

**Pastoralism within Land Administration: Seasonal Interactions and Access
Agreements between Pastoralists and Non-Pastoralists - A Case of Northern
Kenya¹**

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Abstract

Pastoralists in Northern Kenya maintain their seasonal migrations between drylands-highlands resources, and this often result to interactions with non-pastoralist land use actors. The aim of this paper is to understand how non-pastoralist land use actors manage seasonal encounters with migrating pastoralists. A case study was used to find out if non-pastoralist land use actors made agreements to allow herders grazing access on private land; the nature of those agreements; and their opinions on regularization of these access agreements through formalization in Land Administration (LA). Results showed that the majority encountered seasonally migrating pastoralists in distinct drought periods; the majority never allowed herders access on private land; a least proportion allowed access, and made agreements through spoken and written contracts.

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Rules formed to regulate pastoralists presence on private land centred on grazing fees, grazing regulations and protection of private property; majority are unwilling to have pastoralists access rights regularized in LA. As land is continuously being adjudicated, surveyed and allocated for private purposes, imposition of statutory rights on pastoralists' areas, including migration corridors, permanently cuts out and extinguishes pastoralist rights to mobility and access to required resources. This research argues that land adjudication should identify and confer all existing land rights to all its users, in order to avoid obstruction or re-negotiation for access, and concludes by recommending the inclusion of pastoralists' access rights as real property rights which could be accommodated in LA system.

Key words: Land Administration, adjudication, real property rights, pastoralists, non-pastoralist land use actors; access agreements

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1 Introduction

Land administration (LA) system is fundamentally about improving tenure security and access to land. The core of a Land Administration (LA) system is the cadastre (Williamson, 2001). "A Cadastre is normally a parcel based, and up-to-date land information system containing a record of interests in land (e.g. rights, restrictions and responsibilities). It usually includes a geometric description of land parcels linked to other records describing the nature of the interests, the ownership or control of those interests, and often the value of the parcel and its improvements. It may be established for fiscal purposes (e.g. valuation and equitable taxation), legal purposes

(conveyancing), to assist in the management of land and land use (e.g. for planning and other administrative purposes), and enables sustainable development and environmental protection” (FIG, 1995). Cadastral parcels are owned in a variety of tenures, which describe how rights to land are owned (Dale and McLaughlin, 1999).

There are processes involved in creating a cadastral parcel. These cadastral processes are boundary survey and adjudication (Molen, 2002). Boundary surveys identify, define, demarcates, measures and maps new or changed parcel boundaries, whereas adjudication establishes the existing rights on land, (FIG, 1995). The boundary of a parcel could comprise of any form, which cadastre 2014 (FIG, 1998) refer to as land object. Definition of parcels is prerequisite for adjudication, whereupon rights and restrictions to be exercised within the parcel are established and with finality (Lawrance, 1985). The rights adjudicated will correspond to with rights to be registered (Lawrance, 1985). These rights are exercised based on four qualities i.e. universality, exclusivity, transferability and enforceability (Tietenberg, 1992). Universality focuses on ownership rights; exclusivity focuses on the rights to benefit from land; transferability focuses on the rights to transfer property rights to another owner; and enforceability provides a structure of penalties that prevent others from encroaching on or taking over property rights without the agreement of the owner (Tietenberg, 1992, Dale and McLaughlin, 1999). All these can be seen as a bundle of rights that are included during adjudication, and it is what the society recognizes as ownership (Freyfogle, 2003, Jacobs, 1998, Penner, 2000).

In LA system, however, the adjudication process operates to identify and confer ownership rights, but often isolates/neglects other derived rights which are likely to be important under customary tenure (Platteau, 2000). For example, pastoralist herders relying on longstanding secondary rights of use to stubble, water and pasture resources,

are finding their passage blocked, with crops planted in what were cattle tracks and the enclosure of common grazing land (Toulmin, in press). Conferring of ownership rights therefore cuts out overlapping interests, by creating more exclusive forms of ownership to a resource (Woodhouse, 2003, Meinzen-Dick and Mwangi, 2007). This often leads to conflict or recurrent re-negotiation of access rights (Mwangi and Dohrn, 2008). The aim of this paper is to understand how non-pastoralists land use actors manage seasonal encounters with migrating pastoralists in Northern Kenya.

The rest of the paper is structured as follows: we begin by introducing pastoralism and the expansion of non-pastoral land uses and private tenures into pastoral areas, and its effects. We then present the objectives of this paper, methods used and results. Results focus on pastoralists and non-pastoralists seasonal encounters and agreements to graze livestock on private lands. Upon this, we base our arguments on possibilities of inclusion of pastoralists' access rights as real property rights as a strategy to mitigate marginalization and secure access to dry season resources within the LA domain.

2 Pastoralism, and the expansion of statutory tenures in pastoral areas

Pastoralists are a people mainly dependent on raising domestic animals for their livelihoods. They live in environments with marked seasonality (rangelands), and as a strategy for providing year-round food for their herds, they choose to move livestock to pasturage rather than bringing fodder to herds (Dyson-Hudson and Dyson-Hudson, 1980, Chang and Koster, 1994). Livestock provide pastoralists not only with food for sustenance, but also through livestock sale or exchange of livestock products, with a means for financing basic needs expenditures such as grains, tools, clothing, school fees or medical expenses (Barrett and Luseno, 2004, Fratkin, 1997). Households are

the basic units of production for pastoralists, and so they tend to accumulate large herds of animals as a symbol of wealth and status, but also as insurance against drought losses (Hidore and El-Tom, 1975, Kandagor, 2005, Bates and Lees, 1977). This is based on the theory (and perhaps practice) that the more stock a man has the better the chance that more of his herd will survive a drought (Oba and Lusigi, 1987). In droughts, pastoralists move to highlands where the vegetation persists, and move back to rangelands when the rains begin, so as to take advantage of the new grass (FAO, 1999). This land use pattern has survived for millennia (Toulmin, in press). Although pastoralists' spatial extents and migration routes could be fuzzy, alternating between highlands and rangelands allows them to exploit multiple niches distributed across space, at different times to depress fluctuations in production (Goodhue and McCarthy, 1999).

