

Indigenous Maasai Perspectives on Availability of natural resources and Access to community livelihood resources in Masai Mara Wildlife dispersal area, Narok County, Kenya.

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Abstract

Land tenure policy reform have reorganized Maasai living a natural resource scarce space in a wildlife dispersal area in Kenya. However, from the perspectives of Maasai Indigenous Peoples (IP) households who live in place, land productivity specifically; availability and access to environmental resources and community livelihood benefits dwindle in sedentary settlements within Mara ward, Narok south sub- County. A sample size of 183 households' responses regarding benefits from goods and services during a land tenure change regime recorded dissatisfaction events by Maasai IP household heads. From the Mara ward case study findings; dissatisfaction of agro-pastoralist resource group to water resources (72.5%), forest (80.3%) and, dry season grazing land (80.7%) were high. Maasai respondents engaged in business activities were dissatisfied with access to mainly a dry season grazing land (52.9%). Mara households dissatisfied with all community benefits still: agro-pastoralists, expressed dissatisfaction with access to transport infrastructure (82.9%), schools (79.7%), shopping centre (78.9%) and livestock trade (76.3%). These findings depict a competition between livestock and business livelihood source models in Mara ward. Other underlying effects that were raised were, fences that make women and herders to walk longer distances to water and pasture respectively. The poorer Maasai IP households registered off-farm and casual labour engagement; an outcome that depict loss of pastoralism skills. By changing to sedentary lifestyle, 26 percent of younger Maasai household heads from Mara study sites chose to exit the agro-pastoral lifestyle to join hired labour force in nearby towns. In conclusion; land reform policy values and relational power enforce private property rights but, also incentivize to overexploit available natural resources needed by pastoral workforce in Mara, ward. As a recommendation; land reform institutions should prioritize a resilient wildlife dispersal area in order to improve poorer households' access to livelihood sources for better land productivity and outcomes.

Keywords: natural resources, perspective, dry season grazing land, group ranch, Maasai Indigenous peoples.

INTRODUCTION

Since the early 1990s, changes in global systems and institutional structures, alongside shifting cultures have marginalized the livelihoods of Maasai Indigenous Peoples (IP) in a wildlife frontier in E. Africa (Ostrom 2010, Deininger 2014, Ellis 2021). Group ranches were established in Kenya, Masai Mara wildlife dispersal area in 1970s as an interim measure to alleviate fear of loss of land to indigenous communities (Lamprey, & Reid, 2004). Under a new 2010 constitutions Group ranches that had not subdivided are under intense pressure to subdivide as private, community and public land classes under the land laws; a move likely to change the availability of natural resources (Republic of Kenya, 2010). Moreso, the property rights change is at odds with norms of access to dry season grazing land (Murken & Gornott 2022, Unks, Goldman, Miahle et.al 2023). Of concern is environmental changes in indigenous people's territory and, well-being of vulnerable Maasai IP (Msoffe et.al. 2011). Specific data regarding humans-systems important to Maasai IP way



of life moves our understanding towards a more sustainable world (Collins, Coughlin, & Randall (2019).

Regionally, pastoralist access to natural resources is seen as tenuous, and subject to agricultural requirements. In West Africa, the settled sedentary farmers are 'indigenous' while migrant farmers and all herders are considered 'settlers' and 'strangers' respectively (International Organization for Migration (IMO, 2019). Moreso, herder 'strangers' have negated secure access to natural resources to land, jobs and infrastructure. Data on the impact of policy changes related to sedentary living and labour intensity models are crucial for understanding potential consequence for the livelihoods of indigenous peoples (Fratkin 1997, German, King, Unks, & Wachira 2017). The absence of clarity of beneficial connections between indigenous peoples and the wildlife dispersal area around them obscures human-nature relationship (Ibisch et.al. eds. 2010, Watson 2016, Hill, Diaz, Pasual et.al.2021). Data that reflect pro-environment Maasai IP norms mirror how households who live-in-place are, inextricably linked with nature (Wijngaarden & Ole Murero 2023). Scholars advocate for functional recognition approach akin to Australian Law Initiatives that has reformed Aboriginal customary law; it prevents absorption of IP land into mainstream statutory laws- 'so as not to take away primacy of locations' (Craig & Jeffery, 2011).

