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Maasai wellbeing and implications for wildlife migrating from Tarangire National Park

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Abstract A multi-dimensional, locally grounded conceptualisation of human wellbeing provides a way to understand the complexity of people's lives, incentives and aspirations with the potential to inform socially just conservation interventions that have local legitimacy. Based on semi-structured group interviews and a survey at the household level, we discuss how wellbeing is conceptualized among the Maasai of Simanjiro, how this differs between social groups, and how social aspirations have implications for conservation interventions in the ecosystem. We highlight how communal grazing land which aligns with conservation priorities is of paramount importance, but agriculture is also central to people's lives and there is a growing emphasis by younger men on securing private land. Social unity also constitutes wellbeing, but is jeopardized by land disputes and party politics, and is tied up with mistrust of external actors rooted in a history of land and resource alienation. Land insecurity is viewed as a threat to wellbeing, and partly drives the conversion of land to agriculture as well as other aspirations such as education. The findings suggest that future interventions will need to increase land security, work to establish

trust in conservation processes and institutions, and provide equitable alternatives to agriculture to meet subsistence needs.

Introduction

There is increasing acknowledgement in the conservation literature that narrow economic indicators are inadequate for describing poverty and human wellbeing, failing to capture local priorities and the varied ways that local lives may be impacted by interventions (Loveridge et al. 2020; Woodhouse et al. 2017). Ecologically relevant practices are motivated by not only improved income and livelihoods, but a broad range of values such as identity, social relationships, and a sense of fairness (Coulthard et al. 2011; Chaigneau and Brown 2016). A conservation project that is designed to reduce poverty may be successful in achieving that goal, but can also result in increased social stratification and conflict within local communities (West 2006; Gurney et al. 2014). Instead, more inclusive alternative approaches are being explored that capture multiple dimensions of a good life, with the aim of improving the design and evaluation of conservation to better meet ecological and social goals (Woodhouse et al. 2015). Taking a more holistic approach through the lens of multi-dimensional wellbeing has the potential to improve social justice, as well as the local legitimacy of conservation, and ultimately its success. Adopting a wellbeing approach presents challenges in defining, understanding, and measuring wellbeing in a way that is relevant to external policy-makers, practitioners, and local communities. There is, however, a growing recognition that understanding wellbeing for conservation must be grounded in locally relevant conceptions even within a broadly comparable universal framework (Woodhouse et al. 2017). In this chapter we discuss how wellbeing is conceptualized among the Maasai of northern Tanzania, how this differs among men and women, and how social aspirations have implications for wildlife migrating out of Tarangire National Park (TNP) and conservation interventions in the dispersal area in Simanjiro, a key wet season range for wildlife species in the Tarangire ecosystem (Kahurananga and Silkiluwasha 1997). Although some of the results of this study have been previously published (Woodhouse and McCabe 2018), we are incorporating unpublished materials here including quantitative data and a synthesis of our learning about Maasai wellbeing from previous and ongoing research projects on risk and livelihoods.

Wellbeing

Although there are a number of definitions of wellbeing, the one we used in our research is based on the framework developed by the Wellbeing in Developing Counties project based at the University of Bath. Here wellbeing is defined as: "the state of being with others, which arises where human needs are met, where one can act meaningfully to pursue one's goals, and where one can enjoy a satisfactory quality of life" (McGregor 2007). McGregor and Summer (2010) identified three interacting dimensions of wellbeing: (1) the objective material circumstances of a person; (2) a person's subjective evaluation of his or her life; and (3) a relational component based on how individuals interact with each other to meet their own goals and needs. What is different about a wellbeing approach, and what makes it difficult to put into use for policy and practice is that each community is different, and each community is not a homogenous group of people but may be split along ethnic, political, wealth, religious, gendered or other lines (see Agrawal and Gibson 1999). This means that one cannot rely on a predefined set of categories or indicators as communities will differ in their conceptualization of wellbeing, and segments of the community may also differentially conceptualize what wellbeing means to them (Daw et al. 2011).

Maasai social organization and the diversification of livelihoods

There is a rich body of literature concerning the Maasai, and here we present a brief overview to help the reader contextualize this study. Although the commonly depicted image of many African pastoral people emphasizes mobility and an almost exclusive dependence on livestock for subsistence, this romanticized depiction does not represent the complexity of pastoral livelihoods today or even in the past (Homewood 2008). This is especially true for the Maasai, whose image of brave warriors driving herds of cattle though the dust appears on billboards, in movies and on television shows and is shown throughout the world.

The Maasai occupy approximately 150,000 sq. km spanning Tanzania and Kenya. The Maasai population in Tanzania tends to be less economically developed than that in Kenya, primarily due to government policies, especially with respect to land tenure. While land in Tanzania remains as property of the state, with management rights devolving to the village, in

Kenya land is privatized and households have title deeds and the rights to buy and sell property.

Maasai social organization is based on three articulated institutions: family, territory, and the age grade/age set system. Households are generally polygamous with each married woman having her own household or *enkaji*. A man and his wives, children, and dependents form the next organizational unit called the *olmarei*; this is the basic family unit and is responsible for the management of livestock. A number of *olmarei* may live together forming the *enkang*, but it is increasingly common to find an *enkang* consisting of a single *olmarie* (McCabe et al 2010). All Maasai men are members of a clan, in which members help each other in times of stress. All men also pass through a set of age grades from boy, warrior, junior elder, elder, and retired elder. During the warrior age set young men forge a corporate identity, have a leadership structure, and adopt an age set name. The age set acts as a self-help institution and members of a particular age set have responsibilities to each other and will redistribute livestock to poor families if needed.

The largest territorial unit is the *olosho*, in which all members of the *olosho* have access to grazing resources. In general, livestock movements are confined to the *olosho* but in times of drought *olosho* boundaries may be crossed with permission. Within the *olosho* are smaller units in which local communities have defined wet and dry season grazing areas. Both wet and dry season grazing areas are opened and closed seasonally, and according to climatic conditions. Traditional enforcement of rules governing who can use grazing resources and when dry season areas are opened was the responsibility of spiritual leaders or *laibons*. Those trespassing into restricted areas would be cursed and removed. This traditional system has now been replaced by a livestock management system governed at the village level (see below). Some water resources are open to all, but wells, and some streams, are owned by clans.

