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WORKING PAPER

Large Scale Land Acquisition and Pastoralists' Climate Change Adaptation in Kenya



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Cover page photo: a herd of cattle move through Kipeto windfarm, an upcoming green energy project in Kajiado county **Photo credit:** Jackson Wachira

About Rights and Resilience (RARE) Project

Rights and Resilience (RARE) is a DANIDA financed research project (2018-2022) involving institutions in Kenya and Demark investigating the relationships between resilience and land rights in the context of pastoral and agro-pastoral climate change adaptation in Kenya (Please see RARE Website)⁴. The project examines how adaptation strategies interact with land needs, land conflicts, and new land law reforms, and what the implications are for efforts to support community land rights for resilient rural development. The project does this by investigating four interrelated questions namely:

- i. How do land use- and mobility patterns change as pastoralists adapt, and what are the implications for their land needs?
- ii. How do conflicting land claims affect pastoralist adaptation strategies, and what are the statutory and non-statutory mechanisms for dealing with them?
- iii. How do land law reforms and changing land rights affect pastoralist adaptation strategies?
- iv. How can international, national, and local institutions best support pastoralists' land access and deal with conflicting land claims related to climate change adaptation?

Each research question constitutes a work package, investigated by a team two senior researchers and one PhD student. While each work package is semi-autonomous, the overall study is interconnected through joint data collection plans, data sharing, monthly meetings and intra and extra work package co-authorship.

⁴ <https://www.rare-net.org/>

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Abstract

This working paper explores literature to establish the interrelationship between Large Scale Land Acquisition (LSLA) and pastoralists' climate change adaptation. The paper builds on a wealth of academic and policy literature that has emerged over the last decade, mainly concerned with the extraordinary growth of the LSLA phenomenon since the year 2000 and resultant contestation with indigenous communities. By adopting a climate change adaptation framing, the paper examines the opportunities and constraints that arise from LSLA's for pastoralism and pastoralists' climate change adaptation strategies. The paper finds that LSLA disrupts mobility, a traditional pastoral resilience strategy while precipitating a discursive space of contestation that may further constrain pastoralists climate change adaptation, or provide opportunities for pastoralists to assert rights for adaptation to impacts of climate change. This takes place through wide-ranging forms of negotiations around access to privatized pastoral lands, and by pastoralists tapping into contested visions of transformation mainly driven by governments and investors based on expropriation of extensive pastoral lands.

Key Terms:

Large Scale Land Acquisition, Climate Change, Climate change adaptation, Pastoralism, Arid and Semi-Arid Lands, Community, Kenya

1. Introduction

Globally, pastoralism contributes immensely to the economies of countries where it is practised (Nyariki & Amwata, 2019; African Union, 2010; Galvin, 2009, Nori, Taylor, & Sensi, 2008).

Paradoxically, pastoralists face complex challenges that have contributed to high vulnerability to impacts of diverse hazards as well as differentiated socio-economic-political and ecological outcomes. Changing and unpredictable weather patterns associated with impacts of global climate change (Opiyo, Wasonga, Nyangito, Schilling, & Munang, 2015; Nkediye, et al., 2011; IUCN, 2008; FAO, 2018; Ouma, Obando, & Koech, 2012; Galvin, 2009; López-i-Gelats, Fracer, Morton, & Rivera-Ferre, 2016) and changing land tenure (Kimiti, Western, Mbau, & Wasonga, 2018; Lengoiboni, Bregt, & Molen, 2010; López-i-Gelats, Fracer, Morton, & Rivera-Ferre, 2016) are among major threats facing pastoralism today.

Adverse impacts of climate change-related hazards and disasters such as erratic rains and cyclic drought often cause enormous setbacks to the regions' socio-economic wellbeing and huge livestock losses. With livestock rearing being the mainstay of pastoral economies, massive pastoral livestock deaths or disrupted reproduction cycles contribute to high multidimensional, socially differentiated poverty as well as eroded capacity amongst pastoralists to manage current risks and future adverse impacts of climate changes. Yet, pastoralists have adapted to climate change and climate variability for centuries, over diverse temporal and spatial conditions and political-economic frameworks. Numerous development projects have also been implemented by government and non-government organizations ostensibly to help pastoralists better manage the adverse impacts of climate change and variability (López-i-Gelats, Fracer, Morton, & Rivera-Ferre, 2016; Hogg, 1992). Such adaptation strategies are typically context-specific and constantly evolving, but generally include mobility in search of pasture and water, herd diversification, education, livelihood diversification, livestock healthcare and offtake (López-i-Gelats, Fracer, Morton, & Rivera-Ferre, 2016; Opiyo, Wasonga, Nyangito, Schilling, & Munang, 2015; Herrero, et al., 2016).

