

Conservation, tourism and pastoral livelihoods:  
Wildlife conservancies in the Maasai Mara, Kenya

Claire Bedelian

University College London

PhD Thesis

2014

'I, Claire Bedelian, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.'

.....

## **Abstract**

The pastoral rangelands of the Mara in Kenya have been a hotspot of evolving conservation and development initiatives. However, these initiatives have tended not to produce positive outcomes for either people or wildlife. At the same time, pastoral policies have promoted the privatisation of rangelands, subdividing the land to individual ownership. Within this backdrop, a number of wildlife conservancies have been recently set up where tourism investors pay Maasai landowners to vacate their land of settlements and livestock. As market-driven approaches that have profound impacts on the way land is viewed, used and managed in the Mara, this thesis situates itself within the growing body of literature on neoliberal conservation. The study takes a mixed methods approach to evaluate these initiatives for pastoral livelihoods and the environment. Using a political ecology lens it analyses the nature of the partnership between the tourism investors and Maasai landowners and the levels of participation and power between different actors. It investigates the contribution of wildlife conservancies to pastoral livelihoods, and uses evaluation techniques to assess the impact of participation in conservancies on pastoral livelihoods. It also examines the resultant settlement and livestock grazing displacement and the implications this has for livelihoods and the wider landscape. The thesis finds that conservancies can contribute large incomes from tourism to participating households. However, this is not more than the contribution of livestock, meaning that conservancy land use restrictions create considerable trade-offs for livestock-based livelihoods. Also, since payments are based on land ownership, and a previously inequitable system of land distribution, there are considerable inequity implications of such schemes as poor and marginalised groups tend to be left out. Furthermore, although conservancies are positive in keeping the range open for wildlife inside of conservancies, this must be considered in light of the displacement effects to non-conservancy areas.

## Acknowledgements

I am extremely grateful to my supervisor, Katherine Homewood. Thank you for your intellectual calm guidance, your insightful comments, and amazing speed at always getting back to me. Being part of the Human Ecology Research Group was really useful for learning broadly about Human Ecology research issues and ideas from all parts of the world. Thanks to the group for the constructive feedback and comments whenever I presented my work. Thanks also to Sara Randall and Phil Burnham for earlier comments and input during the upgrade stage of the thesis. I would also like to thank Aidan Keane for very helpful comments on using evaluation techniques.

My PhD studentship, field work expenses and language training was provided through a NERC/ESRC PhD studentship. Additional funding was provided by The Parkes Foundation, the UCL Graduate School, and the Land Deal Politics Initiative. I am grateful to the Directorate of Resource Surveys and Remote Sensing (DRSRS) in Kenya for use of their livestock data, and to Planet Action for the SPOT 5 satellite images.

In Kenya, I would like to thank the Government of Kenya for giving me permission to conduct my research in Kenya, and the Narok County Council and the different Mara Conservancies for allowing me to carry out my research in the Mara. I would like to thank the International Livestock Research Institute (ILRI) for providing institutional and intellectual support. Within ILRI, many thanks to Mohammed Said, Joseph Ogutu, Jan de Leeuw, Jeff Worden, Mario Herrero, Polly Ericksen and Philip Osano for stimulating discussions at different stages of my work. I would especially like to thank Joseph Ogutu for his methodological and statistical guidance and incisive comments at various points along the course of the PhD. Thanks to Nicholas Ndiwa and Jane Poole, for help on stats when needed. Also to Shem Kifugo; I really appreciate all the help as I learnt more about GIS. I would also like to thank Zipporah Musyimi for working with me on the identification of settlements. Lastly, thanks to Mats Lannerstad for the cuppas, cookies and air in the final stages, and making sure I stayed on track.

To everyone in the Mara, this research wouldn't have been possible without your help, time and support. Thank you for inviting me into your homes, for the sweet milky teas, and patience to talk with me. Thanks to Daniel Naurori for excellent research assistance and guiding me around the Mara. Thanks to James Kaigil, Dickson Kaelo and Rob O' Meara for repeated visits and also being a wealth of information. I would like to thank my research assistants, Philip, John, Peter, Ntimama, Keswe, and Josephat. Also thanks to Chris Parsitau for your meticulous translation and for helping me learn Maa. I am indebted to Vivian and Lucy for helping me look after Anabelle, and everyone at Aruba for being so friendly and welcoming. Thanks to all our wider Maasai friends and colleagues too numerous to mention here; thank you for always welcoming us to the Mara, for organising our Maasai wedding, and for all the help and support along the way. Ashe Oleng.

Lastly, I would like to thank my family and friends for all the encouragement and support over the last few years. To Anabelle, Oliver and Emily, who were all born within the time of this PhD, you greatly enriched the PhD journey, as you have our lives in so many wonderful ways. Anabelle, I'll fondly remember the time we spent together in the field. To Oliver and Emily, you joined for the less fun parts of data analysis and writing up; sorry for the crazy work schedule close to the end. Finally, thanks to Matt for all the love and support, in so many ways over the last few years, and especially in the last couple of intense writing months for taking the kids out and giving me time and space to finish.

## Table of Contents

Chapter 1 Introduction.....	13
1.1 Changing narratives of conservation .....	14
1.1.1 Fortress conservation.....	14
1.1.2 Community conservation .....	15
1.1.3 Back to the barriers.....	17
1.1.4 Neoliberal conservation.....	18
1.1.5 Changing and overlapping conservation narratives.....	22
1.2 Neoliberal conservation approaches .....	23
1.2.1 (Eco)Tourism .....	23
1.2.2 Payments for ecosystem services (PES) .....	27
1.2.3 Private sector-led conservation .....	32
1.3 Pastoralism, livelihoods and conservation.....	36
1.3.1 View that pastoralism is an unproductive, degrading land use .....	37
1.3.2 Pastoral alienation in favour of competing land uses.....	39
1.3.3 Pastoralist livelihoods and the need to diversify .....	40
1.4 Tourism, conservancies and wildlife in Kenya .....	42
1.5 Research questions and thesis structure .....	44
Chapter 2 Study Area .....	47
2.1 Introduction .....	47
2.2 The Maasai .....	47
2.3 Maasailand .....	48
2.3.1 Privatisation .....	50
2.3.2 Subdivision .....	51
2.4 The Mara .....	53
2.4.1 The Maasai Mara National Reserve (MMNR) .....	55
2.4.2 Land privatisation in the Mara .....	55
2.4.3 Impacts of privatisation on settlements and land sales .....	58
2.4.4 Agriculture expansion and contraction.....	59
2.4.5 Livestock.....	62
2.4.6 Wildlife .....	64
2.5 History of community-based conservation initiatives in the Mara .....	66
2.5.1 19% gate fees to the Group Ranches .....	67
2.5.2 Wildlife associations.....	67

2.5.3 The Mara Triangle .....	69
2.5.4 Low and declining wildlife incomes to the community .....	69
2.5.5 New models of conservation in the Mara – Conservancies.....	71
Chapter 3 Methods .....	72
3.1 Introduction .....	72
3.2 Selection of study sites.....	72
3.3 Research approach.....	73
3.4 Carrying out the field work .....	75
3.4.1 Research permissions.....	75
3.4.2 Researcher position .....	75
3.4.3 Ethics .....	77
3.5 Research methods.....	77
3.5.1 Household questionnaire.....	78
3.5.2 Semi-structured interviews.....	83
3.5.3 Participant observation and unstructured data collection .....	85
3.5.4 Methods described in other chapters.....	86
Chapter 4 Partnership, participation and power in conservancies.....	88
4.1 Introduction .....	88
4.1.1 Partnerships .....	88
4.1.2 Participation .....	89
4.1.3 Research Questions.....	90
4.2 Analytical framework .....	91
4.2.1 History of local management .....	91
4.2.2 Meaningful Participation.....	91
4.2.3 Political ecology analysis.....	94
4.3 Methods .....	95
4.4 The beginnings of a new tourism model.....	96
4.4.1 Community perceptions on why the conservancies were set-up.....	101
4.4.2 What motivated people to join a conservancy? .....	103
4.5 The landowner-tourism investor partnership.....	106
4.6 Participation .....	109
4.6.1 Degree of local collective action .....	109
4.6.2 Descriptions of power wielded at the local level.....	114
4.6.3 Local managers’ accountability relations.....	119

4.7 Political ecology analysis of different interests.....	122
Chapter 5 The costs and benefit of conservancies to pastoral livelihoods.....	131
5.1 Introduction .....	131
5.1.1 Research questions .....	133
5.2 Methods .....	133
5.2.1 Conservancy costs and benefits.....	133
5.2.2 Contribution of conservancy income to household income.....	134
5.2.3 Perception of importance of conservancies to livelihoods and use of conservancy payments.....	136
5.3 Results .....	136
5.3.1 Conservancy costs .....	136
5.3.2 Conservancy benefits .....	143
5.3.3 Summary of costs and benefits.....	148
5.3.4 Perceived importance of conservancies to household welfare.....	156
5.4 Discussion.....	159
Chapter 6 The impact of conservancy participation on wealth.....	165
6.1 Introduction .....	165
6.1.1 Equity of direct payments.....	165
6.1.2 Need for evaluation studies .....	165
6.1.3 Impact evaluation .....	166
6.1.4 Research questions .....	167
6.2 Methods .....	167
6.2.1 Data .....	167
6.2.2 Analysis variables .....	168
6.2.3 Methods of analysis .....	172
6.3 Results .....	177
6.3.1 Land ownership.....	177
6.3.2 To what extent do households in Koyiaki participate in conservancies? .....	179
6.3.3 How do conservancy members and non-members differ in their household characteristics? .....	183
6.3.4 What are the determinants of conservancy participation?.....	184
6.3.5 What is the impact of conservation participation on household wealth?.....	186
6.4 Discussion.....	189
Chapter 7 Displacement of people and livestock: livelihood and landscape effects.....	195

7.1 Introduction .....	195
7.1.1 Pastoral displacement due to conservation.....	195
7.1.2 Displacement from protected areas .....	196
7.1.3 The conservation impacts of displacement – spill-over effects.....	197
7.1.4 Research questions .....	197
7.2 Methods .....	198
7.2.1 Identification of bomas from satellite imagery.....	198
7.2.2 Spatial and temporal analysis of bomas in the Mara.....	205
7.2.3 Qualitative experiences of household displacement from conservancies .....	208
7.2.4 Livestock grazing within conservancies and grazing displacement .....	209
7.3 Results .....	210
7.3.1 Settlement displacement .....	210
7.3.2 Household displacement from conservancies .....	217
7.3.3 Livestock grazing in conservancies and displacement .....	226
7.4 Discussion.....	233
Chapter 8 Discussion.....	239
8.1 Introduction .....	239
8.2 Partnership and participation .....	241
8.3 Conservancies and pastoral livelihoods .....	245
8.4 Implications of conservancies for the wider landscape.....	250
8.5 Conclusion.....	251
References.....	254
Appendix One: Household questionnaire survey.....	283
Appendix Two: Key informant and community interviews.....	296
Appendix Three: List of interview questions for members and non-members.....	298



## Table of Figures

Figure 1.1: Research questions addressed in each data chapter.....	46
Figure 2.1: Present day Maasailand and the different Maasai sections. Samburu area also shown. Source: Galaty (1993).....	49
Figure 2.2: Map of the Mara study area, showing the Maasai Mara National Reserve, the surrounding group ranches, and conservancies. Map insert showing location of the Mara within Kenya.....	54
Figure 2.3: Map showing subdivided parcels of land inside conservancy areas in Koyiaki. All areas of Koyiaki Group Ranch are now subdivided; however subdivision maps were not available for these areas. ....	57
Figure 2.4: Trends in a) cattle and b) sheep and goat (shoats) populations in the Mara ecosystem from 1977 to 2011. The data are from the DRSRS aerial counts. Further information showing the area counted details of the count methodology, and further application of livestock count data are given in chapter 7. ....	63
Figure 3.1: Map showing GPS points of all surveyed households in study area. Households were spread out through Koyiaki and located both inside and outside of conservancies .....	82
Figure 4.1: The reasons given by conservancy members to join a conservancy (n=131).....	103
Figure 4.2: The Olare Orok Conservancy partnership model.....	107
Figure 4.3: The information conservancy members wanted before signing up to the conservancy (n=35) .....	118
Figure 5.1: The main cost of conservancies as perceived by the household head in household survey (n=135). Includes responses from both conservancy members and non-members.....	137
Figure 5.2: Most important conservancy benefit perceived by household head, outside of the conservancy payment (n=57). Includes responses from both conservancy members and non-members. ....	143
Figure 5.3: Distribution of conservancy payments amongst households that receive them, for the year ahead, 2010-2011 (n=133).....	148
Figure 5.4: Diagram showing summary of costs and benefits accruing to conservancy members and non-members.....	149
Figure 5.5: Proportion contribution of different livelihood activities to total annual household income (income is across all households even if not involved in an activity). ....	150
Figure 5.6: Contribution of the different off-farm activities to, a) total off-farm conservation income and b) total off-farm non-conservation income. Percentage of households involved in each activity is shown in parenthesis, (n=258) .....	153
Figure 5.7: Proportion of total conservation income from different sources (n=258) .....	154
Figure 5.8: Proportion of gross annual household income from different activities disaggregated to conservancy members (n=127) and non-member (n=121) households.....	155
Figure 5.9: Total incomes per livelihood activity for all households, disaggregated to conservancy members (n=127) and non-members (n=121) .....	156
Figure 5.10: Perception of importance of different livelihood activities to household welfare: conservancy members only (n=131).....	157
Figure 5.11: First ranked expenditure of conservancy income, conservancy members only (n=131) .....	157