Previous research has demonstrated that Maasai in Tanzania began to adopt cultivation beginning in the 1950s (O'Malley 2002), and that cultivation became widespread among Maasai communities in northern Tanzania during the 1970s and 1980s (McCabe et al. 2010). The process began with planting small gardens which expanded into farms over time. The most commonly grown crops were maize and beans in farms and vegetables in home gardens. The plots were small, and fields were plowed primarily by hand, although in certain areas ox plows were used to till the land. The Maasai have traditionally incorporated grain in their diet, and it has been argued that wealthier people adopted cultivation to avoid selling

livestock to buy grain and poorer people were pushed into agriculture because their livestock holdings were too small to provide enough food (McCabe et al. 2010).
The Tanzanian villagization program of the 1960s and 1970s encouraged people to settle in defined villages but this was not as successful in Maasailand as in other parts of the country. Nevertheless, mobility began to decrease, and the population increased exponentially. Schools, health clinics, small shops, and churches were built in village centers, but village boundaries did not inhibit the movement of people and livestock (Homewood and Rodgers 1991). As the human population grew, villages divided into subvillages. With the expansion of cultivation and a decrease in mobility village leaders felt pressure to allocate individual plots to households. This process began in the 1980s and continues today. Plots were generally small consisting of one or two acres, but as we discuss below land allocations in Simanjiro – our study site – were larger than in other parts of Maasailand. During the 1980s many young men, seeking to make money to purchase livestock, began to migrate into urban areas to find jobs, primarily as watchmen. Wages were very low and often no shelter was provided, yet young men continued to migrate. Some were able to buy enough livestock to serve as a basis for an independent household, but most young men only made enough money to survive (McCabe et al. 2014). It has been argued that, despite this lack of success, migration of young men away from Maasailand is transforming into a rite of passage, similar to that of young men guarding cattle in remote areas during the dry season (McCabe et al. 2014).

The Village Land Act of 1999 established the village administration authority to manage village land and resources. This act was seen as a critical juncture in shifting the responsibility of rule enforcement related to livestock management from the *laibons* to the village government. This coincided with a weakening of the authority of *laibons* and the expansion of Christianity (McCabe et al. 2020). Village government consists of a village assembly that includes all members of the village over the age of 18. The village assembly elects a chairperson (*mwenyekiti*), secretary (*katibu*), and treasurer (*mweka hazina)*, while the village executive officer (*mtendaji*) is appointed by the District. Villages are divided into sub-villages, each of which has a chairperson and secretary. A village council, consisting of the chairperson, sub-village chairpersons, and elected members (which must include women) is the governing body of the village. Within the village council a series of small committees are formed to deal with legislation that may include how livestock and water are managed. The livestock committee is responsible for defining and enforcing rules concerning the

opening and closing of wet and dry season grazing areas, and if and when outsiders will be allowed to use village resources (McCabe et al. 2020).

Simanjiro Case Study

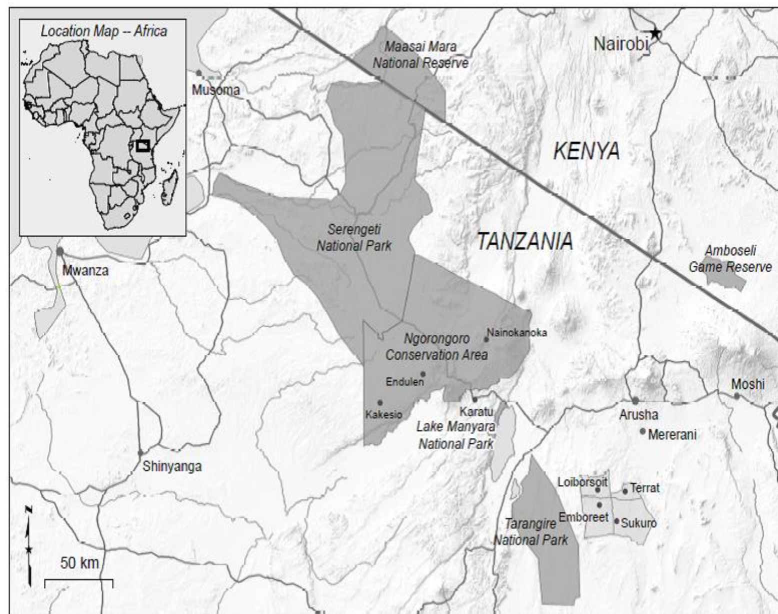
The population of Simanjiro District is primarily Kisongo Maasai who now engage in a set of diversified livelihoods, incorporating cultivation, migration to urban areas for wage labor, and acting as middlemen in the Tanzanite trade, along with their traditional economic and social emphasis on the raising of livestock (Fig. 4.1). Cultivation among Maasai communities in Simanjiro followed a very different process of adoption than Maasai communities in other areas of northern Tanzania. Beginning in the 1980s people began to cultivate in Simanjiro but not by using handheld hoes in small plots; rather, the use of tractors and ox-plows were common, and the cultivated plots were large, often averaging 10 or more acres.

Although individuals are not allowed to sell these allocations, it is not uncommon to see large plots of land “leased” to outside interests for commercial agriculture. The regional government declared a moratorium on new farms on the Simanjiro plains in 2006, fuelling fears among local people that they would lose land (Davis 2011). Alongside processes of land allocation, village administrations have developed land-use plans often supported by NGOs, to specify areas for cultivation, herding, and sometimes conservation. Just as the process of adopting cultivation was different in Simanjiro than in other places in Maasailand, the pattern of rural-urban migration is also unique with implications for the social-ecological system. The gemstone Tanzanite was discovered in the hills behind Kilimanjaro airport in 1967, close to the town of Mererani. In Simanjiro, like in the rest of Maasailand, young men were migrating to urban areas during the 1980s, but the lack of success and the danger inherent in guarding influenced elders to encourage young men to migrate to Mererani rather than to urban areas, where they learned to evaluate gemstones and began to buy and sell Tanzanite (Smith 2012; McCabe et al. 2014). Although there were men from other parts of Tanzania engaged in the gemstone business, men from Simanjiro began to dominate as middlemen buying gemstones and selling them to local brokers and brokers in the city of Arusha. Unlike those who migrated to seek wage labor, many men engaged in the Tanzanite trade became wealthy. With this newfound wealth many built modern houses and purchased land and tractors. This resulted in the acceleration of land being converted from rangeland to cultivated land, a process which is continuing today.

Finally, following a severe drought in 2008 and 2009, in which tens of thousands of cattle from the border areas in northern Tanzania and southern Kenya migrated into the rangelands of Simanjiro, many villages in Simanjiro began to redefine access to resources to outsiders. The process was different among villages but the common theme was that informal institutions based around a common ethnic identity that facilitated access to village land to outsiders during times of stress transitioned to formal village-based institutions limiting access to village lands and strengthening village boundaries (McCabe et al. 2020).

Research for the wellbeing study took place in four villages located to the east of Tarangire National Park (TNP). Two villages, Emboreet and Lobor Soit border the park, while the other villages, Sukuro and Terrat, are located 40 and 45 kilometers east of the park boundary. Prior to the establishment of TNP Maasai moved with their livestock, especially small stock, west to utilize the water and forage resources in what is now the park during dry seasons and times of drought (Fig. 4.1).

