



## Article

# NGO-Led Community-Based Conservation: A New Frontier of Territorialization with Implications for Pastoralists' Land Tenure and Climate Change Adaptation

Jackson Wachira <sup>1,\*</sup> , Joanes Atela <sup>2</sup>, Paul Stacey <sup>3</sup>  and George Outa <sup>4</sup>

<sup>1</sup> Department of Earth and Climate Sciences, The University of Nairobi, Nairobi P.O. Box 29053, Kenya

<sup>2</sup> Africa Research and Impact Network, Nairobi P.O. Box 53358-00200, Kenya; j.atela@arin-africa.org

<sup>3</sup> Department of Social Sciences and Business, Roskilde University, 4000 Roskilde, Denmark; pas@ruc.dk

<sup>4</sup> Centre for Science, Technology and Society Studies, Technical University of Kenya, Nairobi P.O. Box 52428-00200, Kenya; georgeouta@tukenya.ac.ke

\* Correspondence: j.wachira@outlook.com or j.wachira@students.uonbi.ac.ke

**Abstract:** In recent years, many community-based conservancies (CBCs) led by non-governmental organizations (NGOs) have been established on land inhabited by pastoralists in Northern Kenya. Despite a growing body of research, little attention has been paid to the impacts on pastoralists' climate change adaptation. We provide a deeper understanding by considering NGO-led community-based conservation (NGO-led CBC) as a new frontier of territorialization and adaptation to climate change and variability as a social-natural process. Based on an analysis of primary data collected in Samburu County, Kenya, we show that NGO-led CBC involves resource enclosures that aggravate conflicts over land rights and pastoralists' vulnerability to climate change and variability by constraining their mobility. In relation, the legal and institutional environment promoted by NGO-led CBC leads to increased control over ecologically vibrant lands, which erodes pastoralists' land tenure security and climate change adaptation. Although NGO-led CBC plays an important role in enhancing access to external finance and incentivizing diversification, governance mechanisms remain opaque and overshadow local institutions. Overall, we highlight the need for actors to carefully consider the implications of this conservation/development model for already hard-pressed land-dependent communities.

**Keywords:** NGO-led community-based conservation; new frontier of territorialization; pastoralists; climate change adaptation; land tenure; northern Kenya



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## 1. Introduction

Pastoralists are among the communities most affected by global climate change and variability [1]. This is traceable to multiple factors, including high poverty levels [2,3]; biophysical conditions such as extreme aridity and high climate variability [4]; and dominant depictions of pastoralists and resultant political, policy, and development approaches stereotyping pastoralism as retrogressive and destructive [5–7]. Pastoralist marginalization is exacerbated by moral, economic, cultural, and idiosyncratic factors privileging formally educated and wealthy population segments over other pastoralists [8–11].

The effects of climate change and variability on pastoral systems include reduced pasture, animal productivity, and reproductivity [12]. However, over the last 7000 years, pastoralists have developed diverse adaptation strategies to reduce vulnerability to the adverse impacts of climate, as well as other socioeconomic and environmental changes [13]. Often, this involves radical reconfiguration or innovation in response to complex environmental shocks [11,14]. Such responses by individuals and communities to maintain or improve livelihoods are termed autonomous or spontaneous adaptation [15,16]. This contrasts with the so-called planned adaptation, which covers actions and strategies intentionally designed and implemented by the state and other external actors, ostensibly

to reduce local vulnerability and increase resilience to climate change [14,17,18]. Despite their respective conceptual and practical differences, however, planned and autonomous adaptation are interconnected through context-specific interactions between affected actors and institutions [14]. This paper views autonomous and planned adaptation as inextricably connected and understands climate change adaptation as a combination of knowledge, experience, and institutional structures that enable individuals to make informed decisions and potentially take appropriate actions in response to climate change and other environmental and socioeconomic changes [14,19]. The context-specificity and contingent nature of climate change adaptation imply that people respond differently to climate change and variability and that their adaptation is shaped by combinations of existing, emerging, and disruptive socioeconomic, ecological, and political developments [14,15,20].

In the pastoralist-inhabited arid and semi-arid lands (ASALs) of northern Kenya, the initiation and subsequent growth of NGO-led community-based conservation (NGO-led CBC) constitutes one of the most profound land use and developmental changes in recent decades. Between 2000 and 2019, thirty-nine community-based conservancies covering a considerable 4.7 million hectares of land were established, representing a 700% growth in CBC numbers [21]. In relation, a cumulative commercial income of KES 672,588,362 (approximately 5 million USD) from diverse domestic and international sources was managed by northern Kenyan CBCs between 2011 and 2019 [21] (p. 75). The scale and financial resources associated with NGO-led CBC mirror key dynamics of the global land rush, a phenomenon traced to the early 2000s, which involves the control of land in the Global South by various actors for diverse market-oriented goals [22–24]. Meanwhile, NGO-led CBC has received significant national and international policy and political support as a pathway for pastoralists to achieve diverse developmental ambitions, climate change adaptation and mitigation, and biodiversity conservation [21,25–28]. This leads us to the question: How has the establishment and subsequent rise of NGO-led CBC, including the related institutional changes for resource management, impacted pastoralists' climate change adaptation strategies and land tenure?

Although there is a growing body of research on market-based conservation in general and NGO-led CBC in particular, little attention has been paid to the effects on pastoralists' climate change adaptation and land tenure. Some studies suggest that NGO-led CBC results in improved socioeconomic well-being for pastoralists and enhanced ecological conditions [29–31]. However, as observed in southern Africa, where contemporary CBC was established much earlier and is more widely studied, research is nevertheless often limited to or undertaken with the direct beneficiaries or promoters of NGO-led CBC (see, for instance, [29,30,32]), and which poses a methodological weakness [33]. Community-based conservation is also conceptualized as ecosystem-based adaptation [34–36] or as payment for ecosystem services [37]. These approaches are often referred to as nature-based solutions (NbS) to climate change, with the assumption that they are more effective than technocratic adaptation and mitigation strategies [38,39]. However, policies and studies in support of NbS to climate change are criticized for limited engagement with social, economic, and political realities [40], and for the risk that such interventions may lead to maladaptation [17]. Critical agrarian scholars argue, for example, that such approaches lead to new forms of territorialization that partition resources and alienate local land-dependent groups [41–45]. Inspired by critical agrarian studies, we characterize NGO-led CBC as a new frontier of territorialization and examine the implications for pastoralists' climate change adaptation strategies and land tenure. New frontiers of territorialization involve new cycles of unilateral or collective control of people and land by emergent, more powerful actors, which alienate pre-existing owners and users and rework systems of tenure [44,45].

The primary data for this study are from Samburu County, Northern Kenya, which presents a highly relevant context for the case study on three fronts. First, it is a climate change hotspot owing to the high vulnerability and adverse impacts of climate change in recent decades [46–48]. Second, unlike other community-based conservation models in Kenya and southern Africa, which cover comparatively smaller areas, the model

here covers substantial areas of land [49], potentially affecting the entire socioecological system. Finally, the community-based conservation model evident here contrasts with models in other parts of Kenya because it involves vast swathes of customary land tenure, whereas in Kenya's southern rangelands, it occurs on private land [37,50]. In Kenya and other countries across sub-Saharan Africa, customary land governance is evolving [51–53]. On this basis, this study makes an important and timely contribution to the literature and policy.

The remainder of this paper is organized as follows: Sections 2–4 examine the relevant literature to introduce the concept of new frontiers of territorialization, expound on the social-natural and contingent nature of climate change adaptation, and trace the evolution of NGO-led CBC as a new frontier of territorialization. Together, these sections provide an analytical and conceptual basis for interpreting the primary data. Section 5 elaborates on the materials and methods used in this study. Section 6 presents the results of this study. Section 7 presents a discussion of the results, and Section 8 concludes this paper.