Figure 6.1: Map showing GPS points of all surveyed households. Conservancies, towns and other group ranches are also show. Households were spread out through Koyiaki Group Ranch and located both inside and outside of conservancies.....	170
Figure 6.2: Distribution of total land size owned per household (n=206).....	177
Figure 6.3: Relationship between the age of the household head and total land size owned per household (n=258).....	178
Figure 6.4: How land was acquired amongst households over time (n=206).....	180
Figure 6.5: Membership of the 133 households to different conservancies. Since some households are members of more than once conservancy, a total of 157 land parcels are joined to a conservancy.....	181
Figure 6.6: The distribution of combined parcel size for the six conservancies (n=154 parcels) ..	182
Figure 6.7: The distribution of the total land size under conservancy for all conservancy member households (n=133).....	182
Figure 6.8: Proportion of their land conservancy members have joined to a conservancy (n=133) .....	183
Figure 6.9: Distribution of propensity scores of individual units in the member and non-member groups, either matched or unmatched (Graph was produced using routines from the MatchIt package). Due to the use of one to many matching, weights are represented as dots of differing sizes in the control group. The region of common support spanned almost the entire distribution of the propensity score; only in tail regions were no appropriate matches found. ....	186
Figure 6.10: Histograms of standardized differences before and after matching. The comparative view of the matched and unmatched samples shows the magnitude of differences before and after matching. Standardised differences after matching are centred on zero and no systematic differences exist after matching. ....	187
Figure 7.1: The extent of the 2006 and 2011 SPOT images and the Mara conservancies and group ranch layers.....	200
Figure 7.2: a) An aerial photo of a typical Maasai settlement showing the central circular livestock boma enclosed by a fence, and the surrounding houses and an outer circular fence, (b) a Maasai settlement as seen from a pan-sharpened SPOT 5 image – in this case the surrounding houses and outer fence are visible. (Figure 7.2a image courtesy of Kenya Wildlife Service). ....	201
Figure 7.3: Areas inside and outside of conservancies in Koyiaki Group Ranch.....	207
Figure 7.4: DRSRS 5x5km transect count points inside and outside of conservancies in Koyiaki Group Ranch.....	210
Figure 7.5: Bomas identified from the 2011 SPOT image with conservancy and group ranch boundaries and the MMNR shown. The image shows the extent of the SPOT image captured in 2011 .....	212
Figure 7.6: Bomas in 2006 and 2011 – showing the extent of image captured in 2006 SPOT 5 image and the 2011 image clipped to match. ....	213
Figure 7.7: Density surface map of bomas for 2006 and 2011 .....	216
Figure 7.8: Monthly calendar of the use of the MMNR and Conservancies (OOC, MNC, Naboisho, Motorogi) grouped during 2009-2010 (n=257).....	227
Figure 7.9: Trend in cattle density, inside and outside of conservancies, and before and after conservancies were set up in Koyiaki .....	232
Figure 7.10: Trend in shoat (sheep and goats combined) density, inside and outside of conservancies, and before and after conservancies were set up in Koyiaki. ....	233

## Table of Tables

Table 3.1: Summary of different methods used, sample sizes, year collected, and in which data chapter they are applied .....	77
Table 3.2: Information and topics covered in the household questionnaire .....	78
Table 3.3: Descriptive statistics of the household sample (n=258) .....	81
Table 4.1: Arrangements of the four different conservancies in Koyiaki .....	100
Table 4.2: Different interest groups, their influence at start up, sources of power, interests and concerns.....	123
Table 5.1: Number of households fined for grazing in a conservancy and reserve in the preceding year to the household survey, and amount spent on fines (n=258).....	140
Table 5.2: Chi-squared tests for significant difference between how people valued conservancy land (n=200) vs non-conservancy land (n=167). ‘Conservancy land’ includes 20 pieces of land in a conservancy but which was not joined to the conservancy .....	144
Table 5.3: Mean incomes from the different livelihood activities and all activities combined into a total income. Mean incomes are shown per household per year, and per adult equivalent (AU) per day. Only includes those involved in the activity (standard deviation in parenthesis). .....	149
Table 5.4: Number of livestock owned and household annual incomes (US\$) from the different livestock production activities .....	151
Table 5.5: Area under cultivated fields, and the annual household incomes (US\$) from crop production.....	152
Table 5.6: Households involved in off-farm activities, and household annual income (US\$) from off-farm conservation and non-conservation sources income.....	152
Table 5.7: Proportion of total conservation income made up from different conservation income sources (n=258).....	155
Table 6.1: The range of independent variables collected, and those used as predictor variables in logistic regression (LR) of determinants of conservancy participation, and as matching covariates in propensity score matching (PSM) .....	169
Table 6.2: Variables used as indicators of wealth.....	171
Table 6.3: Principal components analysis used to develop the household asset index .....	172
Table 6.4: Housing quality index (adapted from CASHPOR’s quality of housing index as used in ILRI’s livelihood indicators (Njuki et al., 2011). .....	172
Table 6.5: Number of parcels owned per household.....	179
Table 6.6: Participation of households in conservancies (n=258) .....	180
Table 6.7: Summaries and difference in means tests for household variables between conservancy member (n=133) and non-member (n=125) households (full dataset).....	184
Table 6.8: Summaries and difference in means tests for household variables used in logistic regression between conservancy member (n=133) and non-member (n=73) households (landowners only dataset) .....	185
Table 6.9: Logistic regression of determinants of participation for landowners only .....	185
Table 6.10: Number of members and non-members matched, unmatched and discarded .....	186
Table 6.11: Results of t-tests showing differences in means between conservancy members and non-members in the unmatched (full dataset (1) and landowners only dataset (2)) and the matched dataset (3).....	188

Table 7.1: Comparison of bomas identified in the first and second stages of eCognition and the final manually verified file used in this study, for both the 2006 and 2011 SPOT images. ....	203
Table 7.2: Area, number and density of bomas for each conservancy in 2011.....	211
Table 7.3: Area, number and density of bomas inside and outside of KGR in 2011.....	211
Table 7.4: Differences in bomas between 2006 and 2011 inside and outside of Koyiaki Group Ranch.....	214
Table 7.5: Difference in bomas between 2006 and 2011. Includes conservancies in Koyiaki and Olkinyei. ....	215
Table 7.6: Households reporting being moved from a conservancy. Data from the main household survey .....	217
Table 7.7: Sample of 25 households moved from the OOC when it was formed in 2006 (from an estimated 103) .....	217

## Chapter 1 Introduction

This thesis investigates new forms of conservation in the privatised rangelands in the Maasai Mara, specifically in terms of their implications for pastoral livelihoods. As an area with a rich assemblage of wildlife, a lucrative tourism industry, and a poor local population - the win-win opportunities for conservation and development have great appeal, and are being increasingly promoted. This is nowhere more apparent than in Maasailand where there has been a rapid growth and evolution of conservation and ecotourism initiatives in recent years.

In the Mara, as elsewhere, there is increasing application of market-based instruments to solve all conservation problems (Brockington et al., 2008). There is also an increase in the private sector undertaking conservation efforts (Igoe and Brockington 2007). These types of approach are becoming the focus of a new narrative of conservation efforts – neoliberal conservation (Igoe and Brockington 2007; Brockington et al., 2008; Büscher et al., 2012). These approaches are creating new forms of governance and new relationships between communities and the private actors. They are attracting increased attention as ways to directly link conservation and development. Market-based instruments (such as payments for ecosystem services (PES), biodiversity offsets, and ecotourism) are also seen as more efficient and effective ways to do conservation compared to indirect community-based approaches such as Integrated Conservation and Development Programmes (ICDPs) (Ferraro and Kiss 2002; Ferraro and Simpson 2002). The narrative of neoliberal conservation is becoming increasingly powerful and pervasive and now permeates much conservation practice (Brockington and Duffy 2010). However, emerging evidence demonstrates that its rhetoric does not match its reality, and local people have been excluded, and lost access to resources and livelihoods as nature has been (re)valued and reassigned (Igoe and Brockington 2007; Brockington and Duffy 2010; Igoe et al., 2010).

There is a long history of pastoral land loss and displacement due to conservation. Recent work shows that conservation and tourism has had poor outcomes for most Maasai, with most benefits being captured by a few well-placed individuals (Homewood et al., 2009; Thompson et al., 2009). By linking landowners directly to the market, and bypassing community level institutions, new neoliberal conservation initiatives in the Mara have the potential (and promise) to provide better incomes to those participating (Osano et al., 2013a). However, there is little understanding of who gets to participate in such initiatives and little evaluation of how these initiatives contribute and integrate with pastoral livelihoods. Also, as these types of initiatives invariably involve a shift

in livelihoods to adjust to the new initiative coming in, this can have important implications for access and use of the pastoral rangelands.

This thesis therefore sets out to investigate these issues in an analysis of wildlife conservancies in the Mara. It aims to investigate who participates, and to what extent, in conservancies, and the reasons for this. It also aims to analyse how conservancies contribute to local pastoral livelihoods, for both those people involved in conservancies, but also those left out, who may nevertheless be affected by the initiative.

In the rest of this chapter I begin by looking at the changing narratives of conservation, and how neoliberal conservation approaches are now becoming popular and are gaining dominance. I discuss a number of neoliberal conservation approaches which are relevant to how conservancies in the Mara are applied, including PES, ecotourism and public-private partnerships. I then look at pastoralism and how pastoral policies and common misconceptions have encouraged the marginalisation and alienation of pastoralism in favour of alternative land uses, including conservation. Finally, I narrow down on issues relating to conservation and tourism in Kenyan Maasailand, then introduce the research questions and give a breakdown of the thesis.

## **1.1 Changing narratives of conservation**

### ***1.1.1 Fortress conservation***

The dominant narrative of conservation for most of the twentieth century was premised upon the need to separate humans from other species for the protection of biodiversity (Hutton et al., 2005). The central strategy that arose to accomplish this was the creation of protected areas excluding local people as residents (in cases forcibly removing people from their homes), and preventing access to resources important for their livelihood activities. This protectionist view, also known as 'fortress conservation' or the 'fences and fines' approach, is largely state-controlled with little or no involvement of protected area adjacent people (Adams and Hulme 2001; Brockington 2002). Based on ideas of wilderness, the creation of modern protected areas stems from the first national parks in the USA, where the Yellowstone National Park became the dominant global model of national parks and the colonial approach to protected areas in Africa. The idea of wilderness, free from human presence has been a strong motivator of conservation; national parks were areas that needed protecting and preserving, and not meant for human habitation (Neumann 1998, 2004).

There is concern over the impacts of protected areas on local livelihoods (Brockington 2002, Colchester 2002; Brechin et al., 2003). The social impacts include the physical displacement of people from their homes, but also the restriction of access to resources (Cernea 2006). Protected areas may thus increase poverty amongst the poor due to land appropriation or removal of access to resources (McShane 2003). There is also the concern that the costs and benefits from protected areas tend to have different spatial distributions, where by benefits are realised at the global level and costs at the local level (Bell 1987; Wells 1992; Emerton 2001, Ferraro 2002; Balmford and Whitten 2003). The outcome is thus that the cost of protected area conservation is often at the expense of the poor.

### ***1.1.2 Community conservation***

At the end of colonialism, broader changes in the international development climate and dissatisfaction over protectionist approaches to conservation led to a change in the dominant narrative of biodiversity conservation (Adams and Hulme 2001). Maintaining large areas of land under exclusive protected areas is financially costly (Inamdar et al., 1999), and the eviction of local people from protected areas is increasingly seen as ethically wrong and unfair (Neumann 1998; Brechin et al., 2002). Thus, conservation needed to reach out of protected areas to the communities in the wider landscape. The new narrative for conservation that gained support was people-focused and participatory; conservation could not and should not be pursued against the interests and wishes of local people (Ghimire and Pimbert 1997).

Community conservation emphasises a shift, from conservation being state-centric to being more based in society, particularly at the local level (Hulme and Murphree 1999). It emphasises the role of the community as an alternative to the state, echoing the bottom-up approaches being promoted over top-down approaches in the development arena. It advocates for the transfer of property rights in natural resources to local communities, through devolution of control over land and wildlife. Thus, the concept of sustainable development through resource utilisation rather than preservation is taken to promote the conservation of resources (Hulme and Murphree 1999). This also allows for greater participation and ownership over resources so conservation can ultimately benefit local people. There is a great diversity of these types of approaches, labelled in many different ways. Among them are community-based conservation (CBC), community-based natural resource management (CBNRM), integrated conservation and development projects (ICDPs), community-based ecotourism (CBET), and joint or collaborative management (Barrow and Murphree 2001; Hughes and Flintan 2001).

### Linking conservation and development

The narrative of community conservation involves the linkage of conservation objectives to local development needs (Adams and Hulme 2001). In theory, community conservation has the potential to achieve both biodiversity conservation and livelihood improvement objectives, by providing social and economic incentives to communities and expanding habitats available for conservation. With an emerging focus on local people in conservation, and the need to match sustainable livelihoods and resource use, community conservation offers the potential for win-win solutions to conservation and development.

However, the extent to which projects are able to achieve and combine both conservation and development objectives has been much debated (Inamdar et al., 1999; Sanderson and Redford 2003; Adams et al., 2004; Roe and Elliot 2004; Blaikie 2006). Positive outcomes in poverty reduction or conservation have proved to be elusive, and there is little evidence that solutions to meet the joint goals of conservation and development have been met (Hulme and Murphree 2001, Adams et al., 2004; Agrawal and Redford 2006). One problem relates to the insufficient empirical evidence of the links between poverty reduction and biodiversity conservation (although see Barrett et al. (2011) and collection of papers for a noticeable exception). Successes are typically described in anecdotal case studies, and any win-win claims with coupled success in both conservation and development objectives are often later found to be exaggerated due to a lack of data, and specifically a lack of data on both biophysical and social outcomes (Garnett et al., 2007; Barrett et al., 2011).

Rarely are projects able to adequately address both conservation and poverty reduction objectives, with one objective more commonly dominating over the other. It is likely there will be costs to one goal over another, and trade-offs and hard choices will be necessary (Adams et al., 2004; McShane et al., 2011). In fact, it may be impossible to reach the mutually exclusive goals of many conservation and development projects. Thus, many scholars have pointed to the critical issue of recognising trade-offs (Wells and McShane 2004; Barrett et al., 2005; McShane et al., 2011; Salafsky 2011). Simply communicating projects as win-win does not acknowledge the multiple complexities of most conservation and development scenarios, and some projects would be better understood as involving trade-offs (McShane et al., 2011). This is a much more realistic viewpoint when any project restricts existing patterns of resource use, leading to a loss of livelihood opportunities.



The community conservation narrative has been widely taken up and supported, and even accepted by protected area proponents (Brandon et al., 1998). Since the early 1990s there has been increased donor and government support for these approaches, and they have become an established policy goal for rural development (Blaikie 2006). However, criticisms of these approaches have also flourished and they have often produced disappointing results, failing most of all to deliver to the people they set out to serve - the community (Hutton et al., 2005; Blaikie 2006; Dressler et al., 2010). In particular, there is the tendency for benefit and control to flow to more powerful members of the community, disempowering those it was intended to support (Blaikie 2006; Dressler et al., 2010; Leisher et al., 2010).

### ***1.1.3 Back to the barriers***

Widespread criticism of community approaches to conservation, from both the conservation and the development worlds, have renewed conservationist arguments for a return to more traditional protectionist approaches of fortress conservation; a revival that has been named the 'back to the barriers' movement (Hutton et al., 2005) and a resurgence of the 'protectionist paradigm' (Wilshusen et al., 2002). Much of the critique is based on the unrealistic underlying assumptions of integration and synergies within the conservation and development approach (Barrett and Arcese 1995; Songorwa 1999; McShane and Newby 2004; Robinson and Redford 2004), and the recognition that many conservation and development projects often involve competing rather than complementary goals (McShane et al., 2011; Robinson 2011).

