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“Grazing agreements: negotiated resource access and conflict mediation at the private property-common property nexus in Kenya’s rangelands”

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Abstract

Pastoralist access to private property is increasingly being mediated through formal, contractual arrangements. This paper explores how formalizing access provisions through the grazing agreement contract provides significant benefits to both parties of the arrangement. The engagement of formal access agreements observed in this case study demonstrates institutional innovation. Large-scale ranches are increasingly mediating the access of pastoralists to graze on ranch pastures through formalized access arrangements generally known as “grazing agreements.” In this paper it will be demonstrated that grazing agreements may be used in innovative ways by both ranches and pastoralists to suit their particular land tenure and production requirements, while also reducing conflict tensions and increasing resource access options. Rather than using grazing contracts solely for monetary income or pasture resources, both parties are using this institution for strategic purposes beyond what might be expected. Pastoralists have integrated grazing agreements into their portfolio of hybrid property rights and resource access options, thus diversifying the locations in which they keep their livestock. This case study in the innovative use of grazing agreements holds lessons for governance of common property and rangelands.



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WASHINGTON DC, MARCH 25-29, 2019



Key Words: pastoralism, rangelands, commons, private property, conflict mediation, negotiated access, innovation

Summary

This paper explores the grazing agreement contract, an institution that is being used for multiple and variable purposes by ranches and pastoralists. I argue that ranchers are innovating on this existing institution to protect private property rights on some of the large-scale ranches in Laikipia County, Kenya. The resource pressure on large-scale ranches originating from land use patterns in “abandoned lands” (unoccupied subdivided plots) led some ranch managers to allow access to a number of pastoralists for specific periods of time through formal grazing agreement contracts. I will explain how these contracts contribute to prevention of unauthorized resource use by third parties. I also demonstrate how such a situation assists in preserving private property rights arrangements. I argue that grazing contracts do more than simply protect private property rights through a legal pathway of formal arrangements by describing how property owners have created land use buffers against trespassing and “illegal grazing” using contracted grazers as a land use “barrier.” Meanwhile, pastoralists use grazing agreements to expand their access to resources across the landscape.

Section I

Introduction

In the context of Laikipia’s fluid hybrid property rights system, pastoralists may access large-scale private properties through informal, unauthorized means. As a result, access to private property is increasingly being mediated through formal, contractual arrangements. This paper explores how formalizing access provisions through the grazing agreement contract provides significant benefits to both parties of the arrangement. The engagement of formal access agreements observed in this case study demonstrates institutional innovation on the part of both ranchers and pastoralists. The research and analysis presented here contributes to the expansion of past work by others (Letai and Lind 2013 and Lengoiboni et al. 2011) that explored the innovation in herder-farmer agreements from the particular perspective of pastoralists during periods of drought. Here I will expand on the grazing agreement concept and its benefits from the perspective of private property management and mutually positive interactions between users of the commons and private property.

Context: land use in Laikipia County, Kenya



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ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2011



Laikipia County (Sundaresan and Riginos, 2010: p19), part of the Ewaso ecosystem (Georgiadis, 2011: p2), is approximately 9,666 sq km in extent and is surrounded by the Aberdare Mountains to the west, Samburu County to the north, and Mount Kenya to the south. Approximately 37% of the land is used for large-scale ranching, while 25% of the land is used for pastoralist grazing (LWF 2013), including 11% of land under the category of group ranches (Graham et al. 2010). Vast areas of Laikipia, amounting to approximately 240,000 acres, have been left idle by the approximately 85,000-100,000 legal owners (Zeitzi 2013, LWF 2013). The way these areas are used as pastoralist grazing areas deviates drastically from the way they are depicted from a statutory perspective on a cadastral survey as subdivided, small-holder farms (LWF 2012).

Laikipia sits at an intersection of Kenya's property systems between areas where agriculture is highly productive and individual land rights are well defined and an area to the north where land productivity is marginal. In such areas rights of access and use are more often determined according to collective community use of common property than by exclusive use (Galaty 1994, Homewood 2008, Lesorogol 2008, Mwangi and Ostrom 2009). Laikipia has been described as a land use "mosaic" (Graham et al. 2009, Graham et al. 2010). Property arrangements in Laikipia are dynamic, with some property categories, such as subdivided small-holder farms and large-scale ranches, being misleading because they are used in ways that are not directly implied by their tenure categories. For example, some large-scale ranches function primarily as wildlife conservancies, and many smallholder farm plots have been left idle or vacated by their legal owners and are used for grazing by pastoralists.