Disputes over natural resources that persist; are exemplified by Maasai communities of Ngorongoro area of Tanzania for Serengeti territory and adjacent Maasai communities of Kenya for Maasai Mara territory (Kaisoe & Ole Seki, 2001). Maasai IP exploit natural resources to livelihood, and manage them for posterity- they expect future benefits (UNEP 2020, Dominguez & Luoma 2020). For policy makers, self-identification criterion is used to determine which IP groups ILO Convention provisions apply (Simpson, 1997ACHPR, 2005, Barume 2014). ILO convention No.50 regarded IP to be people who were natives, 'born in non-independent territories,' or, in other words, 'indigenous by origin'. In 1950s, ILO Convention No. 107 adopted a new meaning- third phase (ILO, 2016). From the convention provisions; antecedence or origin, and 'by similarity', defined IP meaning to refer to people who were not indigenous by origin but whose conditions of life were similar.

In the colonial era, caring for the land rights of African communities was never a priority in Kenya (Okoth-Ogendo, 1991). In 1899, the colonial system planned Europeans highlands settlement with an agriculture potential because the British believed they were not used by IP (Boone, 2015, Royal Meteorological society 2020). The Kenya-Uganda railway; a territorial infrastructure came into play, and brought along experimental settlements, (Lesutis 2021, Syagga 2012). Currently, the new constitution allows interchange of private, public and community land that diminishes Maasai IP territorial rights (Republic of Kenya 2010, Okoth-Ogendo, 1991, Syagga 2012, Manji 2021, Unks et.al. 2023) in former colonies with fragile territories (Ellis 2021, Henderson 2013, Kariuki, Willock & Marchant 2018, Onguny & Gillies 2019). This stratification strategy is being immortalized by abandoning the idea of community controls such as collective rules in favour of; subtle power from a slow individualization that change who can access environmental income; progressive elites versus vulnerable Maasai IP livelihoods (Angelson, Jagers & Babigumira et.al. 2014, Weldemichel & Lein 2020). A fresh Maasai IP community perspective will provide new understanding of devolved power dynamics (Senanayake 2006, Tiampati 2015, Kateiya Thuo & Ombok 2021).

The colonial land distribution system did not provide that a dry season grazing land and natural resources available therein be directed towards reducing resource disparities; the current constitutions has also created infrastructure with similar ill-effect to tribal livelihoods (Lesutis 2021). This is going on despite the existence of the Swynnerton Plan; it resulted in several pieces of legislation, most importantly the Land Consolidation Act of 1959 (Cap 283), and the Land Registration (Special areas) Act of 1959 (ROK 1959), which introduced a registration system for individually held plots of land within the reserves or special areas. Development and Use of Land (Planning) Regulations, 1961 (ROK 1961), was later repealed and enacted as part of the Land Planning Act, Cap. 303 of 1968 (Republic of Kenya 2015). One of

the last laws to be passed before independence was the Registered Land Act of 1963. This Act –did not come in force until 2012 – made provision for the registration of land as well as for the registration of lease of agricultural tenancies and its legal consequences (ROK 2012). The impact to vulnerable IP community in a wildlife dispersal area territory is rife (Giller, Leeuwis & Anderson, et.al. 2008; Chaminuka, Udo, Eilers, & van der Zijpp, 2010); Eccleston & March 2011, Kateiya et.al. 2021, ROK 2015).

Group Ranches in Narok are laden with environmental problems emanating from the State land reform expansion as a land privatization policy value that have not been assessed from the perspective of the IP household lives (Ibisch, Hobson, Hermann eds.2010). Pastoralists in Kenya are used to utilizing a shared range of 250 ha per household; but during drought they move away from registered ranches in a radius of 5-10 kilometers (Leeuw & Grandin 1984). In regard to community livelihood sources; overexploitation occurs to generate income; with poor environmental planning and management the resources become scarce (Payne & Durand-Lassuve 2013). In the context of the land scarcity regime Maasai IP have raised incidences of dissatisfaction in the literature however; this has not triggered a land policy review (World Economic Forum, 2014, Lambin & Meyfroidt, 2011; Msoffe, Kifugo, Said, de Leeuw, Skidmore, & Prins, 2003). Sustainable livelihood is not a national value and indigenous people suffer from effects of competing land uses. The constitution of Kenya firms the right of minorities and vulnerable group rights (ROK 2010) while a land policy provides indigenous people an opportunity to beneficially occupy land (ROK 2009). Early case law milestones such as the 1912 Kenya court claims for land protection form the colonial government underscore sovereignty of indigenous communities over their territories (IFAD 2012, Natarajan et.al. 2022). However, despite these advancements, lack of institutional recognition of a functional criterion (pastoral production) managing access to resources, in land management in livelihood source as a dry season grazing land heighten tension in land disputes.