Fragmentation and territorialisation of pastoral lands as driven by changing land use and land

laws constrain pastoral mobility and are associated with wide-ranging forms of contestations between pastoralists and (private) owners of land hitherto appropriated by pastoralists on a communal basis. Historically, land acquisition in pastoral regions has been justified on the basis of “marginality”, “emptiness” and/or “under-utilization” (Lind, Okwena, & Scoones, 2020; Galvin, 2009). Such justifications have been criticized for imagining the existence of vacant lands in African rangelands while different communities in these regions have deployed complex institutions and management practices to utilize land for social and economic purposes (Batterbury & Ndi, 2018; Borrás Jr & Franco, 2010). While many diverse forms of externally driven land appropriation exist, large scale land acquisition by foreign investors and governments to address food crises in advanced economies; green ends and conservation; as well as modernist infrastructural agenda by national governments are thought to have fundamentally altered African rangelands (Lisk, 2013; White, Borrás Jr., Hall, Scoones, & Wolford, 2012; Barsaglio & Cleaver, 2018; Mbaria & Ogada, 2016; Fairhead, Leach, Melissa, & Scoones, 2012; Achiba, 2019; Borrás Jr S. , Franco, Gómez , Kay, & Spoor, 2012; Chome, 2020; Okwena, 2020; Lind, Okwena, & Scoones, 2020).

Many current studies on large scale land acquisition have addressed the economic and social implications of LSLA on different affected populations, with many of these studies arguing that the negative impacts of LSLAs far outweigh associated benefits (Olokoyo, George, Efobi, & Beecroft, 2015; Mbaria & Ogada, 2016; Achiba, 2019; Fairhead, Leach, Melissa, & Scoones, 2012; Borrás Jr & Franco, 2010). On the other hand, proponents of LSLA argue that they provide unprecedented opportunities for developing countries to overhaul their perennially low agrarian [and industrial] production through sophisticated investments that can raise productivity, catalyse additional investments, and eradicate poverty through initiatives such as contract farming (Collier & Venables, 2012; Deininger, et al., 2011). Yet, interrelationships between LSLA, land-based livelihoods, and government plans are complex and do not always result in clear cut winners and losers (Lind, Okwena, & Scoones, 2020). Rather, relationships are created, broken, negotiated and renegotiated as investors, governments and residents seek to assert their visions through diverse and differentiated formal and informal institutions (ibid).

Thus, pastoralists who find themselves at the interplay with LSLA processes are to be assumed as active, rational actors who continually engage, negotiate and renegotiate with investors and governments in ways that influence their climate change adaptation strategies in diverse and complex ways.

In light of limited contextualized research undertaken to establish how Large Scale Land Acquisition influence pastoralists' adaptation to climate change, this paper reviews literature on pastoralism and large scale land acquisition. Specifically, the paper aims to apply climate change adaptation thinking in the study of LSLA phenomenon, and highlight context specific knowledge gaps in the interrelationship between LSLAs and pastoralists in the context of pastoralists climate change adaptation. The next section outlines the methodology adopted for the review. This is followed by a discussion of large scale land acquisitions, pastoralism and the potential climate change adaptation outcomes of the interrelationships between pastoralism and large scale land acquisition. Finally, a conclusion is inferred, summarizing the key points and highlighting key knowledge gaps.