Arguments supporting the return to fortress conservation see community approaches as having abandoned sound scientific analysis, as being based on romantic and unrealistic ideas, as wasting scarce conservation resources because funds are channelled towards human development, and as failing to conserve threatened species and ecosystems (Wilshusen et al., 2002; Hutton et al., 2005). They prioritise the overwhelming moral imperative there is to protect biodiversity (Kramer et al., 1997; Terborgh 1999), and on the assumption, as much as the emerging evidence, that national parks and other protected areas are effective and successful in protecting biodiversity (Bruner et al., 2001; Nagendra 2008). Moreover, the premise that local support is necessary for conservation does not hold strong, and given stronger enforcement, fortress conservation may flourish despite local opposition. Conservation can succeed without local participation and support (Brockington 2004).

Disenchantment with community approaches to conservation can be linked to wider changes in environmental and development policy discourse (Roe 2008). In the late 1990s, and also in particular with the Millennium Development Goals (MDGs), poverty reduction began to dominate the development agenda causing a concomitant shift of interest away from biodiversity conservation (Roe 2008). As a result, funding for biodiversity conservation projects was significantly reduced as development assistance policy switched to focus on poverty reduction (Hutton et al., 2005; Roe 2008). This led to concern by some that the emphasis of the development agenda on poverty reduction was at the expense of attention to biodiversity, which would 'pay the price for development yet again' (Sanderson and Redford 2003, p389).

The 'back to the barriers' movement reflects a change of focus from community-based approaches towards alternatives to conservation such as trans-boundary natural resource management (TBNRM), eco-regional planning, direct payments and public-private partnerships (Brosius and Russell 2003; Hutton et al., 2005; Duffy 2006). These approaches have become popular amongst donor agencies, gaining increasing prominence and support. For example, in southern Africa, the US Agency for International Development (USAID) adopted TBNRM as its regional priority and decreased funding support to CBNRM (Hutton et al., 2005).

The increased focus on a 'back to the barriers' movement has created an increasing dichotomy between community-based conservation and protectionist approaches. Scholars argue that this dichotomy should not be viewed as purely pro-people versus pro-nature (Brechin et al., 2002; Büscher and Dressler 2007). More importantly, it is about *how* conservation initiatives are carried out, with a focus on issues such as governance, politics and accountability (Büscher and Dressler 2007). Brechin et al. (2002) argue that conservation must be understood as a 'social and political process' and is ultimately a result of human action. Therefore, a better understanding of the social and political processes inherent in conservation such as the moral argument of who benefits, legitimacy, governance, accountability and the wider political economy is required (Brechin et al., 2002). These issues cut across conservation and the different approaches by which it is carried out, such that it is not the type of conservation strategy that is important, but the processes and dynamics that produce the different outcomes (Brockington et al., 2008).

#### **1.1.4 Neoliberal conservation**

A new narrative of how conservation is done is now gaining prominence. There is a large and growing body of literature on the increasing neoliberalisation of conservation (Sullivan 2006;

Büscher and Dressler 2007; Büscher and Whande 2007; Igoe and Brockington 2007; Brockington et al., 2008; Brockington and Duffy 2010; Igoe et al., 2010; Büscher et al., 2012). Neoliberal conservation essentially refers to the increasing capitalist and market-based approach of conservation interventions witnessed in recent years. Under neoliberalism, economic growth, markets and business are seen as essential to successful biodiversity conservation. The theory is that attaching a market value to resources creates incentives for local people to protect species and landscapes thereby ensuring their conservation. There has been a proliferation of market-based instruments applied to conservation initiatives as proponents see them as the solution to the world's environmental problems. Scholarship on neoliberal conservation essentially derives from the literature on the neoliberalisation of nature (McCarthy and Prudham 2004; Heynen et al., 2007; Castree 2008ab), which provides a broader context in which the application of neoliberalism to conservation can be viewed.

Neoliberalism is a form of capitalism characterised by privatisation, marketization, deregulation (the reduction in the power and reach of the state), and re-regulation (the deployment of state policies to facilitate privatisation and marketization) (Castree 2008a). Under neoliberalisation more and more facets of life are brought under the sphere of the market to be traded monetarily, or to be 'commodified' and 'commercialised'. Neoliberalism stresses the efficiency of private enterprise, trade liberalisation and open markets, and seeks to maximise the role of the private sector. Neoliberal approaches rose to prominence during the 1970s and were favoured by the major financial institutions such as the World Bank and International Monetary Fund (IMF). In the mid-1980s, neoliberalism influenced many government policies through implementation of economic liberalisation in the form of structural adjustment programmes (SAPs), which encouraged free market programmes and policies and the scaling back of the state. By the 1990s neoliberal approaches became globally dominant, pushed forward by states, corporations and international financial institutions (Brenner and Theodore 2002).

### Valuing nature

Neoliberalism turns nature, or flora and fauna, into 'natural resources', and exposes them to the market (McAfee 1999). Nature is essentially 'commodified' as resources and processes are transformed into products and experiences that accrue value determined by what people are willing to pay for them in monetary terms (Sullivan 2006; Büscher and Whande 2007). The theory goes that by attaching a market value to resources, incentives are created to keep species and habitats viable and sustainable, and therefore, their likelihood of conservation is enhanced. The

market is seen as central to the survival of nature, or as McAfee (1999) puts it, it is the necessity of 'selling nature to save it'. And because of this synergistic relationship between markets and nature protection, the market is seen as able to bring a win-win solution.

As monetising nature and the value of nature has become the new *lingua franca* in conservation today, there has been a huge increase in valuation efforts in mainstream conservation<sup>1</sup>. In this wave of valuing nature, resources, such as a species, habitat or 'ecosystem service', are transformed into services for humans (Sullivan 2009ab). Nature becomes money, and as resources are commodified and monetized, people's traditional use of them changes, as their use values take on monetary exchange values. In this way, the neoliberalisation of nature involves a reconstitution of the relationships between people, and between people and nature according to the market (Büscher and Dressler 2012).

#### Hybrid governance

Neoliberal conservation is characterized by a reduction in the state's control over conservation, in favour of hybrid forms of governance in which governments, businesses, NGOs and communities all share responsibility for, and opportunity to benefit from, conservation (Igoe and Brockington 2007). Global networks of different stakeholders now work together in conservation, in comparison to the discrete units in pre-neoliberal conservation efforts (Brockington et al., 2008). An important effect of neoliberalism is the increase in private sector involvement in conservation. One outcome of this is the rise of conservation-business partnerships through the corporate sponsorship of large conservation NGOs (Chapin 2004). Multinational corporations are presenting themselves as the planet's conservationists as they gain green credentials through conservation partnerships. The emergence of new approaches to conservation, such as TBNRM, direct payments, and public-private partnerships, to some extent reflects the need for conservation goals to be presented in terms corporate sponsors will understand (Adams and Hutton 2007). Other outcomes include the increasing private ownership and management of protected areas (Langholz and Krug 2004; Carter et al., 2008), and the growth of global ecotourism (Duffy 2010) (see below).

---

<sup>1</sup> These include: The Ecosystem Marketplace of Forest Trends; The Economics of Ecosystems and Biodiversity Program (TEEB) of the United National Environmental Programme (UNEP); and the Natural Capital Project of the World Wildlife Fund (WWF), the Nature Conservancy (TNC), Stanford University and the University of Minnesota.

### Conservation and capitalism

Neoliberal conservation comprises the alliance of conservation and capitalism as the resulting conservation practices and interventions share a similar faith in market solutions to conservation problems (Brockington et al., 2008; Brockington and Duffy 2010). Brockington et al. (2008, p4) view the partnership between conservation and capitalism as a mutual one, in which the 'objectives of conservation and capitalism go hand in hand'. As capitalism drives new forms of conservation-based enterprise, conservation fuels the process of global capital accumulation by endorsing the 'greening' of businesses and corporations, and by creating new conservation enclosures and market-orientated enterprises (Brockington and Duffy 2010; Corson 2010). The relationship between conservation and capitalism is in fact nothing new; 'neoliberal conservation is but the latest stage in a long and healthy relationship between capitalism and conservation' (Brockington and Duffy 2010, p2). For example, capitalist interests advocated for the first national parks in America and the first conservation NGOs (Brockington and Duffy 2010). What is new, however, is the intensity and variety of capitalist interventions into conservation. The idea that capitalism should help conservation is now mainstream and widely promoted in the conservation movement. Neoliberalisation now permeates so many parts of conservation that 'it would be more interesting to look for conservation strategies that are *untouched* by neoliberalism (Brockington and Duffy 2010, p480).

### Powerful positive narrative

The rhetoric of neoliberal conservation has become an increasingly powerful and pervasive narrative. Proponents assert that the approach will automatically benefit livelihoods and the environment. Market-based conservation is seen as the way to bring win-win solutions to conserve biodiversity and achieve economic growth. Neoliberal conservation brings together a range of stakeholders, interests, and goals into a unifying belief that sees the economic use of nature services as the solution to the world's environmental problems. Its rhetoric is relentlessly positive as it is viewed as the solution to multiple goals; to mobilise support for conservation, to provide the finance to protect biodiversity, to save nature, to bring economic development, and more (Brockington and Duffy 2010). It therefore moves beyond 'win-win' scenarios and promises a world where everybody is a winner, or a world of 'win-win-win-win-win-win-win' solutions (Grandia 2007). In conservation policy and practice, neoliberalisation is seen as a solution to community conservation's dysfunctions.

It is from this overwhelming positive-ness, that caution and criticism comes. The critical literature on neoliberal conservation is growing and rich. Büscher (2008) worries about the overwhelming neoliberalisation of conservation as noted in the Society of Conservation Biology (SCB) 2007 conference, where there was a large emphasis on ecological services and ecological economics, and the win-win of market approaches. There is much emerging evidence that neoliberal conservation interventions often have both negative social and ecological consequences and are rarely the win-win they are advocated to be (see Igoe and Brockington 2007 and accompanying papers; Brockington and Duffy 2010 and accompanying papers; Igoe et al., 2010 and accompanying papers).

The result of neoliberal conservation is that 'emphasis is shifting from local constructions of nature *by* communities to what these should mean *for* communities in terms of commodity resources and capitalist markets' (Büscher and Dressler 2012, p368). Local communities become invariably excluded from any benefits, or worse, are negatively impacted by the intervention. Local land uses and livelihood systems are undermined or criminalised in favour of conservation for the global market. In this way, neoliberal approaches to conservation can end up meaning less for local people.

This literature points to big gaps between the rhetoric and reality of neoliberal conservation. As the environment is carved up and appropriated by hybrid institutions, neoliberalism can lead to greater livelihood and environmental loss. The effectiveness of markets for conservation in developing countries to work for local communities is questioned (Levine and Wandesforde-Smith 2004), as issues of accessibility, instability and volatility (e.g. in tourism) can inhibit markets hoped for functioning. Moreover, the reduction of conservation problems to economic terms is counter-productive and can have the opposite results of jeopardizing populations it is supposed to protect (Ehrenfeld 2008).

#### ***1.1.5 Changing and overlapping conservation narratives***

The narratives of conservation presented here although emerging at different times, also coexist in time and are overlapping. The different narratives have not replaced one another, nor does one disappear as the next one comes up; they are overlapping and competing (Adams and Hulme 2001; Büscher and Whande 2007). Similarly, there is no best conservation blueprint or best policy that can be applied widely in different areas. Rather, a mix of narratives is produced and used (Hulme and Murphree 1999; Adams and Hulme 2001). Narratives become prominent but they

are never absolutely dominant and this allows new ‘conservation hybrids’, which are place and time specific, to evolve (Büscher and Whande 2007).

Thus, in neoliberal conservation, we see that approaches more aligned as fortress and community conservation are hybridised with neoliberal ways of conceptualising nature. In this sense, the neoliberalisation of conservation is better seen as *process*, or a set of practices, rather than any particular or fixed programme (Tickell and Peck 2003; McCarthy 2006; Castree 2008b). Neoliberal processes thus hybridise with existing methods and approaches to conserving nature, creating new markets to value and justify the conservation of nature. In this thesis, the neoliberalisation of conservation is examined in the context of conservancies to show how recent conservation initiatives in the Mara have been neoliberalised, but still include aspects of both fortress conservation and community conservation.

## **1.2 Neoliberal conservation approaches**

In the move to commodify nature and market its services there has been a widespread increase in market-based approaches to conservation. These include, payments for ecosystem services, Reducing Emissions from Deforestation and Degradation (REDD), carbon credits, ecotourism, and private sector-led conservation. In this review, I discuss further some of these approaches which are relevant to this thesis, in particular conservancies, and the many different ways in which conservancies can be viewed.

### **1.2.1 (Eco)Tourism**

Tourism fits in well with the dynamics of neoliberalism. Tourism creates economic value from species, landscapes and activities, and turns these into ‘commodities’ that clients pay to see or experience. Tourism is thus one means by which nature is neoliberalised. It opens up nature to international markets and inscribes new values and uses for nature, species and landscapes (West and Carrier 2004; Duffy and Moore 2010).

Tourism is one of the world’s largest industries, generating an estimated 9% of global Gross Domestic Product (GDP) (UNWTO 2013). Tourism has seen a sustained period of growth since the 1950s; rising from 25 million international tourist arrivals globally in 1950 to 1.035 million in 2012 (UNWTO 2013). Money can be made from tourism; international tourism receipts generated US\$1.075 billion in 2012 (UNWTO 2013). Tourism is thus an attractive option and a key policy agenda for governments as a way to deliver economic growth.

Duffy and Moore (2010) argue that the huge growth of global tourism is not simply reflective of global neoliberalisation, but it is a core driver of neoliberalism. In tourism and ecotourism particularly, nature is opened up to markets. It allows nature to be neoliberalised. Tourism allows markets to capitalise on nature, finding ways to open and colonise new spaces in nature (Duffy and Moore 2010). Nature is then drawn into the global tourism marketplace as a product to be consumed and to generate profit (West and Carrier 2004). Nature is produced, reproduced and redesigned as a tourism attraction (Duffy 2013). Tourism is thus an important element that drives, expands and deepens the process of neoliberalisation (Duffy and Moore 2010).

Ecotourism is a form of tourism that is usually considered nature-based, with the idea that it is environmentally responsible and thus avoids any negative environmental impacts (Goodwin 1996; Roe et al., 1997; Kiss 2004). There is also the added assumption that it should benefit local people, partially through a sociocultural element of seeing and interacting with people (Goodwin 1996; Roe et al., 1997; Honey 1999). There is, however, confusion to its meaning and ecotourism has been defined in many different ways (Honey (1999); see Roe et al. (1997) for a useful summary of this). Much use of the term ecotourism is in fact just as a marketing tag, rather than a clear designation of a specific approach, which the tourism industry has been quick to exploit (Goodwin 1996).