Fig. 4.1 Map of the study area showing focal communities in relation to Tarangire National Park



Simanjiro District as well as TNP are located within the Tarangire Ecosystem which is considered one of the most biodiversity rich ecosystems in Africa (Olson and Dinerstein 1998). TNP is famous for its large population

of elephants and the migration of ungulates that is second only to the Serengeti-Ngorongoro ecosystem in the size of the annual migration (**Bond et al.** Chap. 8; **Foley and Foley** Chap. 10). The Tarangire River and the swamps are among the only permanent sources of water in this semi-arid landscape. TNP is a dry season refuge, and many of the animals migrate out of the park in the wet season and back into the park as the dry season progresses. The major migration routes lead eastward to the Simanjiro plains and north to the plains located just south of Lake Natron (**Lohay et al.** Chap.12). The soils in the Simanjiro plains are rich in phosphorus which is important to eastern white-bearded wildebeests (*Connochaetes taurinus albojubatus*) and plains zebras (*Equus quagga*) during the calving season (Kahurananga and Silkiluwasha 1997). The Simanjiro area is considered vital to maintaining the wildlife populations of TNP but is also an area without any formal protected status. It has thus been the focus of contention between wildlife conservationists, human rights advocates, and the Maasai.

There have been numerous efforts to confer some type of protected status to the Simanjiro plains, probably the most famous of which was Markus Borner's call for parts of Simanjiro to be managed in a similar fashion to the Ngorongoro Conservation Area (Borner 1985), and the latest being a recent attempt to establish a Wildlife Management Area by the government and promoted by the African Wildlife Foundation , but these efforts have all been opposed by many Maasai living in Simanjiro (Benjaminsen et al. 2013).

One exception to this was the establishment of the Simanjiro Conservation Easement in the village of Terrat in 2006. A number of conservation NGOs, tour operators, and lodge owners agreed to contribute approximately $4,500 per year to the village government in exchange for setting aside a section of the plains within the village boundaries (Nelson et al. 2010). The Easement prohibits cultivation and permanent settlement but allows the area to be used for livestock grazing. In 2010 the village of Sukuro also joined the Easement. This attempt to set aside an area for wildlife, especially during the calving season, has been successful to a large extent due to the transparency of the process of distributing funds and maintaining an open area for livestock. However, based on conversations we had with villagers in Terrat, there are factions within the Terrat village government that are challenging the Easement's continuation, and its future remains uncertain.

Methods

We conducted 26 semi-structured group interviews with groups of men and women between January and August 2014. A qualitative approach which is flexible and open to unexpected findings, was appropriate to understanding the nuances of local conceptions of wellbeing as well as the historical, political, and cultural issues shaping these ideas (Woodhouse et al. 2017). These interviews were centered around a series of questions but allowed flexibility in following up answers with further questions and themes that emerged to be explored further in subsequent interviews. Due to the challenges of recruiting participants randomly in a dispersed population, we used local contacts to access participants and to include different age sets, sub-villages, and wealth categories. Because participants were not randomly selected, results cannot be extrapolated to the community as a whole. Validity of the data was supported by establishing trust through long-term fieldwork, sampling a range of people, using culturally appropriate forms of communication (group meetings), and trained and experienced field assistants. In total 76 men were interviewed in 14 groups, and 72 women in 12 groups. McCabe was primarily responsible for the interviews conducted with men and Woodhouse primarily responsible for interviews conducted among the women. Both McCabe and Woodhouse were aided by male and female Maasai assistants.

As mentioned above, one of the principal organizing features among the Maasai is the age-set system, in which men pass through a series of stages from boys, warriors, junior elders, senior elders, and retired elders. There is some overlap between the closing of one age set and the opening of another and in the context of this research the age sets represented were *Esuri* (estimated age 59–78), *Makaa* (48–60), *Landess* (37–50), and *Korianga* (21–35). The newest age set *Nyangulo* had just been opened at the time of the research and was not included in the interviews. Women do not go through the structured age system as the men but are identified as *Endoyie* (unmarried girls), *Siangiki* (married with a few children, approximately 20–32 years old), *Endasati* (married women between 33–49 years of age), and *Koko* (women beyond reproductive years). Women of each status were also included in the interviews.

One of the first challenges was trying to translate the concept of wellbeing into Maa. Early attempts based on what we called a “good life” often produced a wish list that was more aspirational than realistic. We settled on translating a “normal life” (*engishui e kawaida*), which seemed to capture the wellbeing concept fairly well. Group interviews were guided by the following key questions:

- What is important for you to feel that you have a normal life?
- Why is this important?
- How has this aspect of your life changed over the last 10 years?
- Why has it changed?
- Are the changes the same for everyone in the village?
- What threats do you see for the continuation of this aspect of your life?

Insights gained from the qualitative data into locally meaningful concepts of wellbeing informed the design of a survey to further understand patterns of wellbeing and perceived changes through time. The survey sample ($n = 149$), carried out in 2015 after the group interviews were analyzed, and was structured to capture variation in household wealth, sub-village location (i.e., near and far from the village center), and age of the household head, a sample which is part of an ongoing study of land use in the region (McCabe et al. 2014; Baird et al. 2009). We also surveyed 148 women (wives of household heads) within these households. The surveys were piloted and then conducted by a trained team of Maasai field researchers. Descriptive statistics from a preliminary analysis of these data are presented here.

Data analysis of transcripts and notes from the group interviews was guided by the three dimensions of wellbeing but was inductive in that the specific components of wellbeing and the reasons given for their importance emerged from the data through coding carried out by Woodhouse. We tested emerging ideas iteratively, inspecting for recurring instances and differences to ensure comprehensive treatment of the data set (Silverman 2006). The analysis presented here also draws upon ongoing ethnographic fieldwork including participant observation and informal conversations focused on livelihoods and land use carried out over the last 16 years in the study villages by McCabe.

Results for the men

Summaries of the results of the group interviews for percentage of Maasai men reporting on what components (structured in family, land, and livestock) are necessary for a "normal life" (*engishui e kawaida*). Percentages are broken down by age set [*Korianga* (estimated age: 21–35 years; *Landess* (37–50), *Makaa* (48–60), *Esuri* (59–78)] are presented in tables 4.1 and 4.2. We are not including the following components in the tables as all respondents said that these were important to a normal life: livestock,

wives, children, cultivation, having one's own land, and common grazing areas.