## 2. New Frontiers of Territorialization

In his pioneering work, Turner describes the American West as a frontier to be colonized [54], a process whereby 'the civilized gradually subsumes the wild, and nature comes under the control of man' ([44] p. 390). Frontiers are, in his view, 'the meeting point between savagery and civilization' and 'the line of most rapid and effective Americanization' [54]. Based on this understanding, frontiers are regions to be conquered and exploited for civilizing purposes. This tendency to cloak conquest and ethnocide in the language of righteousness has long been a central pillar of broader frontier dynamics. An alternative perspective rejects the racialization within the distinction between civilized and primitive spaces and how it has helped to legitimize the disruption of property systems, political structures, social networks, and ways of life to pave the way for new modes of extraction [44,55]. This perspective sees the process of frontier-making as cyclic, whereby past processes give way to new ones following capitalism-inspired conjectures. This is the case, for instance, with the global financial crises in 2007–2008 and the associated global drive for land for food production, green energy, and biodiversity conservation, which have led to widespread usurpation of control of vast amounts of land across the Global South in the last two decades [22,23,56,57]. This global land rush is driven by wealthy foreign governments, investors, and powerful multilateral and bilateral organizations in collaboration with domestic governments and local intermediaries [42,57–60]. The processes involved resemble the land rushes of the past (e.g., the dispossession of the Irish in the 17th century, the Amerigo-Indians and English poor in the 19th century, and colonial and post-independent land control mechanisms) [61–63]. Like past land rushes, contemporary land control processes result in the contested shifting of the access to, use of, and ownership of land and biodiversity from indigenous groups and designated first settlers to the state and political and economic elites [61,64–66]. However, contemporary land control processes, such as those involving the production of food, feed, and fuel [23,67,68]; speculation [56,65,69]; or those justified based on green credentials [41,42,51] can be distinguished by several features. These include their rapidity and failure to absorb dispossessed communities into the labor processes of the emergent, dominant economic frameworks [58]; their vastness in size and capital; the role of new actors; and their tendency to emerge in response to multiple, real or imagined crises [23].

Territorialization, on the other hand, relates to 'the attempt to affect, influence, or control actions, interactions, or access by asserting and attempting to enforce control over a specific geographic area' [70] (p. 55). Typically, political economy theorists see partnerships between states and private corporations as key and dominant drivers of territorialization. However, along with a rich body of critical agrarian scholarship, we emphasize the role of other actors and institutional forms [10,43,44,70–72]. New frontiers of territorialization involve governance and disciplining architecture that constitutes a form of governmentality [45,73], which is fueled by the discovery of new resources or a renewal of interest in the

value of pre-existing resources and the emergence of resource-based opportunities [44]. The result is 'sites where authorities, sovereignties, and hegemonies of the recent past have been or are currently being challenged by new land control dynamics' [45] (p. 668). Through these mechanisms, powerful actors create space and assert claims to the land [45,74]. In turn, the process is contested and spawns counterclaims as competing actors seek to assert control [10,75–77].

Drawing on Peluso and Lund's notion of the 'new frontiers of land control', we identify legal instruments, institutional alliances, and the creation and communication of boundaries as the three key processes constituting new frontiers of territorialization [45]. Legal instruments involve, for instance, legislation on private rights and exclusive ownership with the issuance of title deeds [45,78,79]. This can include granting private rights to the members of a particular group. Across sub-Saharan Africa, the transition to private tenure has been influenced by the work of developmental economist Hernando de Soto and multilateral organizations such as the World Bank on the understanding that private property provides a pathway for poverty reduction and social stability through access to credit [78,80,81]. However, while gaining traction across sub-Saharan Africa in recent decades, the privatization of land to individuals or groups has not resulted in improved security of tenure for many others, partly because of the erroneous assumption that formal land titles result in improved productivity [82,83]. Moreover, privatization processes are prone to manipulation and interference by the state [84], local elites [10,85], and international NGOs [78].

Institutional agreements and alliances involve formal or informal arrangements that stipulate engagement [86]. Hereby, institutions may be understood as the 'complexes of norms and behaviours that persist over time by serving collectively valued purposes' [87] (p. 7). Institutions serve to minimize uncertainty by establishing a consistent framework for human interaction, but this does not always yield optimal results [86]. The outcome of institutional relationships is also shaped by (changing) relations, with the more powerful often but not always enjoying advantageous results. This means that agreements and institutional relationships can influence both land governance and disciplinary practices, with implications for governmentality [45,73,88]. For instance, Igoe and Brockington show how new conservation networks involving local communities, states, NGOs, and profit-oriented organizations collaborate to create and claim territories. This ostensibly protects the natural environment from the negative effects of capitalism, but it also alienates land, which profoundly affects the rural communities in the targeted areas due to the privileging of market-based ideals [43,89]. Similarly, German et al. observe that by pursuing collaborations and supporting the formalization of customary tenure, international NGOs can gain and legitimize authority over the control of critical range resources for conservation, but with the consequence that customary institutions are excluded [90].

Finally, boundary-making involves defining and communicating boundaries and restrictions to those within the territory. This may range from formal to informal markers that can be codified using land titles and maps [42,74]. This results in physical or institutional enclosures that curtail access to initial resource users and inhabitants [42,45]. The arguments that local communities are inherently destructive and therefore ought to be separated from nature [7], and that ecosystems can and should pay their way to conservation [91], inform such boundary-making processes [42]. In recent years, such ideas have influenced ambitious conservation projects, including efforts to put 30% of global (but mainly developing countries') land under conservation by 2030 [27,92]. At the same time, however, this has had a significant impact on conservation efforts around the world, often resulting in negative consequences for local communities and the environment. Several researchers contend that this occurs because the neoliberal policies and practices within which such practices are anchored prioritize economic growth and private ownership over conservation and community well-being [42,43,91,93,94].

Borras and colleagues argue that contemporary land control processes by powerful domestic and external actors may occur through stealth [41]. This involves highly veiled

and secretive processes that may be presented and justified by promoters as transformation opportunities. However, this does not make them less important but complicates their governance [41] and understanding [95]. By considering the legal, institutional, and physical processes associated with the control of vast amounts of land for conservation, the concept of a new frontier of territorialization allows for the interrogation of both explicit and implicit processes constituting NGO-led CBC. As such, the interplay between legal, institutional, and physical processes comprises a useful framework for understanding and studying such developments. As discussed in the next section, institutions can influence climate change adaptation in diverse ways.

### 3. Climate Change Adaptation as Contingent and Social-Natural Process

The Intergovernmental Panel on Climate Change (IPCC) defines adaptation as ‘the process of adjustment to actual or expected climate and its effects to moderate harm or exploit beneficial opportunities’ [96] (p. 43). While the conceptualization of adaptation within scholarship and international climate policy has evolved to encompass human agency and transitional and transformational aspects [15,96–98], many internationally and nationally designed and implemented programs are based on the assumption that vulnerability is caused by biophysical changes and that the most effective way to adapt is through a combination of technical measures and institution building [99]. However, vulnerability to climate change arises from diverse and deeply entrenched social, economic, and political factors that influence people’s actions, incentives, opportunities, and constraints [15,17,100,101]. Moreover, adaptation to climate change and variability occurs in the context of other environmental, social, economic, and political processes [14,19,102,103].

Diverse, highly contextual adaptation types exist. This study draws on two conceptual frameworks to interpret climate change adaptation and to explore how institutional arrangements such as new frontiers of territorialization shape pastoralists’ response to climate change and variability. Thornton and Manasfi identify eight key strategies for climate change adaptation, which vary on the degree to which they are autonomous or planned [14]. These include mobility, exchange, rationing, pooling, diversification, intensification, innovation, and revitalization. Mobility involves movement to avoid risk or find better living conditions; exchange relates to the flow of goods and services; rationing involves controlling limited resources; pooling relates to the sharing of assets or incomes or the use of collective resources during scarcity; diversification involves increasing the variety of food, income, and income strategies; intensification involves increasing resource availability; innovation involves applying new methods to address needs; and revitalization involves reorganizing ideology and practices to reduce stress [14] (p. 139). Typically, these adaptation strategies are interrelated and may produce new combinations and pathways out of vulnerability [104].

Agrawal meanwhile argues that institutions influence adaptation to environmental changes in at least three critical ways [102]: First, they structure the impact of, and vulnerability to, climate hazards on social groups and communities. The assumption here is that more equitable access to livelihood-related institutions and their resources, coupled with transparent communication and governance, reduces the adverse impact of climate-induced hazards. Conversely, highly stratified and monopolized institutional and information access can exacerbate impacts and vulnerability. Second, they can create an incentive framework within which the outcomes of individual and collective action unfold. In other words, dominant institutional frameworks may promote certain adaptation strategies that either support or constrain others. Third, by governing access to resources through external interventions, institutions can reinforce or undermine existing adaptation practices. Based on these insights, we examine the relationships between institutional change related to NGO-led CBC and pastoralists’ climate change adaptation.

In the next section, we trace the emergence of NGO-led CBC as a new frontier of territorialization in Kenya. The purpose is to highlight the contextual, broader social, economic, and political processes within which NGO-led CBC is embedded. The section

shows that although specific motivations for biodiversity conservation change over time, political economic frameworks that privilege the commodification of biodiversity and approaches that shift control over critical resources and biodiversity from local communities cut across different eras.