Securing boundaries through grazing agreements

Large-scale ranches are increasingly mediating the access of pastoralists to graze on ranch pastures through formalized access arrangements generally known as "grazing agreements." These agreements grant formal access to enter large-scale ranches where the purchaser has "reserved" grass inside a private property boundary through a formal agreement. During my research, I found that one of the primary responses to "illegal grazing" adopted by the management of some large-scale ranches is to formalize access arrangements with particular livestock keepers or defined pastoralist communities. These agreements are often made with those living directly adjacent to their boundaries on formally unoccupied subdivided lands known as "informal grazing areas" or "abandoned lands." However, grazing contracts are also made with individuals of influence, or wealthy pastoralists, who might arrange for a large herd to rent grazing.

Grazing agreements are most common during the dry season (i.e. during times of resource scarcity) but these agreements are increasingly common on some large-scale ranches in Laikipia even outside of the dry season or drought periods. The grazing agreement contract defines user access and captures an economic benefit from pastures vulnerable to being forfeited to "illegal grazing" on boundaries that are difficult to defend effectively or patrol frequently.

In the past, grazing agreements functioned as a business agreement between land users providing the commodity of pasture for an economic profit. Grazing agreements have been reached



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ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



between large-scale ranches during times of resource scarcity in the past. One rancher reported; renting grazing from surrounding ranches during various drought periods since 1978. Pastoralists have also reached grazing agreements with multinational business corporations that own land or on government land that is seen as underutilized. Some pastoralists may purchase small plots in areas near opportunities for rented grazing which facilitates the movement of their livestock between bases that operate as “outspans,” or holding grounds, from which to manage their operations.

The presence of unmanaged or “abandoned land” on the periphery of a large-scale ranch was observed to result in an attempt by large-scale ranches to secure their boundaries against incursions originating from these areas. Grazing agreements were being used to manage the conflict resulting from competition over pasture and other rangelands resources. The attempt at defending private property rights leads some large-scale ranches to engage in these agreements for reasons beyond the motivation for cash income from the rent paid for pasture. The permanent presence of livestock on “abandoned lands,” the friction and inconvenience brought about by responding with force or by legal means, and the sheer difficulty in maintaining exclusionary arrangements to prevent trespassing incidents has led a growing number of large-scale ranches to adopt grazing agreements that permit pastoralists to access their properties through contractual arrangements.

Description of the grazing agreement “contract”

A grazing agreement is a contract between a land manager and a livestock keeper that authorizes access to pasture on a private property. Through such an agreement a herd owner is allowed entry onto a private property with a specific, pre-determined number of livestock. The amount of livestock permitted should not fluctuate. Approved livestock in the context observed was usually restricted to cattle and sometimes camels, though sheep and goats could also in theory be permitted. The “rent” paid is based on the number of animals and related animal husbandry services that may be included, not according to the acreage of land that is used. The costs for monthly rent per head of livestock on large-scale ranches in Laikipia in 2013 ranged from 100 Kenyan Shillings to nearly 500 (USD 1.20-6.00), depending on services, such as herding, security, vaccination, and dipping that are included in the agreement.

Grazing agreements can be leveraged to maintain and defend property rights on large-scale ranches even where fences, physical exclusion, and legal means, such as fines, fail to do so. This institutional arrangement involving resource allocation has implications for resource access in pastoralist production.

Access and allocation

Livestock are expected to graze in a particular area allocated for their exclusive use of pasture for a specific period of time. According to the contracts, the duration was generally two to four weeks. In some of the situations observed, however, livestock may remain on the property as long as there is pasture and both parties wish to continue with the agreement. Rules for access,



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ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



costs for resource utilization, and sanctions imposed for failure to abide by established guidelines comprise an important part of the contract. Some properties require that grazing committees, serving as de facto co-management bodies, are formed to handle grazing issues with communities (cf. Lengoiboni et al. 2011), while other properties deal with individuals on a case-by-case basis when they wish to rent grass. These committees assist in arbitration of disputes between properties and individuals. They also sometimes decide which individuals from the community will get access to grazing agreements, and for what number of livestock. In this sense, these committees may be viewed as “gate-keepers” for access to resources.

An evolving and adaptable institution: protection of property rights through grazing agreements

Grazing agreements have been used in Laikipia to defend property rights in an unconventional way. It was observed that some ranches employed these arrangements strategically in order to protect vulnerable parts of their properties from unauthorized entry originating from adjacent lands lacking formal management structures. By allocating in a well-defined way who has access and user rights to a resource, a private property is able to derive profit from the grass commodity while creating a “property rights buffer” that acts as an invisible barrier against intruders. Therefore, a ranch might zone its rented grazing strategically in order to benefit from the buffer zone, renting grazing on areas that are primarily challenged in property rights enforcement. While a property may be foregoing the grass resource on its periphery for a relatively low value, the alternative is to forfeit the peripheral grass resources due to “illegal grazing.” One land manager, while explaining the various benefits and complications associated with renting grazing noted, “They just take the grass if you don’t rent, so you may as well.”