Pastoralism is influenced by expansion of land uses outside the pastoral sector into the pastoral areas (Fratkin, 1997). This begun with the onset of the colonial period where policies introduced took the form of alienation of the best native lands to be given to the settler communities, and enforcement of particular strategies for the protection and exploitation of natural resources (Fumagalli, 1978). In Pastoral areas in Northern Kenya, controlled grazing areas were introduced in 1935, and this was followed by policies directed towards delimitation of boundaries, protection of wild game, forest and erosion protection – which became government lands, hence dry season grazing areas were closed out for livestock grazing (Fumagalli, 1978). Destocking policy to convince pastoralists of the need to reduce their livestock numbers (by marketing excess livestock); maintain carrying capacity and to avoid overuse of vegetation and reduce soil erosion; and to manage livestock levels to realize reasonable annual off-takes then followed (FAO, 1992). Elsewhere in Southern Kenya, Campbell et al.(2000b) mention

that prior to the colonial period, Maasai-herding cattle, sheep, and goats dominated the area, and that wildlife was abundant and tolerated by the Maasai. Under the colonial land demarcation the area became part of the Maasai Reserve, and pastoralists were prohibited to graze because government authorities felt that cattle competed for resources with the wildlife, which were becoming increasingly important as source of foreign revenue through tourism (Homewood, 1995).

Post-colonial government also continued to hamper pastoral mechanisms by supporting other sectors of the economy such as urban development and agriculture, which increased economic marginalization to pastoralists (Anderson and Broch-Due, 1999, Markakis, 2004). Homewood (2004) states that urban expansion in the pastoralists territories date back to colonial periods when district officers were introduced in villages and services like commerce, education, health, administration, security, etc. were introduced. She adds that while pastoralists occupied the environs of trading centres, immigrant professionals were attracted to work either in government or trade, some of whom did not return to their homelands after retirement. Furthermore, expansion of agricultural peoples into the better high-rainfall grazing lands and where permanent water is available has reduced grazing lands available for pastoralists, and access during dry seasons (Talbot, 1986).

Expropriation of high potential areas for land uses outside the pastoral sector has created uncertainty on the pastoralists access, control, and exploitation of land based resources, according to the Kenya National Land Policy (2007b). Further more, formalized lands are protected by land laws such that upon registration, land owners are protected against all other interests and claims not shown in the land register; as provided in Chapter 300 of the Land laws in Kenya (Kenya). This has weakened pastoralists established norms and rules for regulation on pasture, as customary land is

opened up to non-pastoral users who are not tied by pastoral customary norms (Mwangi and Dohrn, 2008). Obstructing pastoral movements by formalization of property rights therefore deprives pastoralists access rights, and neglects the notion of multiple use of land by various groups (Brink et al., 2005, Toulmin and Quan, 2000, Mwangi and Dohrn, 2008, BurnSilver and Mwangi, 2006). While pastoral economy remain dependent on herding of livestock (Fratkin and Roth, 2005), and mobility remain commonly high, the associated complexities of perennially renegotiating temporary and flexible access to resources are made more problematic in a landscape that is progressively being surveyed, demarcated and allocated for private purposes (Homewood et al., 2004). Pastoralists are thus marginalized as they are hardly involved in local and regional planning (Neumann, 1995). While the negative impacts associated with increasing scarcity of land during the dry season is compounded by increased pressure transforming into conflict because pastoralists hold no more rights to previously accessed grazing lands, many times it is the conflict over resources, and access to those resources that underlie the conflict (Fourie, 1999, Deininger, 2003). This has caused a decline in social and economic conditions among pastoralists (Swallow and McCarthy, 1999). Persistence of pastoralism, on the contrary, testifies to its appropriateness as a productive system in the drylands, according to the Kenya National Land Policy (2007b). This is supported by (Behnke et al., 1993, Scoones, 1994), who add that mobility and flexibility of pastoral systems enables them to exploit their patchy and fragile environment in the semi arid lands. It is also supported by researches advocating for recognition of pastoral mobility by policies and legislations (Mwangi and Dohrn, 2008, Toulmin, in press, Hobbs et al., In Press). As statutory tenures expand into pastoral areas, and as pastoralists maintain their seasonal migrations, there is little knowledge, however, about how non-pastoralist land use actors manage encounters

with seasonally migrating pastoralists. The objective of this paper is to find out if non-pastoralist land use actors make access agreements with pastoralists to allow grazing livestock on private land, the nature of those agreements and their opinions of regularization of those access agreements in Land Administration.

3 Study area and Methods

The study area is in the Samburu – Isiolo – Laikipia and Meru landscapes in Northern Kenya, where sedentary and pastoralist land uses neighbor each other. The study area consists of diversities in land uses, land use actors and tenures. These diversities provide an ideal setting for this research. Six main categories of land use actors were identified for this study - as adapted by Lengoiboni (under review). These land use actors are: farmers, private ranchers, urban residents, wildlife park wardens, forest officers and pastoralists. Most farmers and Forest officers are located in the highlands, whereas most private ranchers, urban residents, wildlife park wardens, and pastoralists are located either within or in areas of transition between highlands and rangelands. For this research, farmers, private ranchers, urban residents, wildlife park wardens and forest officers are categorized as non-pastoralist land use actors or right holders, interchangeably. Their tenures are commonly private (under individual or government land ownership). Each land use actor is treated as a unit of analysis in order to compare how the different groups respond to manage the encounters with migrating pastoralists. Pastoralist communities chosen for the study practiced communal land ownership and seasonal migrations. Climatic conditions regulating pastoral migrations in study area bimodal, i.e. pertaining to two rainy seasons and two dry seasons (McClanahan and Young, 1996). This triggers two pastoralists' migrations each year. Figure 1 presents the study area, land uses and locations of land use actors.