Ecotourism is seen by some as a tool to combine conservation and development and is a common element of many conservation projects. It is promoted by a variety of organisations, including: governments, the private sector, the UN, the World Bank, NGOs, and civil society. It is seen as a magic bullet and promoted as a way to achieve sustainable development and environmental protection. Ecotourism claims to benefit both nature and livelihoods: the proposition is that ecotourists visit rural areas so the money they spend is expected to benefit local people. It is further postulated that this encourages rural development, and that the responsible nature of ecotourism simultaneously helps conserve the environment.

Ecotourism fits well with the neoliberal rhetoric of win-win, where the commodification of nature through tourism is seen as the solution to reconcile otherwise divergent objectives of conservation and development. Through the (ecotourism) market, the economic value of nature is harnessed for both economic development and nature protection. (Neoliberal) nature is essentially conserved because of the market value put on it. Duffy (2008) argues that this shows there is in fact little difference between ecotourism and 'mass tourism': both are heavily linked



with global capitalism through their reliance on international markets. Since in ecotourism the justification is that nature is essentially conserved because of the market value put on it, ecotourism is still heavily reliant on global markets. Ecotourism is thus one more way by which nature is neoliberalised and opened up to capitalist expansion (Duffy 2008).

Despite the positive and much touted win-win claims, the ability of ecotourism to contribute to both conservation and development goals is largely unknown. The positive, multiple wins so often proclaimed with ecotourism should be taken with as much caution as other win-win claims. Much information tends to be anecdotal, vague, and lacking quantitative data (Kiss 2004). Claims of the economic benefits of ecotourism, are rarely supported by any more than selective quantitative evidence, and can be hard to interpret (Wunder 2000; Kiss 2004). For example, when evaluating the socio-economic benefits of ecotourism it is important to distinguish between revenues and profits, to explore wider costs as well as benefits, and to look at issues of income distribution and displacement (Kiss 2004). Although most ecotourism projects tend to produce modest cash benefits, these are captured by a relatively small proportion of the community (Kiss 2004), and may be at the expense of problematic restrictions and losses for others, often the poorest. There is also a lack of supporting data in studies which claim the success of the conservation benefits of ecotourism (Kiss 2004). There is a need for better and more rigorous assessment of ecotourism initiatives for both conservation and socio-economic outcomes (Kiss 2004).

#### Additional rather than substituting activity

One of the assumptions of ecotourism is that the economic benefits from tourism provide incentives for people to alter their livelihoods and change the way they use natural resources (Stronza 2007). However, the effects of ecotourism may not be as simple as this. Although employment in tourism can lead to a decline in other activities (e.g. hunting and farming) due to a shortage of time, new income sources enable greater market consumption and the expansion of production (Stronza 2007; Hodgkinson 2009). So, new livelihood opportunities tend to be added in as ancillary rather than substituting for established activities. Thus, high earnings might be put back into activities that threaten biodiversity (Kiss 2004). For example, new or increased incomes allow people to invest in new technologies or intensify farming. Murombedzi (1999) found that revenues to households from CAMPFIRE in Zimbabwe were reinvested in ways to improve agricultural productivity which are incompatible with wildlife. Langholz (1999) found that for some households adjacent to the Maya Biosphere Reserve in Guatemala, the provision of

alternative economic opportunities led to accelerated rates of deforestation. In the Mara, tourism earnings were reinvested in large-scale cultivation (Thompson and Homewood 2002). These so called 'conservation backfires' (Langholz 1999, p140) (or spill-over effects or leakage), where project revenues inadvertently support increased destruction of biodiversity - are therefore common. This questions whether ecotourism is an incentive for communities to take conservation action (Kiss 2004). High earnings may not be enough for people to protect biodiversity or to abstain from unfriendly activities as this requires ecotourism to out-compete other livelihoods, which is uncommon (Kiss 2004). Ecotourism may thus work better as long as it doesn't threaten or interfere with their main source of livelihood (Kiss 2004).

Ferraro (2001) argues that paying people directly for conservation performance can be a better way to ensure conservation goals, by directly linking people to their (positive) conservation actions and providing direct incentives to protect habitat. Without these clear links to conservation goals, increased incomes from an ecotourism project may simply encourage more rapid resource extraction (Barrett and Arcese 1998; Barrett et al., 2001). This is made worse where there is weak enforcement to monitor whether conservation goals are being upheld (Barrett and Arcese 1998; Barrett et al., 2001).

Moreover, even if income does cause changes in what people do, there may be no change in people's beliefs or conservation perspectives (Stem et al., 2003). Thus, people are likely to revert back to previous ways if tourism drops or incentives stop (Pretty and Smith 2004). This is when indirect (approach) benefits such as training, education can have stronger associations with pro-conservation perspectives than direct economic benefits. Stronza and Pegas (2008) found that as well as economic benefits, social benefits such as participation were important for ecotourism to result in conservation. Salafsky et al. (2001) found that participation was more important than the amount of benefits in explaining conservation success. Thus, economic factors alone are not sufficient to encourage conservation or affect conservation practices and perspectives.

#### Contradictory nature of ecotourism on conservation

Ecotourism is assumed to be environmentally friendly. Associated with low-impact and small-scale tourism operations and 'eco' lodges, it is assumed to be beneficial to conservation. It is often preferred over high value-low volume or 'mass tourism' because of its assumed lower environmental impact (Roe et al., 1997). However, ecotourism may have some unexpected or conflicting impacts on conservation. The desire to enhance the tourism experience can

manipulate habitats to favour some species over others, and have an impact on the ecology of an area. For example, in Laikipia District, Kenya, a shift in land use from cattle ranching to wildlife conservation and ecotourism encouraged the restoration of predators, which consequently caused severe declines in five ungulate species (Georgiadis et al., 2007). Further examples show how bush habitat can be cleared to enhance game viewing (Reynolds and Braithwaite 2001), and the pursuit of wilderness can justify the displacement of people and livestock, thus changing the natural histories of areas (Butt 2011a).

For this reason, West and Carrier (2004) see a contradiction in ecotourism: that rather than the preservation of landscapes and ecosystems it tends to lead to the creation of landscapes that conform to externally prioritised Western idealizations of nature, through market-oriented consumption. Landscapes and wildlife are reproduced and reconfigured as tourist attractions for global consumption. Landscapes are conformed to a product that fits the eco-tourist or the ecotourism market. The result is that ecotourism does not often benefit local livelihoods but produces an alternative, capitalist market system that can exclude or negatively impact local people.

### ***1.2.2 Payments for ecosystem services (PES)***

In line with the move to value or neoliberalise nature, people are placing an economic value on the 'ecosystem services' that humans receive from nature. Nature is broken down into the services<sup>2</sup> that it provides to humans, which are quantified, and then assigned a price. The idea is that by assigning these services a financial value, their conservation is enhanced and economic growth is simultaneously realised by creating new tradable commodities. The corollary being that, if these services are not valued, priced, bought and sold then the environment will continued to be destroyed as their value is zero. The concept of ecosystem services became the mainstream of conservation and environmental policy after publication of the Millennium Ecosystem Assessment (MA 2005). It is now a widely-used, all-encompassing way of framing conservation imperatives in terms of the value of the natural world. It is a way of explaining the importance of nature to policy makers.

As ecosystem services become tradable commodities, a popular strategy for nature conservation is the exchange of ecosystems services in the form of PES. PES offers incentives to the 'producers'

---

<sup>2</sup> These include provisioning services such as water, food and timber; regulating services such as regulation of climate, floods and waste treatment; supporting services such as nutrient cycling, soil formation and pollination; and cultural services such as spiritual, aesthetic and recreational benefits (MA 2005).

of a particular ecosystem service (those who develop, maintain or enhance it), the costs of which are, in theory, borne by the 'users' of that ecosystem service (Engel et al., 2008). PES logic is that payments act as a compensation for lost economic opportunity costs where environmental practices are altered or prevented to conserve ecosystem services. The users of services compensate the producers bearing the cost. By compensating people whose actions enhance or protect ecosystem services, payments alter behaviour to maintain a particular environmental service. PES schemes now commonly operate for four main types of environmental service: 1) carbon sequestration, 2) biodiversity conservation, 3) watershed protection, and 4) protection of landscape beauty (Wunder 2007).

Ecosystem services and PES effectively draws on neoliberal ideology of managing and valuing nature, transforming the social relations around natural resources, and turning them into tradable commodities. The concept of ecosystem services reduces and transforms complex natural and social phenomena into priced and tradable commodities whose value is set on global markets (Sullivan 2009a). Nature is captured and priced, and this facilitates the creation of markets for the exchange of ecosystem services in the form of PES (Sullivan 2009b). As Büscher (2012, p29) asserts, 'PES and the process by which it is marketed are both inherent to neoliberal conservation'.

PES is an increasingly promoted and widely-used approach. There is a large array of PES schemes, increasingly been applied in developed and developing countries (Wunder et al., 2008). There are even 'PES-like' schemes, where hybrid schemes have some PES characteristics but also characteristics of alternative approaches (Engel et al., 2008; Wunder et al., 2008). PES is viewed by its many advocates as a win-win strategy able to achieve both conservation and development goals. By using PES it is considered possible to generate multiple positive outcomes – e.g. for biodiversity and people, climate and economies. Conservation NGOs and donors are embracing PES as a critical tool for generating and distributing the finance needed for conservation activities. PES is seen as a way to tap into new, and potentially large, forms of conservation funding, especially from the private sector (Goldman et al., 2008). PES is also viewed as being self-financing, and able to support itself after short-term start-up costs. Thus, PES is seen as both a tool for conservation investment and for raising conservation funds (Ferraro 2011).

However, PES also has its critics, and it is viewed more cautiously by many (Büscher 2008; Adams and Redford 2009; Redford and Adams 2009; Vira and Adams 2009; Kosoy and Corbera 2010). Its

sceptics warn of the risk in the speed and uncritical enthusiasm in which PES is being applied (Redford and Adams 2009). A key concern in the use of PES to achieve conservation is that economic arguments will outweigh non-economic justifications for conservation, e.g. nature's intrinsic value (Redford and Adams 2009). One consequence of this economic emphasis is that those ecosystems that produce economic returns will be well preserved, whereas those that do not will be diverted or transformed to increase returns (Adams and Redford 2009). Vira and Adams (2009) warn that economic approaches do not fully match the complexity of relations within biodiversity, and so may not automatically achieve conservation. Ecosystem service functions may also not always match conservation priorities. Kosoy and Corbera (2010) warn that PES simplifies the complexity of ecosystems to a single exchange value, thus imposing a trend towards monetary and market-driven conservation. Commodification through PES therefore masks the non-economic values of ecosystems, and fails to account for value in a broader sense, wiping out other social and ecological qualities in those services (Kosoy and Corbera 2010).

Although there is evidence of the positive contribution of PES to the livelihoods of the poor (Grieg-Gran et al., 2005; Wunder 2008), PES can lead to further concentration of wealth and to excluding the poor from their land or resources (Landell-Mills and Porras 2002; Milder et al., 2010; Kronenberg and Hubacek 2013). Furthermore, the poor may be limited to participate in PES due to institutional and technical barriers, insecure land tenure, high transaction costs and limited understanding (Grieg-Gran et al., 2005; Pagiola et al., 2005; Kosoy et al., 2008; Wunder 2008; Kosoy and Corbera 2010). There are concerns about equity issues in PES (Corbera et al., 2007; Sommerville et al., 2010). PES may not be locally empowering (Clements et al., 2010) and may create or reinforce power asymmetries amongst those involved (Kosoy and Corbera 2010; Kronenberg and Hubacek 2013). As ecosystem services are commodified, they form the basis for new socio-economic hierarchies, the repositioning of social actors and the reproduction of unequal power relations (Kosoy and Corbera 2010). Even if PES effects on participants are positive, effects on non-participants may be positive or negative (Pagiola et al., 2005; Wunder 2008). The poverty reduction ability of PES is thus not seen as its main aim, but an important side objective (Pagiola et al., 2005; Wunder 2008).

Despite the enthusiasm for PES, there has been little assessment and evaluation of PES schemes (Ferraro and Pattanayak 2006; Wunder 2007; Engel et al., 2008; Wunder et al., 2008). There are few efforts to document the characteristics and effectiveness of PES programmes, although Landell-Mills and Porras (2002) review 287 case studies and Wunder et al. (2008) compare and

contrast a number of schemes. In conservation circles, PES has been embraced and taken up without proper evaluation, assessment or critique (Büscher 2008; Redford and Adams 2009). There is little monitoring of PES schemes, and few PES schemes have explicit frameworks for monitoring and evaluating their impacts. Goldman et al. (2008) found from a sample of ecosystem service projects of The Nature Conservancy (TNC), only a quarter were monitoring any conservation outcomes.

Little credible empirical research has evaluated the environmental and social impacts of PES (Ferraro 2011). Impact evaluation is often confused with efforts to monitor PES conditionality and compliance - i.e. that PES recipients comply with their contractual obligations (Ferraro 2011). Also in evaluations, 'inputs' get confused with the 'outcomes'. Many PES scheme evaluations look at input into a scheme (e.g. amount of land) rather than outcomes (e.g. on wildlife) in their conclusions on effectiveness (Ferraro and Pattanayak 2006). Pattanayak et al. (2010) found only eight case studies that had rigorous empirical evaluations (meeting Ferraro and Pattanayak's (2006) four rules of thumb), of which only one evaluated social outcomes, and the others environmental outcomes. Due to this dearth of evidence on PES effectiveness, scholars thus caution against expanding its scope until more evaluations are carried out (Ferraro 2011).

Redford and Adams (2009) warn that as one of the latest conservation enthusiasms, PES needs to be thought through carefully. As Adams and Redford (2009, p328) put it, 'there are particular risks with the idea of payments for ecosystem services as an effective way of achieving conservation and more general risks in the speed with which the language of "ecosystem services" is being rolled out as if, like a mantra, it will smooth away all conservation's problems'. Despite the poor evidence and even design for poverty reduction, interest in PES persists because of the popular rhetoric of expected win-win outcomes in conservation and poverty reduction (Muradian et al., 2013)

#### Direct payments for conservation

Direct payments are a subset of PES that involve paying people directly, often, but not always, through direct cash incentives. As with PES, payments act as an incentive to protect species or habitats, and aim to make conservation a competitive land use option. Direct payments usually take the form of habitat-based contracts (such as land leases, concessions or easements) or species-based contracts (such as nest protection or hunting bans) (Milne and Niesten 2009). Examples of the use of direct payments schemes include, maintaining open habitat for wildlife

(Gichohi 2003; Bulte et al., 2008), reducing wildlife and livestock disease risks (Horan et al., 2008), and protecting bird nests (Clements et al., 2013).