Property rights buffers established through re-assignment of the “bundle of user rights”

Observations from the field and interviews indicate that the beneficiary of the lease agreement often begins to protect the resources for which he has paid to obtain user rights. The leaser then creates an invisible “land use buffer” that blocks other trespassers and livestock from entering the property where he has been granted access and allocated pasture. By extending the bundle of user rights to a pastoralist placed in a strategic location on the private property, the land manager uses the grazing agreement to the effect of forming a buffer that excludes potential trespassers and “illegal grazers.” A property manager may set aside specific blocks of grazing that create a series of buffers on the property to prevent incursions by the livestock of non-authorized pastoralists.

Motivations for renting grazing

Large-scale ranches reportedly engage in grazing agreements for various reasons, indicating that innovation on this institution to suit variable, specific land management purposes is a common strategy. Administrators and key interview sources also described grazing agreements as a method of conflict resolution. It was reported that grazing agreements often reduced tension between ranches and pastoralists over pasture resources.



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ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



This assertion is supported by the following ways grazing agreements were described. One source indicated they were a method of “conflict avoidance.” Another source described them as “pressure relief points” during times of tension resulting from resource scarcity and competition for pasture. One administrator described them as payment of a “courtesy fee,” which acknowledges the notion of private property, in exchange for pasture resources.

Symbiosis: creating benefits for ranches and pastoralists

Grazing contracts hold benefits for both large-scale ranches and pastoralists who manage to access them through formal agreements. Such interactions between large-scale ranches and pastoralists provide opportunities to discuss property management issues, resource allocation and management strategies (such as Holistic Management) and the likelihood of pasture availability for rent in the future. When renting grazing to communities, such opportunities provide an opportunity for individuals to hold each other accountable for the locations of their respective herds, and to view the extent to which others are abiding by the established regulations. By creating this kind of forum, a ranch might provide opportunities for greater community-level enforcement. It also increases accountability amongst the grass-renters, resulting in discussion and conversation about resource use rather than tension or conflict between herders themselves, and between pastoralists and ranches.

The true cost of “free” grass

One under-utilized ranch (where the stocking rate was around one tenth that expected by conventionally accepted stocking rates) experiencing extreme pressure from trespassing grazers managed to reverse the property rights situation using grazing agreements. By renting grazing to nearly 4,000 head of cattle through formal arrangements with individual pastoralists from settlements on surrounding subdivided lands, the ranch managed to regain some management traction on the property. The month this arrangement was established the ranch earned a significant income from leased pasture that was previously being “taken.”

Although it is difficult to quantify the financial cost of the resource pressure on private properties when adjacent land users access “free” grass, this scenario is indicative of the potential cost of resource incursions by mobile livestock. Considering that this property charged one of the lowest monthly per animal fees for renting pasture in the region, the potential total operating cost incurred by a private property owner due to the use of “free” grass resources by pastoralists, often dismissed as trivial, is actually a significant one.

The price pastoralists pay for leased pasture is far lower than the price required of them to purchase land. In most areas of Laikipia, one would need 10-15 acres to support one mature tropical livestock unit. The fact that ranches recover a portion of their operating costs and preserve property rights while pastoralists access pasture for such a “reasonable” price demonstrates that this arrangement is mutually beneficial.



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ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



Stewardship responsibility

Interview data obtained during the research period illustrated that establishing and allocating grazing agreements strategically can contribute to the defense of private property resources. The following examples drawn from two different large-scale ranches where pastoralists were renting grazing aptly demonstrate the changing property rights relationship between authorized, official users (who have paid grazing fees) and outsiders when grazing agreements are in place to govern access:

- “If someone comes in to illegal[ly] graze and I’ve rented then he’s stealing my grass.” (conversation with a pastoralist renting grazing on a large-scale ranch)
- “...the land belongs to the ranch, but we own the grass.” (Pastoralist renting grazing on a large-scale ranch)
- “...people can’t accept others eating the same grass they have already paid for...” This source explained how renting grazers frequently report trespassers to the ranch management. (interview with a security officer on a large-scale ranch)

This evidence demonstrates that placing a financial value on the grass resource and defining the access for user rights to a particular area through an official agreement bestows an increased element of stewardship tantamount to conferring “ownership” of the resource to the user. Resources at risk to “illegal grazing” represent a potential financial cost to the beneficiary of the grazing agreement. Thus, formalizing the arrangement to access pasture grants legitimacy for user rights of access and places a greater responsibility on grantees to defend the resource against incoming mobile livestock because of its newly assigned financial value.

Security and reciprocity

Some land managers also voiced that renting grass to surrounding communities had improved their security and social relationships with communities over the course of the formalized relationship with pastoralist neighbors. Two properties reportedly observed a decrease in stock thefts and trespassing since entering into regular grazing agreements with surrounding communities.