#### **4. The Emergence of NGO-Led CBC as a New Frontier of Territorialization in Northern Kenya**

NGO-led CBC is a relatively new phenomenon in northern Kenya. However, it constitutes part of a continuum of conservation practices traceable to the beginning of the 20th century when British colonial rulers arrived in Kenya. At this time, the region was heavily populated by wildlife and sparsely inhabited by people owing to dramatic changes in human demography resulting from the rinderpest epizootic in the 1880–1900 decades [105,106]. Consequently, the colonial government established game reserves ostensibly to arrest wildlife dominance over large areas and protect wildlife from ‘destructive’ pastoralists [105,107]. By 1919, two game reserves had been established. The Northern Reserve covered 36,000 km<sup>2</sup> and was located between Lake Turkana and Mt. Kenya [108]. On the other hand, the Southern Reserve situated between Nairobi and the Tanganyika border covered 27,000 km<sup>2</sup> [109,110]. Although wildlife was the main food source for pastoralists when catastrophes such as droughts decimated their livestock, colonial authorities only reluctantly acknowledged their right to hunt [109]. At the same time, however, colonial laws allowed for political and economic elites to hunt enormous amounts of big game to protect agricultural enterprises for trade and leisure [109]. This precipitated unprecedented destruction of biodiversity across the colony [95,109,110].

Around the end of 1920, pastoral production systems in the country began to recover from the disruptions of the 1880–1890 decade and human and livestock populations were on the rise [106]. Consequently, dominant administrative perceptions of pastoralism began to change. Supported by studies such as Herskovit’s cattle complex, which misrepresented pastoral production systems as retrogressive, colonial rulers pushed new arguments around overstocking and degradation in pastoral systems [6,7,106,111]. This new arrangement ignored pre-colonial relationships, where most pastoral communities sought and succeeded in controlling biodiversity to address various social, cultural, and economic needs, while also preserving perceived intrinsic value and relationships [112]. This narrative shaped colonial fortress conservation policies, perceiving pastoralists as inherently destructive and counterproductive to efforts to preserve biodiversity [109,113]. Consequently, protected areas established by colonial rulers were transformed into game parks starting in 1945, leading to the eviction of pastoralists [109,110,114]. This eroded pastoralists’ claims over critical natural resources while concurrently raising economic burdens, for instance, through the loss of livestock to wildlife [90,115]. However, partly because of the disruption of the symbiotic relationships between pastoralists and biodiversity and the policy framework favoring political and economic elites to extract natural resources, these conservation measures did not halt the deteriorating biodiversity conditions [109].

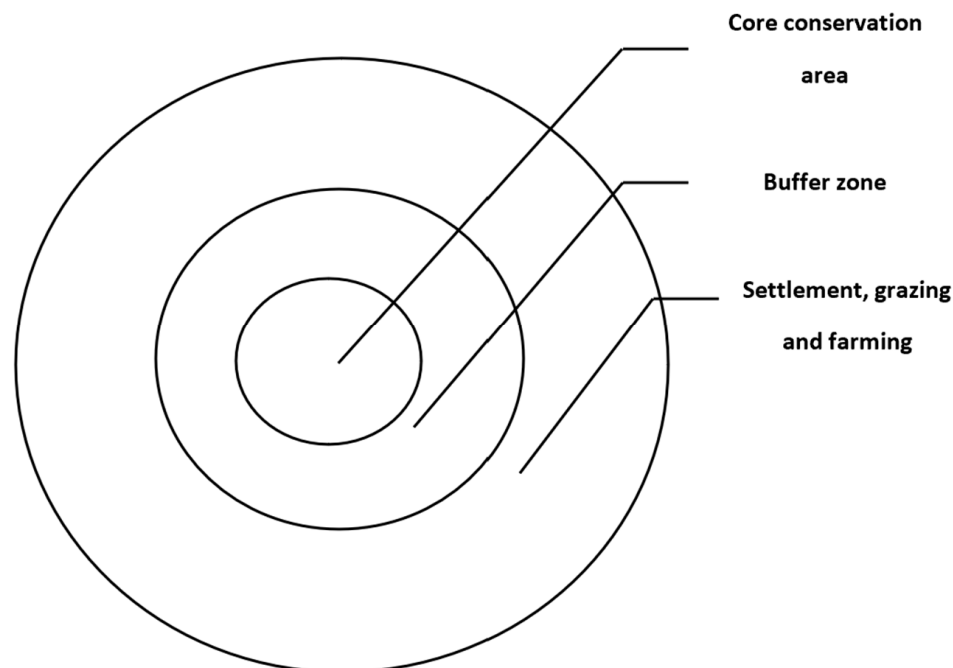
The independent Kenyan government adopted the colonial biodiversity conservation policy virtually unchanged. To consolidate power at both national and local levels, the state sought to control all natural resources [109]. As a result, the colonial era’s ambiguity and contestation regarding community rights to control and access critical natural resources spilt over into independent Kenya. The discontent by communities was expressed in the form of increased wildlife losses, for instance through the killing of rogue wildlife [90,116]. To address declining wildlife populations and the resulting international outcry, the Kenyan government banned all forms of wildlife hunting in 1977 [117]. However, during the same period (1970s), the government generally realized that protected areas covered only a small portion of the total area utilized by wildlife [109,115]. This led to the piloting of collaborative management (co-management) approaches, whereby pastoralists would benefit from tourism income and donor-funded development projects by making their land available for wildlife dispersal [116,118]. This experiment yielded mixed results, but it

nonetheless strongly shaped the 1975 wildlife policy that institutionalized co-management approaches [119]. However, due to insufficient financial resources, corruption, poaching, and nepotism, these efforts did not result in desirable outcomes [109].

By the late 1980s and the early 1990s, the idea of community-based conservation had emerged more strongly, predominantly targeting pastoral regions. This was partly due to the high numbers of wildlife spreading across or inhabiting these lands. Previous studies estimate that up to 75% of the total wildlife population in Kenya—especially the so-called big five (elephant, rhino, cheetah, buffalo, and leopard) that have remained the main focus of biodiversity conservation efforts and at the center of Kenya's multi-billion dollar tourism industry—disperses over customary lands [115,117,120]. While the Kenya Wildlife Service, the government agency mandated to manage the country's wildlife [109,116], led the implementation of community-based conservation imperatives, prominent multilateral and bilateral organizations provided virtually all the resources to operationalize this conservation model. These include the World Bank's USD 66 million Protected Areas and Wildlife Service project [121], USAID's USD 16.5 million Conservation of Biodiversity Resources Areas [122,123] and their Conservation of Resources through Enterprise [117,124]. Meanwhile, so-called participating communities were usually involved in contractual commitments providing game scouts and were required to accept land use restrictions in their wildlife areas [110]. However, the new model for biodiversity conservation could not effectively reverse biodiversity loss because of what the funders' reports indicated as government bureaucracy, unrealistic donor-driven project designs, poor human resource management, and weak financial management systems [121,123,125]. The promotion of the control of natural resources by local landowners also conflicted with the government and commercial actors' interests in maintaining control over valuable resources [126–128]. Thus, as Nelson and Agrawal contend, external aid alone has proven insufficient to propel the decentralization of biodiversity conservation because underlying political and economic constraints and interests are not addressed [128]. In other cases, however, communities pushed against the initiatives due to poor levels of involvement and participation [110].

As state institutions struggled to implement community-based conservation, private actors occupied an increasingly central role. For instance, despite the lack of a national legislative or institutional framework to guide the process, Ian Craig—an influential and wealthy Kenyan of British descent whose family had been running the Lewa Wildlife Conservancy, a high-end private wildlife sanctuary in northern Kenya—engaged with pastoralist elites and politicians to establish community-based conservancies [93,129,130]. Up to 2000, the already faint government footprint was scaled down further, following the closure of the Protected Areas and Wildlife Service (PAW) and COBRA (Conservation of Biodiversity Resources Areas) projects in 1998 and 1999, respectively [110]. This resulted in a power vacuum that allowed for private actors to spearhead community-based conservation efforts in northern Kenya. In 2004, Ian Craig collaborated with local politicians and influential pastoralists to form the Northern Rangeland Trust (NRT), an NGO aimed at 'supporting the growing number of community conservancies in northern Kenya' [130] (p. 3).

The NRT defines community conservancy as a 'community-owned and community-run institution that aims to improve biodiversity conservation, land management, and the livelihoods of its constituents over a defined area of land traditionally owned or used by that constituent community' [130] (p. 10). By seeking to balance community participation, ecological stability, and livelihoods, the definition closely mirrors scholarly and policy work promoting nature-based approaches as sustainable solutions to complex human-ecological challenges [37–39]. Private actors such as the Lewa Wildlife Conservancy initially provided technical and financial resources to the NGO-led CBC model, but over time, multiple international donors and organizations have become involved, propelling the NGO-led CBC to be an emergent and influential conservation and development model in this region [21,26,93]. A typical NGO-led community conservancy system consists of a core conservation area, buffer zone, settlement, and grazing (and farming in arable regions), as shown in Figure 1.