In the changing narratives of conservation, payments emerged from the critique of ICDPs (Ferraro 2001; Ferraro and Kiss 2002; Ferraro and Simpson 2002). Today, conservation discourse has largely moved away from ICDPs as direct approaches have become increasingly widespread and popular. Theoretically, one of the key differences between direct payments and ICDPs is that in direct payments, incentives are conditional on conservation performance. If land users do not deliver on conservation services, payments can be withdrawn. In contrast, ICDP benefits are not performance based.

Proponents of PES criticise ICDPs for not being cost effective since the benefits they bring are not directly linked to conservation outcomes (Ferraro and Simpson 2002). Without this aspect of conditionality, there is no assurance in ICDPs that conservation will occur (Ferraro 2001; Wunder 2005; Engel et al., 2008). Also, in ICDPs alternative livelihoods or new income sources are complementary to existing activities rather than substitutes (for degrading activities), thereby failing to reduce pressure on resources or even increasing it (Ferraro and Kiss 2002; Engel et al., 2008). In reality, 'conditionality' can be hard to monitor and enforce (Jack et al., 2008; Muradian et al., 2010), and it is the hardest criterion to meet in PES (Wunder 2005). Instead many payment schemes are based on indicators of inputs into the production of the service (e.g. the amount of land put into a scheme), and payments are made up front rather than being truly contingent on conservation performance (Wunder 2005, 2007).

Others view payment approaches more cautiously. Payments conditional upon stopping or limiting livelihood activities can lead to a variety of consequences, including the displacement of conservation unfriendly activity elsewhere (e.g. spillovers or leakage). Also, by paying people to forgo using resources, payments can be viewed as an extension of more conventional policies to exclude rural people from the resources they need for their livelihoods (Hutton et al., 2005). Paying people not to do something also does little to build local management capacity or empower people in environmental protection (Hutton et al., 2005), and can raise worries about welfare dependency (Balmford and Whitten 2003).

Recently the literature shows there is a trend towards more inclusion of ICDP elements in PES design than was evident in the early days of PES (Cranford and Mourato 2011). Cranford and

Mourato (2011) suggest that PES design could benefit from adopting the principles of community conservation in establishing the institutional and social context for which PES can take place within a community, before providing incentives through a market-based mechanism. This approach might increase the level of community support for a scheme. Others agree that PES can learn and can benefit from ICDP practice (Blom et al., 2010). Indirect and direct approaches can be combined (Kiss 2004) and PES-ICDP hybrids – such as contingently financed integrated projects - will increasingly emerge (Wunder et al., 2008).

As PES has become the new popular approach to nature protection, ICDPs are increasingly being seen *as* a form of PES (Nelson et al., 2010; Naidoo et al., 2011). This is occurring to the extent that long-term CBNRM programmes in Namibia and Zimbabwe are now being reconceptualised as PES (Frost and Bond 2008; Naidoo et al., 2011). As the latest conservation bandwagon, critical analysis is required to assess how these initiatives are impacting on the livelihoods of local people affected by them. This thesis aims to investigate this in the context of direct payments for conservation in conservancies in the Mara.

### ***1.2.3 Private sector-led conservation***

Private sector involvement in protected area management and biodiversity conservation has proliferated in the last two decades (Langholz et al., 2000; Langholz and Lassoie 2001; Child 2004). Data on protected areas globally shows a proliferation of all types of protected areas in recent years (Bertzky et al., 2012; WDPA 2012). This has been attributed to the increase in privately protected areas (Brockington et al., 2008). Privately protected areas can take many forms and have been defined in various ways (Langholz and Lassoie 2001; Carter et al., 2008; Dudley et al., 2010). They tend to go by a variety of labels such as conservancy, reserve, preserve or park. The lack of a precise or standardised definition and the large diversity of privately protected areas mean that it is difficult to estimate their number or document their extent (Langholz and Krug 2004; Carter et al., 2008). Although, there have been recent attempts to characterise and categorise privately protected areas in some regions (Carter et al., 2008)

Privately protected areas as an important governance strategy for protected areas emerged from the Fifth World Parks Congress in 2003. Privately protected areas are now seen as a way to help achieve the Convention of Biological Diversity's (CBD) Aichi Biodiversity Target 11, whereby at least 17% of terrestrial and inland areas and 10% of coastal and marine areas are to be conserved



by 2020 (Bertzky et al., 2012; Woodley et al., 2012). Currently, protected areas cover 13% of terrestrial areas and 1.6% of marine areas (Bertzky et al., 2012).

Privately protected areas continue to thrive and proliferate in both the developing and developed world (Langholz and Lassoie 2001; Langholz and Krug 2004; Carter et al., 2008). Although data is scant, privately protected areas can make significant contributions to conservation real estate in some countries and be important in achieving biodiversity conservation goals. For example, Carter et al. (2008) estimated that at the time, privately protected areas covered 13.3% of Tanzania and 1.4% of Kenya. In the United States, one conservation-NGO alone, The Nature Conservancy, protects more than 16 million acres of private land (Armsworth et al., 2006). Added to this, the failure of formally (or government owned) protected areas in conserving biodiversity and the fact that the majority of biodiversity falls outside of formally protected areas (Western et al., 2009), means that privately protected areas are increasingly gaining attention and support.

The increase of privately protected areas in conservation reflects the neoliberalism of conservation efforts, in which states are no longer viewed as the sole proprietor and manager of conservation estate, whilst the private sector plays an increasingly important role (Büscher and Whande 2007; Igoe and Croucher 2007). For-profit businesses, NGOs, charities, trusts and private individuals are increasingly investing in conservation by buying and/or maintaining private nature areas. Eco-philanthropists are using their fortunes to buy large areas of land to save/sell nature (Fortwangler 2007; Holmes 2012; Jones 2012). The involvement of business or the private sector in protected areas or conservation can be seen as a form of 'green-washing' to hide a company's negative environmental impact. Private sector investment in conservation often occurs in conjunction with a lucrative ecotourism business, concurring with the neoliberal ideology that markets are essential to enable conservation areas to pay their way. Money can be made from conservation and profit is a strong motivating force in establishing a privately protected area. Many protected areas and other conservation investments could not exist without private support (Fortwangler 2007).

Despite the proliferation of growth and interest in private sector investment in conservation, this has not always translated into positive impacts for local communities. There are numerous examples of local people being alienated from their land or livelihoods due to the creation of privately protected areas, and in some cases forcibly or violently. For example, serious human rights issues were raised in 2004 when the African Parks Foundation (APF), a private Dutch-based

organisation, who aim to run parks as businesses, was contracted by the Ethiopian government to manage Nechasar National Park. Just months after signing the agreement 500 people were removed from the park and 463 houses burned down to try to force them to leave (Pearce 2005). In Tanzania, there have been a number of contested cases of private sector involvement in creating new conservation areas with deleterious outcomes for local people. The African Wildlife Foundation's (AWF) involvement in Manyara Ranch, a livestock ranch now managed as a protected area, led to the displacement of local people, who lost access to land for their livelihoods (Igoe 2007; Igoe and Croucher 2007)<sup>3</sup>. In other cases, the Tanzania government granted as concession the whole of the Loliondo hunting block to a wealthy investor from the United Arab Emirates through the Ortello Business Corporation (OBC) (Nelson 2004; Nelson et al., 2010; Gardner 2012), and American financier and eco-philanthropist, Paul Tudor Jones, was granted 140,000ha to create Grumeti Reserves Ltd, an exclusive safari destination (Igoe 2007; Galaty 2011). These deals created a lot of controversy with local communities, threatening local land rights, displacing livestock grazing and in the case of OBC, resulting in the forced eviction and burning of homes (FEMACT 2009; Gardner 2012). In Kenya, 300 Samburu families were evicted in 2011 after two US-based charities, TNC and AWF purchased their land, allegedly from former president Daniel Arap Moi, and gifted it to the Kenya Wildlife Service (KWS) who plan to create a new national park, Laikipia National Park (Cultural Survival 2010; Nichonghaile and Smith 2011; Letai and Lind 2012). These and other deals, point to the alienating effect of private sector investment in conservation for local people.

Another concern is that privately protected areas can concentrate land ownership into the hands of the wealthy, and often foreign, few. Langholz and Lassoie (2001) warn that privately protected areas can become islands of elites, places where wealthy landowners host affluent tourists. In Latin America this trend is very apparent. In Patagonia in Argentina, a few very wealthy North American businessmen have purchased millions of hectares of land in the name of nature conservation, becoming some of the largest landowners in Argentina (Vidal 2008; Zoomers 2010). In Brazil, one European businessman bought many thousands of hectares of rainforest (Vidal 2008), and in neighbouring Uruguay over 5 million hectares have been sold to foreigners (Zoomers 2010). Moreover, land acquisitions for conservation can also have the effect of increasing land prices (Armsworth et al., 2006), making it unaffordable for poorer land users to buy land. Private ownership of conservation areas can thus tend to transfer land to wealthy and foreign-owned hands and can be considered a form of land grabbing or neo-colonialism (Langholz

---

<sup>3</sup> Grazing is now reportedly allowed in some parts of the ranch and with some benefit-sharing arrangements from ecotourism (Fidelis Ole Kasha, ranch manager, pers comm)

and Lassoie 2001; Vidal 2008; Fairhead et al., 2012). As Büscher and Whande (2007, p31) succinctly put it: 'In areas of the world where land rights and conservation are contested issues or where there are high levels of poverty, privatised nature reserves represent a new form of dispossession..'.

### Green (land) grabbing

These types of land losses have been labelled as 'green grabs' - where land, or access to land, is lost for conservation purposes. 'Green grabbing' is a growing phenomenon that has been increasingly witnessed and described in recent years (Fairhead et al., 2012). Conservation and ecotourism development was identified as one of seven processes driving global 'land grabs' (Zoomers 2010). Although most land grabs result from large scale land acquisitions in developing countries by finance-rich, resource-poor countries to satisfy their food and fuel requirements (Cotula et al., 2009; Zoomers 2010; Borras et al., 2011), increasingly, private individuals and international organisations are investing in large areas of land for nature conservation, triggering a 'great green land grab' (Vidal 2008). Echoing land appropriation under European colonialism, this trend can be portrayed as a reinvention of a phenomenon that has occurred for centuries.

Green grabs may be linked to conservation agendas, and also to the markets related to 'green' enterprises such as PES, biodiversity offsets, and ecotourism. Under neoliberalism, the commodification of nature is linked to the process of green grabbing as new (economic) values are inscribed on resources, opening up opportunities, and creating incentives, for outside investors to capture them. Thus in the valuing, marketing and commodification of nature, land or resources can be appropriated, justified by conservation needs and for conservation ends. Green agendas are thus the core driver and goal of the process of green grabbing (Fairhead et al., 2012). The effects of this is that as nature is sold, local people risk being dispossessed or losing access to land or resources. Moreover, even if 'grabbing for green ends does not always involve the wholesale alienation of land from existing claimants, it does involve the restructuring of rules and authority over the access, use and management of resources, in related labour relations, and in human-ecological relationships, that may have profoundly alienating effects' (Fairhead et al., 2012, p239).

### Summary - changing conservation narratives and neoliberal conservation

This review has outlined a number of approaches that fall under the narrative of neoliberal conservation, especially those that apply to how conservancies operate in the Mara. Many of these approaches, however, can also be viewed under different conservation narratives (e.g. ecotourism and the community conservation narrative), showing that narratives overlap and create conservation hybrids (Büscher and Whande 2007). Much has been revealed about the problematic outcomes of market-based instruments for local communities, and especially how this involves a restructuring of the rules over access to resources. This can ultimately lead to processes that alienate local people from their livelihoods or landscapes, as previous subsistence use is replaced with use based on the market. Neoliberal conservation can therefore lead to a disconnect between conservation and social justice, as new spaces of investment are promoted over the needs of local communities – leading to question if these are green grabs or livelihood opportunities (Bedelian 2012)? I now talk about some of these issues in relation to pastoral livelihoods and the pastoral rangelands; areas which are also host to a plethora of conservation and development initiatives.

### **1.3 Pastoralism, livelihoods and conservation**

In the pastoral rangelands, conservation and development projects build on the premise that wildlife and pastoralism are compatible and complementary land uses (Homewood and Rodgers 1991; Bourn and Blench 1999). Indeed, in the pastoral savannas of East Africa, wildlife and livestock have lived side by side for millennia, and traditional pastoralism has been considered to be compatible with wildlife conservation (Western 1982; Homewood and Rodgers 1991; McCabe and Perkin 1992). Synergies between mobile pastoralism and wildlife conservation keep rangeland open and thus allow wildlife and livestock to coexist. The fact that African savannas have until recently maintained thriving pastoral economies and densities of wildlife is testament to their potential compatibility (du Toit et al., 2010; Reid 2012).

Conservation interventions in the rangelands/pastoral areas are thus based on the potential opportunities for a win-win scenario for conservation and livelihoods, whereby protecting rangelands for wildlife can also benefit pastoralists. It is also assumed that wildlife revenues will provide incentives for pastoralists to engage in conservation compatible land uses.

Conservationists, international donors and governments support and favour these conservation interventions as pastoral systems are widely portrayed as degrading, unproductive, and environmentally destructive land use systems. This is despite the fact that rangeland areas home

to pastoralists, are one of the only places that wildlife still exist in such high numbers, alongside what is increasingly demonstrated to be nationally very significant levels of production (see below).

### ***1.3.1 View that pastoralism is an unproductive, degrading land use***

Pastoralism is still commonly portrayed in official government and conservation literature as an irrational, archaic and primitive form of livelihood. Common misconceptions regarding pastoralism have viewed it as an unproductive and uneconomic land use, in need of modernising (Galaty and Bonte 1991). Pastoralism has been undervalued as a land use and negative perceptions have dominated pastoral policies (Hesse and MacGregor 2006). The popular narrative of the arid and semi-arid lands (ASALs) in Africa has been that of expanding deserts and overgrazed rangelands due to the overstocking of livestock. Pastoralists are portrayed as causing desertification and degradation due to their irrational desire to accumulate large herds. Two well-known texts justified and shaped these arguments. In the first, Herskovits (1926) describes a 'cattle complex' in East Africa, where herders had a sentimental attachment to their cattle and kept more than was needed, based on concepts of prestige and power, rather than what was economically rational. In the second, Garrett Hardin (1968) theorised in the 'tragedy of the commons', that individuals sharing a common resource will act in their self-interest to utilise a greater proportion of that resource. Hardin used a metaphor of a herdsman 'locked into a system that compels him to increase his herd without limit', ultimately leading to the tragic overuse and destruction of a commons resource (Hardin 1968). To avoid the tragedy Hardin proposed privatisation of common resources, or government ownership.

The ecological arguments portraying pastoralism as an unproductive and environmentally degrading form of land use were based upon the long-standing ecological theory that tropical and subtropical grazing lands should be stable, equilibrium systems, based on strong feedback or coupling mechanisms between livestock and vegetation (Lamprey 1983; Sinclair and Fryxell 1985). Pastoral systems were thus seen as fragile, with characteristic patterns of boom and bust driven by overstocking and overgrazing, and pastoralism viewed as a destructive and degrading land use.