- One source stated that general security issues had declined in recent years, following grazing agreements, and succinctly noted: “I give them grass, and they give me security.” He explained that renting grass to surrounding communities was premised on the notion that you “will help your neighbor and your neighbor will then help you.” (interview with a ranch manager)
- It was noted by grazers renting from two different ranches and property managers and their security agents that renting grazing helps secure resources, as demonstrated by the following observation: “Those who rent grass will not let others use it, and they will report on activities like illegal grazing and poaching to the ranch, so it helps protect ranch resources (paraphrased).”



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



(interview with a ranch employee)

While the grazing agreement protects and preserves the borders of the private property, for those pastoralists who are able to secure such agreements, these contracts contribute to additional strategic herd management options.

Why do ranches rent grazing?

Level of willingness to rent grazing varies substantially between properties in Laikipia. Property managers have a wide variety of motivations for using these formal access arrangements to allow paying grazers onto their property. The likelihood of using grazing agreements appears to be correlated with a combination of factors, including:

- management objectives of the property (whether for cattle production, wildlife conservation, etc.);
- adjacent land use arrangements (i.e. large-scale ranch vs. “abandoned land”);
- ability to actively and effectively defend property boundaries (through exclusion with fences or enforcement);
- the size of the property, and ability to monitor it.

It was observed that some large-scale ranches may be more willing to rent grazing as a result of the scale of the illegal grazing pressures posed by adjacent absentee “abandoned land” patches. There appears to be a fairly strong correlation between the presence of adjacent absentee owned areas and the willingness of large-scale ranches to rent grazing. Based on the following observations, diversification of property income and availability of sufficient resources to effect exclusion of potential trespassers are two key variables that could determine whether a grazing agreement is present.

The following dynamics suggest varying levels of willingness to rent grazing based on individual property characteristics.

- Large ranches with diversified incomes also appear more willing to rent grazing than small cattle ranches with few alternative sources of income.
- While it may not be stated conclusively that willingness by large ranch owners to rent pasture is determined by surrounding property arrangements, an apparent correlation exists between the presence of adjacent subdivided property, the degree of wildlife intolerance felt by the large ranch owners, and the likelihood or feasibility of renting grazing to neighboring communities.
- Two commercial operations that were intolerant of wildlife were generally also not open to the idea of renting grazing. In other words, those properties generally capable of excluding wildlife also appear capable of excluding trespassers.
- It was also observed that those properties capable of maintaining an intact electrified perimeter barrier or that are bordered exclusively by commercial operations with similar management strategies claimed to rent out grazing only during drought, or not at all.



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



The reasons reported for renting grazing included the following:

- To generate income revenue
- As a humanitarian measure during drought
- To share resources with surrounding communities
- Develop a positive relationship with surrounding communities
- To encourage market integration and destocking among pastoralists
- As part of a holistic rangelands resource management strategy, including to consume dry/rank grass that needs to regenerate, and to increase bunched herd impact on bare land (see Savory and Butterfield, 1999)
- To preserve private property rights
- To reduce “trespassing” incidents by establishing a framework governing access
- To “appease” would-be trespassers by inducing them to pay for grass
- To create buffers of rented grazing blocks where rented grazers prevent incursions from other trespassers.

Not all commercial ranches in Laikipia enter into grazing agreements with surrounding pastoralist communities. In fact, some ranch managers strongly disapprove of the arrangement. These individuals stated that that renting grass may be interpreted as signaling that private property resources were not being used judiciously and that ranches had excess pasture resources. Meanwhile, others expressed concern about property rights protection and enforcement once herds were allowed entry to a property.

Risks of stock theft, grass fire, and other security issues, such as conflict between rented grazers were also raised as potential concerns when grazing agreements were present. Another problem is that if cattle are not kept on the property, they may trample pasture when traveling to and from water points, or when coming and going from the property on a daily basis. Interviews also revealed that livestock may be “swapped out,” so that different animals are grazing on the property on different days (this can lead to higher number of cattle accessing the area around the ranch, which means higher pressure for the ranch’s pasture, even if only the allowed amount of animals are actually on the ranch); likewise, one large-scale manager noted that sometimes individuals “fiddle their numbers” in order to graze more animals than they have paid for.

While grazing agreements create cash revenue in return for the grass commodity, they also produce opportunity costs of meeting with potential grazers, risk to private property (poaching, property damage, fire, stock theft, access to property resulting in improved knowledge of security and access to areas on a property), and a management task (allocating resources, managing paying herds, and settling disputes or liabilities that may arise from accepting outsiders onto a property). These opportunity costs may decline as the relationship between the paying grazer and the commercial ranch develops, resulting in an increase in bridging social capital. While an external view may focus on income as the primary benefit to large-scale ranches, in cases where large-scale ranches are surrounded by unoccupied subdivided lands,



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ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



grazing agreements may be employed as an important land management instrument and property rights defense/enforcement tool.