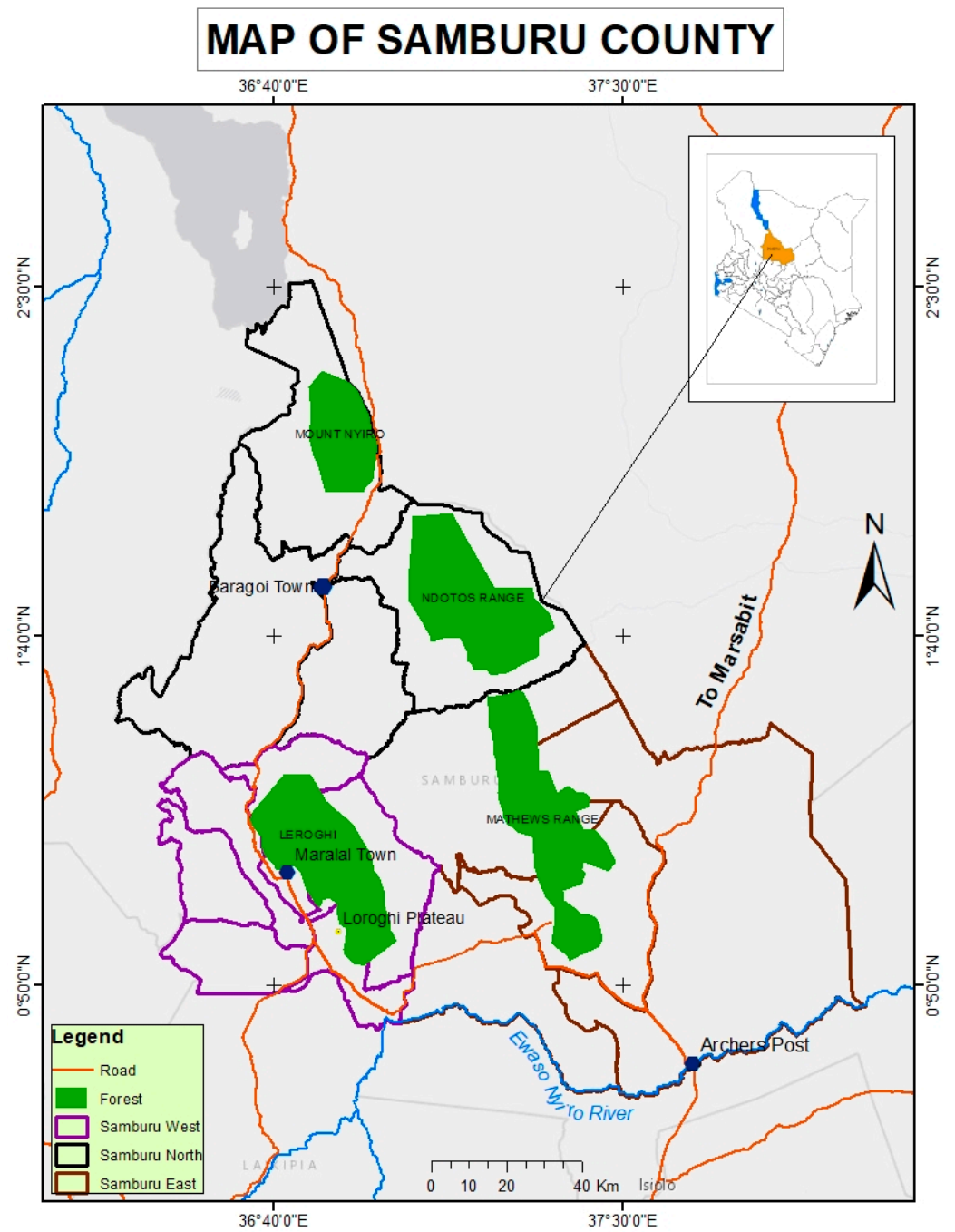
**Figure 1.** Typical land use pattern in NGO-led CBCs. **Source:** Authors.

Core conservation areas are highly restricted territories that are usually reserved exclusively for biodiversity conservation and tourism. One such area measures 10,000 ha [129]. According to the Land Matrix, a database that monitors global land deals, domestic acquisitions cover 50 or more hectares, whereas transnational large-scale land acquisitions involve 200 or more hectares [24]. The 10,000-hectare enclosure significantly exceeds the median value of 6500 hectares for large-scale land acquisitions in Kenya [10]. Core conservation areas are surrounded by ‘buffer zones,’ which are similarly highly restricted through multiple rules, monitoring, and regulations but where livestock grazing may be allowed during extreme droughts [130–132]. Finally, settlement and grazing areas are the outermost regions where people live, graze, and farm (in less arid areas) and where multiple livelihoods, resilience, peace, security, and other developmental interventions are spearheaded by conservancy management. The control of large amounts of land; the involvement of new actors such as influential conservation NGOs, private actors, donors, and new community institutions; and the array of legal, financial, and institutional tools at their disposal make NGO-led CBC a new frontier of territorialization. In the following section, we examine how these dynamics shape pastoralists’ climate change adaptation strategies. First, however, we elaborate upon the materials and methods used in this study.