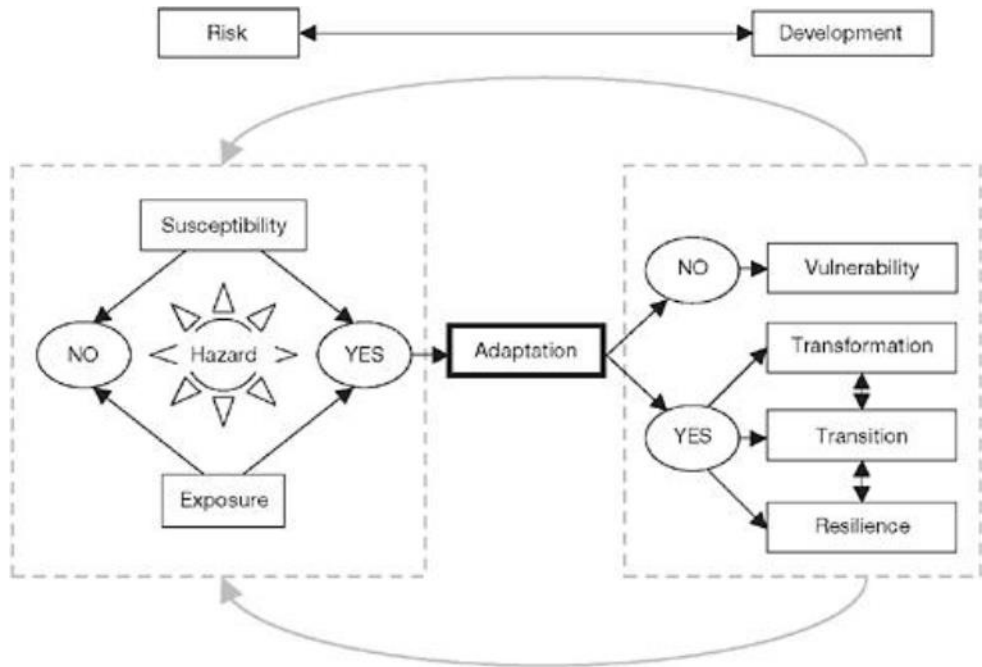
2. Methodology

2.1 Conceptual framework

We apply climate change adaptation theory (Pelling, 2011) to interpret and discuss literature on large scale land acquisition and pastoralism. Climate change adaptation theory acknowledges and draws from historical and contemporary thinking of system theory, adaptive management, co-evolution and coping. With this framework, climate change adaptation is conceptualized as a political process manifest in three, nested and compounded pathways; resilience, transition and transformation (Pelling, 2011; figure1). Power, temporal and spatial variability are integral, just as it is the case with policy and diffuse cultural reactions to risk. Based on this framework, development and risks are inextricably connected as part of a risk society-development continuum. That is, it is only when a system is neither susceptible nor exposed to climate-related hazards (which is unlikely given the socio-economic and political heterogeneity of

societies in the face of global climate change), that adaptation is unnecessary. Without adaptation, there persists an aggravation of vulnerabilities to the impacts of climate change.

Figure 1: adaptation in the context of development in the age of climate change



Source: Pelling (2011)

Resilience involves a system only seeking change that can allow existing functions and practices to persist but in ways that do not question underlying power relations that result in differentiated vulnerability is a society (Pelling, 2011). The implication is that resilience is not necessarily a positive outcome as often projected in much development and scholarly literature and discourses because it may entrench vulnerability if it results in protecting a status that already predisposes a population to adverse impacts of climate change. On the other hand, transition involves acts that seek to assert full rights and responsibilities within the prevailing political-economic system rather than cause radical regime changes. Finally, based on this thinking, transformation is the deepest form of adaptation, which is indicative of radical reform of overarching political economy regimes and changes in associated cultural discourses about development *vis a vis* risks. Theoretically, no adaptation pathway is more preferable to the

other, as these are determined by context, can influence each other positively or negatively, and may be interpreted differently by diverse actors (Pelling, 2011). This fluidity is perhaps one of the main limitations of this theory, but also its strength given the complex nature of human relations, relationship with the environment and institutional pluralism.

2.2 Literature search methods

The literature reviewed covered topics on large scale land acquisitions, pastoralism and climate change adaptation sourced from published journal articles and books, theses, and relevant grey documents. A snow-balling approach was utilized to identify relevant literature following an initial online search on “Google Scholar”, using the key terms large scale land acquisition/land grabbing/land deals, pastoralism and climate change adaptation. Google Scholar search engine was preferred as it contains a wider variety of publications compared to popular, online academic information search engines such as Web of Science (Mikki, 2009:42). Google Scholar has however been critiqued for “lacking important sources and noise [results that don’t match researchers’ particular needs] making it less useful for a thorough literature search (ibid:42). Thus, the search engine was complemented with other literature search options, including published books and general web searches. Notwithstanding, Google Scholar is considered a “new paradigm” in academic research, with evidence that the resource enables researchers to access relevant peer-reviewed articles (Mikki, 2009) and grey literature (Haddaway, Collins, Coughlin, & Kirk, 2015). The online search had a global scope and without a time-frame limit but was biased on literature covering Kenya. Google Scholar’s search criterion allows sorting of literature by relevance was tapped to identify the ‘most relevant’ published and grey literature. Article relevance considers full text on documents, publishers, writers and the extent to which documents are recently cited in other scholarly works (Google Scholar, n.d.).

3. Large Scale Land Acquisition, pastoralism and pastoralists’ climate change adaptation

3.1 Large Scale Land Acquisition phenomenon

The Land Matrix, which is “an independent land monitoring initiative that promotes transparency and accountability in decisions over LSLAs in low- and middle-income countries by capturing and sharing data about these deals at global, regional, and national level” considers

an LSLA as one that: 1) Entail a transfer of rights to use, control, or ownership of land through sale, lease, or concession; 2) Have been initiated since the year 2000; 3) Cover an area of 200 hectares or more; 4) Imply the potential conversion of land from smallholder production, local community use, or important ecosystem service provision to commercial use (Land Matrix, n.d.). Some writers observe that the Land Matrix is the most reliable source of global data on LSLA (See, for instance, De Maria, 2019; Borras Jr., et al., 2016) and the database is widely utilized to analyse the growth and development of large scale land acquisition across the world. Yet, the definition by Land Matrix has been critiqued as physical-land centred, potentially precluding other notions of land and critical acquisition processes (Borras Jr., et al., 2016; Wachira, Atela, Stacey, & Asingo, forthcoming). Besides, the limitation of time prescribed by Land Matrix potentially impedes the examination of historical land acquisition processes that share similar characteristics with contemporary LSLA. Borras Jr, Franco, Kay, & Spoor (2011) argue that large scale land acquisition involves grabbing control of land and related resources to derive benefits from them. It involves not just expansive lands but also massive capital, and for contemporary acquisitions, it is invariably revolves around capital accumulation and global crises of food, feed, fuel, finance and climate change (ibid). This understanding allows the analysis of LSLA from a historical and geographical point of view, as well from more nuanced perspectives that may not result directly into the fencing of lands, expulsion or outright dispossession of indigenous inhabitants.