In Section I, I have explored aspects of access and allocation resulting from the tenure arrangement involving subdivided land in Laikipia. In the next section I will discuss the implications of these findings for property management and pastoralist land use in Laikipia.

Section II: Discussion

Access through grazing agreements

Some pastoralists are leveraging grazing agreements toward gaining access to much larger areas and quality of pasture than would be possible by purchasing land assets. The “calculation” inherent to this statement is that conventional ranching systems calculate stocking rates at one tropical livestock unit (TLU) per 10 to 15 acres in most parts of Laikipia, and up to 17 acres in the drier areas. Grazing agreements are not paid on the basis of acreage utilized, but are most frequently based on the number of livestock that graze inside a property per month. Larger herd owners are privileged through this arrangement as they are with accessing commons pasture in communal areas (Galaty, 1994; Mwangi and Ostrom, 2009) because they are more easily able to liquidate a portion of their livestock assets to pay for leased grazing (Little, 1985; Zaal and Dietz, 1999). This is evidence of further commodification of rangelands resources throughout Africa (Letai and Lind, 2013; Catley and Aklilu, 2013; Zaal and Dietz, 1999; Little, 1985), a situation that privileges wealthy pastoralists over those with small herd assets (Mwangi 2009).

It also seems that some pastoralists are avoiding the competition for pasture in communally grazed areas by engaging in grazing agreements inside private property. Some do this by establishing relationships with ranchers that build social capital (Pretty and Smith, 2004) they may require to access grass in a time of distress. Payment for grazing provides authorized entry to lands that are under formal resource management supervision; this creates opportunities to secure access to pasture resources that are not at risk of being consumed by other livestock keepers. Through grazing agreements, pastoralists make use of a resource over which they can legitimately claim to hold “user rights” (e.g., Bromley, 1991; Schlager and Ostrom, 1992), having secured this resource through payment and receipt. Also, the local chief/authority is often privy to the arrangement.

Some pastoralists are now “anchored” with tenure security in subdivided areas due to having purchased small-scale land assets. My research experience suggests that constant pressure on large-scale ranches may contribute to the willingness of ranch management to offer grazing concessions even outside of drought periods. As earlier noted, once individuals have been assigned formal user rights over the pasture resource, grantees begin to defend it against being consumed by outside resource appropriators. Therefore, the strategic use of grazing agreements may assist in protecting the property of large-scale ranches from unauthorized pastoralist incursions.



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WASHINGTON DC, MARCH 25-29, 2019



Amplification of resources through combination of strategic options

Pastoralists exhibit extreme adeptness at production efficiency using subdivided lands and “grazing agreements” in a strategic combination that amplifies access to resources. This is especially so for those pastoralists with access to capital. By investing in just small portions of private property, some pastoralists using Laikipia’s unoccupied subdivided lands avoid many of the administrative costs (Bromley 1989) associated with owning larger areas of private property.

Opportunities to access and utilize subdivided, unoccupied plots work in tandem with grazing agreements to increase pastoralist access options through “hybrid” property arrangements. The wide presence of “abandoned land” in Laikipia increases access options for pastoralists through the following fundamental property pathways:

- From a subdivided plot, a livestock keeper can gain access to the larger, surrounding grazing area provided by “abandoned land.”
- In terms of access to the larger contiguous area of rangeland created by “abandoned land,” this can be achieved through either occasional forays onto the land with mobile livestock, or through purchase of a plot of small acreage that formalizes and legally justifies occupancy and presence on that specific plot, and elevates the purchaser to the status of a formal resident of the larger area.
- This status of residency is important because it establishes the livestock keeper as a known entity to authorities (i.e. “legibility,” Scott, 1998), but also creates greater opportunity to access formal arrangements with commercial ranches. A review of grazing agreement contracts and interview data shows that often ranches would only consider renting grazing to immediate resident neighbors, and not long-distance migrants lacking formal residential status in Laikipia.
- The presence of “abandoned land” on the periphery of a large-scale ranch increases access opportunities for pastoralists to a constantly available source of pasture.
- From this same base, informal access to pasture on large-scale ranches can be achieved.
- More secure access to this resource can then be achieved through formal grazing agreement arrangements with commercial ranches.
- Individuals may move animals between various access options elsewhere, including multiple locations of abandoned land and multiple ranch locations where grazing agreements are offered.

Implications of grazing agreements for pastoralist resource access and allocation

A variety of pastoralists from diverse ethnic groups, including but not limited to Samburu, Laikipiak Maasai, Ndorobo, Turkana, Pokot, Somali, and Tugen, was observed to be renting pasture at various locations in Laikipia. An array of pastoralists, ranging from land-wealthy to land-poor, and those with just small pieces of private property or access to communally managed rangelands have secured leased pasture on some of Laikipia’s large-scale ranches. The ability to engage in grazing agreements with ranches holds important implications for how pastoralists access and manage their resources. I discuss a combination of both hypothetical and observed



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



advantages of these strategies below, followed by a brief commentary on how grazing agreements may imply unforeseen repercussions for pastoralism and large-scale ranches.