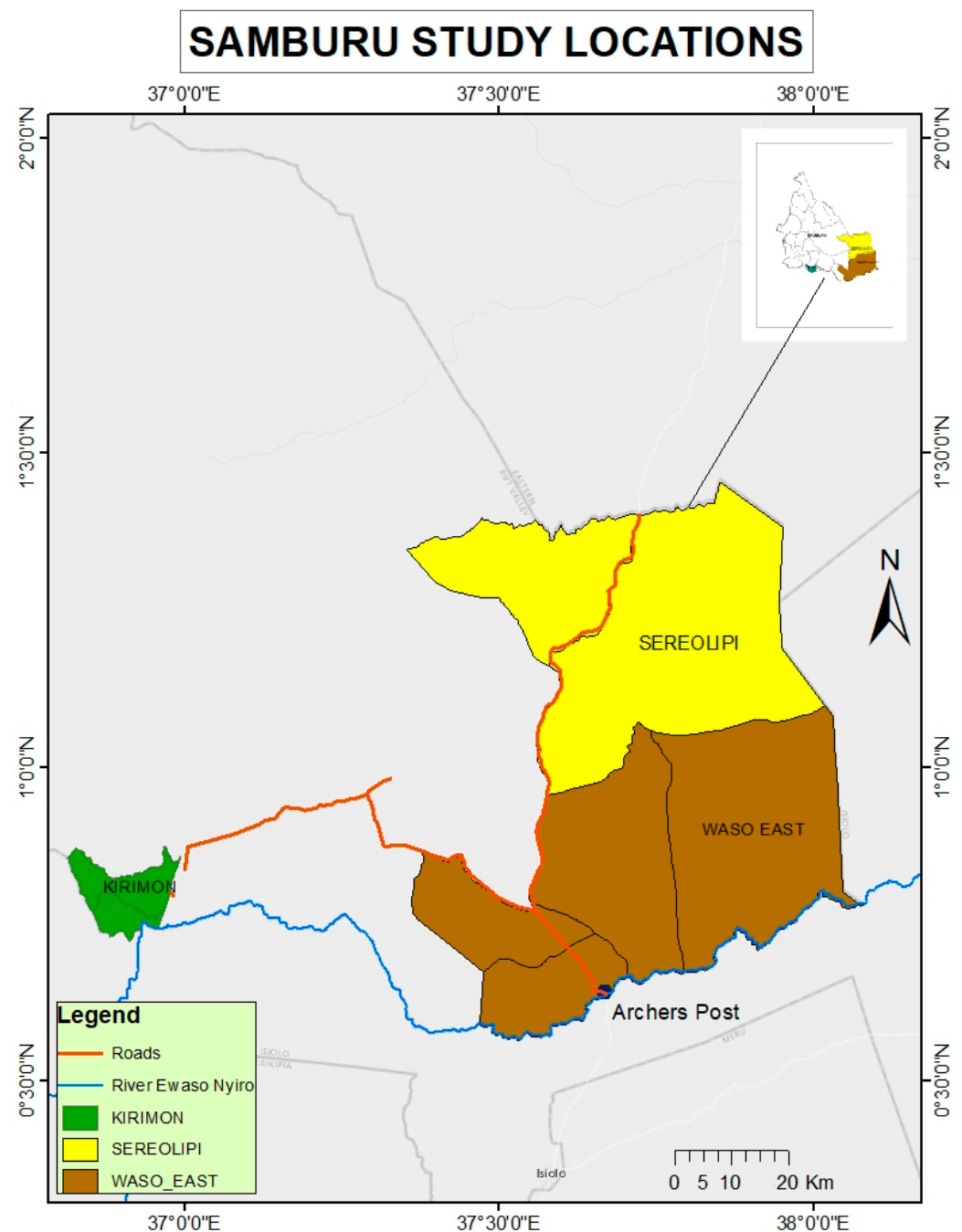
## 5. Materials and Methods

The primary data for this study were collected in Samburu County, one of Kenya’s 29 ASAL counties (Figure 2). Data were collected during repeated visits of between 5 and 30 days in May and August 2021, February and March 2022, and November 2023. Specifically, data were collected in two sub-counties, Samburu West and Samburu Central, in three administrative locations: Waso, Sereolipi, and Kirimon (Figure 3).<sup>1</sup> Waso and Sereolipi host Sera Community-Based Conservancy (SCBC), which was established in 2001 and occupies approximately 339,540 ha. Kirimon hosts Nkoteiya Community-based Conservancy (NCBC), established in 2016, which covers 15,715 ha. The study locations were selected to offer insights into the diverse socioecological dynamics of Samburu County. That is, Losesia and Sereolipi, which are located in the more arid parts of Samburu, are categorized by the County Government of Samburu as ‘low potential land’ [133].<sup>2</sup> In contrast, Kirimon is located in Samburu West, an ecological region labelled as ‘medium to higher potential land’ due to the relatively higher rainfall in this agroecological zone.





**Figure 2.** Map of Samburu County. **Source:** Developed by the Directorate of Resource Survey and Remote Sensing (DRSRS) in collaboration with the Rights and Resilience Project (<https://rare-net.org/>).



**Figure 3.** Map of study locations. **Source:** Developed by the Directorate of Resource Survey and Remote Sensing (DRSRS) in collaboration with the Rights and Resilience Project (<https://rare-net.org/>).

Methodological challenges in studying large-scale land control processes have been documented. These include the tendency of activist organizations and media to rely on quick ‘killer facts’ [134], as well as the reluctance of promoters and investors to share data with researchers [135]. We overcame these challenges using an inductive research approach, allowing for data to inform an appropriate analytical framework. This mitigated the challenges associated with any priori constructs, which could undermine the relations between us as researchers and NGO-led CBC promoters, investors, and interests (see, for instance [135]).

Our study is empirically grounded in a mixed-methods approach, including a household survey, key informant interviews, focus group discussions, and field observations. A broad range of published and grey literature was examined and interpreted, providing a

critical and historicized understanding of the contextual and broader social, political, and ecological dynamics shaping pastoralism, biodiversity conservation, and climate change adaptation. Many large-scale land acquisition studies have been ahistorical [84]. Grey material aided triangulation of the primary data [21,131,136–138] and published academic literature provided the conceptual and theoretical frame.

We conducted a socioeconomic survey of 350 households based on the Yamane formula ( $n = \frac{N}{1+N(e)^2}$ ) [139].<sup>3</sup> Through random sampling, 165, 118, and 67 questionnaires were administered to household heads or their spouses in Waso, Kirimon, and Sereolipi, respectively. These location-level sample sizes were distributed across various sub-locations and were directly proportional to the sub-location populations. The household survey was administered by the first author, with the support of three local research assistants. Kiswahili and Samburu languages, the main languages in this region, were used to administer the survey. The questionnaire contained both closed and open-ended questions. Among others, closed questions covered data on gender, wealth, age, and education, which allowed for a granulated analysis of relationships with diverse pastoralists' land tenure status and strategies for climate change adaptation. For instance, based on household size, age, and livestock holdings, a wealth index (TLU/adult equivalent) was generated [140].<sup>4</sup> Given the centrality of livestock among pastoralists, researchers apply the tropical livestock unit/adult equivalent (TLU/AE) as a suitable indicator of wealth among pastoralist households [140–143]. Pastoralist households that possess 4.5 or more per adult equivalent (AE) are considered to sufficiently meet their household food and socioeconomic needs. Thus, the TLU/AE enabled the analysis of pastoralists' climate change adaptation based on wealth categories and the role of livestock-based wealth in relation to conservancies. Closed questions also allowed for the collection of data on pastoralists' perceptions of a broad range of dynamics related to climate change, adaptation, and NGO-led CBC. On the other hand, open-ended questions enabled respondents to state and explain their opinions, allowing for a better understanding of broader contemporary and historical issues. Descriptive and inferential statistics using Microsoft Excel and SPSS Version 28 software were used to analyze the household survey data.

We undertook forty-six semi-structured interviews with government officials, community-based and non-governmental organizations (CBOs and NGOs), CBC representatives, local opinion leaders, and community leaders. We also undertook twelve focus group discussions (FGDs) with group ranches/community lands boards; conservancy board members; and men, women, and youth from the study areas. The interviews and FGDs were semi-structured and primarily led by the first author. Interviews and FGDs provided knowledge of the historical processes, day-to-day experiences, and social relationships between pastoralists and actors involved in community-based conservation. In addition, these methods enabled us to obtain individual respondents' perceptions of various events, practices, and processes related to local climate, adaptation strategies, and community-based conservation imperatives. Finally, we visited and undertook transect walks in SCBC and NCBC to observe and triangulate some of the diverse dynamics accruing from the household survey, interviews, and FGDs, such as the nature, use, and access of different categories of land constituting community conservancies and the experiences of contestation and exclusion. A general inductive approach for analyzing qualitative data [144] and thematic analysis [145] were employed to identify, analyze, and report patterns within the data. This process involved access to the original data, followed by a series of interactive processes aimed at extracting meanings and relationships between NGO-led CBCs, pastoralists' land tenure, and climate change adaptation strategies [146].

## 6. Results

This section is divided into two parts: The first briefly outlines the primary climate change adaptation strategies used by Samburu pastoralists in response to climate change and variability. The second presents the impacts of NGO-led CBC on pastoralists' adaptation strategies and land tenure.

### 6.1. Samburu Pastoralists' Climate Change Adaptation Strategies

The household survey shows that residents of Samburu perceive the local climate to have severely deteriorated. Of the 350 households participating in the household survey, 86% perceived rainfall amounts to have significantly decreased, whereas 94% and 93% perceived drought severity and local temperature, respectively, to have significantly increased since they settled in their respective locations.<sup>5</sup> According to one respondent, these conditions are worsened by unfavorable economic conditions.

'In 1984, we experienced a severe drought, and livestock died in large numbers. Since then, more droughts have occurred. While we had enough rain and healthy animals in the past, we can now go for three years without rain. Previously, we had many livestock, but now the wealthiest has about one hundred goats that may belong to several co-wives, so only about 20 per boma (household). Previously, you would find someone who had five wives, each of whom had approximately 100 goats. The climate has worsened, but so has the economy. Previously, we depended on milk, but now there is none due to inadequate grass, and people sell their livestock at throw-away prices.' (Participant, elderly woman, FGD # 2, Samburu East)

In the above, we see how diverse socioeconomic and political processes can compound climate change and variability. Different Samburu pastoralists have adopted diverse adaptation strategies in response to deteriorating environmental conditions. As illustrated in Figure 4, the survey indicates that migration in search of pasture and water, engaging in casual jobs, grazing in conservation areas, and relying on relief constitute some of the main strategies pastoralists in Samburu employ in response to climate change and variability. However, many of these strategies are interrelated, and as per Thornton and Manasfi, we have reclassified them to identify the key adaptation approaches. Mobility (migration for pasture, water and to towns), diversification (e.g., engaging in casual work, formal employment, varying livestock numbers and species), and pooling (grazing on private land and in conservation areas) are the key adaptation strategies practiced by 68%, 56%, and 34% of the respondents, respectively. In the following section, we discuss the nature of these strategies and their relationship with NGO-led CBC.