3.2 Pastoralism, change and uncertainty

Defining pastoralism is an ongoing intellectual endeavour and no one universal definition exists. Common definitions cover production or livelihood dimensions of pastoralism (Dong, 2016). The production dimension understands pastoralism as livestock husbandry in the context of dry and cold landscapes (ibid). As a livelihood strategy, pastoralism involves mobile livestock rearing in ways that exploit highly variable arid and semi-arid environments that cannot uphold sustainable crop cultivation due to extreme cold or dryness (Aberra & Abdulahi, 2015). This definition by Aberra and Abdulahi can be said to be inherently flawed as it benchmarks pastoralism to crop farming as the ideal livelihood pathway thus depicting pastoral livestock rearing as a “last resort” livelihood option. Pastoralism is also an identity (Schrepfer &

Caterina, 2014; Almagor, 1980). This understanding emphasizes the central role of the inextricable relationship between pastoralists and livestock rearing in processes of establishment and sustenance of their social-cultural and economic practices.

Some literature suggests that three spheres of pastoralism above are not mutually exclusive but rather portray the mosaicism of practices and believes that constitute pastoralism. For instance, Almagor (1980:36) argues: “a pastoral society is a society where the social, psychological and economic spheres are so interwoven that any attempt to separate them even for analytical purposes will be partial and artificial, for the obvious reasons that [pastoral livestock rearing] is the embodiment of three essential spheres of [pastoralism] namely subsistence, social relationships and values.” In this paper, pastoralism is understood as a complex system of livestock production for food, income and cultural purposes, undertaken by inhabitants of cold or hot arid and semi-arid regions of the world. A distinction is made between pastoralism and agro-pastoralism in that under pastoral systems, livestock and livestock products contribute more than 50% of income while under an agro-pastoral contexts households obtain most of their income from cultivation and only a small proportion from livestock production (Dong, 2016). Pastoralists and agro-pastoralists particularly interact within the confines of their livelihood strategies for instance by pastoralists supplying milk, meat and manure to agro-pastoralists while agro-pastoralists supply crop residuals and reserve pastures to pastoralists, particularly during drought seasons (Nori & Davies, 2007). As it the case with pastoralists of different identities, pastoralist-agro-pastoralist relationships are not always peaceful as they sometimes involve violent conflicts over livestock, land and other natural resources (See for instance Drew, 2020).

Pastoralism is traced to the Andes of South America (6000 BP) and Northeast Africa as early as 9000 BP as a result of long-term climate change (Dong, 2016; Nori & Davies, 2007; Nori, Taylor, & Sensi, 2008). Many researchers agree that climate change and climate variability combined with other political-economic changes are and will continue to affect pastoral regions.

However, disagreements exist concerning the ultimate impacts of such change on pastoralism. (Nori, Taylor, & Sensi, 2008; López-i-Gelats, Fracer, Morton, & Rivera-Ferre, 2016). Those who hold that pastoralism will be adversely affected by impacts of climate change and variability

and other changes project that a majority of the pastoral population will sink deeper into poverty, vulnerability and perhaps total transformation into non-pastoral communities due to loss of key resources such as pastureland, water, and livestock. On the other hand, those who see pastoralism as inherently adapted to natural and socio-economic variability and change argue that pastoralists will adapt to the adverse impacts as the system “does not operate on the principles of risk avoidance but rather utilize risk as the very base of pastoral production.” (López-i-Gelats, Fracer, Morton, & Rivera-Ferre, 2016:259) This latter argument is perhaps best reflected by Almagor (1980:37) who states that pastoral systems may have radically been transformed over the years but will likely continue to integrate change as long as they continue to attribute livestock as a basis for existence, relationships, and values. The assertion is further reflected in more recent studies such as Galaty (2016) and Archambault (2016). Galaty’s work in Kenya demonstrates a reassertion of pastoralists of their rights of access and use of land previously encroached by small and large scale land users, while Archambaults work finds the mimicking of traditional pastoral practices among pastoral communities living in rapidly changing landscapes.