Improved resource management planning for pastoralists

Grazing agreements may create increased resource management planning options for pastoralists. One of the benefits of securing access through grazing agreements is that one secures guaranteed access to grass (and usually water) and is able to avoid competition for these resources in communally used areas.

Such an arrangement might allow an individual to reserve his/her own sources of grass for future hardship in drier times, assuming that s/he can find a way to exclude others from using his/her “grass reserve” in the interim. This in turn allows a pastoralist to plan for periods of uncertainty in the future by accessing rented grazing as a first option and using his/her own sources of grass at some strategic point in the future. Grass in communal areas may be allowed to recover while livestock graze on large-scale ranches. This also allows a livestock owner to divide his livestock between rented grazing and other available options. This situation can benefit both individuals and entire communities, depending on the nature of the arrangement for rented grazing.

Security of livestock

Pastoralists may achieve improved physical security of their herds through rented grazing since security guards, and sometimes game scouts, are employed to protect private properties offering rented pasture. Regular security patrols of ranches contribute to making immediate surrounding areas more secure. Because private properties attempt to exclude outside livestock, herds that are renting grass on a ranch may reduce risk of exposure to disease. Large-scale ranches can provide pastoralists a “quarantine area” prior to market sale. This may contribute to more secure livelihoods for pastoralists operating both market-oriented, and subsistence systems, of production.

Livestock production inputs and services

Pastoralists may access services like cattle dips and spray race infrastructure, and may be able to participate in herd vaccination and cattle “dipping” when these activities are being coordinated on a ranch. Such infrastructure may not be available in all the areas where an individual splits his/her herd assets. Vaccination is also less expensive when being purchased and provided for large numbers of livestock. In this way, pastoralists also benefit from the economies of scale present on large-scale ranches but which are not likely to be available on subdivided areas grazed communally.

Allocation of pastoralist pasture resources

Securing a grazing agreement plays into the pastoralist strategy for the purchaser by increasing his/her options for access to various geographic locations of pasture, potentially in different



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



rainfall and agro-ecological gradients and at slightly different altitudes. Once s/he secures grass resources on a private property, it means s/he can plan to use other resources s/he has access to through formal ownership, actualized tenure, or grazing agreements in an increased variety of ways. In other words, it increases the number of options available in a portfolio of options that the pastoralist draws on in a complex and efficient strategy for livestock management. For example, herd owners can buffer against uncertain climatic periods ahead by reserving their own grass in areas “closed” to grazing. The resource pressure on a herd owner’s other available grass resource is reduced for the duration of the agreement during which guaranteed access to resources is secured.

Pastoralists who are successful in securing grazing agreements can set aside their grazing options on a group ranch, on community lands in surrounding counties, or even on larger areas of their own private property for the future as a “grass reserve” during the dry season. Also, an individual may turn a profit by renting out other sources of pasture to neighboring herd owners who fail to secure access agreements with ranches. One may even hypothetically sell this pasture resource for a higher price than one pays for access to pasture on large-scale ranches, especially during times of resource scarcity. Again, this is a dynamic that privileges wealthy pastoralists, who already have more secure livelihoods and access to land and pasture resources, over the subsistence level producer.

A portfolio of options: property in multiple locations

Informal conversations during the research period indicated that pastoralists make use of multiple locations and property regimes in their production strategies. Regardless of whether individuals are purchasing titles to secure their holdings, they are sometimes making use of subdivided areas to diversify their livestock holdings (e.g., Galaty, 1981) among multiple locations (Niamir-Fuller and Turner, 1999: p21). In addition to this there is also an observable strategy of securing pasture in one or more large-scale ranches through grazing agreements when pasture is exhausted in common grazing areas. Some herd owners also request grazing agreements before times of hardship in order to secure resources for their livestock prior to the onset of others asking for grazing agreements.

Risk-spreading

There is an evident strategy to spread risk across subdivided areas. During the research period there was anecdotal evidence that it has become a pastoralist convention to use multiple locations of absentee-owned subdivided land in Laikipia to split herd assets among several locations. Pastoralists may purchase private property in more than one subdivided area distributed throughout Laikipia in order to gain multiple “footholds” for access to grazing privileges. Thus, the maximum access made possible through the pivotal position provided by one small plot of private property may be realized and amplified at a landscape level through several, often minimal, investments in such plots where they are available.