Table 4.1 Components of a normal life for Maasai men of different age sets in Simanjiro: family, land, and livestock. Families were considered small if a man said two or one wife, medium if the man said 3 to 5 wives, and large if the man said that 6 or more wives were necessary for a normal life. Land allocations were considered small if they consisted of less than 10 acres; medium if the land allocation was between 11 and 30 acres, and large if the desired land allocation was more than 30 acres. Herds were considered small if cattle numbers were less than 30, medium if between 31 and 50 cattle, and large if the desired herd exceeded 50 cattle. The numbers in parentheses are the number of respondents.

	Korianga (N=25)	Landess (N=27)	Makaa (N=9)	Esuri (N=4)
Small Family	36% (9)	44% (12)	22% (2)	0
Medium family	8% (2)	15% (4)	67% (6)	0
Large family	16% (4)	11% (3)	0	100% (4)
Small land allocation	8% (2)	7% (2)	22& (2)	0
Medium land allocation	40% (10)	19% (5)	11% (1)	0
Large land allocation	0	30% (8)	33% (3)	75% (3)
Small herd	16% (4)	7% (2)	11% (1)	0
Medium herd	8% (2)	30% (8)	0	0
Large herd	20% (5)	37% (10)	44% (4)	50% (2)
Improved breed	12% (3)	11% (3)	0	0

Table 4.2 Components of a normal life for Maasai men of different age sets in Simanjiro: infrastructure and development

	Korianga (N=25)	Landess (N=27)	Makaa (N=9)	Esuri (N=4)
Modern house	36% (9)	59% (16)	33% (3)	0
Motor bike	44% (11)	0	0	0
Services (transportation, shops, clinics etc.)	16% (4)	52% (14)	0	0
Development	24% (6)	7% (2)	0	0

There were clear distinctions among the men according to age sets, but for all the men issues pertaining to land and livestock were paramount. Although the Maasai practice diversified livelihood strategies, livestock – and in particular cattle – are not only a source of food and wealth but are integral to the Maasai sense of identity. Galaty points out the Maasai are "people of the cattle" (Galaty 1982) and this certainly was evident among men from all age sets. Traditionally, wealth among the Maasai was measured by the number of livestock, the number of wives, and especially by the number of children a man had. The older men in this study reflected this conceptualization of what constitutes wealth. Based on discussions that McCabe had on other research projects with younger Maasai men in the Ngorongoro Conservation Area (McCabe et al. 1992; McCabe 2002), it was evident that within Maasai society there were now two different ideas about what constituted wealth. While an older man described himself as wealthy, some younger men viewed the same person as poor. Younger men would commonly say: yes, he (referring to the same older man) does have a lot of cattle, but if you divide the number of cattle he has by the number of wives and children, you can see that he is actually poor. Although this sentiment was not explicitly expressed in this study, most young men (*Landis* and *Korianga* age sets) said that they wanted fewer cattle, fewer wives, and fewer children (Table 4.1). It is now considered normal to have two wives, each expected to have four or five children. Older men also felt that the zebu breed of cattle was fine, but for younger men cattle breeds such as Boran and Sahiwal were preferable. Both of these latter breeds are larger and produce more milk and meat per animal than zebu cattle allowing fewer animals to be kept, but may be more vulnerable to stress during drought years.

Land was also a concern for all men in the study, but again older men and younger men differed in what they saw as the amount of private land necessary for wellbeing. Older men stressed the need for large areas set aside for communal grazing, although they also recognized the importance of individual plots for houses and areas for sick animals and calves. Younger men had some of the same concerns, but priorities were reversed. Privately held land was considered extremely important for housing, cultivation, and for sick animals and calves. However, younger men did agree with the older men that communal grazing was also important. In arid and semi-arid lands precipitation is highly variable, both spatially and temporally, and all men agreed that in any one year parts of a village may receive adequate rainfall while other areas within the same village may not. The need to be able to move livestock from privately held plots to common grazing areas was therefore considered extremely important.

It has been evident for some time that Maasai society has been transitioning from a more cooperative form of social organization in which many families lived together within a compound and shared herding responsibilities and sometimes food, to a more individualized form of social organization in which it is not uncommon for an *enkan* to consist of a single family and its livestock (McCabe et al. 2010). The emphasis on private land allocations among younger men in this study was reflective of this transition.

In terms of wellbeing, older men stressed the importance of being able to help others, while younger men expressed having enough resources to have control of their own lives, and this related to both land and livestock. Education of children was also an issue agreed to as important for all men, but more so among the younger men, and that included the education of girls. The maintenance of tradition was also viewed as important especially by the older men, while the younger men felt that traditions were important but if there was some loss of traditions because children were being educated, then the tradeoff was worth it. A modern concrete house is increasingly important across age sets. Younger men in particular recognized the importance of being close to services such as education, water sources, and veterinary care, and were the only ones to specifically mention the concept of ‘development’ (Table 4.2). ‘Development’ includes things like a modern house and increased services, but also refers to being a modern Tanzanian.

One issue that was expressed by men of all age sets, and which was surprising to us, was an emphasis on having unity (*enaiboshu*) within the village. This is especially related to the Maasai tradition of mutual assistance including the practice of restocking poorer households with livestock

within clans (*ewoloto*), but was also raised in relation to the importance of intrahousehold harmony particularly by women (see below). Arguments within households can be among wives; between wives and the husband over the education of children, or the allocation of resources; and between sons and their fathers over the allocation of livestock, and the desire for sons to establish their own households. Disputes over the boundaries of land allocations often result in conflict among households and disputes over village boundaries often cause conflict between and among villages. The survey results showed that 54% of women and 76% of men were of the opinion that unity had worsened within their village and between villages respectively, largely attributed to party politics and land issues. Indeed, village-level politics were discussed by men as the major cause of conflict within villages. This often related to national-level politics as the party which has ruled Tanzania since independence, Chama Cha Mapinduzi (CCM), was being challenged by a newly formed party, Chama cha Demokrasia na Maendeleo (Chadema). It was sometimes expressed that in the past it was easy to call for a village meeting when necessary, but now if a village leader calls for a meeting and he is a member of one party, villagers who are members of the opposing party will not attend.

