-story-of-land-adjudication-in-kenya-paradoxes-uncertainties-and-reversionary-tendencies/>
- Mbaiwa, J. E. (2010). The Socio-Economic Impacts of Community-Based Wildlife Tourism in the Okavango Delta, Botswana. *Journal of Sustainable Tourism*, 18, 575-590.
- Mganga, K. Z., Musimba, N. K., Nyariki, D. M., Nyangito, M. M., Ekaya, W. N., Muiro, W. M., & Mwang’ombe, A. W. (2011). Different Land Use Types in the Semi-Arid Rangelands of Kenya Influence Soil Properties. *Journal of Soil Science and Environmental Management*, 2, 370-374.

- Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MoALFC) (2021). *Agricultural Policy-2021 “Food: Our Health, Wealth and Security”*.  
<https://leap.unep.org/en/countries/ke/national-legislation/agricultural-policy-2021-food-our-health-wealth-and-security>
- Ministry of Lands (2009). *The National Land Policy*.  
<https://repository.kippira.or.ke/bitstream/handle/123456789/4081/The%20National%20Land%20Policy%20june%202009.pdf?sequence=1&isAllowed=y>
- Mkutu, K., & Mdee, A. (2020). Conservancies, Conflict and Dispossession: The Winners and Losers of Oil Exploration in Turkana, Kenya. *African Studies Review*, 63, 831-857.  
<https://doi.org/10.1017/asr.2020.2>
- Moyo, S. (1995). The Land Apportionment Act of 1930: A Historical Analysis. *Zambezia*, 22, 1-18.
- Mulinge, W., Gicheru, P., Murithi, F., Maingi, P., Kihui, E., Kirui, O. K. et al. (2016). Economics of Land Degradation and Improvement in Kenya. In E. Nkonya, A. Mirzabaev, & J. von Braun (Eds.), *Economics of Land Degradation and Improvement—A Global Assessment for Sustainable Development* (pp. 471-498). Springer International Publishing.  
[https://doi.org/10.1007/978-3-319-19168-3\\_16](https://doi.org/10.1007/978-3-319-19168-3_16)
- Musembi, C. N., & Kameri-Mbote, P. (2013). Mobility, Marginality and Tenure Transformation in Kenya: Explorations of Community Property Rights in Law and Practice. *Nomadic Peoples*, 17, 5-32. <https://doi.org/10.3167/np.2013.170102>
- Musyimi, Z., Said, M. Y., Zida, D., Rosenstock, T. S., Udelhoven, T., Savadogo, P. et al. (2017). Evaluating Fire Severity in Sudanian Ecosystems of Burkina Faso Using Landsat 8 Satellite Images. *Journal of Arid Environments*, 139, 95-109.  
<https://doi.org/10.1016/j.jaridenv.2016.11.005>
- Mwangi, E. (2007). Subdividing the Commons: Distributional Conflict in the Transition from Collective to Individual Property Rights in Kenya’s Maasailand. *World Development*, 35, 815-834. <https://doi.org/10.1016/j.worlddev.2006.09.012>
- National Environment Management Authority (NEMA) (2011). *Integrated National Land Use Guidelines for Sustained Societal Attributes—Infrastructure, Environmental Resources and Public Safety*. Intermass Printers and Stationers Ltd.  
<https://www.nema.go.ke/images/Docs/Guidelines/national%20landuse%20guidelines-nema.pdf>
- Nelson, C. J., Moore, K. J., & Collins, M. (2017). Forages and Grassland in a Changing World. In *Forages, Volume 1: An Introduction to Grassland Agriculture* (pp. 1, 3). Wiley-Blackwell.
- Njiru, B. N. (2012). Climate Change, Resource Competition, and Conflict amongst Pastoral Communities in Kenya. In J. Scheffran et al. (Eds.), *Climate Change, Human Security and Violent Conflict: Challenges for Societal Stability* (pp. 513-527). Springer.  
[https://doi.org/10.1007/978-3-642-28626-1\\_24](https://doi.org/10.1007/978-3-642-28626-1_24)
- Njoka, J.T., Yanda, P., Maganga, F., Liwenga, E., Kateka, A., Henku, A., Mabhuye, E., Ma-lik, N., & Bavo, C. (2016). *Kenya: Country Situation Assessment. Pathways to Resilience in Semi-Arid Economies (PRISE)*.  
<https://idl-bnc-idrc.dspacedirect.org/server/api/core/bitstreams/9b334416-a601-4bb2-a93e-c74d776004c3/content>
- NSW Government (2018). *Crown Land Management Act 2016*.  
<https://alc.org.au/newsroom/network-messages/crown-land-management-act-2016-to-take-effect-on-1-july-2018/>
- Nyangweso, D. O., & Gede, M. (2022). Performance Evaluation of Land Administration System (LAS) of Nairobi Metropolitan Area, Kenya. *Land*, 11, Article 203.