The sustainable livelihood framework and the Value Belief Norm Theory (VBN) were reviewed to guide collect data about community perspectives on new behaviour across historical regimes, natural resource governance and labour practices (Roe, Nelson & Sandbrook 2009. Chakrabarti 2021). Maasai IP family labour living with wildlife bring into play poorer households' demography and land use behaviour change in environmental benefits (Ibisch et.al. eds. 2010), Watson 2016) and Hill et.al. 2021). Riamit (2014), Jandreau (2014) and Republic of Kenya (2016) cite that take-over by cropping of pastoral spaces fragment the area, expand sub-urban infrastructure that jeopardize sustainable livelihood (McCabe et.al. 2010, Akall 2021, Kariuki, Willock & Marchant. 2021). Models that capture Maasai IP perspectives at the grassroot level are not clear (Simandan, 2018, Nelson 2009 ed., Volpato & King 2018 Gatzweiler & Baumuller et.al. 2014). The study was inspired by understanding colonial influences, and modern belief systems to define perspectives of IP regarding livelihoods (Kameri- Mbote 2009, Freeman et.al. 2004, FAO 2012, Jandreau 2014, FAO 2017, Onguny et.al. 2019). Aspects of land use type and livelihood source provide a framework for assessing these perspectives (Browne, Varcoe, Lavoie et.al., 2016).

To manage planning expectations, dissatisfaction is defined as; not achieving planning targets as stated in development plans (Vianden, et.al. 2017). The study qualitatively tested an assumption that; H0 competing land use environment in Mara study site is associated with dissatisfaction with availability of environmental resources and accessibility to livelihood benefits (indicator) in Osupuko, Ololulunga, and Mara study sites in Narok County.

MATERIALS AND METHODS

Study Area

The study area consisted of Narok County (580 367 km²), found in South-Western Kenya. Based on 2009 Kenya national census, Narok County had a population size of 850,920 people. The study finding covered Mara ward with a population of 41,954 people and borders Ololulunga and Osupuko wards. The Mara study site is a buffer zone between the National Reserve and the northern farming areas (Mukeka, Ogutu, Kanga and Roskraft (2019). The study area covered parts of Narok County a territory for Maasai IP tribe affected by a land subdivision process regime. According to Kiriimi & Njeru (2016) Mara study site has collective land use regimes (Yin 2017). Previous studies had cited that the root causes of community dissatisfaction with existing natural capital in Mara ward is unclear (Janudianto 2012, Vianden and Yakaboski 2017).

Study Method

A qualitative design of Mara study site as single case study was used to learn about the competing land use phenomenon; emerging ideas, real-life events, and situations (Teegavarapus et.al. 2008). The Critical Incident Technique (CIT) is a research method for systematically obtaining incidents (behaviour or events) as an integral part of enforcement of environmental laws. Unk et.al. (2023) and, Angelson et.al. (2014) used the CIT in a study model to compare both socio-economic and community village level data to provide feedback on a policy outcome. The CIT framework has previously been used to identify and investigate benefits accrued to individuals and the community (Smith, Anderson, Davenport et.al. 2013, Browne,Varcoe , Lavore et.al. 2016). The data obtained provides an institutional feedback response action (Douglas, Mc Clelland, Davies et.al. 2009, Janudianto 2012, Vianden and Yakaboski 2017, Mukeka et.al 2019). The outcomes of this study give a description at the community and household levels the characteristics of Maasai IP livelihoods in Mara ward in Narok South, Kenya.

Primary data sources

The probability cluster random sampling procedure was used to select household heads in Mara ward (Nielsen C., Lund M., Aamand, & Su 2015 & Leung, (2015). A population size of 183 households' heads was adequate for a clustered case study according to Rosala (2020). Obtaining primary data through a questionnaire survey about a policy reform in transition was unique (Niewöhner, et.al. 2016). The research data was collected from indigenous Maasai as a livelihood group; living in settlement villages of Olkinyei, Nkoilale, Siana, Eloilale, Inkooso, Ilturnisho, Olmanie and Mosir o-kiti/ Mosiro kolon (Figure 1). Perspectives is an understanding of what matters to them; in a purview of socio-economic benefits and ecosystem services obtained (Janudianto, Khususiyah, Isnurdiansyah, Suyanto and Roshetko, 2012). The type of data collected consist of dissatisfaction frequencies responses regarding availability and the institutional outcomes of restructuring of the rules of access to natural resources and community benefits. Primary data were collected using questionnaires, interviews, open-ended survey guides (Appendix A), photography and observations. The interview guide supported to direct the sectoral actors' views, priorities and opinion regarding planned activities to support land production choices introduced in the area as well and land reform incidences.