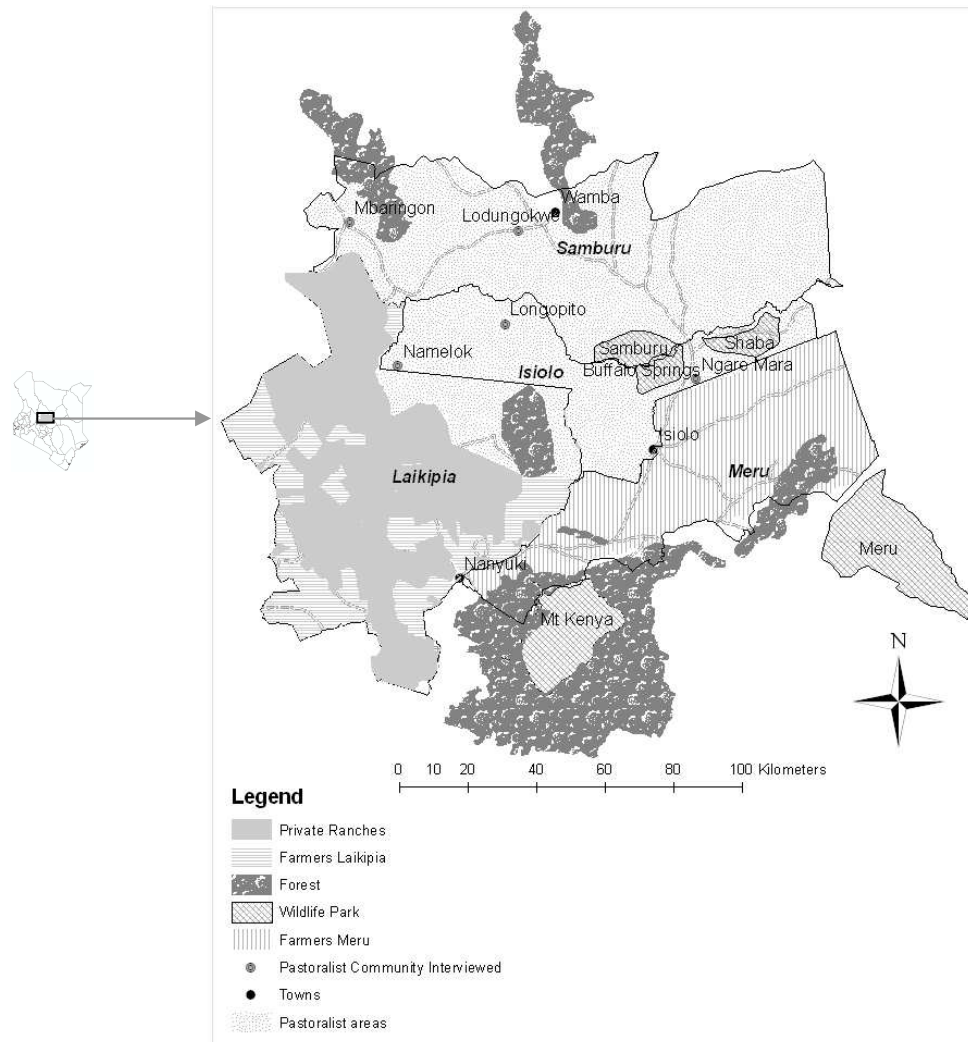


Figure 1: Study area, Land Use and Land Use Actors within the Samburu - Isiolo - Laikipia and Meru Landscape

Source: (Lengoiboni et al., under review).

Figure 1 presents the position of study area in Kenya. It presents pastoralists areas where tenures are mostly communal, and non-pastoralist land use actors' areas where tenures are mostly private.

Methods

To understand how non-pastoralists land use actors manage seasonal encounters with migrating pastoralists, embedded case study approach is used. This method, as adapted in Lengoiboni (under review), is preferred as it is appropriate for studies containing more than one unit of analysis, where the purpose is to combine details of each unit of analysis in to one single research (Scholz and Tietje, 2002, Yin, 1994). Also, case based research is preferred because it allows the use of various methods to obtain data, or in data analysis (Glesne, 1999). In this research, semi-structured questionnaires were used to obtain data through face to face interviews and email. Both open and closed questions were asked to non-pastoralists land use actors about: i) if they encountered migrating pastoralists and in which periods/months; ii) if they made agreements to allow migrating pastoralists access; and iii), the nature of those agreements based on: timing – an indication of amount of time herders are allowed on private land; rules – an indication of regulations that pastoralists must abide with while on private land; and penalties – an indication of punishments to pastoralists when rules are breached. Non-pastoralists land use actors also gave their opinions on regularization of these access agreements, through formalization in LA. On the other hand, pastoralists answered to closed questions, giving their views on arrangements supporting seasonal mobility.