3.3 Contested notion of pastoral viability

Although pastoralism is an integral part of the global livestock and livestock products value-chain based on the notable contribution the system makes to local, regional, and international economies, policy has been flagged out as a major limitation to the growth and development of the system (Blench, 2006; IUCN, 2008; Nori, Taylor, & Sensi, 2008). Ambivalent policy towards pastoralists has been linked to theorization such as the tragedy of common narrative - a highly influential argument that linked pastoralism to rational decisions to maximize benefits from common-pool resources. The tragedy of commons theory postulates an inevitable break down of common-pool resources, due to over-exploitation of rangelands as each user seeks to maximize gains from common-pool resources (Hardins, 1968; Hogg, 1992). Although the theory has been widely challenged for its “incorrect [presumption] that most common-pool resources were open-access resources where property rights had not been well-defined” (Ostrom, 2010:2), a related development narrative that projects pastoralism as a retrogressive practice persists (Boles, et al., 2019; IUCN, 2008; Blench, 2006; Schrepfer & Caterina, 2014; López-i-

Gelats, Fracer, Morton, & Rivera-Ferre, 2016). In Africa ASALs, the theory and negative narrative of pastoralist have significantly influenced donor, government (both colonial and independent), and media reporting. A development narrative that problematizes pastoralism has been blamed for numerous policy initiatives that have sought to transform pastoralism based on the ideals and interests of sedentary farmers or ranchers. Such efforts have often resulted in enormous failure as demonstrated by Bruce et al., (2013) in their comprehensive review of international experience with projects that have sought to individualize, sedentarize or decollectivize pastoralism tenure systems in Kenya, Botswana, China, and Nigeria. In Kenya, the Group Ranches system of tenure established by the Land Group Act (1968) have been described as a failure from the onset, due to a myriad of reasons including failure to consider pastoralists migration needs adequately; poor involvement of pastoralists in the entire initiative; failure to set aside sufficient pastures given the high spatial and temporal variability in the arid and semi-arid regions; and further stratification of communities on gender and economic lines (See, Bruce, Ngaido, Nielsen, & Jones-Casey, 2013; Nori, Taylor, & Sensi, 2008; Evans & Adams, 2015). Although the Land Group Act has been repealed and a community-land law (Republic of Kenya, 2016) enacted to protect pastoralists' land, powerful elites, politicians and corporations continue to alienate pastoralists' land through varying, direct, and indirect approaches (Wachira, Atela, Stacey, & Asingo, forthcoming; Lind, Okwena, & Scoones, 2020). Acquisitions of pastoral lands by powerful external actors have also resulted in a demand for the privatization of land by pastoralists themselves as they seek to assert ownership through formal structures perceived as more secure, and as they seek to benefit from monetary compensations related to modernists government plans targeting these regions.

3.4 Pastoralists adaptation to impacts of climate change

Pastoral regions are among parts of the world most affected by climate change (Nori & Davies, 2007; Herrero, et al., 2016) even if they have contributed minimally to global climate change (Nori, Taylor, & Sensi, 2008) and they are known to have historically been in the forefront of range ecologies preservation (Mbaria & Ogada, 2016). Pastoralists' vulnerability to climate change can be traced to political-economic frameworks that limit their coping and adaptation strategies, particularly their ability to move and to access critical resources in a highly variable

ecosystem (Nori, Taylor, & Sensi, 2008). While projections of impacts of future climate are diverse and uncertain, pastoral regions such as the Sahel, Kalahari and the Australian rangelands are projected to get drier and more arid in the long run (Nori, Taylor, & Sensi, 2008; Herrero, et al., 2016; Ouma, et al., 2018). In higher latitudes regions, there is projected increase in precipitation but also decline in the quality of forage due to projected temperature increases and thus livestock are likely to suffer nutrition challenges (Herrero, et al., 2016). Generally, projected climate change effects include more precipitation variability, compromised biodiversity, changes in wind patterns, more frequent droughts and floods as well as an increase in the intensity of extreme climate events associated with El Nino and tropical cyclones (Nori & Davies, 2007; Herrero, et al., 2016). This will likely continue affecting global pastoral systems adversely for the foreseeable future, necessitating workable adaptation strategies.

Historically, pastoralists have managed highly variable climate change characterizing ASAL regions (Herrero, et al., 2016). Numerous development interventions have also been designed and implemented by non-government organizations and governments ostensibly to help pastoralists manage high vulnerability and a generally challenging ecosystem. Such interventions have had mixed results; with many seen as detrimental rather than beneficial to pastoralists due to a lack of understanding of the core rationale and dynamics of pastoral systems (Nori & Davies, 2007; Nori, Taylor, & Sensi, 2008; Gebeye, 2016; Homann, Rischkowsky, Steinbach, Kirk, & Mathias, 2008; Hogg, 1992). In essence, then, pastoralists adaptation to climate change involves their agency but also mediation by other actors, resulting in a complex regime of socio-ecological relationships that are likely to get even more complex with globalization. Indeed, many pastoralists are conscious of the fact that climate change is just one of the many factors affecting their livelihoods in significant ways (Herrero, et al., 2016). Other important factors include human and livestock population growth, globalisation, conflict, competition for land, changes in land tenure and land use, intensification of production, voluntary and government-facilitated sedentarisation of nomadic pastoralists, and institutional changes (Ibid:421). The implication here is that knowledge of pastoralists' adaptation to climate change demands careful analysis of changing local, national, and global relationships between diverse actors which mediate the climate change challenges faced by pastoralists. Indeed,

although global studies exist outlining pastoralists climate change adaptation strategies (See for instance Herrero, et al., 2016:423), a review of place-based studies (See, for instance, Opiyo, Wasonga, Nyangito, Schilling, & Munang, 2015; Kima, Okhimamhe, Kiema, Zampaligre, & Sule, 2015; Cuni-Sanchez, et al., 2018) indicates that the “global typology of adaptation strategies” applies to many pastoral regions but different societies possess critical peculiarities. This indicates that a place-based approach to understanding pastoralists adaptation strategies is key in understanding particular pastoral systems and how these interrelate with broader socioeconomic and environmental conditions within which they prevail.