Pastoral development policy was thus directed towards fostering what are seen as more productive and economic land uses; intensifying livestock production or converting pastoral land to agriculture. Governments promoted privatisation, and range and livestock development projects were based on the ranching model. These were donor promoted and promised

improved levels of livestock production. In East Africa, government policies favoured the commercialisation of rangelands, and the sedenterisation of pastoralists as a way to increase productivity (URT 1997; RoK 2007a). Sedenterisation, and the restriction of mobility, became a feature of many sub-Saharan government policies in the belief that nomadic pastoralism is the cause of rangeland degradation (Galaty and Bonte 1991). In Kenya, this included the establishment of communally and privately owned group ranches from the 1950s and 1960s (Rutten 1992; Galaty 1994; chapter 2).

The view that pastoral rangelands are overgrazed and degraded has come under considerable criticism and been widely challenged (Homewood and Rodgers 1987; Ellis and Swift 1988; Behnke et al., 1993; Sullivan 1996; Sullivan and Rohde 2002). In the 1980s, empirical advances in non-equilibrium ecology showed that pastoral systems are often better understood in terms of dynamic, non-equilibrium systems, intrinsically more resilient than stable systems as they have to deal with climatic perturbations and instability (Ellis and Swift 1988). This is more appropriate to the drier and variable rangelands (ASALs) with high rainfall variability. In non-equilibrium rangelands there is little feedback or coupling between livestock and vegetation as herds are mobile and vegetation dynamics are not primarily driven by grazing pressure. Rather, it is drought/climate and the options for movement that regulate the number of livestock and not overgrazing (Homewood and Rodgers 1987; Ellis and Swift 1988; Behnke et al., 1993). There is now substantial research demonstrating the viability of pastoralism in climatically variable and dryland environments (Behnke et al., 1993; Scoones 1994; Leach and Mearns 1996).

Pastoralists are well adapted to these landscapes and the variable conditions. They have long traditional knowledge and practices suited to these landscapes. What is described as degradation in such systems may be just part of the normal range of variation that is displayed by these systems (Sullivan 1996). Moreover, claims that pastoralism is detrimental to the environment and the cause of rangeland degradation are often not supported by meaningful data (Sullivan 1996; Brockington 2002).

The modernisation policies have been widely criticised, with an increase in rangeland degradation and pasture insecurity for pastoralists attributed to these policies (Ellis and Swift 1988; Rutten 1992; Sneath 1998). These policies have undermined traditional forms of management and coping strategies of pastoralists, ignoring the social, cultural, political and ecological complexities of pastoralism. One such coping strategy is mobility. The important role of mobility in

preserving high levels of pastoral output is well documented (Ellis and Swift 1988, Behnke et al., 1993; Niamer-Fuller 1999). Mobility is a key characteristic of non-equilibrium systems, allowing use of spatially heterogeneous and climatically variable resources. A reduction in mobility increases the risk of degradation as it leads to continuous, heavy utilization of only a part of the range, and also increases pastoralists' susceptibility to droughts (Vetter 2005). Rather than pastoral degradation, arguably it is the socio-political processes that are transforming these landscapes, through displacing pastoralists, reducing mobility, and preventing them from using their traditional knowledge and practices.

Hardin's account was shown to be oversimplified and based on an incomplete understanding of property, and was more relevant to open access resources, where resources are not under any system of control regulating use and access (Berkes 1989; Bromley 1989; Bromley 1992). Hardin did not account for the ability of resource users to recognise resource degradation or to develop self-governing institutions for resource access and use (Ostrom 1990). Indeed, abundant evidence has shown that local populations have been long able to successfully manage and regulate common resources amongst users (McCay and Acheson 1987; Feeny et al. 1990; Ostrom 1990). In fact, rangelands under established customary communal control may be better able to prevent resource degradation than those under privatized individual control (Sneath 1998). Furthermore, under climatically variable environmental conditions, communal property arrangements provide advantages over privatized individual arrangements in minimizing risk, promoting equitable use of variable resources and minimizing costs (Ostrom 1990; Behnke et al., 1993; Niamer-Fuller and Turner 1999). Furthermore, comparison between sedentary, commercial ranching and more mobile pastoral production systems across Africa showed pastoralism out-produces ranching under the same conditions (Western 1982; Cossins 1985; Scoones 1992, 1994).

### ***1.3.2 Pastoral alienation in favour of competing land uses***

The misconceptions regarding pastoralism have resulted in pastoralism being undermined by the appropriation of land in favour of alternative and often more intensive forms of land use. Due to the modernisation and privatisation policies, pastoralists have continued to experience land loss, physical insecurity and economic marginalization. Pastoral areas have been considered underused and undeveloped lands, and therefore available for conversion or grabbing. The increased needs for agriculture and biofuels (food, fuel, cash crops) and also for tourism, have justified the expropriation of pastoral areas by outsider investors, governments, local elites for commercial investment, as these areas are seen as barren, idle, wastelands (Zoomers et al.,

2010). Pastoralists have been displaced out of their range, leading to the permanent loss of land and the erosion of pastoral land rights (Brockington 2002; Walsh 2012).

However, recent studies are showing how pastoralism is more profitable than agriculture, and also more valuable than previously thought. Research by Behnke and Kerven (2013) in Ethiopia show how pastoralism is more profitable than irrigated agriculture. Behnke and Kerven (2013) quantify the benefits from three alternative agricultural systems – pastoral livestock production, cotton and sugar cane - and find that revenues per hectare are higher on areas with livestock than either sugar or cotton plantations. However, because the government has more control over the cash crops, and receives more from them, irrigated cultivation is preferred over pastoralism. Though cropping is not more productive than pastoral production, it is more productive for the Ethiopian state, through a number of taxes and contributions to the state that pastoralism escapes, or where the contributions of pastoralism are not so clearly apparent. In comparison, pastoral trade is informal and invisible, it is not included in figures such as GDP, and is therefore undervalued (Behnke and Kerven 2013). Another study highlights the important contribution of livestock to the Kenyan Economy (Behnke and Muthami 2011). They find it significantly higher (150%) than previous estimates, and only slightly less than that of crops and horticulture combined.

### ***1.3.3 Pastoralist livelihoods and the need to diversify***

As pastoralists have lost land to alternative uses, pastoral ranges are shrinking, and livestock per capita reducing. There are high levels of poverty in pastoral areas in Kenya (Kristjanson et al., 2010). Fragmentation is constraining mobility and access to key resources, thus increasing pastoral vulnerability (Galvin et al., 2008). In response, pastoralists have to increasingly rely on non-livestock sources of income in their livelihoods. Diversification of pastoral livelihoods is widely observed across Maasailand (Homewood et al., 2009). Maasai are increasingly diversifying into cultivation, business and trade, wage labour and tourism (Kristjanson et al., 2002; Homewood et al., 2004, Homewood et al., 2009). Since farming in the pastoral rangelands is so risky with unpredictable rainfall and low yields, diversification into wage labour, business and trade is often more important (Homewood et al., 2009).

Diversification is driven by different 'push and pull' factors, showing increasing differentiation between the rich and poor in Maasailand (Little et al., 2001; Homewood et al., 2009). Poor households are likely to be 'pushed' to diversify by necessity; seeking work that is typically



insecure, unskilled and low paid in order to survive. In contrast, wealthier households are more likely to be 'pulled' to diversify for investment and risk management, looking for opportunities to complement livestock and accumulate wealth. Diversification invariably means an increasingly sedentary way of life as people settle to seek opportunities.

#### Diversification into and role of conservation – few have benefited

Diversification in conservation and tourism is another option in areas with high wildlife presence. Tourism potentially provides an important source of income for Maasai adjacent to protected areas. The wildlife rich savannas of East Africa are well suited to ecotourism development, with high densities of easy to view charismatic wildlife. Maasailand includes some of the most important tourism destinations in Africa, including the Ngorongoro Conservation Area in Tanzania, and the Maasai Mara National Reserve in Kenya. However, there is little evidence that conservation has benefited pastoralists in Maasailand (Coast 2002; Thompson and Homewood 2002; DeLuca 2004; Homewood et al., 2009). Tourism incomes to pastoralists have overall been very small and very few derive their main income from tourism. Although, the Mara is an exception where tourism revenues are higher and more widely reached than other areas, even here, livestock are the main livelihood activity (Homewood et al., 2009).

Furthermore, tourism revenues tend to be inequitably distributed with revenues being captured most heavily by the wealthier and better placed individuals (Thompson and Homewood 2002; Homewood et al., 2009). Benefits also tend to be spread unevenly along age, gender, educational, race and ethnic lines (DeLuca 2004). Distributional issues are worse when revenues are captured at the community level and siphoned off by elites (Thompson and Homewood 2002). Furthermore, tourism can be a risky livelihood alternative to pastoralism and agriculture, susceptible to concerns over political stability, economic downturns and violence. Research shows that Maasai in Ngorongoro are not interested in substituting tourism for their current pastoral and agricultural livelihood activities but rather as a possible way of supplementing them (DeLuca 2004). Although livestock and cultivation are also risky in terms of factors such as disease and climate, they involve direct food production, and so allow for more control over the outcome (DeLuca 2004).

## 1.4 Tourism, conservancies and wildlife in Kenya

Tourism is one of Kenya's top earners of foreign exchange along with tea and horticulture. Income generated from tourism was US\$1.2 billion<sup>4</sup> (KES 96 billion) in 2012 (KNBS 2013). This is an increase of 53.6% from 2009 when tourism earned US\$0.78 billion (KES 62.5 billion). Tourism is one of six priority sectors of Kenya's Vision 2030 – Kenya's long term development strategy that aims to transform Kenya into a middle-income country by 2030 (GoK 2008). Tourism is also an important contributor to Kenya's national GDP (World Bank 2011).

Much tourism in Kenya is associated with game viewing and photographic safaris in state protected areas – national parks, national reserves and national sanctuaries<sup>5</sup>. However, in recent years, there has been a proliferation of conservation and tourism initiatives occurring outside of protected areas in non-state conservation areas. Carter et al. (2008) in their analysis of community and private conservation areas in Kenya in 2005 found an array of different types of non-state conservation areas that made up 1.4% of Kenya's land mass compared to 7.8% under state protected areas. A review of community conservancies in Kenya in 2011, found over 40 different community conservation areas, making up some 3.1% of Kenya's land mass (ILRI 2011; Bosire et al., 2012)<sup>6</sup>. Both datasets show a rapid growth in community and private conservation areas since the early 1990's. However, more recent estimates in 2013 put the number of conservancies in Kenya again much higher, at 160 conservancies (Dickson Kaelo, pers comms). Most of this phenomenal growth is occurring in pastoral areas, and much of it in Maasailand.

Non-state protected areas are important areas for wildlife. Community and private conservation areas greatly increase Kenya's conservation estate. Western et al. (2006, 2009) found that only 35% of Kenya's wildlife is found in state-owned national parks and reserves, compared to 65% found outside of parks and reserves. Of the 65% found outside, 40% is found in community and private conservation areas and 25% outside of any type of protected areas. Thus, more wildlife is found in community and private conservation areas than in state protected areas, highlighting their importance for wildlife conservation.

---

<sup>4</sup> I use an exchange rate of US\$1 = KES 80 throughout the thesis.

<sup>5</sup> A 1977 Kenya-wide ban on hunting and consumptive utilisation of wildlife, limits tourism to game viewing and photographic safaris only.

<sup>6</sup> This review excluded those conservation areas under long-term private ownership by individuals, e.g. the privately-owned ranches in Laikipia Ranches.

In Kenya, the use of the term 'conservancies', has come to denote a wide range of community and private conservation initiatives. In Maasailand this is occurring predominately on group ranch land or on subdivided group ranches, and involves a variety of often complex management and ownership arrangements (Carter et al., 2008). Many initiatives are driven by agreements with tourism operators, and involve the setting aside of land for conservation in return for tourism revenue and other benefits e.g. employment, community development projects (Carter et al., 2008). Where group ranches have been subdivided, individual landowners regroup their land to form a conservation area, and landowners receive direct payments through a land lease arrangement (Bedelian 2012). Payments are then conditional upon agreeing to certain land use restrictions for the covenanted conservancy land.

These initiatives have tended to evolve independently and adaptively in different areas, according to the conditions, opportunities and priorities of a particular area or community. A range of different groups or partners are involved in these diverse initiatives; including communities, private individuals, NGOs, trusts, tourism companies and other corporate bodies. This is occurring alongside an increasing focus of Kenya's wildlife and tourism policies on areas outside of state protected areas (RoK 2006, 2007b, 2012). Both policies include poverty reduction as a key objective and state the need to include local communities in managing and equitably benefiting from wildlife and tourism. However, despite all of this, there have been poor returns from tourism to the local level and little evidence of any impact on poverty reduction (Rutten 2002; Thompson and Homewood 2002; Manyara and Jones 2007; Homewood et al., 2009). It has been argued that landowners or communities receive few benefits from wildlife, because approximately 95% of revenues are diverted away to the service side of the industry (Emerton 2001; Norton-Griffiths and Said 2010). The little that does filter down to the local level is then captured by a small proportion of the community as much gets siphoned off by corrupt community level institutions (Thompson and Homewood 2002).

There have also been steep wildlife declines in Kenya. Since aerial monitoring of wildlife began in the mid-1970s, analysis of wildlife trends have repeatedly shown that Kenya has lost between 50% and 70% of most wildlife species (De Leeuw et al., 1998; Ottichilo et al., 2000; Western et al., 2009; Ogotu et al., 2011). These losses are occurring both inside and outside of protected areas, however, these declines are shown to be lowest, or populations are even stable, on community or private conservation areas (Western et al., 2006, 2009). Although there will be some differing effects for individual species and areas, these declines have been ultimately attributed to habitat

loss and fragmentation, primarily caused by conversion of wildlife habitat to cultivation (Homewood et al., 2001; Norton-Griffiths and Said 2010).

### **1.5 Research questions and thesis structure**

The current trend in setting up conservancies in Kenya reflects the way they are perceived as a win-win solution to increase habitat for wildlife and provide income for local people. Their phenomenal growth in the past few years shows how they are being widely promoted and implemented on the ground. However, little is known on the kinds of partnership or governance structures that are emerging from these types of initiative. Also, there is little evidence of their ability to meet either conservation or livelihood goals.

As Kenya's rangeland policies have promoted privatisation, pastoral areas are shifting from communal to individual ownership. A parallel shift is occurring in tourism initiatives with revenues distributed at the household level rather than the community level. In the Mara, the latest set of initiatives involves direct payments to landowners from tourism investors, in return for setting aside land for tourism. With direct links and partnerships with the private sector, and new ways of marketing and valuing nature, these initiatives fit well with the narrative of neoliberal conservation. The thesis has three main questions:

- What kinds of partnerships are emerging from conservancies and who within the community gets to participate?
- To what extent do conservancies contribute to and integrate with pastoral livelihoods?
- What are the implications of conservancies and their restructuring of rules over use and access to conservancy land, for the wider landscape?