Data was collected between November 2007 and February 2008. A variety of methods such as quota sampling and cluster sampling were used to identify interviewees, in a similar process as described in Lengoiboni (under review). 72 filled out questionnaires were obtained. 67 of these questionnaires were from non-pastoralist land use actors i.e. farmers (n=21, wherefrom 71 farmers were interviewed in both individual and group interviews); private ranchers (n = 6, wherefrom 26 ranchers were requested to volunteer

to participate in the research through email, and that their responses would be kept anonymous); urban residents (n=25, wherefrom 40 urban residents were interviewed using individual and group interviews); wildlife park wardens (n = 4, wherefrom individual interviews were carried out); forest officers (n = 8, wherefrom individual interviews were carried out); and lastly, 5 questionnaires were obtained from pastoralists communities (n = 5, wherefrom a total of 72 participants were interviewed in 5 focus groups). For analysis, maps, figures and cross tabulations are used. Maps are used to visualize results on spatiotemporal interactions; while figures and cross tabulations are used to represent the frequencies of distribution of the responses from each category of land use actors, due to unequal sample sizes. In this research, we focus on spatiotemporal interactions and spatiotemporal access agreements, and do not consider the amount of livestock that pastoralists migrate with.

4 Non-Pastoralists and Pastoralists Encounters and Spatiotemporal Agreements

4.1 Encounters with migrating pastoralists

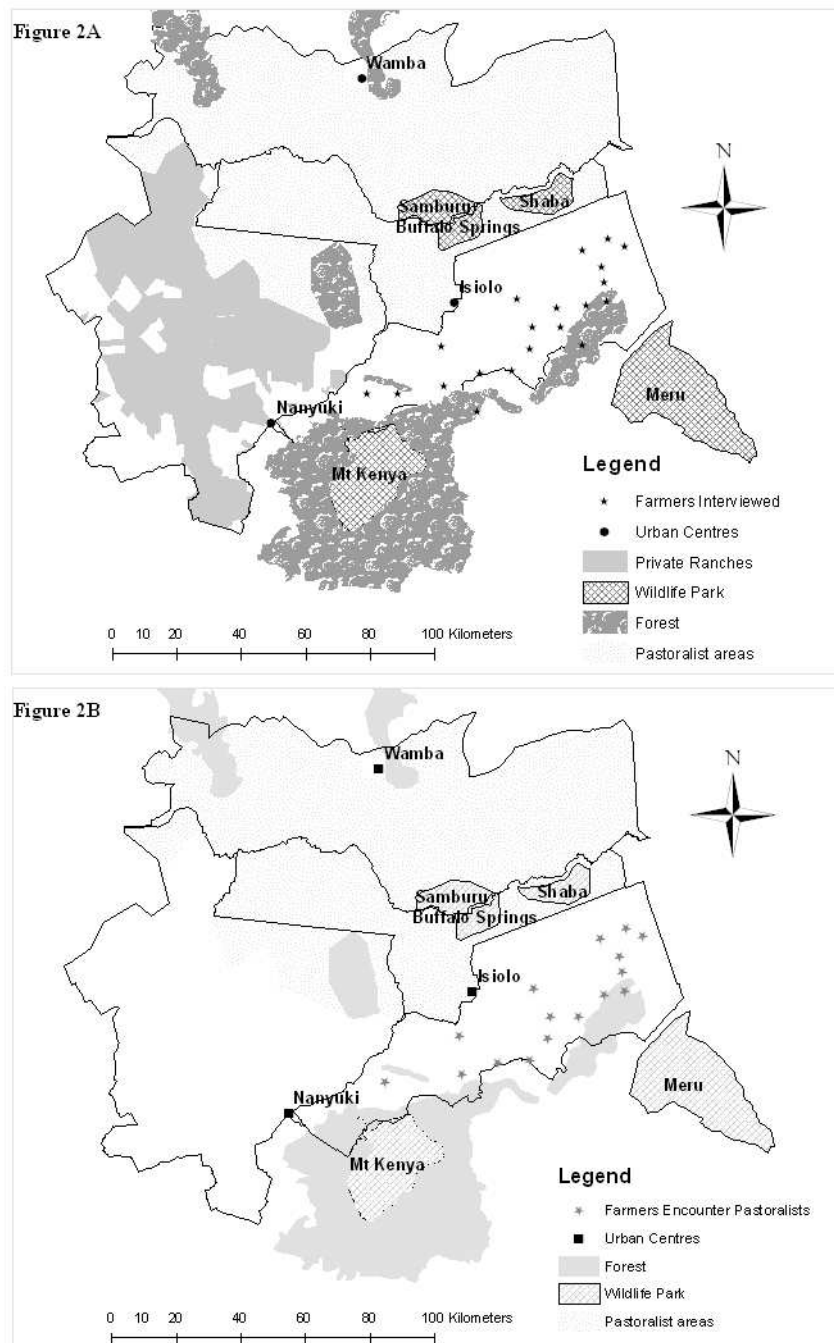


Figure 2: Spatial representation of non-pastoralist land use actors encountering migrating pastoralists

Figure 2A presents a spatial distribution of land use actors interviewed on if they encountered migrating pastoralists. Results of respondents who encountered migrating pastoralists are presented in figure 2B. In Figure 2B, all categories of land use actors i.e. farmers, urban residents, forest officers, wildlife park wardens encountered migrating pastoralists therefore little difference between the proportion of respondents displayed in figure 2A and 2B. The spatial extent of private ranchers disappears in figure 2B. This because of low response rates from private ranchers. Meanwhile, majority of private ranchers respondents expressed no encounters with migrating pastoralists as ranches were fenced, surrounded by other private ranches or were situated far from pastoralists' migration corridors/routes.

In figure 2B, the locations of non-pastoralist land use actors encountering migrating pastoralists suggest that close proximity to pastoral areas create the probability that interactions will occur during pastoralists' migrations. Further, encountering migrating pastoralists is an indication that pastoralists seek required resources wherever they can be found, including private land.

4.2 Interaction periods

All respondents who encountered migrating pastoralists were further asked to give which months of the year that these encounters occurred. Results based on percentages of encounters within the land use actors categories are shown in figure 3.