3.5 Large Scale Land Acquisition and pastoralists’ adaptation to climate change

3.5.1 LSLA and pastoralists resilience to impacts of climate change

Resilience as adaptation has been described as a system or actors seeking to secure the persistence of desired functions of a system into the future in the face of climate change (Pelling,2011). However, definitions are contested and the term is widely problematized concerning its applicability as well as its epistemology (Schipper & Langston, 2015). Still, the concept continues to be utilised widely particularly amongst development practitioners as a way of enhancing accountability for development interventions in the related fields of climate change management and disaster risk reduction (ibid) , as well as by academics to understand communities’ relationships with various types of hazards. Authors emphasize that resilience is contextual and differentiated (Pelling, 2011; Schipper & Langston, 2015; McPeak & Little, 2017). Consequently, as the literature review shows, there are no universal indicators for resilience but rather a multiplicity of indicators intended to measure resilience within specific contexts (Schipper & Langston, 2015)⁵. For Pelling (2011), self-reorganization and social learning are the most important tenets of resilience. A literature review of global resilience frameworks by Schipper and Langston (2015) closely relate with this contention, identifying “learning, options

⁵ A literature review by Schipper and Langston narrows down to 16 indicators from different globally sampled frameworks. Some individual frameworks such as UNU-IAS (https://collections.unu.edu/eserv/UNU:5435/Toolkit_for_the_Indicators_of_Resilience.pdf) have as many as 20 indicators covering social, ecological, agricultural, social economic and cultural aspects.

and flexibility” as the key dimensions of resilience from an analysis of 16 indicators of resilience projects from across the world.

Pastoralists are understood by many researchers as inherently resilient, usually due to their capability to migrate in search of water and pasture for their livestock, and to avoid human and livestock diseases in fragile and highly variable regions (See Blench, 2006; Boles, et al., 2019; Galvin, 2009; Gannon, et al., 2019; Nyariki & Amwata, 2019; Nori, Taylor, & Sensi, 2008; Hogg, 1992). Pastoral migration involves both routine migration through established migration routes but also emergency migration in response to perturbations, which often cover hundreds of kilometres and involve different members of pastoral households and extended networks in different ways (Nori, Taylor, & Sensi, 2008). Migration is, therefore, the best strategy that pastoralists have deployed to manage overall productivity, unpredictability and risk on arid and semi-arid lands (Nori, Taylor, & Sensi, 2008; Lengoiboni, Bregt, & Molen, 2010). Besides allowing access to “territorial” forage, migration is also related to the establishment and maintenance of social relationships and markets that functionalize “extraterritorial” migration. Here, pastoralists are for instance able to access forage from regions occupied by other pastoralists, exchange crop residual from agro-pastoralists with manure, attend customary events or access markets and complementary livelihoods (Nori, Taylor, & Sensi, 2008). Perhaps in line with migration demands as a *sine qua non* for successful pastoral production, pastoralists’ land tenure has for centuries been based on communal land ownership and open access arrangements. Under such tenure, informal institutions exist to manage access among pastoralists who share a common identity (eg. tribe, lineage, clan), and which can enable the management of conflicts arising from contestations over pasturelands.

Large scale land acquisitions have fundamentally altered pastoralist migration in two main ways. First, the annexation of large, productive chunks of land in pastoral regions deny pastoralists important grazing space within regions they historically consider their grazing territory. This form of acquisition may best be exemplified with the eviction of the Maasai by the colonial government in 1903/1904 from the Rift Valley regions of Transmara and Laikipia districts to pave way for imperial agricultural activities. This massive acquisition of Maasai pastoral lands by the colonial regime effectively cut-off the Maasai from extensive rangelands

they required for pastoral livestock rearing (Hughe, 2006). They were instead relocated to an area where disease vectors were more prevalent, with no permanent water sources, accessible forests or drought refuges (ibid). To date, the Maasai feel dispossessed of their land and continue to contest in attempts to repossess these lands, which have since been redistributed to influential elites, politicians, and subsequent generations of the colonial masters (Galaty, 2016; Evans & Adams, 2015). The extent to which such Masai assertions are driven by a need for climate change adaptation is a subject of ongoing research by the RARE project.