Specific questions asked in each data chapter are shown in Table 1.1.

My thesis extends previous research in the Mara which investigates the contribution of conservation to livelihoods in the Mara (Thompson et al., 2009), by specifically looking at new (neoliberal) forms of conservation involving direct payments and partnerships between tourism investors and Maasai landowners in Koyiaki Group Ranch. I approach the research questions in two ways:

- 1) Through an understanding of the socio-political processes of who gets to participate in conservancies and by how much, and who gets left out. I use a political ecology approach,

which is useful to show how people are divided by differentials of power and competing agendas to control conservation initiatives (Bryant 1992).

- 2) Through empirical evaluation of how conservancy participation compares to other livelihood activities, how it impacts on household wealth, and how conservancies influence settlement and livestock patterns in the wider landscape.

### Thesis structure

In **chapter 2**, I first introduce Maasailand and the processes and consequences of land privatisation that has occurred there. I then describe the study site, the Mara, including its history of conservation initiatives. **Chapter 3** outlines the main methods used in the study and the mixed-methods approach to the research. **Chapter 4** describes the conservation partnership between landowners and tourism investors, and uses an approach to empirically measure participation. I also use a political ecological analysis to assess the different groups involved or affected by conservancies. In **chapter 5**, I describe the main costs and benefits of conservancies that accrue to conservancy members and non-members. I then measure the contribution of conservancy income relative to other sources of household income. In **chapter 6**, I first investigate the trends in land ownership amongst households in Koyiaki, and use this and other household characteristics to investigate the determinants of conservancy participation. I then use matching methods to evaluate the impact of conservancy participation on household wealth. In, **chapter 7**, I look at the displacement of settlements and livestock from conservancies due to conservancy restrictions, using satellite images, livestock trend data, and household and interview data. **Chapter 8** pulls together the findings of the thesis by revisiting the main research questions, and placing it in the context of neoliberal conservation.

Figure 1.1: Research questions addressed in each data chapter.

<p><b>Chapter 4: Partnership, participation and power in conservancies</b></p> <ul style="list-style-type: none"><li>- How did the community participate in the formation of the conservancy? To what extent was it outsider- or insider-driven?</li><li>- What motivated people to join the conservancy?</li><li>- What is the nature of the partnership between the community and tourism investors?</li><li>- What are the different interest groups involved in or affected by conservancies, and how does their status and position influence their levels of participation and power in conservancies?</li></ul>
<p><b>Chapter 5: The costs and benefits of conservancies to pastoral livelihoods</b></p> <ul style="list-style-type: none"><li>- What are the costs and benefits of conservancies to conservancy members and non-members, at the household and community levels?</li><li>- What is the contribution of conservancy income relative to other sources of household income?</li><li>- How do conservancy members perceive the importance of conservancies to their household welfare?</li></ul>
<p><b>Chapter 6: The impact of conservancy participation on wealth</b></p> <ul style="list-style-type: none"><li>- What are the trends in land ownership amongst households in Koyiaki?</li><li>- To what extent do households participate in conservancies?</li><li>- What are the determinants of conservancy participation?</li><li>- What is the impact of conservancy participation on household wealth, measured through income, assets and expenditure?</li></ul>
<p><b>Chapter 7: Displacement of people and livestock: livelihood and landscape effects</b></p> <ul style="list-style-type: none"><li>- What is the impact of conservancies on settlement distribution and density in Koyiaki?</li><li>- To what extent has settlement displacement occurred and with what spill-over effects?</li><li>- How do conservancies affect livestock grazing inside and outside of conservancies?</li><li>- How do people perceive settlement and livestock displacement?</li><li>- What are the social implications of displacement for pastoral livelihoods and the ecological implications for the wider landscape?</li></ul>

## Chapter 2 Study Area

### 2.1 Introduction

This chapter introduces the study site – the Mara in south-western Kenya, with a particular focus on the now privatised Koyiaki Group Ranch. I first give a brief background on the predominant group of people that inhabit the study area – the Maasai. I then move on to describe the progressive loss of land that Maasai have experienced in Maasailand due to in-fighting with neighbouring groups, colonisation, post-independence pastoral development policies which encouraged privatisation, and protected area formation. As important historical processes that can help to explain contemporary practices and conflicts over resource control these are explained here. I then focus in on the study site in the Mara, and describe the process of land privatisation, the expansion of settlements and cultivation, and trends in livestock and wildlife. I finally give an account of the history of community-based conservation and tourism initiatives in the Mara, leading up to the formation of conservancies.

### 2.2 The Maasai

The Maasai are transhumant pastoralists speaking a Nilotic language and are found in the arid and semi-arid rangelands spanning the border of southern Kenya and northern Tanzania. Prior to the colonial period, their historical range extended much further than present day (Spear and Waller 1993), especially in Kenya, towards Lake Victoria and Mount Kenya. Today, Maasailand in Kenya is roughly congruent with Narok and Kajiado Counties<sup>7</sup>. The Maasai population in Kenya was estimated at 841,622 in the most recent census in 2009 (KNBS 2010).

The Maasai are one of the better known ethnic groups worldwide, as subjects of a great number of ethnographic and historical accounts (e.g. Thomson 1885; Hollis 1905; Jacobs 1975; Waller 1976, 1979; Galaty 1982; Spencer 1988; Talle 1988; Spear and Waller 1993, Hughes 2006). Images of the Maasai are also popularised internationally and in contemporary media, and commonly associated with tourism in Kenya and Tanzania. Once a powerful and dominant group in the 18<sup>th</sup> and 19<sup>th</sup> centuries, intersectional warfare (the *Iloikop Wars*), followed by a series of ecological disasters (known as *emutai*) and the advent of colonial rule, caused them to lose political dominance relative to neighbouring agricultural groups, resulting in a contraction of their former range (Waller 1976, 1988).

---

<sup>7</sup> Under the 2010 Constitution of Kenya, Counties replaced Districts as the units of devolved government.

Early accounts tended to portray the Maasai as 'pure' pastoralists, reliant on livestock products of meat, milk and blood for subsistence. Livestock are also of economic and cultural importance to the Maasai, and the focus of social relationships. Cattle are used in bride wealth, stock exchanges, and for gifts amongst friends and relatives. However, the Maasai's reliance on cultivation may also have a long history (Berntsen 1976; Spear and Waller 1993). It is likely that most Maasai have relied on agricultural products for part of their subsistence during every dry season, or as a result of the loss of livestock due to disease, drought or raids (Berntsen 1976). As economic or environmental conditions compelled them, individuals would shift between the subsistence modes of herding, farming and hunter-gathering, or rely on trade with neighbouring tribes to meet their needs (Berntsen 1976).

### **2.3 Maasailand**

In the nineteenth century, Maasailand stretched from northern Kenya down the broad plains and adjacent highlands of the Rift Valley to the Maasai Steppe in northern Tanzania. During the period of colonial rule that followed, much land was alienated from the Maasai as the colonial administration reallocated rights of access to land and resources (Waller 1988). In 1895, Maasailand was split in two by the international boundary between British Kenya and German Tanganyika. This was followed, in 1906, by the establishment of two native reserves in Kenya, the Northern and Southern Game Reserves, into which several sections of Maasai were concentrated, losing much of their previous range (Hughes 2006).

Just a few years later Maasai were again moved, from their Northern Reserve on the Laikipia Plateau, and became concentrated in the Southern Game Reserve in Narok and Kajiado Districts (Hughes 2006). During the 'Maasai moves' in Kenya from 1900 to 1915 several sections of Maasai pastoralists were alienated from their best dry season grazing land (Hughes 2006). Maasai lost land to European settlers and neighbouring agricultural groups, losing prime water and grazing land around the Ngong Hills, and Lakes Nakuru and Naivasha (Spear and Waller 1993). Further expropriation of land occurred for conservation through National Park formation, first by the colonial government and then continued post-independence. In Kenya, the Maasai lost land to Amboseli National Reserve (now National Park) and the Maasai Mara Wildlife Sanctuary (now National Reserve) in 1948<sup>8</sup> (Homewood 1995). In Tanzania, similar land expropriation occurred as pastoralists were moved from, among other areas, the Serengeti National Park in 1951, the

---

<sup>8</sup> Hughes (2007) gives an account based on oral history of how the Maasai Mara National Reserve at this time wasn't permanently occupied by Maasai, but was used as seasonal grazing reserves.



Tarangire National Park in 1957, and the Mkomazi Game Reserve (now National Park) in 1988 (Homewood 1995; Brockington 2002). In these cases permanent water and dry-season grazing resources were removed from pastoral use. Pastoral land loss due to conservation continues today and more recent examples are given in chapter 7. Figure 2.1 shows the current extent of Maasailand.

Figure 2.1: Present day Maasailand and the different Maasai sections. Samburu area also shown. Source: Galaty (1993).

### **2.3.1 Privatisation**

Livestock development and privatisation policies caused further loss and alienation of pastoral land in Maasailand. Post-independence government policies continued to encourage the privatisation and commercialisation of pastoral lands in both Kenya and Tanzania Maasailand. This was driven by economic incentives to intensify livestock production and convert higher potential areas to cultivation.

Privatisation of pastoral communal land was a government policy from as early as the 1950s. In Kenya, the colonial government in the 1950's, proposed the subdivision of Maasai communal lands into privately owned parcels. This centred on the belief that indigenous systems of land management resulted in land degradation as they encouraged pastoralists to keep excessively large numbers of cattle. Privatisation, it was thought, would create incentives for individuals to better manage and conserve the rangelands.

In 1968, the post-independence government, with help from USAID and the World Bank, promoted group ranches that gave groups of people formal and legal tenure over land. Group ranches were introduced in the expectation they would provide tenure security thus creating incentives for the Maasai to invest in range improvement and reduce the tendency to accumulate livestock. The 'Land Group Representatives and Land Adjudication Act' of 1968 enabled land to be demarcated into group ranches, which were owned and under private title by a group of registered members, and managed by an elected committee (Galaty 1992). The group ranch maintained agreed stocking levels and herded their livestock collectively, but owned them individually.

The concept of group ranches was initially accepted by Maasai as a way to provide security of tenure and to prevent further encroachment on their land by the Government, non-Maasai cultivators and elite Maasai (Grandin 1986; Bekure et al, 1991; Galaty and Ole Munei 1999). It also provided opportunities for the Maasai to qualify for loans for the development of livestock production infrastructure, such as water facilities and cattle dips (Galaty 1980). However, the land adjudication process was associated with a number of problems. Large areas of land were allocated to individuals from both within and outside the Maasai community. Individuals in positions of power and with the ability to influence the management committee were able to register title to privately owned areas annexed from the rest of the group ranch (Galaty 1993, 1999; Galaty and Ole Munei 1999; Thompson and Homewood 2002; Homewood et al., 2004).

Many of these new landowners subsequently sold on land for personal profit to in-migrant cultivating groups (Galaty and Ole Munei 1999; Thompson and Homewood 2002; Homewood et al., 2004). The group ranch elected committees were, in theory, meant to be elected annually, but in reality many group ranch officials remained in power for over 20 years (Rutten 1992; Thompson and Homewood 2002). These and other local elites (such as local county council members and administrative chiefs) were able to entrench their positions and became influential spokesmen for the wider group ranch, in many cases misusing these powers for personal gain. Many used their positions of power to form new farming and wildlife associations (Thompson and Homewood 2002).

### **2.3.2 Subdivision**

Group ranches failed to meet most of their objectives as stipulated by the government; they were ineffective in intensifying livestock production systems, and, at least initially, Maasai did not reduce the number of livestock they owned (Grandin 1986; Rutten 1992). Furthermore, group ranch committees lost public support as they failed to properly manage and maintain livestock infrastructure and showed favouritism to themselves, family and friends (Galaty and Ole Munei 1999). Pressure to subdivide group ranches began to mount from members frustrated with the inefficiencies and equalities of management committees, with individuals wanting better control of their own land, and title deeds to secure individual loans (Rutten 1992; Galaty and Ole Munei 1999). Individual ownership, it was envisaged, would provide new income opportunities such as leasing pasture, cultivating or selling land (Mwangi 2007a). Unlike the previous division of land, the pressure to subdivide emerged largely from the Maasai community itself (Rutten 1992; Kimani and Pickard 1998; Mwangi 2007a), although government and donor policies were also widely supportive of subdivision. Subdivision is argued to be a defensive strategy on the part of the Maasai, against appropriation by the state or political elites from both within and outside the Maasai community (Mwangi 2007a). Subdivision of group ranches and registration of individual titles it was believed would provide greater security from outsiders wanting to appropriate land, than did tenure rights held in group ranches. Subdivision of group ranches (and the registration of individual titles) began in the better watered and more commercially valuable parts of Maasailand in 1970s and then gradually spread to more remote and arid areas (Rutten 1992).

### Corrupt process

The subdivision process has been widely documented as being corrupt with cases of manipulation of land titling and illegal practices (Galaty 1993, 1999; Galaty and Ole Munei 1999; Thompson and Homewood 2002). Subdivision favoured the wealthy and the powerful group ranch committees who primarily catered for their own interests (Mwangi 2007b). Contrary to members expectations, subdivision did not result in equal land parcels; committee members captured the largest and most fertile portions of land (Galaty 1999; Mwangi 2007b). Wealthy individuals able to bribe the committee, and those with close ties to committee members were also given large shares, whereas those that had disagreements with the committee were punished with smaller parcel sizes (Mwangi 2007b). Since only adult men were added to group ranch registers (except in some cases the sons of the powerful), women, youth, and other marginalised groups were left out of land allocations and dispossessed of land altogether (Talle 1988, 1999). The subdivision process entrenched the influence of the group ranch committees in land allocation, who refused to abide by the legal principles set forth for subdivision (Galaty 1999; Galaty and Ole Munei 1999). Attempts to challenge the committee against unequal land allocations, first directly and then appealing through elders, the government administration and the courts, all failed (Mwangi 2007b).

### **2.3.3 Impact of subdivision**

Subdivision resulted in large tracts of land falling into the hands of non-Maasai. The onward sale of plots to non-Maasai has been a common occurrence, and as land has been progressively taken by non-Maasai groups, Maasai have permanently lost rights of access (Rutten 1992; Kimani and Pickard 1998; Galaty 1999; Galaty and Ole Munei 1999). The loss of land affects the long term security of families, and threatens the resource base for viable extensive livestock production (Rutten 1992). In attempts to increase the viability of their production system, Maasai have re-aggregated individual parcels for joint herd and pasture management with neighbours and kin, and re-established shared reciprocal access (BurnSilver and Mwangi 2007; Mwangi 2007b). Model simulations of subdivision show that by cooperating and forming grazing associations it is possible to mitigate some of the negative outcomes of subdivision (Thornton et al., 2006).