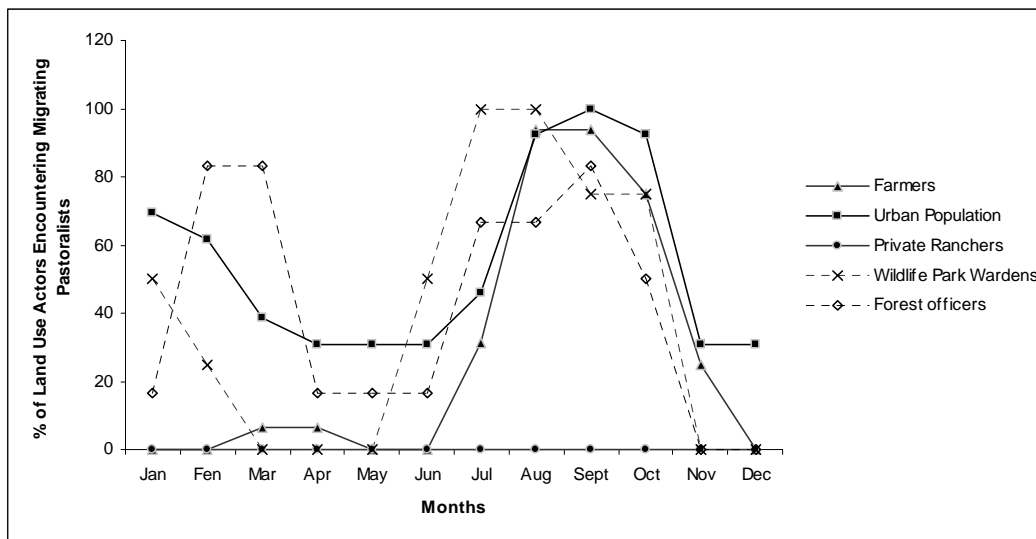


Figure 3: Months in which non-pastoralist land use actors encounter migrating pastoralists

Encounters between non-pastoralist land use actors and migrating pastoralists are concentrated in two periods, as shown in figure 3. The first period occurs around January through March, after which the frequency of encounters lessens. The second period can be observed to peak in around July through October, thereafter the frequencies of encounters lessen again. In the first period, encounter rates are observed to be lower for most land use actors than in the second period. In the first period, forests, wildlife parks and urban residents present encountering pastoralists. This could be influenced by their proximity to pastoral areas i.e. being located within or near pastoral areas (as shown in figure 2), hence increased chances of encounters. Private ranchers show no encounters with pastoralists. Ranchers preferred not to measure the intensity of interactions, although they acknowledged encountering pastoralists throughout the year. The second period presents high encounter rates for most land use actors, including farmers, who almost do not appear in the graph during the first period. This could suggest that pastoralists' migrations are directed towards non-pastoralist land

use actors' areas, during the second period, hence increased encounters. On the other hand, the periods of interaction as shown in figure 3 matches the two drought periods as experienced in northern Kenya. These drought periods usually occur around January through March, and the second drought period around July through September. Upon establishing interaction periods, these non-pastoralist land use actors were asked whether they made agreements to allow pastoralists on access private land. Their responses are presented in table 1.

4.3 Access agreements

Table 1: Non-pastoralist land use actors forming spatiotemporal access agreements with pastoralists

| | | make agreements with pastoralists to allow access | | | | |
|-----------------------|-----------------|---|-----------|--------|-------|--------|
| | | never | sometimes | always | Total | |
| Land use category | Farmers | Count | 15 | 1 | 0 | 16 |
| | | % within Category | 93.8% | 6.2% | .0% | 100.0% |
| Private ranchers | Private | Count | 0 | 1 | 1 | 2 |
| | | % within Category | .0% | 50.0% | 50.0% | 100.0% |
| Urban residents | Urban | Count | 11 | 1 | 1 | 13 |
| | | % within Category | 84.6% | 7.7% | 7.7% | 100.0% |
| Wildlife park wardens | Wildlife park | Count | 3 | 0 | 1 | 4 |
| | | % within Category | 75.0% | .0% | 25.0% | 100.0% |
| Forest officers | Forest officers | Count | 4 | 1 | 1 | 6 |
| | | % within Category | 66.7% | 16.7% | 16.7% | 100.0% |
| Total | Total | Count | 33 | 4 | 4 | 41 |
| | | % within Category | 80.5% | 9.8% | 9.8% | 100.0% |

In table 1, the proportion of non-pastoralist land use actors who never make agreements to allow herders access on private land are high in all categories of land use actors .i.e. farmers (93.8%), urban residents (84.6%), wildlife park wardens (75.0%), forest officers (66.7%), except for private ranchers who mostly allowed access. Protection/conservation of private property and perennial crops were main reasons to deny pastoralists access. Despite encountering migrating pastoralists, never allowing access indicates that majority of right holders exercise exclusive rights as provided for in LA. This exclusion suggests that pastoralists are left to seek options to secure access to required resources in order to sustain their livelihoods. The proportions of right holders who sometimes or always allow pastoralists access are comparable, and are less than responses from right holders who never allow pastoralists access. For these who allowed access, further questions were asked about contents of their access agreements. Their responses are shown in table 2.