Another issue that was strongly expressed relating to a lack of harmony at the village level, was a strong distrust of external actors who can take advantage of weak and corrupt leaders. This almost always concerned issues relating to land, and in some ways goes all the way back to the formation of Tarangire National Park. Stories about a local leader who put his thumb print on a document in 1970 that ceded land that the Maasai considered theirs is well known to Maasai living in Simanjiro today, and fuels suspicion about leaders giving away or selling land to conservation interests or private investors. This distrust is not without merit. A few years ago a local leader in Emboreet illegally sold 6,000 acres to outsiders without approval of the village government, and court cases trying to resolve disputes arising from this illegal sale are ongoing. Our survey data of Maasai men corroborate the expressions of distrust in our qualitative interviews. Although people generally expressed support of local leaders, there was a concern that corruption posed a threat to wellbeing and there are high levels of distrust for external organizations, especially private investors, tourist companies, and conservation organizations, but with the exception of development organizations (Table 4.3). Concerns were particularly raised about the establishment of a Wildlife Management Area (WMA) in Simanjiro, or selling land to private investors, both of which everyone we talked to opposed. During the time of our interviews, WMAs were generally viewed negatively due to their alignment with conservation priorities and organizations, and some people had heard other's experiences (but see **Raycraft**

Chap. 6 for more recent attitudes about Randilen WMA in this region). For example, we talked to a number of people in the village of Lobor Soit who were taken to visit the Burunge WMA to see how that WMA worked. Lobor Soit has already previously made agreements with tour companies and joining a WMA was viewed as risking the dilution of revenue. This would put villagers in Lobor Soit in a similar position as those in the village of Minjingu, who have been attempting remove themselves from the Burunge WMA for many years (Bluwstein et al. 2016**)**.

Table 4.3 Responses by Masaai men to the statement: I trust what people from the *following organizations* tell me about land issues

	Don't know them	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Leaders (N=145)		5	5		118	17
Conservation NGOs (N=144)	20	14	91	4	13	2
National Park officials (N=145)	19	17	94	5	10	0
Development NGOs (N=145)	0	10	46	1	81	7
Private investors (N=144)	16	12	102	4	7	3
Photographic tourist companies (N=144)	20	3	83	3	30	5
Hunting tourist companies (N=144)	19	5	92	2	24	2

Based on previous research we knew that men were worried about TNP expanding into the villages in our study area (Baird et al. 2009), and there was concern about the establishment of wildlife corridors connecting TNP

to the Simanjiro plains. Despite these concerns there was almost universal support for the Simanjiro Wildlife Easement, with protection of grazing land rather than funds given as the most important benefit by 86% of men in Terrat and Sukuro (n=72). This suggests that if trust is established in creating a protected area, with tangible valued benefits provided, then initial suspicion concerning the motivations of the actors involved can be overcome (Davis and Goldman 2017, **Raycraft** Chap. 6).

Results for women

One of the striking differences between responses of men and women concerning what constitutes wellbeing was that there was consistency of responses across all age groups for women. Many aspects of having a good life were shared by both women and men, but in many cases, it was the relational aspects of a good life that were emphasized by women (36 separate instances where this was raised compared with 17 for men). Because women are primarily responsible for the care of children, having enough livestock was seen as important in order to provide milk for children. Cultivation was seen as important for the same reasons—to provide food security so that the children would not go hungry. Cultivation was also seen as a source of income when money was needed for hospital costs, school fees, clothes, etc.

Children were seen as important, not as a component of wealth, but because women desired to live close to their children and sons and daughters are a critical component of their social lives. Having a son was important because when women pass their reproductive years, they often will leave the household of their husband to move to the household of their eldest son. Although the government of Tanzania has passed laws saying that inheritance should be shared equally between women and men, among the Maasai women will rarely, if ever, inherit livestock when a man dies and thus, they are dependent on sons following the death of their husband.

Women were also concerned about losing land to outsiders, and often stated that outsiders could not be trusted. There was less concern about losing land to conservation than to “unscrupulous” or “clever” people. Like with the men, the education of children was important and like with the men education was seen as important in securing land rights. Many expressed vulnerability in relation to external actors due to their lack of formal education and their inability to read. They were suspicious when asked to approve or sign documents that they do not understand, and they felt

that the education of their children will prevent them from being exploited by more educated members of other ethnic groups who can "steal our land by the pen". There was more emphasis among the women for the education of girls than among the men. Both men and women felt that defending their rights to land will fall to their educated children. A Maasai friend of McCabe once told him that education is now "the tip of the spear" in defending land rights.

Unity was also a component of having a good life for women, but for women the emphasis was harmony within the household. This was true for the relationship of wives to their husband, but also among the wives in a single household. First wives tend to have more authority and access to resources than other wives, but a husband can also have a favorite wife who may not be the first wife. The difference in status among wives can cause conflict within the household, and this is much more of a concern among the women than among the men. Conflict within the village was also a concern, but primarily as it impacts dynamics within the household.

Women also emphasized the importance of being listened to and having their opinion respected concerning household decisions. Coupled with this was having some degree of economic independence and a focus on money which was not present in discussions with men about wellbeing. A number of NGOs and church groups have facilitated "merry go round" activities among women's groups where a number of women contribute money to the group who then give this money to one of the group's members, often used to buy livestock, that would be her own property. The next round would go to another woman in the group allowing all the women to have access to resources that were independent of the husband. Although there is little written on this for Maasai of Tanzania, Taeko discusses the success of this practice among Maasai women in Kenya (Taeko 2019) and economic schemes have been shown as one route towards empowerment for Tanzanian Maasai (Goldman and Little 2015).

One of the major differences between women and men was their attitudes towards the Church and Maasai traditions. Although there are many different denominations among the churches in Simanjiro, all are Christian. Men, unlike women, voiced concerns about Church leaders preaching about equality between men and women. Dorothy Hodgson has written on the particularly powerful relationship between the Church and Maasai women and its role in the negotiation of gender (Hodgson 2005). Some traditional aspects of Maasai life, such as the importance of *laibons* (spiritual leaders) has been undermined by church leaders, and many women agreed that these aspects of Maasai traditional life are outdated, perhaps reflecting

that *laibons* have historically been aligned with men as ritual leaders of cattle raids and spiritual advisors of elders (Hodgson 2005). Other Maasai traditions remained highly valued, especially those designed to share resources and help those in need.

Threats to wellbeing and changes of the last 10 years

The majority of men (75%) and women (67%) expressed the view that their access to grazing land had worsened in the last 10 years. Two factors stand out as major causes for the loss of grazing land: the expansion of cultivation, and the shifting of village boundaries (Table 4.4). A minority also attribute change to private investors and the Tanzania National Park Authority (TANAPA).

Table 4.4 Maasai men's responses to the question 'Which groups or issues contributed to the worsening of access to communal grazing land?' (question only asked if they had answered that land access had worsened)

	Number of respondents (N=112)	% of respondents
Boundary changes	95	85
Agriculture	58	52
Private investors	49	44
TANAPA	22	20
Local government	7	6
Photographic tourism	4	4
Hunting tourism	3	3
National government	3	3

As previously mentioned, when a village exceeds approximately 5,000 residents a process of dividing the village into two separate villages is initiated, and as village boundaries become barriers to the free movement of livestock, people have to rely on grazing resources within the village. In addition, there are frequently disputes between and among villages concerning where the boundaries should be following village division. Large areas for grazing become divided and as the human population grows there is more pressure to allocate land to individuals. As discussed earlier the younger generation of men highly value individual land allocations and there is increasing pressure on village leaders to grant land allocations as young men move from warriors to junior elders.