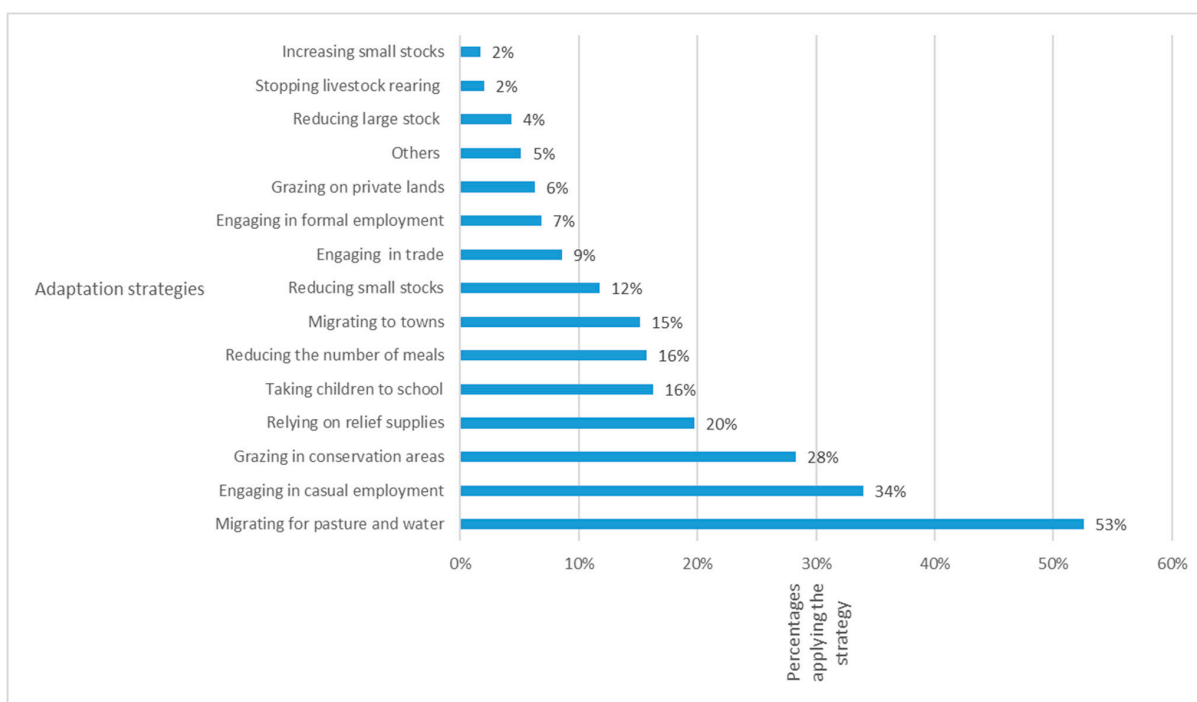


Figure 4. Samburu pastoralists' adaptation strategies.

## 6.2. Relationship between NGO-Led CBCs and Pastoralists' Adaptation Strategies

### 6.2.1. Mobility

The key migration areas for respondents in the study area were further away in Samburu East, as well as to neighboring counties, particularly Isiolo and Laikipia. A few respondents replied they also migrate further to distant counties, particularly Nyeri, several hundred kilometers away. Notably, some significant variations exist in relation to migration and diverse ecological and socioeconomic dynamics. For instance, at 88% compared to 48%, wealthier pastoralists (those possessing 4.5 or more TLU/AE) migrate more than their poorer counterparts. This variance reflects the role of wealth in shaping migration, a resource-demanding strategy. Similarly, at 58%, residents from the more arid locations (Waso and Sereolipi) migrate more than their counterparts in the less arid locations (Kirimon, 43%). This variance can be explained using two key dynamics: First, unlike their counterparts in less arid areas, residents of Waso and Sereolipi cannot undertake any form of rain-fed farming, and thus rely heavily on mobile livestock production. Second, residents of the more arid locations still strongly favor communal land ownership compared to those in Kirimon, who, while still owning their lands jointly, operate a de facto private land tenure. That is, residents have delineated their land parcels, often where they have constructed houses, and undertake a variety of sedentary practices, such as fencing and livelihood strategies, including crop farming and livestock rearing. Together, these practices constrain or discourage migration, as one respondent explained:

'Many places where we would graze in the neighbouring county (Laikipia) have been fenced off as private conservancies guarded fiercely. Moreover, insecurity has increased in the far-flung areas where we used to migrate (central Kenya), and we keep losing our people and livestock to death. Therefore, we think settling and undertaking livestock rearing and pursuing other economic activities in our areas is safer' (key informant interview #6, elder man, Samburu West).

The establishment of fenced and unfenced territories for NGO-led CBC restricts pastoralists' ability to access traditional dry-season grazing areas. As explained by one respondent, 'conservancy *wanashukua ile mahali nono zaidi* (Kiswahili for conservancies tends to target the most fertile land). The result is that people do not get sufficient grazing land.' (KII # 20, elderly man, retired government officer, Samburu East). This assertion was substantiated by field observations and transect walks, which showed that areas designated for core conservation enjoy a high level of ecological vitality and are sources of key dry-season pasture, water springs, and forest coverage. For NGO-led CBC promoters, this combination of rich ecological conditions provides an ideal context for biodiversity conservation and exciting scenery for tourists. This includes high-end restaurants that have entered into memoranda of understanding (MOUs) with local communities (key informant interview #30, conservation NGO worker Samburu East; key informant #22, conservation NGO worker, Samburu East).

The Wildlife Conservation and Management Act [147] is enforced to keep pastoralists from accessing these lands. At the local level, enforcement is undertaken through diverse institutions, including the Community Land Management Committee (CLMC), Conservancy Rangeland Management Committees (CRMCs), and the Conservancy Rangers. The CLMC was established by the Community Land Act [148] to promote equitable governance of community land. In Samburu, however, NGO-CBC promoters, such as the NRT, utilize the institution for the management of community-based conservancies (key informant interview #29, advocacy NGO worker, Mararal; key informant #22, conservation NGO worker, Samburu East). The CRMC consists of elected men and women trained by conservancies and NRT staff to undertake diverse land control measures. Conservancy rangers are also employed by community conservancies and are trained and armed by the Kenyan government through Kenya Police Services. Overall, as Table 1 shows, the various strategies employed by NGO-led CBC promoters to restrict access to conservation areas include the criminalization and sanctioning of livestock production, and rangeland management

strategies traditionally employed by pastoralists to manage the high variability and risk characteristics of pastoral rangelands.

**Table 1.** An example of NGO-led CBC grazing by-laws.

Offence	Penalty/Fine
Members grazing and watering without permission from the grazing committee	KES 5000 (app. USD 35) failure to which one offender's he-goat is confiscated and sold to recover the fine
Non-member grazing and watering without permission from the grazing committee	KES 7000 (app. USD 50) failure to which the case is taken to police where the offender is charged with trespass/illegal grazing
Intentional burning of the grazing areas	The case is taken to the police
Accidental burning	The case is taken to the police

Source: Nkoteiya Community Conservancy Management Plan 2019–2024 [131] (p. 13).

Respondents opposed to these rules stated they were overbearing and exclusionary:

A new rule was made the other day that once you encroached on Sera Conservancy, there would be a fine of KES 200,000 (USD 1360). Yet, people here claim that the conservancy is theirs; it is not a park that belongs to the government. However, what is the difference between a park and a conservancy if such fines are imposed on us? Where would we graze? (Participant, FGD #10, Losesia Group Ranch Committee)

According to the respondent, there are similarities between NGO-led CBC and parks. As discussed earlier, this was a conservation approach that dominated colonial and post-independence Kenya. Paradoxically, the idea of community-based conservation aims to replace this approach. Consequently, in this area, NGO-led CBC has resulted in a feeling of exclusion among some community members, resulting in apathy. As one participant in a focus group discussion put it, 'One does not attend a meeting he is not invited to' (FGD#10, Samburu East). However, the situation is more complex because, as shown in the following, many pastoralists in the area attempt to regain control over the land they have traditionally owned and utilized for grazing but is now restricted for conservation.

### 6.2.2. Pooling

In Samburu, pooling involves grazing in communally owned traditional grass-reserve areas, but also in distant places outside Samburu County. It also involves grazing on private lands, often the vast amounts of land that were privatized by pastoralist elites during land adjudication processes starting in the 1980s, but whose ownership remains contested today [10]. Moreover, it involves accessing communal land that has since been converted into conservation areas. We focus now on pooling in the core conservation areas.

Fieldwork showed that the enclosure of substantial areas of land for core conservation expectedly creates pasture reserves in areas that pastoralists from Samburu and neighboring regions have long accessed for grazing, particularly during drought seasons. Grazing in these rangelands that NGO-led CBC promoters have since transformed into core conservation areas is particularly dominant among traditional pastoralists (those with no formal education 78%) and residents of Waso (46%). The former constitute the bulk of residents in the study area, who primarily rely on livestock production for livelihood. The latter experience a protracted conflict with their counterparts in Sereolipi and NGO-led promoters over the establishment of the Sera Conservancy. Access to enclosed conservation lands may occur through negotiations with the management of community-based conservancies but may still involve the use of force as pastoralists assert their customary right of ownership, use, and access (KII # 20, elderly man, retired government officer, Samburu East; KII #41 young man, CBO worker). Although pastoralists have historically owned and utilized these lands for grazing based on variable climatic and weather conditions, NGO-led CBCs do not readily allow pastoralists to graze in core conservation areas. This

is driven by perceptions of nomadic groups as (1) lowering the quality of tourism since 'tourists cannot fly in to come and watch people and livestock', and (2) threatening the safety of endangered wildlife (key informant interview #22, NGO worker, Samburu East). The result is multi-dimensional conflict, as pastoralists and conservation promoters pursue divergent visions for land, and different pastoral communities assert their rights to utilize pastures in core conservation areas.