Table 2: Nature of spatiotemporal access agreements created by pastoralists and non-pastoralist land use actors

| Land use actors | Type of negotiation | timing | rules | penalties |
|------------------------|----------------------------|--|---|---|
| farmers | – spoken | – not specific | – leave when rains begin – pay grazing fees – pay overnight stay fees | – eviction – access denial |
| private ranchers | – written | – renewable 14 days agreements – renewable monthly agreements | – pay grazing fees – follow grazing plan – no night grazing | – eviction – deny future access |
| urban residents | – spoken | – not specific | – pay grazing & fees – pay overnight stay fees – no destroying fence | – reinforcement through local leaders |
| wildlife park wardens | – spoken | – not specific | – no grazing in park – access to water points only | – eviction – confiscation of livestock |
| forest officers | – N/A | – not specific | – N/A | – suspension |

In table 2, majority of land use actors use spoken agreements to grant pastoralists access i.e. farmers, urban residents and wildlife park wardens. Only private ranchers use written agreements, whereas no communication on access agreements are involved when pastoralists go to forests. Forest officers indicated having grazing arrangements

with communities resident around forests, but not with pastoralists. Upon arrival, pastoralists were not warded off even though no grazing agreements were made. On timing, majority of non-pastoralist land use actors do not have specific regulations regarding length of time pastoralists are allowed on private land i.e. farmers, urban residents wildlife parks and forests. Farmers and urban residents indicated that pastoralists usually just show up whereupon negotiations for access begun; and that herders withdrew after stubble was depleted. Private ranchers regulated the timing based on fortnight or monthly agreements.

Elements of rules centred on payments of grazing fees, grazing regulations and prevention of destruction of property. Grazing fees was set at Kenya Shillings (Ksh.) 25/- (approximately €0.25 or US\$0.30) per head of cow per month. Private ranchers allowed specific pastoral communities to designated grazing zones within the ranches. Access is allowed on prerequisite that pastoralists formed grazing associations.

Representatives of grazing associations (grazing committee) act as communication link between the ranchers and the communities. Grazing committees manage operations such as collection of grazing fees; regulation of alternation of herds either coming to graze or termination of grazing contracts and conflict resolution mediation, among others. Unlike other right holders, access to graze in private ranches is not restricted to drought seasons only, but allowed in any month as long as requirements are followed.

Eviction can be observed as the most common action undertaken by non-pastoralist land use actors when pastoralists violate access agreements, also in forests where no agreements were made. Others listed are denial of future access, while reinforcement through local leaders and confiscation of livestock required pastoralists to pay fines. Fines were paid for two reasons: either to compensate for the damages caused by

livestock; or to regain their confiscated herds, where after herders withdrew from private property.

All the non-pastoralist land use actors who made agreements to allow herders access were further asked if they would agree to allow pastoralists spatiotemporal access rights during seasonal migrations, if these rights were to be regularized.

4.4 Views on regularisation of spatiotemporal access in LA

Table 3: Non-pastoralists views on allowing pastoralists spatiotemporal access rights

| | | Would allow pastoralists access if access to be regularized | | | |
|--------------------------|-----------------------|---|--------|--------|--------|
| | | | no | yes | Total |
| Land use actors category | farmers | count | 13 | 3 | 16 |
| | | % within category | 81.2% | 18.8% | 100.0% |
| | private ranchers | count | 2 | 0 | 2 |
| | | % within category | 100.0% | .0% | 100.0% |
| | urban residents | count | 9 | 4 | 13 |
| | | % within category | 69.2% | 30.8% | 100.0% |
| | wildlife park wardens | count | 4 | 0 | 4 |
| | | % within category | 100.0% | .0% | 100.0% |
| | forest officers | count | 0 | 6 | 6 |
| | | % within category | .0% | 100.0% | 100.0% |
| | total | count | 28 | 13 | 41 |
| | | % within category | 68.3% | 31.7% | 100.0% |

In table 3, majority of non-pastoralist land use actors are not willing to allow herders access, if those access arrangements were to be regularized in LA, i.e. farmers (81.2%); private ranchers (100.0%); urban residents (69.2%); wildlife park wardens (100.0%); apart from forest officers (100.0%). By regularization it is meant if pastoralists' requirements to access to or through private land should be kept open through formalization in LA. Minimal support to allow herders access to or through private land is an indication that property right holders prefer exclusive rights. It also indicates that right holders can not be relied on to willingly give temporary access rights.

4.5 Pastoralists' support, views on maintained mobility and resultant conflicts

Table 4: Pastoralists views on support from government, consequences and future perspectives

| Pastoralist community | government gives alternatives for migration routes | Closure of migration routes and drought grazing areas threaten sustainability of pastoralism | desire to continue with pastoralism |
|-----------------------|--|--|-------------------------------------|
| Namelok | - | + | + |
| Longopito | - | + | + |
| Ngaremara | - | + | + |
| Lodungokwe | - | + | + |
| Mbaringon | - | + | + |

Key - = no + = yes

All the 5 pastoralist communities express a lack of legal arrangements that support livestock movements across the traditional migration routes to and from drought grazing

areas, as shown in table 4. All pastoral groups also agree that the absence of arrangements supporting seasonal migrations threaten the sustainability of their livelihoods. It was mentioned that migrating herders are left to seek alternative migration routes therefore taking longer periods to access to drought grazing areas. Effects of these were summarized as poverty, conflict and animal cruelty. Poverty was mentioned to result from selling livestock in order to settle fines upon breaching of property rights to land owners or courts, hence a reduction in livestock numbers; conflict was mentioned to cause social tension in terms of mistrust and hostilities between pastoralists and non-pastoralist land use actors; and animal cruelty as closure of access areas resulted to livestock suffering and eventual deaths due to starvation. Despite the challenges, all the pastoralists groups expressed the desire to continue with pastoralism, and postulate that opening access to seasonal mobility on private land will reduce the conflicts often experienced.