Secondary data sources

Qualitative data secondary source used include land policy documents as well Public sector administration interviews regarding their experiences. This study leveraged on this information especially planning and sector management norms

in the analysis and interpretation of results during the land tenure transitions. Lands, Water, Wildlife and Environment Sectoral actors' policy values gave diverse perceptions and experiences regarding decision making. A map of the study area is hereby provided (Figure 1). Secondary data was also obtained from published and unpublished sources. These included documentary analysis of research reports, public laws and regulations, published papers, unpublished research theses and organization websites.

Other observations made about the surrounding environment and settings of homesteads were recorded in a notebook. The observations helped to contextualize the data, validate findings and complexities that pastoral Maasai IP experience under a land tenure regime change. Initial sample sizes of 183 households were randomly selected for Mara, study site. Sample correction was carried out for finite populations to final sample of 154 households (35 % of all households in Mara ward, from a total number of households (53,974) in Narok South. This sample size was sufficient to meet the study objectives under optimum use of limited financial resources.

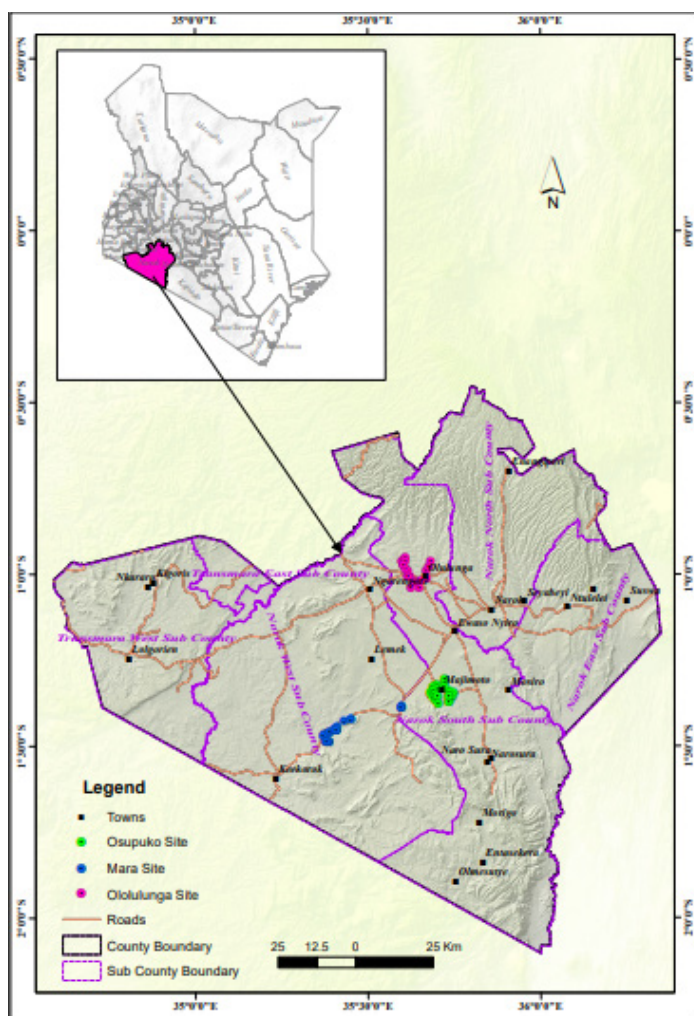


Figure 1. Location of Narok South subcounty, showing Mara site in Kenya. Source. Department of Resource Survey and Remote Sensing.

RESULT AND DISCUSSION

According to the findings in Table 1, Mara study site respondents indicated various Maasai IP household heads' perspectives regarding dissatisfaction with natural resources availability and access to community benefits. Analysis of respondents depict the nature of relationship between land use types and dissatisfaction with communal natural resources and benefits of Mara study site' group ranch grazing reserve. From the data findings there exist two components that concern households in Mara study site that can be grouped into two items; natural resources availability and access to community benefits in Mara ward Narok County. The sector interviews further reveal the centrality of livestock in Maasai IP livelihoods. Agro-pastoralist are the largest livelihood source group who are also most dissatisfied with group ranch's natural resources (Table 1).

Table 1: Perception of Dissatisfaction with livelihood sources and land use types benefits at Mara division.