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ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



Because even the smallest subdivided plot can potentially yield access to hundreds of acres surrounding it, there does not appear to be any significant benefit to purchasing large portions of land in one specific location. This would be the case unless additional plots of land provided proximity to a new source of water, or to a new source of pasture that cannot be reached within the daily grazing radius of a homestead base (see map in Anderson, 2002: p52 from Spencer, 1973: p15). In this case, it would be logical for an individual to attempt to secure plots located near several permanent sources of water and options of available pasture, situated a significant distance from each other, but not immediately adjacent to each other. This would provide the benefit of flexible and adaptive response to a variable environment (Van den Brink et al., 1995: p378).

Livestock could theoretically be moved in a rotational manner between different subdivided areas where individuals have access in order to capture new grass following rain. Alternatively, separate herds may be distributed to various subdivided areas, private land owned by the pastoralist, areas where grazing agreements can be accessed, and community or group ranch areas simultaneously. For example, one herd owner requested access for 100 of his cattle on a ranch, thereby splitting his herd evenly between a nearby piece of “abandoned land” where he kept 100 of his cows, and a large-scale ranch. The individual explained that he was moving his mixed herd to the ranch ahead of the dry season to split his risk between multiple locations. Another herd owner stated that he had his cattle in four groups on two commercial ranches, one area used informally, and a subdivided area where he has formal access to 50 acres in a large subdivided block of land, which provides access to a larger area unoccupied by other titleholders.

Market integration

Among the ways that diversification of pastoralism has taken place is that some pastoralists rent grazing exclusively for herds of steers that are being fattened in preparation for market sale. Renting grazing from a ranch close to a market location, such as Rumuruti, also facilitates closer physical proximity to livestock markets. Ranch prices offered for sale-ready steers can be higher than selling to the usual town-based markets during times of drought. This develops relationships between communities and ranches that stimulates good will, and builds trust, reciprocity, and social capital (e.g., Pretty and Smith, 2004) for future interactions. Such interactions can build linkages between livestock production and wildlife conservation (Elliot and Sumba, 2009), and create opportunities for some of the unrealized synergies (Homewood et al., 2012) and co-benefits (Davies, 2008) between pastoralism and wildlife conservation efforts.

Reducing labor inputs

Livestock keepers may also reduce their labor inputs for herding through use of grazing agreements. For example, one pastoralist reached an agreement to combine his bull herd indefinitely with that of a large-scale ranch under the supervision of the ranch’s hired herder. Through use of the grazing agreement, this pastoralist was able to externalize the cost of a herder’s monthly wage (5,000 Kenyan Shillings, or 60 USD) by amalgamating his herd with that



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



of the ranch. Some of the more expensive grazing agreements include the cost of herding as part of the fee paid for access to pasture.

The increased prevalence of payment for the inputs, including pasture, minerals, and water, necessary for livestock production in the rangelands is indicative of a trend toward increasingly commoditized resources (e.g., Catley and Aklilu, 2013; Letai and Lind, 2013; Zaal and Dietz, 1999: p163; Galaty, 1994; Little, 1985). This is a trend that disadvantages owners of small herds. Such a system favors individuals who can afford to liquidate a small portion of their herd assets in order to pay for access to sources of pasture.

Political ecology and access to pasture

A political ecology of resource access among pastoralists was evident in Kenya's Baringo rangelands neighboring Laikipia beginning in the mid-1980s (Little, 1985). Pastoralists were discernibly part of several groups including pastoralist "drop-outs", destitute herd owners, subsistence level herd owners, and fully integrated market-oriented producers who were absentee herd owners (Little, 1985). Increased opportunities for access to paid pasture resources inside large-scale ranches might encourage a degree of clientelism (as noted by Little, 1985) between wealthy herd owners and impoverished pastoralists who could be contracted to herd livestock assets for them. Less wealthy herders, while not possessing significant livestock assets, for reasons of geographical positioning, community membership, or various political affiliations, might have access to pasture resources outside the reach of wealthier, absentee herd owners.

Where individuals cannot themselves access pasture renting arrangements, they may seek to access these arrangements through reciprocal pasture access arrangements (e.g., Galaty, 1981; Sperling and Galaty, 1990) or by creating a business relationship with relatives, friends, or strategic partners who do have access but who are not able to afford to pay for it. Individuals of wealth or influence, who may themselves be absentee herd owners but who can negotiate stock raising arrangements with less successful or destitute pastoralists whose herds have declined or who are themselves stockless (Little, 1985), might also take advantage of increased access to pasture by blending their herds into those of residents in "informal grazing areas" in both areas of "free" pasture and in areas where pasture is "rented." Heath (2001) notes that most of the cattle that managed to gain access to large-scale ranches in Laikipia during the drought in the year 2000 actually belonged to influential individuals and politicians. In reality, it may be difficult to know who actually owns individual livestock, and whether these are the same livestock that remain in specific locations year-round, or whether they are rotated between and among areas where pasture can be accessed through opportunism.