5 Discussions

Results in figure 2 reveal that majority of non-pastoralist land use actors encountered migrating pastoralists. Despite the encounters, majority of non-pastoralists land use actors never allowed pastoralists access on private land, as shown in table 1. This could be facilitated by the basis on which property rights are founded. Property rights are considered as rights in rem (thing or cadastral parcels in the context of this research) (Steiner, 1994, Lawrance, 1985). This means that property rights attach to persons such that they have a particular relationship to land, and those persons obtain the right to exclude all others (Merrill and Smith, 2001). Persons become right holders upon adjudication and these rights are fixed to a cadastral parcel, which is the basic unit of registering land ownership (Kraak and Ormeling, 2003, Merrill and Smith, 2001). The land, together with the bundle of rights bestowed is also known as real property (Galaty et al., 2002) . Real property rights are usually protected in the constitutions (Tietenberg, 1992, Dale and McLaughlin, 1999, Bruce et al., 2006, Feinman, 2005, Enemark and Molen, 2008, Alden-Wily, 2008). The purpose of protection in the constitutions and laws is to allow the property owners to oblige all others to carry out their duty of keeping off, therefore allowing the right holder to enjoy his rights (Needham, 2006). By not making access agreements, implications are that right holders abide to property rights' requirements to exclude outsiders, pastoralists included.

Right holders encountering migrating pastoralists could be facilitated by the reason that pastoralists seasonal migrations follow established routes (Blench, 2001). These seasonal migration practices could be seen as a form of non-written customary rights, which have the nature of real rights for pastoralists. These customary real rights enabled them to freely move to access to seasonally required resources. Customary real rights to seasonal movements were not considered as existing rights on land that could be

adjudicated and given real rights status during the introduction of LA systems by the colonial authorities and subsequent governments. According to Chapter 284 of the Land Laws in Kenya, interpretation of interests on land are of absolute ownership, and any right or interests over land that is capable of being registered. Pastoralists requirements for seasonal migrations was perhaps perceived as not registerable. Expropriation and allocation of former pastoralists' access areas for private ownership consequently cut out and extinguished the customary real right, yet no options for alternatives that support pastoralists' mobility were instituted, as table 4 results showed. As pastoralists must move their animals following seasonal changes in water and grazing cycles (Toulmin, in press, Mwangi and Dohrn, 2008, Toulmin and Quan, 2000), they are left to seek own options to secure access to required resources within the new system. Interestingly, seasonal encounters between migrating pastoralists and a least proportion of right holders resulted to collaboration instead of exclusion within the LA system (as shown in table 1). Collaboration is as right holders make agreements to allow pastoralists access to graze livestock on private land. Ability of right holders to create access agreements is possible because ownership rights can be separated or unbundled, for example through provision of right of way, lease, or other instruments (Carr et al., 2003); and also because exclusive rights allows right holders to benefit from their land (Dale and McLaughlin, 1999). By spoken and written access agreements, right holders benefit by selling access to pastoralists, as shown in table 2.

Right holders forming access agreements and permitting entrance on private land may be beneficial to pastoralists. The access agreements, whether from spoken or written contracts, are based on personal agreements between involved parties. Implications are that uncertainty for access could be jeopardized if land owners deny future access, or when land owners change. This is because pastoralists can not take legal action

against land owners obstructing access. Further more, if land owners change, new land owners are not obliged to maintain creating access agreements with pastoralists. This can be explained by the reason that access agreements between migrating pastoralists and right holders can not be seen as rights in rem, but instead as rights in personam. Rights in personam are purely personal rights which remain outside the domain of property rights (Gray and Gray, 2005), and can only be enforced against the specific parties to the contract. As only a least proportion of right holders made access agreements, implications are that most pastoralists do not obtain access to resources on private land in droughts. Droughts and prolonged inaccessibility to resources may lead to starvation, livestock loss and consequently economic losses thereby enhancing poverty among pastoralists (Campbell et al., 2000a) . The lack of arrangements to support access to resources through mobility has threatened pastoralism, as expressed in table 4. This is despite pastoralism being a main source of employment and livelihood system which directly contributes to the national economy. In Kenya, as such, pastoralists provide majority of meat consumed in the country, and contribute up to 10% of the Gross Domestic Product (GDP) through sales of livestock and livestock products (Hesse and MacGregor, 2006).

To reduce the negative impacts of exclusion, within the LA system, pastoralists have sought options to secure access to land not only by re-negotiating for access, but also by purchasing land in the highlands in Kenya, as fieldwork revealed. This emerged with the effecting of Forest Policy of 2007 (Kenya, 2007a) and the Forest Act of 2005 (Kenya, 2005). These encourage communities adjacent to forests to participate in forest management by forming Community Forest Associations (CFAs), while forest officers provide management plans on using and managing forest resources. The CFAs compose of various forest user groups such as grazing groups. Grazing groups are

eligible to graze their livestock in the forest after paying grazing fees to forest offices. Effecting the policy and Act has however resulted to seasonal conflicts between migrating pastoralists and grazing groups around Mt. Kenya area. Grazing groups claim pastoralists are non-CFA members and do not pay forest grazing fees. This could be because the policy and Act did not include pastoralists as seasonal users of the forests. By this exclusion, some pastoralists have purchased land in Mt Kenya highlands where CFA grazing groups exist, as strategy to being part of community. Being part of community qualifies the pastoralists to become CFA members, and after joining grazing group memberships, pastoralists can benefit from grazing livestock in forest. Local communities agree to sell land to herders, because they benefit from manure, which is highly in demand by the local farmers. In drought seasons, the pastoralists bring livestock to their private lands in highlands, and move back to rangelands in the onset of rains. This is however not a solution to all migrating pastoralists, as only the rich afford to buy land, while many are left out

Meanwhile within LA systems, majority of non-pastoralist land use actors who encounter migrating pastoralists are not willing to allow herders access to private land, if access arrangements are to be regularized (as revealed in table 3). This is because in the use of property, exclusion is the practical means by which interests in property is enforced and protected (Penner, 2000). Unwillingness by right holders to open up access reverts to the processes of adjudication of rights on land, and pinpoints that inflexibility is caused by traditional concentration property rights on a model based on the cadastral parcel as a single means of organising land information (Kalantari et al., 2008). Hence incompatible with pastoralists land use systems that requires movements, even across cadastral parcels. It is no wonder questions arise as to why ownership rights are well managed and other interests on land often poorly managed (Bennett et al., 2008).