Livelihood sources/land use type		Dissatisfaction with availability of natural resources									
		Water Resources		Forest resources		Wildlife		Dry season grazing land		Salt licks	
Livelihood sources		No	%	No	%	No	%	No	%	No	%
	Farming	5	6.3	3	5.9	0	0	0	0	0	0
	Business	33	41.8	19	37.3	14	38.9	27	52.9	8	42.1
	Formal employment	22	27.8	16	31.4	11	30.6	8	15.7	3	15.8
	Casual off-farm activities	19	24.1	13	25.5	11	30.6	16	31.4	8	42.1
	Total	79	100	51	100	36	100	51	100	19	100
Land use type	Agro-pastoralism	79	72.5	57	80.3	57	83.8	71	80.7	46	85.2
	Subsistence farming	11	10.1	0	0	11	16.2	11	12.5	8	14.8
	Livestock ranching	0	0	0	0	0	0	0	0	0	0
	Mixed farming	16	14.7	14	19.7	0	0%	3	3.4	0	0
	Large scale crop production	3	2.8	0	0	0	0	3	3.4	0	0
	Total	109	100	71	100	68	100	88	100	54	100
Dissatisfaction with community benefits											
		Livestock trade		Road infrastructure		Medical Centre		School		Shopping Centre	

Livelihood sources		No	%	No	%	No	%	No	%	No	%
	Farming	5	7.5	0	0	5	6.6	3	3.9	5	6.9
	Business	27	40.3	19	41.3	30	39.5	33	42.9	33	45.2
	Formal employment	22	32.8	14	30.4	22	28.9	22	28.6	19	26
	Casual off-farm activities	13	19.4	13	28.3	19	25	19	24.7	16	21.9
	Total	67	100	46	100	76	100	77	100	73	100
Land use type	Agro-pastoralism	90	76.3	63	82.9	101	77.1	98	79.7	101	78.9
	Subsistence farming	11	9.3	8	10.5	11	8.4	11	8.9	8	6.3
	Livestock / ranching	0	0	0	0	0	0	0	0	0	0
	Mixed farming	14	11.9	5	6.6	16	12.2	11	8.9	16	12.5
	Large scale crop production	3	2.5	0	0	3	2.3	3	2.4	3	2.3
	Total	118	100	76	100	131	100	123	100	128	100

Source. Field data (2018)

The dissatisfaction of agro-pastoralist resource group regarding access to and availability of natural resources particularly water resources (72.5%), forest (80.3%), dry season grazing land (80.7%) and salt licks (85%) highlight the socio-economic importance of these resources in a savanna wildlife dispersal area (Table 1). Among livelihood source groups agropastoralist also expressed the highest concern about access to all community benefits: medical centre (77.1%), schools (79.7%, shopping centre (78.9%) and livestock trade (76.3%). This data suggests a sedentary way of life with rising external economic interventions that do not take into consideration that some land areas are functionally shared such as grazing fields. It is not clear whether policy actions effectively; promote sustainable resource management in tandem with changes towards a more sedentary lifestyle to simultaneously address pastoral resource access -for those in need, community needs and economic opportunities. According to Montesanti, Fitzpatrick, Fayant, *et al.* (2022), individualising land previously held as a Group Ranch and transferring it to conservancies through land leases risks threatening the well-being of Maasai IP and fueling dissatisfaction. Observed logging trails leading to cleared forest areas provide evidence of the environmental problems such as; illegal logging, poaching and rampant extraction of illegal forest products for sale. The land sector informants explained that households were concerned about illegal logging; which they believe leads to loss of diverse indigenous tree species. Group ranch rules were not sufficient to restrict Maasai IP who in sedentary living desire access forest products in public land or community.

An average of 13.15 percent Maasai households are interested in subsistence farming; a minor labour choice relating to land differently amongst a predominant pastoral community but, with significant impact to land (Table 1). In addition, over 90 percent of agro-pastoral Maasai IP households in Mara ward are directly involved in livestock herding/ ranching either as individuals or groups. 80.7 percent of agropastoralist households either want to utilize in situ dry season grazing land space or ex-situ public game reserve for collective herding as they previously did before the land reform. Previously 100 percent of households were engaged in livestock keeping in Mara and herding was done across all

pasture patches (Nkedianye et.al. 2020). This observation provides evidence that agro-pastoralism is taken up as a preferred livelihood alternative because it fits to a non-standard informal/ or social norms of seasonal movements that aid Maasai IP households to flexibly manage limited water and natural pasture sources.