Conversion of land to agriculture and the leasing of land in Simanjiro has been shown to be influenced by proximity to TNP because of perceived threats of park expansion (Sachedina 2008; Baird et al. 2009), a concern we heard raised in these park-adjacent villages. A large percentage of men (73%) view loss of grazing land as a continuing threat, and worry that there will be further losses in the next 10 years. A sense of security for the future, especially with regard to land, is fundamental to wellbeing in Simanjiro and drives people's actions.

Villages, however, are not helpless and efforts are underway to help preserve the rangelands from further fragmentation. The Simanjiro Wildlife Easement is one example. Another is the granting of Certificates of Customary Rights of Occupancy (CCROs), which formalizes customary land tenure registered by the national government. In Simanjiro, this means setting aside land for livestock and wildlife, by preventing cultivation or settlement. Organizations such as the Ujamaa Community Resource Team (UCRT), the Dorobo Fund, and the Northern Tanzania Rangeland Initiative have been particularly influential in helping villages with the establishment of CCROs. Once established, village leaders are able to resist pressure, both internally and externally, to further divide land.

One of the major obstacles to overcome in setting aside communal land is the lack of trust among the Maasai of Simanjiro towards private investors and many NGOs, in particular conservation-oriented NGOs. There is also a notable lack of trust towards the federal government. Davis (2011) has written about how the TANAPA "Good Neighborliness" (*Ujirani Mwema*) initiative, which aimed to reduce animosity by providing social services to villages, has not been as successful as envisioned in communities adjacent to TNP as the lack of access to resources and perceived threat of TNP expansion counteracts any positive benefits. The perceived lack of willingness on the part of TNP to allow limited grazing within park boundaries during times of drought contributes to the lack of trust between TANAPA and Maasai communities. This was particularly evident during the 2008–2009 drought when thousands, perhaps tens of thousands, of cattle had migrated just to the east of the TNP border. The only grazing available was located inside the park, but was inaccessible to the cattle, many of which died just outside the park boundary. Although this is the law of Tanzania, for the Maasai the relationship is between "neighbors", one of which is TNP.

What is unusual here is that the organizations that worked on the Easement and CCROs have achieved a level of trust that is not shared by some of the other NGOs or TANAPA representatives in this region. The establishment

of the Simanjiro Wildlife Easement was initially accepted because the arrangement was presented to village leaders in Terrat by representatives from UCRT, one of the few NGOs that had gained trust from the communities because of years of work and the fact that UCRT was considered an honest broker. As an important relational aspect of wellbeing one should not underemphasize the importance of trust in establishing relationships among conservation organizations and local communities, something that is broadly recognized as a key enabler in the collaborative and adaptive governance of ecosystems (e.g. Hahn et al. 2006).

Men and women both agreed that small motorcycles (*piki piki*) and cell phones have made great improvements in the lives of people living in Simanjiro and contribute to their sense of wellbeing. Much of the positive impact of both motorcycles and cell phones were mentioned in relationship to health. Instead of remote households being isolated, far from health clinics and hospitals, a motorcycle and driver can be called, and a sick or injured person transported to a health facility in a matter of hours rather than days. Cell phones are widely used to transfer money, collect information about agricultural activities and grazing conditions, and to both strengthen and expand social networks (Quandt et al. 2020; Summers et al. 2020). Our surveys also suggest that people see improvements to services over the last 10 years, in particular water access (80% of men), healthcare (73%), and education (65%). Respondents were largely satisfied with access to services, highlighting that the access to valued services that comes with a more sedentary life is increasingly desirable.

Discussion

What does this mean for Tarangire?

Because many wildlife species migrate from TNP to the east into the Simanjiro plains during the wet season, what happens to the people and their livestock living there, and the extent of their cultivation, is of direct relevance to the sustainability of wildlife in TNP. It is not just numbers of people and livestock, or acres cultivated, but also the aspirations of people and what they find important to their lives. In looking at the results of the wellbeing study, it is apparent that some of the goals of wildlife conservationists and those aspects of Maasai conceptualizations of wellbeing overlap. This is especially true with the preservation of large areas of communal grazing land. The establishment of CCROs and the Simanjiro

Conservation Easement are examples of how these components of Maasai wellbeing have been aligned with conservation in practice. These areas are shared by livestock and wildlife and can been seen as win-win scenarios for wildlife conservation and what contributes to a “good life” for the Maasai. Leaders and village councils in Terrat and Sukuro were not forced into implementing these land-use arrangements but were willing participants in the negotiations that resulted in the land being set aside, so that further fragmentation of the rangelands was prevented. In addition, among younger men, the desire for smaller families, and smaller but more productive herds is also consistent with conservation goals in Simanjiro.

On the other hand, some aspects of Maasai wellbeing are not consistent with conservation goals. One message that Maasai discussed as being promoted by conservationists is that people should depend on their livestock and revenues from tourism as their primary livelihood strategies and abandon cultivation. A frequent response to this message was: ‘they want us to be like our grandfathers’. Cultivation is now a key component to Maasai wellbeing across all segments of Maasai society in Simanjiro, and revenue from tourism is often captured by village elites. Advocating for reduced dependence on cultivation, without viable alternatives for subsistence needs and equitable income generation, will likely not be acceptable to many people and is inconsistent with the Maasai ideas of what having a good life means.

Conservationists should also be cognizant of the importance of both trust and social unity to the Maasai of Simanjiro. Many Maasai are aware that TNP does have programs that help in village development, but local people rarely view these projects as having relevance to their lives. Mistrust of conservation is rooted in historical land and resource alienation, as well as continuing perceived threats by a range of external actors. Many Maasai also are aware that revenue is being generated by tourist-related activities but the Maasai themselves rarely see any of these funds. In talking to a lodge owner a number of years ago McCabe was told: “I give 10% of bed night revenues to the village leaders, what happens then is up to them”. We understand that it is not the responsibility of lodge owners to oversee the distribution of benefits so that they are distributed equally and transparently, but the lack of transparency on the part of the village leaders contributes to the lack of trust and the erosion of harmonious relationships. The results of the wellbeing study articulate well with a previous study on Maasai perceptions and the influence on TNP. In a study conducted by McCabe and colleagues conducted in 2004 and 2005, 240 household surveys were conducted in eight villages in Simanjiro; four were adjacent or close to TNP and four were far away from the park (80–115 km). The four

villages close to the park were the same as those in the wellbeing study. The objective of that research was to examine how Maasai perceived risk and what could be done to mitigate the risk (Baird et al. 2009). For the villages located close to the park the risks that were considered of both high incidence and high severity were human disease, livestock disease, drought and conservation (risk that the park will expand or conservation policies will limit land use). Wildlife predation on crops and livestock were considered as high incidence risks but less severe. In the villages located far away from the park, water, hospital health services, and human disease were risks listed as both of high incidence and high severity. Wildlife-related risks were not mentioned in the distant villages. Ways to mitigate risks in the villages closer to TNP included increased leasing of the land to help secure land tenure, and planting of crops in a way that would inhibit the migration of wildlife directly into the Simanjiro plains and push the migration routes further to the south. In this way, ideas of risk and efforts to improve security are negatively impacting wildlife conservation but are partly driven by the impacts of conservation itself, highlighting that future interventions will need to reduce human-wildlife conflict, increase land security, and establish trust in conservation processes and institutions.