Wrong decisions on the recording rightful claimants, and their kind of rights are likely to frustrate LA systems (Molen, 2002). This could explain why pastoralists have been unable to keep off private property as expected of them, but instead, persistent encounters has transformed into re-negotiation and purchasing of access to now private lands, besides conflict also encountered.

Historical claims on land should result to real rights, instead of personal agreements through re-negotiation and purchasing of access rights. In order to avoid blocking pastoralists' access to dry season resources, how then, could pastoralists and non-pastoralists spatiotemporal access agreements be transformed into real property rights? And how could other pastoralists' interests on land such as migration routes/corridors be secured? The term 'property right' includes informal practices and traditions embedded in the culture as well as formal legal institutions which shape the content of people's opportunities (Cole and Grossman, 2002). At introducing LA systems, thus, it is necessary to investigate the existing informal, traditional or customary rights to land in order to transfer them with a certain degree of accuracy to the formal system, whereas the criteria for determining what constitutes a legal claim to land have to be developed to support the adjudication process (FIG, 1995). This is because adjudication by itself, does not alter nor create new rights, but establishes existing rights (Lawrance, 1985). The aim should therefore be not to formalize all rights as such (except when customary rules are no longer sufficient to ensure security of tenure), but for stakeholders to adopt a system of shared rules so that at local level, the rules of the game are the same for everyone (Lavigne-Delville, 2000). In this regard, principles of adjudication could stipulate circumstances in which a person can be recorded as owner of land objects, while other interests such as pastoralists' access rights could be ascertained by adjudication, and therefore converted to statutory and registerable rights (Lawrance,

1985). Governments could therefore be obliged to do social research to identify all kinds of rights where they exist, and codify what man-land relationship exists where.

Identification and codification of pastoral access rights could follow the approaches of some West African countries where pastoral codes exist. For example in Mauritania, where kind of land rights granted to different land users (including pastoralists) are stipulated and are to be implemented according to the law, while being flexible on conflict resolution (Wabnitz, 2006); in Guinea, where organized livestock movements are based on migration calendars, direction to access areas, and negotiated conflict resolution by compensation (Touré, 2004); in Niger, where zonation of pastoral areas and information flow between pastoralists and government regulate migrations (Thébaud and Batterbury, 2001); etc. Upon identification and codification, qualifying pastoral access rights as existing rights on land could be enhanced through adjudication and registration. This because for existing rights on land to be eligible for registration, they first need to be recognized in the legislation (Hobbs et al., In Press, Needham, 2006). In this research, therefore, possible solutions to securing pastoralists access to or through private land could be aligned based on understanding of occurrences and periods of encounters between non-pastoralists and migrating pastoralists - for example between July and October - as shown in figure 3; while rules governing pastoralists' presence on private land could be aligned on protection of private property and grazing regulations – such as shown in table 2, for example. Further land rights could be localized in a manner that affirms to local land use practices. Applications of context specific property rights should be created to fit within a national framework, where the objective of LA is to support economic development, environmental management and social stability (Williamson, 2001). Research has shown that LA systems are to fail if they are not supported by appropriate institutional framework which can be effectively enforced (Lemmen and Oosterom, 2001). The reasons why the problems occur need to be

considered first, if proposed solutions are to be meaningful - and the historical context provides the answer – but without reverting and developing holistic theoretical and policy frameworks, problems with administration of land interests will continue unabated (Bennett et al., 2008).

6 Conclusions

This research aimed at assessing the characteristics of spatiotemporal access agreements made by non-pastoralist land use actors and migrating pastoralists. The research found out that majority of private right holders encounter seasonally migrating pastoralists. Despite encounters, most right holders abide to the requirements of property rights to exclude outsiders. Pastoralists are left to seek own options to secure access to required resources. But resultant seasonal encounters prompted a few right holders to collaborate by allowing pastoralists access on private land. Right holders created access agreements, alongside rules that regulate pastoralists' presence on private land, with focus on grazing fees, protection of private property and grazing regulations. Access agreements are based on personal agreements, and future accesses are uncertain as they are dependent on re-current re-negotiations. As only a few right holders made access agreements, most pastoralists expressed that the lack of government's support on mobility has threatened their livelihoods, yet pastoralists desire to pursue with pastoralism.

Reasons for seasonal encounters between non-pastoralist land use actors and migrating pastoralists can be backtracked to pastoral historical practices of seasonal migrations. Introduction of LA systems through adjudication and conferring of ownership rights neglected pastoralists' historical access rights. Exclusivity and lack of alternative

structures to support pastoralist migrations have not only resulted to marginalization and poverty among pastoralists, but also affected LA's effectiveness to produce desired results such as maintaining social stability and environmental management. Having pastoralists' customary 'real rights' of mobility extinguished, this paper argued that historical rights on land should result to real rights, rather than re-negotiation and purchasing of access, as is the result for pastoralists in the LA systems. By understanding the periods of seasonal encounters, and characteristics of access agreements, land administrators could use this information as guiding principles behind which pastoralists' seasonal access rights may be aligned during adjudication. Ascertaining pastoralists' access rights during adjudication would qualify it as real rights, therefore an approach to legally support pastoralist mobility and access to dry season resources. This system would require land use actors to share land rights in defined periods. Further research to determine what legal instruments that could support pastoral mobility and thereby securing access to seasonal resources, within the LA domain is necessary.

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