Farming, living-off either earning from land assets or off-site earnings opportunities for young adults is a new behavior change phenomena blurring the boundary of distinct pastoralism and cultivation as a primary source of livelihood (Sikor *et al.* 2017, Nkedianye, Ogutu, Said et.al. 2020, Unks et.al 2023, Friis 2023). Those who are poor or under financial distress sell shares they own in a Group Ranch would suffer from land dispossession during land subdivision. This study finding confirm a previous study findings that indicated; subsistence farming household face loss in access to a Maasai IP dry season grazing land during drought and suffer under a livestock-based livelihood (Bedelian 2014).

Based on the theme of access to community livelihood benefits in Mara study site; conservancies and tented camps as a business (38.9%) were dissatisfied with access to dry season grazing land (52.9%), salt licks (42.1%) and water resources (41.8%). Those engaged in formal employment and casual off-farm activities were equally dissatisfied. For instance, respondents in formal employment were dissatisfied with access to forestry resources (31.4%), wildlife resources (30.6%) and water resources (27.8%) while those in casual off-farm activities were mainly dissatisfied with access to salt licks (42.1%), dry season grazing land (31.4%) and wildlife resources (30.6%). Business people were dissatisfied with business opportunities related benefits from shopping centres (45.2%), schools (42.9%), road infrastructure (41.3%) and livestock trade (40.3%). Those respondents engaged in farming activities were the least dissatisfied with access to natural resources. Comparatively, the highest dissatisfaction was expressed with access to and use water resources, forest resources and dry season grazing land. Regarding satisfaction with community benefits, various livelihood sources fail to satisfy collective human needs and demands. Indigenous Maasai desire a connection and access to non-pastoral spaces and sub-urban environmental services (Burnsliver & Mwangi 2007). This finding depicts a close connection between livestock keeping and business in Mara ward. Further study of rural livestock keeping and urban businesses is recommended.

As far as the Mara study site is concerned, the respondents engaged in most predominant expression of dissatisfaction with all community benefits is by agro-pastoralists. The agro-pastoral livestock herders were also significantly dissatisfied with community benefits. Multiple developments projects in village settlements put up fences to protect their property from migrating wildlife; this trend show the extent of intolerance to wildlife. The fences further make access to water sources harder since livestock and women have to go around fences to obtain pasture and potable water respectively. Cash available from wildlife sector is determining human settlements and access to needed natural resources in communal group ranches in Mara. External controls such County government programmes and sectoral actors are associated with redundancy of pastoral competence and skills; men who cannot herd move to distant Narok, town to look for unskilled jobs.

Respondents in formal employment were more dissatisfied with access to livestock trade (32.8%), road infrastructure (30.4%) and medical centre (28.9%). Wildlife – management related benefits remain widespread among households despite few numbers of casual labour in wildlife conservation. From Table 1, tourism and conservancies encourage sub-urban models of settlements and provide leased land stipends. Market- income benefits from wildlife business is driving land use change in the study area (Pensuk and Shrestha 2007). Respondents cited that they are transitioning to aggregated land on their own volition in ‘tented community camps’ or Wildlife Conservation Areas (Kiriimi et.al. 2016.). The large-scale land users optimise private property rights while the county government constraint land available for Maasai IP amenities without managerial reform involving public participation (Leffers, Wekerle & Sandberg 2021(Cotula, 2007). Previous set of choices such as; diversification and conversion of land use activities raise dissatisfaction with natural

resources available and access to community livelihood benefits and; are threat to Maasai IP lifestyle in Mara ward respectively.

Agro-pastoralist Maasai are most dissatisfied with wildlife amenities (83.8%) and road infrastructure (82.9%). Large scale businesses such as conservancies maximizes use of space, fencing, and road as defensive infrastructure (Oren and Newman 2016). Butt & Turner (2012) cites that, the underlying competition was due to creation of functional tented camps and conservancies in a group ranch. In addition, peoples' livelihood demands are reducing the space and resources for wildlife use (Manoa, Mwaura, Thenya and Mukhovi 2020). This therefore confirms the assertion that; Maasai IP' feel that egalitarian strategies of access to open spaces have remained constricted by elitist models of wildlife management.