Connections between grazing agreements and livestock densities in "informal grazing areas" and wildlife conservation potential



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



The fact that grazing agreements are more prevalent now than in the period before 2001 has implications for wildlife populations in Laikipia. While renting pasture to pastoralists provides distinct advantages to large-scale ranches in the form of property rights protection, there is the possibility that this dynamic might create additional space in the “abandoned lands” present in Laikipia for livestock that would otherwise not be supported on the heavily grazed pastures found there.

Such a possibility has implications for wildlife conservation because wildlife distributions in Laikipia correspond to livestock densities on the different types of property present in the landscape (Georgiadis, 2007a, Kinnaird and O’Brien, 2012). This situation may imply that increased opportunities to access grazing on private properties create the opportunity to scale up livestock densities on “abandoned lands” in proportion to the number of livestock that move out of these lands when they access pasture on private ranches. This could create a form of livestock “leakage” (i.e., Osano et al., 2013, Maasai Mara) where, rather than replacing their access options on “informal grazing areas” with options inside large-scale ranches, pastoralists would use this as an additional option to spread their assets from other locations into private ranches. Similarly, pastoralists might also move additional livestock (from group ranches or from outside the County) into “abandoned lands” for the duration of the period that a portion of their herd enters into a grazing agreement with a large-scale ranch.

This scenario, rather than contributing to wildlife conservation objectives on contiguous land areas in Laikipia, may result in greater displacement of wildlife by livestock. As the densities of the latter increase far beyond what was previously possible before grazing agreements were commonplace (i.e., prior to 2001, as noted by Heath, 2001), wildlife populations across the landscape may face increased harassment, displacement, or exclusion (i.e., Ogotu et al., 2009, Ogotu et al., 2011) in areas where this was previously not the case.

There is also the possibility that using large-scale ranches as grazing schemes (Heath, 2001) can produce a source of livestock that is then shifted into communal areas at a later time (Anderson, 2002). In Baringo, an adjacent county, “grazing schemes” during the colonial period effectively served as “incubation” areas to rear young livestock, which was then transferred into surrounding areas of rangeland under communal tenure where authorities were attempting to regulate and minimize stocking rates (Anderson, 2002). Rather than replacing pastoralist options in communal rangelands that were seen as being used “unsustainably,” this served as a method of channeling an increased volume of livestock into these areas. In the situation Anderson describes, this led to an increase of livestock rather than the intended objective of land rest in the affected areas.

These two examples of how flows of livestock between paid grazing areas on ranches and “informal grazing areas” indicate that while pastoralist-ranch partnerships might hold positive outcomes for pastoralist production strategies and property rights arrangements on ranches, they could have potentially negative impacts on wildlife populations in Laikipia. Due to increased stock density on both large-scale ranches and within and between “informal grazing areas” and communal rangelands, wildlife populations could face increased pressure both directly and



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



indirectly. Careful consideration, therefore, is necessary to ensure that wildlife populations are not adversely affected by otherwise largely positive, collaborative grazing agreement schemes.

Conclusion

A plethora of ingenuity, adaptation, and creativity is employed in finding ways to legitimize land use and property rights throughout Africa (Benjaminsen and Lund, 2003). Rural, developing world contexts, where a mixture of co-existent norms govern resource use and tenure security can promote the adoption of institutional innovation toward achieving increased land tenure security (Delville, 2003) and establishing or protecting property rights. Strategies for achieving land tenure security frequently draw on an amalgamation of notions of property rights institutions and evidence, including statutory, customary, religious, physical occupation and proving prior use, and notions of legitimated user rights (Unruh, 2006). The selective use of institutions, and their corresponding rules of access and privilege, has been described as “institutional bricolage”, a notion which “implies that people may assemble and adapt norms, values, and arrangements from various backgrounds and identities to suit a new purpose” (Benjaminsen and Lund, 2003: p5; see p5-9; Cleaver, 2003: p11-25).

Grazing agreements may be used in innovative ways by both ranches and pastoralists to suit their particular, and often quite divergent, land tenure and production requirements. Rather than using grazing contracts solely for monetary income or pasture resources, both parties are using this institution for strategic purposes beyond what might be expected. Large-scale ranches engage with individual pastoralists and pastoralist communities to develop positive relationships that lead both to financial revenue and property rights buffers. These buffers help protect private boundaries and exclude trespassers because those pastoralists who have been granted official users rights subsequently prevent access by others who have not gained permission to access grazing options on private property. Meanwhile, pastoralists utilize grazing agreements to increase their access to resources across the landscape and as part of their wider land tenure security strategy. This case study illustrates the innovation, agency, and adaptation that may be employed by land users to solve their land tenure dilemmas in creative and proactive ways (Unruh, 2006).



Catalyzing Innovation

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 25-29, 2019



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