- <https://doi.org/10.3390/land11020203>
- Nzau, M., Mwangi, S. W., & Kinyenze, J. M. (2018). Degradation of Grassland Ecosystems, Climate Change and Impacts on Pastoral Communities in Kenya. *African Multidisciplinary Journal of Research*, 3, 1-19.  
<https://journals1.spu.ac.ke/index.php/amjr/article/view/46>
- Okello, M. M., Ole Seno, S. K., & Nthiga, R. W. (2009). Reconciling People's Livelihoods and Environmental Conservation in the Rural Landscapes in Kenya: Opportunities and Challenges in the Amboseli Landscapes. *Natural Resources Forum*, 33, 123-133.  
<https://doi.org/10.1111/j.1477-8947.2009.01216.x>
- Oloo, C. O., Hassan, R., & Mubarak, H. (2021). Over Promising While under Delivering: Implementation of Kenya's Community Land Act. *African Journal on Land Policy and Geospatial Sciences*, 4, 292-307.  
<https://doi.org/10.48346/IMIST.PRSM/ajlp-gs.v4i2.22915>
- Opiyo, F., Wasonga, O., Schilling, J., & Mureithi, S. (2012). *Resource-Based Conflicts in Drought-Prone Northwestern Kenya: The Drivers and Mitigation Mechanisms*. *Wudpecker Journal of Agricultural Research*, 1, 442-453.
- Paik, C., & Shahi, K. (2022). Ancient Nomadic Corridors and Long-Run Development in the Highlands of Asia. *Explorations in Economic History*, 89, Article ID: 101482.  
<https://doi.org/10.1016/j.eeh.2022.101482>
- Pas Schrijver, A. (2019). *Pastoralists, Mobility and Conservation: Shifting Rules of Access and Control of Grazing Resources in Kenya's Northern Drylands*. Doctoral Dissertation, Department of Human Geography, Stockholm University.
- Pas, A. (2018). Governing Grazing and Mobility in the Samburu Lowlands, Kenya. *Land*, 7, Article 41. <https://doi.org/10.3390/land7020041>
- Race, D., Mathew, S., Campbell, M., & Hampton, K. (2016). Understanding Climate Adaptation Investments for Communities Living in Desert Australia: Experiences of Indigenous Communities. *Climatic Change*, 139, 461-475.  
<https://doi.org/10.1007/s10584-016-1800-4>
- REGLAP (2012). *Key Statistics on the Drylands of Kenya, Uganda and Ethiopia*. REGLAP Secretariat; Regional Learning and Advocacy Program for Vulnerable Dryland Communities.
- Reid, R. S., Galvin, K. A., & Kruska, R. S. (2008). Global Significance of Extensive Grazing Lands and Pastoral Societies: An Introduction. In K. A. Galvin et al. (Eds.), *Fragmentation in Semi-Arid and Arid Landscapes: Consequences for Human and Natural Systems* (pp. 1-24). Springer. [https://doi.org/10.1007/978-1-4020-4906-4\\_1](https://doi.org/10.1007/978-1-4020-4906-4_1)
- Salih, M. A. M. (1991). The Pastoral Land Ordinance and the Nuba of Kordofan, Sudan, 1910-1946. *The Journal of African History*, 32, 47-63.
- Sbicca, J. (2015). Farming While Confronting the Other: The Production and Maintenance of Boundaries in the Borderlands. *Journal of Rural Studies*, 39, 1-10.  
<https://doi.org/10.1016/j.jrurstud.2015.03.004>
- Schetter, C., Mkutu, K., & Müller-Koné, M. (2022). Frontier NGOs: Conservancies, Control, and Violence in Northern Kenya. *World Development*, 151, Article ID: 105735.  
<https://doi.org/10.1016/j.worlddev.2021.105735>
- Syagga, P. M. (2006). Land Ownership and Use in Kenya: Policy Prescriptions from an Inequality Perspective. In Society for International Development, Regional Office for Eastern Africa (Eds.), *Readings on Inequality in Kenya: Sectoral Dynamics and Perspectives* (p. 289). Society for International Development, Eastern Africa Regional Office.
- Teague, R., & Kreuter, U. (2020). Managing Grazing to Restore Soil Health, Ecosystem Function,

- and Ecosystem Services. *Frontiers in Sustainable Food Systems*, 4, Article 534187. <https://doi.org/10.3389/fsufs.2020.534187>
- Veit, P. (2019). History of Land Conflicts in Kenya. *Gates Open Research*, 3, Article No. 982. <https://gatesopenresearch.org/documents/3-982>
- Verdoodt, A., Mureithi, S. M., & Van Ranst, E. (2010). Impacts of Management and Enclosure Age on Recovery of the Herbaceous Rangeland Vegetation in Semi-Arid Kenya. *Journal of Arid Environments*, 74, 1066-1073. <https://doi.org/10.1016/j.jaridenv.2010.03.007>
- Willy, D. K., & Chiuri, W. (2010). New Common Ground in Pastoral and Settled Agricultural Communities in Kenya: Renegotiated Institutions and the Gender Implications. *The European Journal of Development Research*, 22, 733-750. <https://doi.org/10.1057/ejdr.2010.43>
- Wily, L. A. (2017). Customary Tenure: Remaking Property for the 21st Century. In M. Graziadei, & L. Smith (Eds.), *Comparative Property Law: Global Perspectives* (pp. 458-478). Edward Elgar Publishing.
- Wily, L. A. (2018a). The Community Land Act in Kenya Opportunities and Challenges for Communities. *Land*, 7, Article 12. <https://doi.org/10.3390/land7010012>
- Wily, L. A. (2018b). Risks to the Sanctity of Community Lands in Kenya. A Critical Assessment of New Legislation with Reference to Forestlands. *Land Use Policy*, 75, 661-672. <https://doi.org/10.1016/j.landusepol.2018.02.006>