The larger picture

Protected areas are critical components of various attempts to stem the loss of biological diversity (Gray et al. 2016). However, there is increasing acceptance that for conservation to be sustainable and just, local communities must be more involved. Aichi target 11 of the Convention on Biological Diversity stresses that protected areas should be effectively and equitably managed. Equity in this sense refers to a fair distribution of cost and benefits to wellbeing, participation in decision-making, and the recognition of social and cultural differences (Schlosberg 2013). Although the situation is not yet irretrievable the world may be experiencing the sixth major extinction episode. As Sir Robert Watson, the chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystems Services (IPBES) stated in a recent media release: "The overwhelming evidence of the IPBES Global Assessment, from a wide range of different fields of knowledge, presents an ominous picture. The health of ecosystems on which we and all other species depend is deteriorating more rapidly than ever. We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide."

The need for preserving current levels of biodiversity cannot be overstated, and protected areas are critical to achieving this goal. In this chapter we emphasize that to ensure the ecological sustainability of TNP, we need to understand the wellbeing and aspirations of the communities in the wildlife migration/dispersal area of Simanjiro and work to achieve equitable approaches to conservation in this area.

References

Agrawal Arun, and Gibson Clark (1999). Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. World Development Vol. 27, Issue 4: 629-649

Baird Timothy, Leslie Paul, McCabe J. Terrence (2009).: The Effect of Conservation on Local Perceptions of Risk and Behavioral Response. Human Ecology Vol 37 #4: 463-474.

Benjaminsen, T. A., Goldman, M. J., Minwary, M. Y., & Maganga, F. P. (2013). Wildlife Management in Tanzania: State Control, Rent Seeking and Community Resistance. *Development and Change*, *44*(5), 1087–1109. https://doi.org/10.1111/dech.12055

Bluwstein, J., Moyo, F., & Kicheleri, R. (2016). Austere conservation: understanding conflicts over resource governance in tanzanian wildlife management areas. *Conservation and Society*, *14*(3), 218. https://doi.org/10.4103/0972-4923.191156

Borner Markus. (1985). The increasing isolation of Tarangire Nations Park. Oryx Vol 19. No 2: 91-96

BurnSilver Shauna B. (2007). "Pathways of continuity and change: Diversification, intensification and mobility in Maasailand, Kenya." Pp. xv, 299
Colorado State University.

Chaigneau, T., & Brown, K. (2016). Challenging the win-win discourse on conservation and development: analyzing support for marine protected areas. *Ecology and Society*, *21*(1), art36. https://doi.org/10.5751/ES-08204-210136

Coulthard, S., Johnson, D., & McGregor, J. A. (2011). Poverty, sustainability and human wellbeing: A social wellbeing approach to the global fisheries crisis. *Global Environmental Change*, *21*(2), 453–463. https://doi.org/10.1016/j.gloenvcha.2011.01.003

Davis, Alicia (2011) Ha! What is the Benefit of living Next to the Park? Factors Limiting In migration Next to Tarangire National Park, Tanzania. Conservation and Society. Vol.9, No.1: 25-34

Davis, A., & Goldman, M. (2019). Beyond payments for ecosystem services: Considerations of trust, livelihoods and tenure security in community-based conservation projects. *Oryx, 53*(3), 491-496. doi:10.1017/S0030605317000898

Daw, T., Brown, K., Rosendo, S., & Pomeroy, R. (2011). Applying the ecosystem services concept to poverty alleviation: the need to disaggregate human wellbeing. *Environmental Conservation*, *38*(04), 370–379. https://doi.org/10.1017/S0376892911000506

Galaty John (1982). Being Maasai; being “people of the cattle”; ethnic shifters in East Africa. American Ethnologist. Vol.9, Issue 1: 1-20

Galvin Kathleen A., Reid Robin S., Behnke Roy H. And Hobbs Thompson N. (Eds.). 2008. Fragmentation in semi-arid and arid landscapes: Consequences for human and natural landscapes. Dordrecht, the Netherlands: Springer**.**

Galvin, Kathleen A. (2009). Transitions: Pastoralists living with change. Annual Review of Anthropology, 38, 185-198.

Goldman Mara J. (2011). Strangers in their own land: Maasai and wildlife conservation in Northern Tanzania. Conservation and Society 9(1):65-79.

Goldman Mara J., and Riosmena Fernando. (2013). Adaptive capacity in Tanzanian

Maasailand: Changing strategies to cope with drought in fragmented landscapes. Global Environmental Change 23(3):588-97.

Goldman, M. J., & Little, J. S. (2015). Innovative Grassroots NGOS and the Complex Processes of Women's Empowerment: An Empirical Investigation from Northern Tanzania. *World Development*, *66*, 762–777. https://doi.org/10.1016/j.worlddev.2014.09.005

Gray, C. L., Hill, S. L. L., Newbold, T., Hudson, L. N., Boïrger, L., Contu, S., … Scharlemann, J. P. W. (2016). Local biodiversity is higher inside than outside terrestrial protected areas worldwide. *Nature Communications*, *7*(1), 1–7. https://doi.org/10.1038/ncomms12306

Gurney, G. G., Cinner, J., Ban, N. C., Pressey, R. L., Pollnac, R., Campbell, S. J., … Setiawan, F. (2014). Poverty and protected areas: An evaluation of a marine integrated conservation and development project in Indonesia. *Global Environmental Change*, *26*, 98–107. https://doi.org/10.1016/j.gloenvcha.2014.04.003

Hahn, T., Olsson, P., Folke, C., & Johansson, K. (2006). Trust-building, Knowledge Generation and Organizational Innovations: The Role of a Bridging Organization for Adaptive Comanagement of a Wetland Landscape around Kristianstad, Sweden. *Human Ecol*ogy, 34, 573–592. https://doi.org/10.1007/s10745-006-9035-z

Hodgson, Dorothy (2005) The Church of Women: Gendered Encounters between Maasai and Missionaries Bloomington: University of Indiana Press

Homewood Katherine and Rodgers Alan (1991). Maasailand ecology: pastoralist development and wildlife conservation in Ngorongoro, Tanzania. Cambridge England ; New York: Cambridge University Press.