To ameliorate this, NGO-led CBC promoters advise pastoralists to reduce livestock appropriately, rather than address the root cause of the problem, which is the growing enclosure of rangelands by outside interests [90]. According to the respondent above, 'they [NGO-led CBC promoters] have suggested that we should reduce our livestock holdings. However, this is difficult for those who have not taken their children to school as they still rely entirely on livestock.' (KII # 20, elderly man, retired government officer, Samburu East). Another respondent explained that 'there is more focus on wildlife and they [NGO-led CBC promoters] do not really care about the livestock despite it being the key livelihood source for pastoralist communities' (key informant interview #29, advocacy NGO worker, Maralal). In Samburu, the imperative to reduce pastoralists' livestock numbers occurs against a background of severely eroded livestock wealth. The household survey shows that 88% of households participating possessed less than 4.5 TLU/AE, the necessary threshold for food-secure pastoral households. While many respondents attributed extensive reductions in livestock holdings to the frequent severe droughts affecting this region in recent decades, others argued that NGO-led CBC contributes to eroding livestock holding, 'as pastoralists are being forced to keep few animals that cannot sustain us, and that is the reason we have so many people crying of hunger' (key informant interview #21, elder man, Samburu East).

### 6.2.3. Diversification

In Samburu, diversification includes people engaging in casual or formal employment or trade as a strategy to substitute or complement income from livestock rearing. It also involves active management of different livestock herds to support the household economy against total drought losses, as different livestock species have different water and forage requirements. For instance, in recent years, Samburu pastoralists have increasingly embraced camel rearing, a practice hitherto outside their focus. For respondents, this is prompted by the realization that camels, together with goats, navigate severe drought conditions better than cows and sheep. However, the adoption of camels by pastoral communities may worsen inequalities as many potential adopters cannot afford it economically [11]. In Kirimon, we also noted a growing preference for the rearing of improved sheep (Dorper crossbreeds) based on a local understanding of faster growth, which enables quicker returns on investments compared to goats and larger stocks. However, they also lament the resultant rapid depletion of available pastures and the high vulnerability of exotic breeds to drought conditions.

NGO-led CBC shapes pastoralists' diversification strategies in various ways. These include the promotion of tourism and the provision of short- and long-term employment opportunities. Tourism promotion occurs in two main ways: First, NRT-Trading, a private company affiliated with NRT, promotes beadwork activities particularly undertaken by women. In the study area, 27% of the respondents, mainly from the Samburu East, indicated that they engaged in such tourism activities. Under this arrangement, the company procures the requisite raw materials and market beadworks, while groups of women provide the labor. This arrangement has, however, been contested and, at some point, has resulted in abdication (focus group #10, men and women, Sereolipi). For some women, the arrangement is exploitative because of marginal returns. For discontented women, an arrangement where they would procure raw materials and produce beadwork would be more favorable. Based on the household survey, it was found that 78% of the people who participated in tourism activities had a monthly income of less than KES 5000/USD 30.

NGO-led CBC promoters also play a key role in tourism by linking investors to community-based conservancies. According to one respondent,

(. . .) if there is any investor who wants to invest in a conservancy, that person will have to come to NRT, which then makes me wonder what the role of the Conservancy Board is when the NRT manages the conservancy. If an investor wants to work directly with a conservancy, the NRT will not be comfortable. The question then is, what happens when NRT no longer exists? What happens to these conservancies, because they have not been equipped to be on their own? I do not think the conservancies are sufficiently polished to fundraise, partner, or collaborate with other partners; they are sharpened to think and work with the NRT (key informant interviews #31, former NGO worker)

In the above, the respondent highlights the domineering role of NGO-led CBC promoters in fundraising and linking communities with potential investors. The concern is that this role overshadows that of the community conservancy board, a community institution established under NGO-led CBC to run community-based conservancies. For the respondent, the dominance of conservation NGOs is unsustainable and risky because donor projects end, and disruption of the tourism economy could precipitate the collapse of conservation imperatives in this region. Although community conservancy boards are peripheral in fundraising and linking with external actors, they play a fundamental role in the management of funds channeled to community conservancies by conservation NGOs and tourism investors. However, many respondents were discontented with the transparency and accountability processes involved in managing community conservancy resources.

Discontent is reflected in conservancy-related employment experiences. The household survey shows, for example, that 33% of household respondents had at least one person employed in community-based conservancies. Several respondents shared reservations about how the employment opportunities were distributed.

(. . .) Employment [in our conservancy] is based on clannism. People use clans to gain employment while claiming it is a 'community', but the community is more fragmented than at any other time (. . .) For example, out of nine clans, two currently dominate the membership of the conservancy board (. . .) after the election, the chairman endorses others at will. (KII # 23; elder man, Samburu East)

Above, we see how local politics can shape the distribution of diversification benefits. Moreover, competing economic interests and political influences have precipitated contestation and lopsided distribution of tourism-related income. For instance, in Losesia and Sereolipi, residents have had a protracted conflict over tourism income, with Sereolipi community members claiming and obtaining more financial resources based on their contribution of larger amounts of land for conservation. The contestation and related variations in income flow are illustrated in the following testimony:

(. . .) Losesia was blackmailed because, when you look at the map of Sera [Community Conservancy], the larger area is indeed in Sereolipi. Unlike us, the Sereolipi community has some guests [in their territory]. We rely on a small guesthouse for income, and that is why when you ask someone from Losesia for the benefits they get from the conservancy, they will tell you, 'Nothing.' The bursaries we had expected from the conservancies came once every four years. And nothing else. For this reason, the issue of Sera is a problem. (Participant, FGD #10, Samburu East)

Here, we see how the creation of conservancies influences the flow of benefits and produces claims and counterclaims over the potential gains, impacting pastoralists' ability to adapt to the adverse impacts of climate change. While the residents of Sereolipi draw wider economic benefits, those in Losesia—in part based on what fieldwork suggests is their resistance to the NGO-led CBC imperatives—have to contend with lower benefits, disgruntlement, and, therefore, feelings of exclusion. Indeed, with an average of 0.88 persons per household employed in a community conservancy in Sereolipi compared to 0.76 in Kirimón, and 0.16 in Waso (ANOVA  $p$ -value = 0.0), residents of Sereolipi have a statistically significant privilege in CBC-related casual employment opportunities.



## 7. Discussion

In this section, we discuss the implications of the results in relation to the literature and policy context. Based on the adaptation, institutional, and livelihood framework, the section contains three parts. These demonstrate relationships between the NGO-led community-based conservation and pastoralists' climate change adaptation and land tenure. First, we examine how territorialization under NGO-led CBC impacts pastoralists' vulnerability to climate change. Second, we discuss the influence of the institutional framework. Third, we explore the effects of external finance.

### 7.1. NGO-Led CBC and Pastoralists' Vulnerability to Adverse Impacts of Climate Change

Pastoral regions are among the regions in the world that are most vulnerable to adverse impacts of climate change. In northern Kenya, a temperature increase of 0.69 °C between 1961 and 2013 has been documented [48], and government records show that these regions are warming faster than the rest of the country [47]. Our results show that pastoralists employ diverse and differentiated adaptation strategies to mitigate the adverse impacts of climate change. In Samburu, migration in search of pasture and water constitutes the foremost climate change adaptation strategy for pastoralists. Past studies show that endurance of mobility is closely related to other adaptation strategies such as migration to towns, pooling, and diversification [149,150].

The creation of physical fences and the institutionalization of diverse rules and regulations limit pastoralists' access to traditional dry-season grazing lands, rendering this conservation approach similar to the fortress conservation logic [89,110,151]. Moreover, enclosing vast amounts of land for NGO-led CBC further decreases the land available for pastoralists, just as land was previously alienated for fortress conservation [113,152] and made off-limits for common use [151,152]. Thus, the enclosure of land for NGO-led CBC constitutes a new form of control that compounds pre-existing land control mechanisms. When such large areas are enclosed for conservation and tourism purposes, a pasture reserve is inadvertently created. At first glance, this may seem to be a beneficial adaptation strategy because pastoralists can graze in these regions during droughts. However, this amounts to maladaptation because of the associated conflicts and processes of exclusion. While pastoralists see the lands as suitable for grazing in the face of climate-induced shocks such as drought, NGO-led CBC promoters perceive the same areas as solely for conservation and tourism to be protected from disturbances, including through the use of armed guards. Consequently, different pastoralist subgroups attempt to forcefully regain control. Similar responses have been documented by Galaty in other pastoral regions of Kenya and Tanzania, where pastoralists use both formal and informal strategies to access lands they historically used for grazing but have since been privatized [77]. This demonstrates pastoralists' agency against more powerful actors who not only control the land pastoralists are dependent on, but also establish institutional arrangements that govern the socioecological system. In turn, conflicts and competition emerge between different pastoralist subgroups and with the NGO-led CBC promoters over access to valuable lands. This intensifies the vulnerability of pastoralists to environmental changes and produces new power imbalances [20].