Interviews with Sector actors revealed widespread dissatisfaction if Group Ranch households with access to land-based natural resources like the dry season grazing land and forest resources. These are the community natural resource points affected by the transition to individual use of land. Agro-pastoral households require to flexibly manage water and natural pasture however; land tenure is individualizing previously communal natural resources. Individuals are associated with driving land degradation in a coupled wildlife field and community Maasai cultural heritage. The opinions confirm the finding that; competition for water and pasture by people and wildlife in Mara study site exist (Bedelian et.al. 2017). According to Campbell et.al. (2003); the findings represent an interaction between biophysical and social realities of Maasai IP that drive land tenure change. From the interviews land sector representative; Mara is the last ward in Narok south undergoing land adjudication. Agro-pastoralists have livestock-based businesses. Having agro-pastoral land uses competing against businesses jeopardizes the quality of the environment (Smith, Gregory, Vuuren et.al. 2010, Leffers et.al. 2021).

According to key informant observation, Olkinyei Conservancy a constituent of Siana group ranch; is a community Maasai IP land initiative that demonstrate competing land use effects. Mara ward is the comparatively the busiest in tourism related activities. Individuals compartmentalize access to natural resources than before as they align natural resource points with land classes (private, public and communal land). Competing individual users (investors) are facing subtle resistance from Maasai IP who have device means to access natural resource area during drought or night. Individualizing areas that Maasai IP previously used to 'expand their territory' (Smith et.al. 2010, Karamesouti et.al. 2018) to Wildlife Conservation Areas (WCA) is raising dissatisfaction. WCAs within Mara study site misaligns Maasai indigenous holistic view of well-being (Montesanti, Fitzpatrick, Fayaout, et.al. 2022). The influx of immigrants and growth of conservancies affects vital forest resources Being open areas; the forests are invaded in the night by livestock herders who also graze in forests. This finding confirms Ayatunde et.al. (2011) finding that night grazing is response to variability of availability of forage and water. According to Geman et.al. (2017), the norm of grazing in a wildlife game reserve in the night is to avoid opportunistic fencing of prime dry season grazing land (Maa, Olopolili).

Maasai IP agro pastoralists (72.5%) and business-oriented households (52%) were most dissatisfied with access to water resources. From the literature; a comprehensive review of interaction between the biophysical dimension of dry season grazing land space and the human dimensions of; access to water sources from varied traditional point sources by women and herders is apparent (Veldkamp and Verburg (2004). However external interventions such as access to irrigation schemes in Mara ward; Naroosura (600 Ha) and Mosiro (325 Ha) support 164 730 km² arable land area; with more enforced exclusion of sedentary Maasai IP households. Weak water sector actors and policies that are institutionalised are fueling competition among inhabitants in Mara ward over scarce irrigation water (Weesie et.al. 2018). The Mara river provides an opportunity for irrigation activities for all natural resource groups as well as joint water resource management models.

According to wildlife and water sector actors: household are dissatisfied with the emergent mobilization by Wildlife Resource Users' Associations (WiRUA) and the Water Resource Use Associations (WRAs) respectively in Mara ward. Institutions are meant to manage exceeding use of scarce pasture and water beyond planetary boundaries (Simandan, 2018 & Mwangi, Despondi & Espandola et.al. 2022). Maasai IP respondents observed that Group ranch members associate WiRUA and WRAs as; new form of colonial labour reorganization initiatives disfranchising poor Maasai IP pastoralism. During the dry season agro-pastoralists also move animals away from the settlement areas to a changing wet area (Maa:ololili) dry season grazing land. One of the household head respondents cited that:

“Those herdsmen you see moving around with livestock are employed by household heads in settlement areas. The settlers can even practice farming on land while their animals are away. The animals return to graze on own farms after harvest due to fencing”.

Youth groups “farmers” use mobile water pump irrigation systems along Mara River; busy themselves in production of french beans and onions for export. Poorer households who practice agro-pastoralism have vegetables grown in the riparian shambas along Mara river or kitchen gardens around the settlements (Maa:manyatta). These kitchen garden later expanded into a farm (Mc Cabe, Leslie and De Luca 2010). Casual-off farmers wish for a re-introduction of Maasai customary law to support a pastoral livelihood has been cited in the literature (Tarayia, 2004). Competing State and Commercial interests in a ‘frontier’ of available natural resources leave out indigenous local people (Nelson 2009 ed., World Economic Forum 2014). There exists differential transition away from a traditional pastoral, a diversification and equally loss of herding young men in society shifting to mine natural extractives (Fratkin 2001, Burnsilver and Mwangi 2007, Nkedianye et.al. 2020).