Second, large scale land acquisitions affect pastoralists' mobility by blocking movement between usual grazing territories and foreign territories, which are especially critical during times of drought in their territory. This especially occurs when LSLA involve the installation of physical barriers such as fences, ditches or development infrastructure that exclude livestock rearing as an option due to dangers posed by close interaction of the two systems. Such examples include wind turbines, high voltage electric lines and electric trains. In Kenya for instance, a conflict is ongoing between Rendile and Samburu communities and the Lake Turkana Wind Power Ltd, a KES 75 B investment to generate clean energy from wind. In a case filed by community representatives in the Environment and Land Court, the communities *inter alia* accuse the company of having been "unprocedurally and illegally allocated 150,000 acres of land belonging to the communities in a flawed process of setting apart thereby inhibiting the community from continuance ownership of their community land and/or accessing it for seasonal, cultural and cyclic use and pasture for their livestock (sic)" (Mohamud Iltarakwa Kochale & 5 others v Lake Turkana Wind Power Ltd, 2014). Thus, as implied by the Samburu and Rendile communities in Marsabit County, LSLA pastoralists may need to utilize longer, unfamiliar routes, which may lead to conflicts and accelerated wastage of livestock particularly during times of drought.

From the foregoing, we see mobility as a key, traditional climate change adaptation strategy among pastoralist being disrupted by LSLA. Pastoralists attempt to adapt to this disruption, in a bid to maintain a status quo that enables them to continue to access expansive rangelands to sustain their livelihoods. However, the "current envelop of adaptation" [as resilience] appears insufficient (Herrero, et al., 2016: 421). Herrero and colleagues suggest that given this

insufficiency of pastoralists' adaptation, contextual transformational adaptation is required. Climate change adaptation theory allows us therefore to explore adjustments that must happen so that transformational adaptation occurs, and which is the subject of the next section.

3.5.2 LSLA and Pastoralists Transition

Transition as adaptation involves actors within a system seeking to assert full rights in the context of governance regimes that intend to retain a status quo, which constrains the capability of the said system to adapt to climate change (Pelling, 2011). Thus, we may see transition as focusing on the agency of actors and ability to pursue interests in a wider socio, economic, political and cultural system, and where governance may exacerbate their vulnerability to climate change impacts.

Pastoralists contest encroachment of their lands through a combination of statutory and non-statutory approaches. Statutory approaches may for instance involve court proceedings such as the Lake Turkana Wind Power Ltd acquisition earlier mentioned. Another example is that of the Maasai who have variously, and as early as 1914, attempted to pursue legal avenues to reclaim land. Although absolute wins are rare, evidence exists to demonstrate the existence of returns from such endeavours. These include drought season access in privatized landscapes (Evans & Adams, 2015; Galaty, 2016) and opportunities in the form of compensation for lost land, jobs and community infrastructure (Okwena, 2020). Still, that absolute wins by pastoralists are rare serves to illustrate significant power imbalance between pastoralists, governments and powerful corporates.

Informal, often spontaneous and sometimes violent approaches are also deployed by pastoralists to assert rights to access, utilization and ownership of resources they consider their own. This scenario is well illustrated by the altercations between pastoralists and large scale landowners in Laikipia County of Kenya. As earlier mention, the Laikipia region was occupied by the Maasai pastoralists before the colonial era. However, the Maasai were forced to relocate to the southern rangelands to pave way for colonially imposed forms of agriculture. During the

extended drought of 2004–2005, Laikipia Maasai and Samburu herders⁶ forcibly entered into the farms for grazing (Galaty, 2016). Besides, given this period coincided with the 100 anniversary of the first Maasai Treaty that saw the Maasai relocated from their territorial grazing regions, they used the opportunity to assert that the leasehold period of 99 years had expired and that these lands should now revert to them (ibid:716). To date, the Laikipia region and neighbouring counties of Samburu, Isiolo and Baringo are characterized by contestation for access to land between pastoralists, community-based conservancies, private ranches and conservancies, particularly during drought seasons when conflicts become violent. The 2017-18 drought saw the worst of these conflicts, resulting in loss of lives and destruction of property worth millions of Kenya Shillings on both sides of the conflict. According to many writers (See, for instance, Evans & Adams, 2015; Galaty, 2016; Lengoiboni, Bregt, & Molen, 2010) colonial and post-colonial land policies that favoured white minority settlers and alienated indigenous pastoralist communities is a root cause of the current land conflict in the region.

From the foregoing, adaptation as transition is not straightforward, with context-specific research needed to understand complex interrelationships and outcomes. According to Preston, Westaway, & Yuen (2011:), the fact that adaptation efforts do not always work casts significant doubt on the capacity of institutions to develop and implement robust strategies for adaptation to both current and future risks. Yet, as Pelling (2011) argues, it cannot be expected that all transitional actions will achieve the intended outcomes. Instead, unsuccessful actions are important to consider as they reveal critical capacity through intention (ibid: 68). Thus, we see that a combination of formal and informal, successful and unsuccessful undertakings characterizes transitional actions by pastoralists as they seek to adapt to climate change.