The results show that NGO-led CBC promoters encourage pastoralists to decrease their livestock numbers to fit within reduced grazing land. Several NGO-led CBC documents contain this narrative [130–132], echoing the long-disproven argument that large herds of pastoralist livestock are irrational and risky [6,7]. However, research has shown the viability and logic of pastoral livestock production as a form of insurance in pastoral communities [153]. Importantly, the current campaigns for pastoralists to reduce their livestock occur in the context of highly eroded livestock holdings. The survey data show that 88% of households in Samburu possess less than 4.5 TLU/AE, which is the minimum threshold for food-secure pastoral households. Reducing livestock alongside the alienation of vast lands can compound pastoral destitution, since, as shown, labor opportunities provided under NGO-led CBC are considered by some as exploitative and inequitable.

Thus, if pastoralists follow the advice of reducing their livestock holdings, it will lead to further erosion of their food security and asset bases, thereby increasing their vulnerability to the adverse impacts of climate change and variability, particularly drought.

### *7.2. NGO-Led CBC Institutional Framework and Pastoralists' Land Tenure and Adaptation*

NGO-led CBC promoters have played a crucial role in the legislation and/or operationalization of advocating national laws and policies in which the role of NGOs is embedded. For instance, Ian Craig, the founder of the NRT, played a key role in lobbying for legislation and operationalization of the Wildlife Conservation and Management Act [129]. These laws are locally embedded through both formal and informal mechanisms. This reflects the central role of powerful actors in establishing legal and institutional frameworks for the governance of land and the people [45,88,154,155]. This has implications for the climate change adaptation and land tenure security of pastoralists. As German has argued, and which our findings support, formalizing customary tenure gives external actors more control over land at the expense of customary institutions [90]. For example, respondents in Samburu East still value communal land ownership but experience land subdivision (privatization) as an option to prevent further conversion of their lands into NGO-led community-based conservancies and to mitigate exclusion from land.

The subdivision of lands hitherto managed customarily in Samburu East would follow a broader trend of individual freeholds witnessed in Samburu West and Kenya's southern rangelands [10,85,154]. The current literature does not anticipate this development, instead seeing the desire to derive income from conservation as a driver for collective land ownership [90]. Yet, subdivision in the context of NGO-led CBC is not far off. For example, despite living in relatively arid areas, residents around Kirimon agree in principle to subdivide their land rather than pursue registration as communal land, in line with the Community Land Act [148]. The local elites support and finance this process. Yet, it is the elite that stands to gain from the privatization process, as they have opportunities to acquire more property through willing buyer–seller arrangements [10]. This would further contribute to the already highly inequitable land tenure system [156–159]. This finding has implications for the northern Kenya region, which (other than in major urban areas) has retained relatively enduring and consistent customary land ownership and use despite emerging and longstanding land markets in neighboring counties.

### *7.3. Impacts of External Finance*

NGO-led community-based conservation involves the management of financial resources obtained from tourism and various donors. These resources can simultaneously support pastoralists' adaptation to climate change and livelihood strategies while also promoting biodiversity conservation. However, as our results and previous studies show, this is characterized by inadequate consideration and integration of social, economic, and political dynamics, and risks dispossessing communities of critical grazing lands. In Samburu, the NRT and the organization's founder play an important intermediary role in the acquisition and management of external resources. This model replaces state-led approaches to community-based conservation, which donors blame for ineffective bureaucratization, poor human resource management, and weak financial management systems [125]. However, our study shows that the NGO-led model dominates, and overshadows, local institutions. As one respondent contended, this is unsustainable because donor or tourism projects can end, and disruption of the tourism economy could precipitate the collapse of diverse community-based conservation activities. In Kenya, this was witnessed following the closure of the COBRA and PAWS projects, as discussed earlier. The decline in the heavily financed CAMPIRE Project in Zimbabwe, previously used as a model for community-based conservation, serves as further evidence of this likelihood [160]. This necessitates honest integration of local institutions in the implementation of community-based conservation and related projects. In doing so, it is critical to consider the complexity of community

institutions, which, as shown by the results in Samburu, are amenable to local power struggles and politics in the distribution of resources and diversification opportunities.

While the NRT plays an important role in fundraising and the overall management of external resources, community institutions such as the Community Land Management Committee (CLMC) play a central role in the management and utilization of external resources. In Samburu, the CLMC also has the responsibility of serving as a community conservancy board, overseeing the running of community conservancies. This has two adverse implications for pastoralists' climate change adaptation and land tenure. First, NGO-led CBC promoters, such as the NRT and community conservancies, remunerate the community conservancy board in the form of monthly or meeting allowances for their role. This creates a patron–client relationship that predisposes the institution to the influence of NGO-led CBC promoters, who, as we have seen, have an interest in conservation and tourism rather than the pastoralist's livelihood and land tenure security. This also erodes the CLMC's capacity to protect the land tenure security of all pastoralists effectively, as envisioned by the progressive Community Land Act [148]. Alden-Wily wrote about the Community Land Act soon after it was enacted [52]. Here, concern is expressed that, despite its progressive nature, the implementation of the law could cause pastoralists to lose some of their best land because of overlapping claims by local and national governments. It also recognizes that non-state actors are needed to help communities secure land under formal collective entitlements. Our study nuances these important points, showing that NGO-led CBC and the associated external resources may worsen rather than alleviate the challenges.

Other problems associated with the involvement of the CLMC in the management of external resources concern the risk of elite capture, poor accountability, and lopsided distribution of external resources. In Samburu, we witnessed a widespread sense of poor accountability and transparency in the utilization of external resources managed by community conservancy boards. In some cases, this provoked conflict as different groups sought to establish control. This demonstrates the importance of considering institutional dynamics such as power and politics in the design and implementation of climate change adaptation programs [99].

## 8. Conclusions

This study examines the implications of NGO-led CBC on pastoralists' climate change adaptation and land tenure. To this end, we apply an understanding of NGO-led CBC as a new frontier of territorialization created through a combination of legal instruments, institutional agreements, and the production of boundaries and restrictions. We draw on the literature on biodiversity conservation in Kenya since the colonial era and work on climate change as a social-natural process to critically examine the interplay between NGO-led CBC and the key adaptation strategies among Samburu pastoralists. Agrawal's adaptation, institutions, and livelihood framework enabled an examination of these relationships. Our study shows that NGO-led CBC may best be understood as a new phenomenon in a continuum of colonial and post-independent Kenya conservation practices that sought to shift the control of land from pastoralists towards market-orientated conservation and tourism businesses. This has deleterious implications for pastoralists' capacity to respond to the adverse effects of climate change and erodes their land tenure security. Notwithstanding these detrimental impacts, national and international policy and politics continue to support NGO-led CBC. This study therefore highlights the need for actors to carefully consider the implications of this conservation/development model for already hard-pressed land-dependent communities.

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## Notes

- <sup>1</sup> An administrative location is a legally recognized area comprising one or more sub-locations. A location is administered by a government-appointed officer known as a chief.
- <sup>2</sup> This land classification approach can be traced back to the colonial era in Kenya. During this time, the arid and semi-arid lands were considered low-potential regions, while the highland areas in central Kenya and the Rift Valley (known as the white highlands) were viewed as high-potential lands. As a result, little investment was made in the low-potential areas compared to the high-potential areas, as the latter were believed to have a higher return on investment.
- <sup>3</sup> Here,  $n$  is the sample size,  $N$  is the population size (1622 households), and  $e$  is the level of precision (0.05) at 95% confidence level. The 321 households obtained as the sample size from this calculation were increased to 350 households to compensate for non-responses and to enhance representativeness.
- <sup>4</sup> Here, 1 TLU = 1 head of cattle = 0.7 camels = 10 sheep = 11 goats; males and females older than 15 years old = 1AE; ages 5–14 = 0.6 household equivalent; ages 2–5 = 0.3 AE; and ages below 2 = 0.1 household equivalent [141].
- <sup>5</sup> Although many respondents still pursue nomadic pastoralism, data show that they adopted a sedentary lifestyle around 1998.

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