From the researcher's observations; sedentary Maasai habitually extend collective livestock herding towards the natural protected wildlife reserve area directions. Paradoxically pastoral Maasai IP choose to hire herding labour; livestock herders' routine consists of seasonal movement to and from the highlands grazing areas. The activities in Mara depict wildlife and livestock land uses competing for pasture and water resources at different geographical scales (Kirimu et.al. 2016, Lind, Ahemed, Skagerlund et.al. 2020). Angelson, Jaggie, Babigumira et.al. (2014), using a comparative analysis of environmental income for 8000 households using Critical Incident Technique; found that natural forest account for 28 percent of total household income. From interviews from a key informant, the poor rely on subsistence wood fuels, wild food and products harvested from natural forest area which they sell to small towns. Group ranch committee can generate financial gain for members using this natural resource sale model (Odour 2020).

Social amenities and public goods from natural resources require a land use plan (Kirimu et.al. 2016). A social transition within a dry season grazing land is also undergoing physical environment change. It also affirms that a suitable behaviour change model for Maasai IP is to cope with this change. Petty businesses, casual non-livestock labour and retail shop activities constitute the bulk of Non- Pastoral Incomes (NPIs) that pastoralist households in the nested sedentary settlements engage in. NPIs are mainly used to supplement a pastoral livestock income in a sedentary lifestyle (Achiba 2018). Therefore, the Maasai IP perspective that a dry season grazing land dissatisfaction creates a ‘new coalition’ that has a natural resource policy implication is true.

In a study by Curtis and Mant (2020) to understand if new land based business models include sustainability, the study used secondary data to understand the diversity of business models ascribed to sharing economy like a wildlife dispersal area. Out of 6 business models half did not include sustainability in their conceptualization. The model that respondents were least dissatisfied with (or most successful) was characterized by a wide range of activities a characteristic of a traditional sharing economy. The specific case study proposed a typology that has three things; shared goods and services, market structure, market orientation that also involves the State sector actors. In conclusion from the Mara

study; as a wildlife dispersal area is not sustainable by default. A shared group ranch that supports a local economy is of interest to researchers and policy makers concerned with shared spaces.

Pastoralism in Mara is changing to conservancies and agro-pastoralism. There exists a strong sub-urban linkage to restrictions of using land. Family labour is the game changer for poorer households to surmount restrictions to access distant natural resources. Bedelian et.al.(2017) asserted that dissatisfaction with livelihood outcomes arise under the rule of law and land policy raising the importance of Maasai IP perspectives regarding traditional pastoralism.

CONCLUSION AND RECCOMENDATIONS

This study aimed at determining the effect of competing land uses on land productivity regarding natural resource availability and access to community resources. Based on the perspectives of respondents from Mara cluster study site, agro-pastoralists were most dissatisfied regarding natural resources and access to community benefits. Sedentary living is associated with a rise of agropastoralism and a high dissatisfaction with livelihood outcomes in Mara study site. There is a strong Maasai IP livestock herding connection, conservancy business and sub-urban linkages. Environment protection is understood as protecting the wildlife for the benefit of the current and future generation. Maasai community feels they protect the wildlife and now they have questions regarding Wildlife Conservancies that do not benefit them. Conservation signifies culture of taking care of the environment and wildlife, both the community and the State. The activities of conservancies differ from each other. The community is dissatisfied with the conservancies because they have leased land that was used for grazing. The number of livestock is decreasing with the group ranch subdivisions, the livestock require water which is found in land leased to conservancies; water management is a problem. The study made the following recommendation; productivity of the Ololulunga, Mara and Osupuko study sites change and is attributed to the land policy. The policy provided an opportunity for some to own land; while others lost communal open spaces. There exist possible defects in the application of the land law in IP territory and classes of private, public and individual which are not clearly distinct that fuel competition. Some people who face more risk, loose land and move to towns but culturally remain connected with their lands. Property rights game led Maasai IP households to change new land use behaviors that impacts natural resources, the culture of IP, the value of the dry season grazing land change, livelihood strategies of either farm based or pastoral based emerged in the area. The assumption that H0 competing land use environment in Mara study site is not associated with dissatisfaction with availability of environmental resources and accessibility to livelihood benefits (indicator) in Osupuko, Ololulunga, and Mara study sites in Narok County is rejected.

The study gives the following recommendations:

- a. Creation of priority spaces for pastoralism and conservation corridors.
- b. More so, as a contingency plan for collective access for vulnerable livelihood groups to access pasture and water sources.
- c. A clear land use behaviour changes models to impart competence to run conservancies and businesses.



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