Homewood, Katherine (2008). Ecology of African pastoralist societies. Oxford: James Currey.

Homewood Katherine, Patricia Kristjanson, and Pippa Trench (Eds.). (2009). Staying Maasai? Livelihoods, conservation, and development in East African rangelands. New York: Springer.

Kahurananga James and Silkiluwasha Frank (1997). The migration of zebra and wildebeest between Tranagire National Park and Simajiro Plains, northern Tanzania, in 1972 and recent trends. African Journal of Ecology 35 (3): 179-185)

Leslie, Paul, and J. Terrence McCabe. (2013) Response diversity and resilience in social-ecological systems*.* Current Anthropology 54(2):114-43.

Little Peter, Smith Kevin, Cellarius, Coppock D. Layne, Barrett Christopher. (2001). Avoiding Disaster: Diversification and Risk Management among East Africa Herders. Development and Change Vol.32: 401-433

Loveridge, Robin, Sallu, Susannah m., Pesha, Ignatus J., Marshall, Andrew R. (2020). Measuring human wellbeing: A protocol for selecting local indicators. Environmental Science and Policy 114: 461-469

McCabe, J. Terrence, Perkin, S. and C. Schofield. (1992). "Can Conservation and Development be Coupled among Pastoral People: The Maasai of the Ngorongoro Conservation Area, Tanzania." Human Organization - Vol. 51, #4, pp. 353 – 366

McCabe, J. Terrence. (2002). Conservation with a Human Face? Lessons from 40 years of Combining Conservation and Development in the Ngorongoro Conservation Area, Tanzania. In: Displacement, Forced Settlement and Conservation. Dawn Chatty ed. Oxford: Berghahn Books pp.61-76

McCabe, J. Terrence, Paul W. Leslie, and Laura DeLuca. 2010. Adopting cultivation to remain pastoralists: The diversification of Maasai livelihoods in northern Tanzania. Human Ecology 38(3):321-34.

McCabe, J. Terrence. Smith, Nicole. Leslie, Paul. Telligman, Amy. (2014). Livelihood Diversification through Migration among a Pastoral People: Contrasting Case Studies of Maasai in Northern Tanzania. Human Organization. Vol.73, # 4: 389-400

McCabe J. Terrence, Leslie Paul, Davis Alicia. (2020). The Emergence of the Village and the Transformation of Traditional Institutions: A Case Study from Northern Tanzania. Human Organization: Volume 79, Issue 2150-160

McGregor,J.A. (2007). Researching wellbeing: from concepts to methodology. In: Wellbeing in developing countries: from theory to research. Gough I. and McGregor J.A. eds. Cambridge: Cambridge University Press.: 316-350

McGregor, J.A. and Sumner (2010). Beyond business as usual: what might 3-D wellbeing to MDG momentum. IDS Bulletin 41 (1): 104-112

Nelson, F., Foley, C., Foley, L. S., Leposo, A., Loure, E., Peterson, D., … Williams, A. (2010). Payments for ecosystem services as a framework for community-based conservation in northern Tanzania. *Conservation Biology: The Journal of the Society for Conservation Biology*, *24*(1), 78–85. https://doi.org/10.1111/j.1523-1739.2009.01393.x

Olson, D. M. and Dinerstein, E. (1998). The Global 200. A representation approach to conserving the Earth's most biologically valuable ecoregions. Conservation Biology. 12 (3): 502515

O'Malley, M. Elizabeth. (2000). Cattle and Cultivation: Changing Land Use and Labor Patterns in Pastoral Maasai Livelihoods, Loliondo Division, Ngorongoro District, Tanzania. Ph.D. dissertation University of Colorado Boulder

Reid Robin Spencer. (2012). Savannas of our birth: people, wildlife, and change in East Africa. Berkeley: University of California Press.

Sachedina Hassa,and Trench Pippa Chenevix. (2009). "Cattle and crops, tourism and Tanzanite: Poverty, land-use change and conservation in Simanjiro District, Tanzania." Pp. 263-98 In Staying Maasai?: Livelihoods, conservation, and development in East African rangelands, edited by Katherine Homewood, Patricia Kristjanson, and Pippa Trench. New York: Springer.

Schlosberg D. 2013. Theorizing environmental justice: the expanding sphere of a discourse. Environmental politics 22 37-55

Silverman, D. 2006. *Interpreting qualitative data: methods for analyzing talk, text, and interaction*. Sage, London, UK.

Smith Nicole M. (2012). Maasai and the Tanzanite Trade: New Facets of Livelihood Diversification in Northern Tanzania. Ph.D. Dissertation, University of Colorado at Boulder.

Summers, Kelly; Baird, Timothy:Woodhouse, Emily; Christie, Marie Elisa; McCabe, J. Terrence; Terta, Felista; Peter, Naomi (2020). Mobile phones and women's empowerment in Maasai communities: How men shape women's social relations and access to phones. Journal of Rural Studies. Vol.77:126-137.

Quandt Amy, Salerno Jonathan Neff, Jason, Baird Timothy, Herrick Jeffrey, McCabe J. Terrence, Xu Emilie, Harter, Joel (2020) Mobile phone use as associated with smallholder agricultural productivity in Tanzania, East Africa. PloS One August: 1-16

Takayanagi Taeko (2019> Listen to the Voices of Maasai women in Kenya: Ensuring the Wellbeing of their Families through Collective Action. International Journal of African Development v.5. no 2:37-52

West, Paige (2006). Conservation is Our Government Now: The Politics of Ecology in Papua New Guinea. Durham. Duke University Press

Woodhouse E., Homewood K.M., Beauchamp E., Clements T., McCabe J.T., Wilkie D., and Milner-Gulland E.J. (2015). Guiding principles for evaluating the impacts of conservation interventions on human wellbeing. Philosophical Transactions of the Royal Society of London B 370 (1681):20150103

Woodhouse, E, Bedelian, C., Dawson, N., & Barnes, P. (2018). Social impacts of protected areas: Exploring evidence of trade-offs and synergies. In K Schreckenberg, G. Mace, & M. Poudyal (Eds.), *Ecosystem Services and Poverty Alleviation: Trade-Offs and Governance* (pp. 243–256). London: Routledge. Retrieved from https://doi.org/10.4324/9780429507090

Woodhouse Emily, and McCabe J. Terrence (2018). Wellbeing and Conservation: Diversity and Change in Visions of a Good Life among the Maasai of Northern Tanzania. Ecology and Society 23(1):43.