3.5.3 LSLA and Transformation of pastoral systems

This notion of adaptation draws from the interrelationships between risk society, social contract, and human security to conceptualize overarching changes in social, economic, political and cultural systems that are a root cause of the susceptibility of a system to impacts of climate change (Pelling, 2011). From a practical perspective, adaptation as transformation is

⁶ The Maasai and Samburu share enormous social cultural identities and belong to the maa community- a broad term used to refer to the various sub-ethnicities of the Maasai

the ultimate goal of adaptation since it aims at radically changing a political-economic system or a governance structure that may have previously hindered social justice, sustainable growth and development thus creating or aggravating a society's vulnerability to climate risks.

Studies focusing on the transformation of pastoral production systems in the context of climate change suggest a mosaic of approaches targeted to protect pastoralists' mobility as the core of successful pastoral production systems, but also, other local to regional to global opportunities for adaptation (See, for instance, Herrero, et al., 2016). Paradoxically combinations of approaches may further weaken migration orientated pastoralism given the history of marginalization by governments, and the implementation of projects that promote fragmentation and sedentarization by governments and non-government actors. As argued by Galvin (2009:186), "once the environment is fragmented, the only way for it to support pastoralists and their livestock is to increase economic and policy inputs." Contemporary economic and policy orientations appear to favour neoliberal capitalistic investments that favour global capital, which in turn isolate local capital (Gannon, et al., 2019).

Large Scale Land acquisitions are projected as an option for the transformation of African rural societies which have perennially under-produced in the agriculture sector (Deininger, et al., 2011); or have been neglected by successive governments over the years (Chome, 2020). Key actors promoting the former narrative are the World Bank, International Food Policy Research Institute (Borras Jr & Franco, 2010: 509) while national governments drive the latter agenda (Achiba, 2019; Chome, 2020; Lind, Okwena, & Scoones, 2020). For instance, in a study conducted on behalf of the World Bank, Deininger, et al., (2011) argue that if well managed, LSLAs pose great opportunities for developing countries to overhaul their weak agrarian production systems, through sophisticated farming investments that can raise productivity, catalyze additional investments, and contribute to poverty eradication through such initiatives like contract farming (See also, Collier & Venables, 2012; Strecker 2014). On the other hand, writers have demonstrated how many African governments have in recent years inaugurated multi-million dollar investments based on modernist philosophies that seek to exploit extensive "unexploited frontier lands" mainly in ASAL regions (See, for instance, Achiba, 2019; Chome, 2020). However, such visions of transformation by development actors and governments are

criticized for contradicting or out-competing localized notions/visions of land. Such criticism is mainly based on understandings that global capital tends to alienate and marginalize local capital (Gannon, et al., 2019; Borras Jr & Franco, 2010); local politics and power play invariably benefit resource strong actors and institutions to the detriment of the resource weak who experience dispossession through LSLA investments (Borras Jr & Franco, 2010; Chome, 2020; Wachira, Atela, Stacey, & Asingo, forthcoming; Okwena, 2020).

Proponents of LSLA as pathways to transformed ASALs have sought to protect their visions of transformation of marginal lands through Codes of Conducts. Borras Jr & Franco (2010) have heavily critiqued such Codes, arguing they do not address fundamental issues such as respect for indigenous people's land rights, or the global political-economic framework (capitalism) that drives LSLAs in some of the poorest regions of the world. Indeed, at face value, such Codes of Conduct (sometimes with powerful backing by for example the World Bank) provide excellent platforms to analyse the extent to which LSLA contribute to the transformation of African rangelands by considering social contracts (transparency, good governance, consultation and engagement) human security (land and resource rights, responsible investments) and risks (food security, environmental sustainability). Yet, based on a conceptualization of adaptation as transformation, such frameworks falls short of addressing fundamental political-economic systems and governance structure within which LSLAs are anchored. This may explain the contention by many researchers that LSLA visions of the transformation of pastoral rangelands often contradict local priorities and it is often difficult to convince residents that they would not be cheated in the process of such engagements (Borras Jr & Franco, 2010; Chome, 2020; Okwena, 2020).

4. Conclusion

From the foregoing review of literature, it is clear that pastoralists have interacted with Large scale land acquisitions since the colonial period. Acquisitions have taken different forms and outcomes are heavily contextual. Generally, two schools of thoughts exist, with one seeing LSLA as an opportunity for the transformation of African rangelands, and the other perceiving LSLAs as a neoliberal, capitalistic encroachment of pastoralist lands, which results in further

marginalization and dispossession of pastoralists. Climate change will likely further complicate the relationship between pastoralism and large scale land acquisition in contextual ways. Yet, not much has been done to particularly introduce impacts of LSLA on pastoralists' climate change adaptation needs in the existing literature. Thus, climate change adaptation theory presents a powerful and useful framework for understanding how pastoralism interrelates not only with large scale land acquisitions, but how this relationship challenges and changes diverse adaptation strategies driven by a myriad of other local, national, and global social, political, and economic forces and interests.

5. References

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