There have been large increases in cultivation on former pastoral land as the higher potential land is used for agriculture, removing key water and grazing resources, and pushing Maasai into more marginal areas (Rutten 1992; Kimani and Pickard 1998; Galaty 1999). Subdivision resulted in substantial declines in livestock as households are required to sell livestock to satisfy their cash

needs (Thornton et al., 2006). In-migration of non-Maasai has occurred reducing the proportion of Maasai in Maasailand, and intensifying land pressure and insecurity for pastoralists. Between 1962 and 1989 the percentage of the population represented by Maasai declined from 79 to 47% in Narok District and 78 to 57% in Kajiado District (Coast 2002). Land parcels are often too small and inadequate to support a family's subsistence requirements and restrictions on mobility (as people opt to fence or cultivate their land) all negatively impact pastoralists, and increase the potential for land degradation (Kimani and Pickard 1998).

Tenure security has been an over-riding concern of the Maasai both historically and currently. The subdivision, fragmentation and subsequent sale of former group ranch land have resulted in the piecemeal and progressive loss of pastoral land, with the permanent, irrevocable loss of rights of access. Nevertheless, Maasai have largely continued to manage their livestock along traditional lines despite development interventions that have encouraged the individualisation of land. A lack of accountability has facilitated the accumulation of land and wealth by local, national and international elite, including expatriate investors. Distribution issues are a common problem of the reassignment of property rights from collective to individual holdings (Mwangi 2007b). Those with power and influence win, and once-collective resources are concentrated in the hands of a few. More equal land reform processes require greater accountability mechanisms, and their enforcement (Mwangi 2007b)

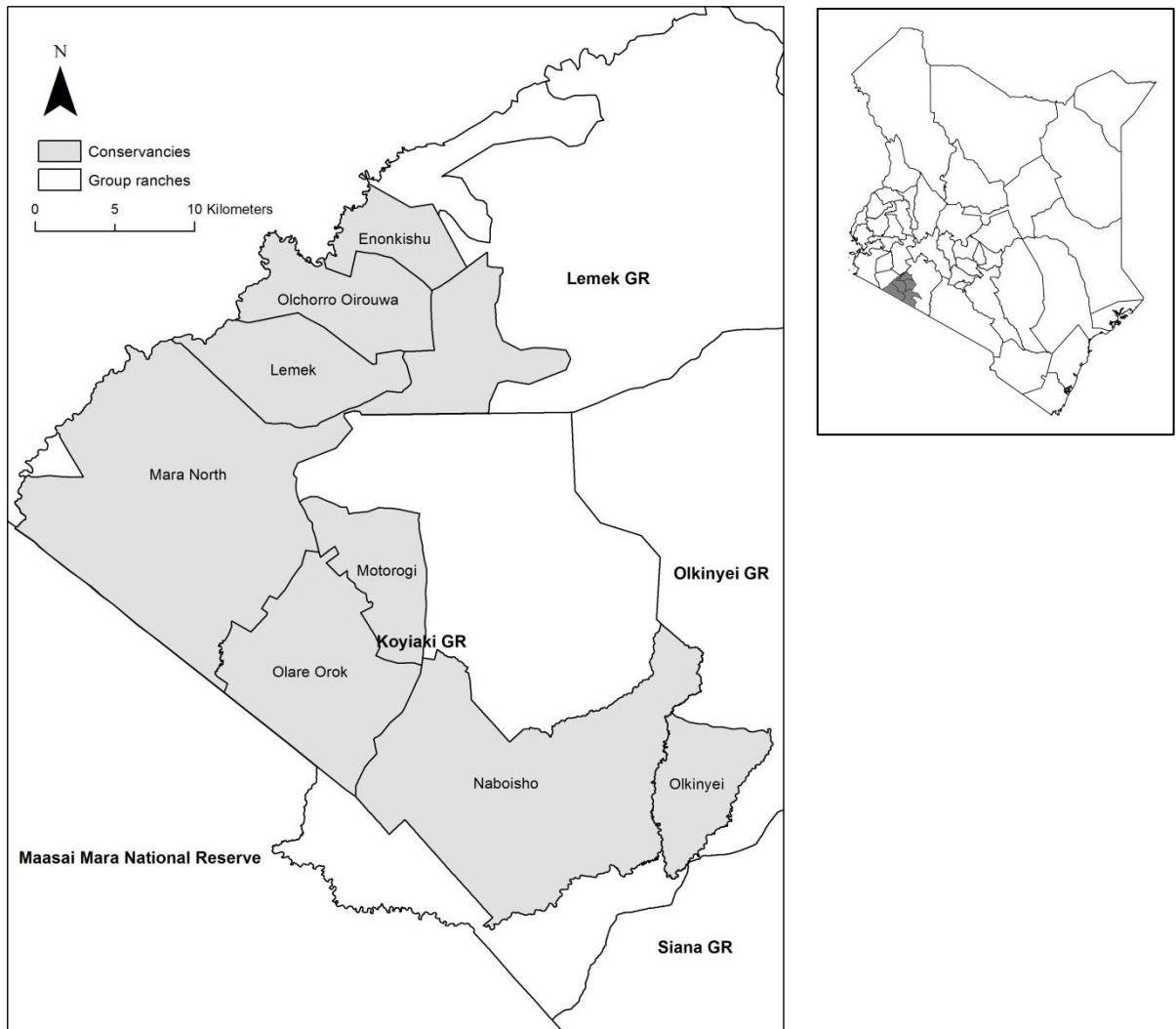
## **2.4 The Mara**

The Mara is comprised of the Maasai Mara National Reserve (MMNR) and surrounding former group ranches (Figure 2.2). The MMNR is a nationally protected area in south-western Kenya situated on the border with Tanzania's Serengeti National Park, and the adjacent group ranches form the main wildlife dispersal area of the reserve. The MMNR and adjacent group ranch land together cover an area of about 6000km<sup>2</sup> and form the northern part of the Serengeti-Mara ecosystem, defined by the annual migration of wildebeest, zebra and Thomson's gazelle. In the group ranches the main land uses are pastoralism, agro-pastoralism, cultivation, and wildlife tourism. These rangelands are important grazing resources for Maasai pastoralists and their livestock, as well as wildlife. In the MMNR, land use is officially restricted to wildlife tourism, with at times, considerable illegal livestock grazing (Butt 2011b; Ogotu et al., 2011).

The Mara is bounded by the Kenya-Tanzania border in the south, the Mara River and the higher potential agricultural land to the north, the Siria Escarpment in the west (separating the MMNR

from the Trans Mara plateau) and the Loita plains in the east. The Mara has two rainy seasons, with the 'short rains' occurring during October to November, and the 'long rains' from March to May. Often the short and long rains merge into one season, or the short rains fail completely. There is a rainfall gradient from the dry south-east (500mm/yr) to the wetter north-west (1200mm/yr) (Brotten and Said 1995) where climate is strongly influenced by the Lake Victoria weather system. In the Loita Hills and Siria Escarpment, there is a sharp increase in rainfall with altitude. Vegetation comprises tall and short grass plains dominated by *Themeda* and *Pennisetum* species, interspersed by a patchwork of *Acacia* woodlands and bushlands, thicket and riverine forest (Lamprey and Reid 2004).

Figure 2.2: Map of the Mara study area, showing the Maasai Mara National Reserve, the surrounding group ranches, and conservancies. Map insert showing location of the Mara within Kenya.



#### **2.4.1 The Maasai Mara National Reserve (MMNR)**

The MMNR was one of earliest protected areas established in Kenya. First set up as a Wildlife Sanctuary in 1948, it comprised a smaller area than what it is now (Koikai 1992, cited in Walpole et al., 2003). In 1961, control was handed over to the Narok County Council<sup>9</sup> (NCC), and it was enlarged and renamed the Maasai Mara Game Reserve (Lamprey and Reid 2004). In 1976, the MMGR was re-designated the Maasai Mara National Reserve (MMNR) under the Wildlife (Conservation and Management) Act, 1976. In 1984, Talek and Mara Rianda settlement areas were excised and de-gazetted and the MMNR came to its present size of 1,510km<sup>2</sup> (Walpole et al., 2003; Lamprey and Reid 2004). In 1995, the Trans Mara County Council (TMCC) was formed in the western part of the reserve and its portion of reserve, the Mara Triangle, placed under its control (Walpole et al., 2003). This district level boundary in effect split the control of the MMNR in two – with the NCC and TMCC managing their portions of the reserve respectively.

The MMNR has the highest densities of wildlife in Kenya, many of which spill out of the MMNR during the wet season and graze on the neighbouring pastoral group ranches (Brotten and Said 1995). As well as supporting a high number of resident wildlife, the MMNR and surrounding pastoral group ranches provide critical dry season grazing and permanent water for the migratory wildebeest, zebra and Thomson' gazelle as they move north from the Serengeti in the dry season (Stelfox et al., 1986).

#### **2.4.2 Land privatisation in the Mara**

As in other parts of Maasailand, the Mara is undergoing a change in land ownership from communal to individual land holdings. Group ranches in the Mara were established in the 1970s and 1980s. As for wider Maasailand, there was a push for the subdivision of group ranches in the Mara, mainly due to the desire for security of tenure (Seno and Shaw 2002). This originated from concerns of agricultural encroachment by immigrant farmers into Lemek, and further south the threat of expansion of the MMNR by the Kenya Wildlife Service (KWS), NCC and the conservation community (Homewood et al., 2004). There was also dissatisfaction with corrupt group ranch committees and local elites grabbing the larger proportion of revenues from tourism and cultivation (Thompson and Homewood 2002).

Many group ranches were thus subdivided and registered members of the group ranch received title to a plot or plots of land. Lemek was one of the first group ranches subdivided. Apart from a

---

<sup>9</sup> The then Narok African District Council

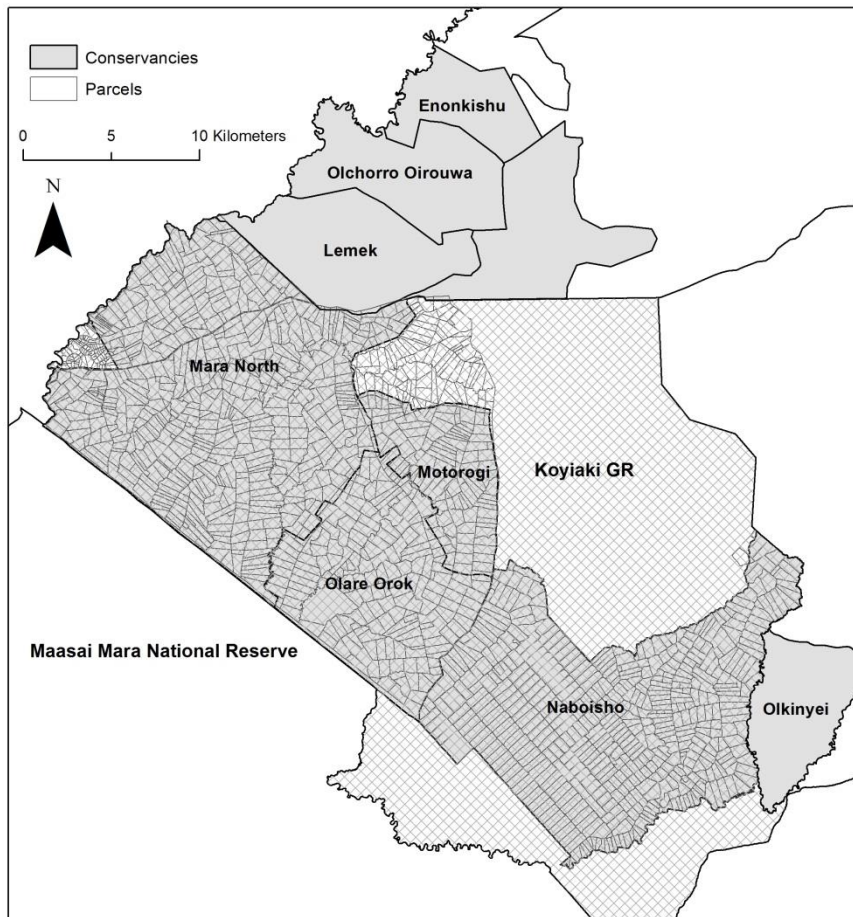
large portion of land which was allocated to a few Maasai in the 1970s, the rest of the group ranch was subdivided in a long and contentious process from the mid-1980s to late 1990s (Thompson et al., 2009).

In Koyiaki, the process was equally long and contentious. Subdivision occurred in at least three stages over a period of 25 years with the group ranch being divided into five blocks for land subdivision purposes. Subdivision in Koyiaki started in 1984 with the Talek area (block five) directly on the MMNR border when this area was excised from the MMNR and subdivided and allocated into 154 plots (Thompson et al., 2009). Land in blocks one and two was subdivided and allocated from 2001-2004 with each member due to receive 150 acres (Thompson et al., 2009). Land in the final two blocks (blocks three and four) was delayed pending a court case contesting a number of allocation irregularities and conflicts. Membership of Koyiaki Group Ranch has been a contentious issue; a number of households (allegedly 300 of an estimated 800 in Koyiaki in 1999) were not allocated land as the validity of their land claims were questioned (Lamprey and Reid 2004). Blocks three and four were finally subdivided and allocated in late 2009. In these subdivisions, land allocation tended to fall below the 150 acres as more people were registered to receive land. Figure 2.3 shows the subdivided parcels in some areas within Koyiaki Group Ranch.

Other neighbouring areas or group ranches include Olchoro Oirouwa, Siana and Olkinyei. Olchoro Oirouwa was privatised in the 1960s to a small number of landowners (Thompson and Homewood 2002). The area was previously used as a veterinary station by the colonial government in the 1950s. When this was abandoned a number of Maasai families were able to acquire title deeds of very large landholdings of several thousand acres. Olkinyei Group Ranch was only recently subdivided in 2009. Siana, which was not registered as a group ranch and remained as trust land, is currently undergoing subdivision.



Figure 2.3: Map showing subdivided parcels of land inside conservancy areas in Koyiaki. All areas of Koyiaki Group Ranch are now subdivided; however subdivision maps were not available for these areas.



### Land grabbing

As for wider Maasailand, it has been widely reported that the privatisation process was rife with conflict, inequality and land grabbing (Thompson and Homewood 2002; Homewood et al., 2004). Group ranch committees and others yielding considerable power, were able to acquire the largest and best placed lands, or allocate them to family and friends both before group ranch formation and during group ranch subdivision. Elites were able to manipulate the subdivision process to secure ownership of the land with the best grazing or the best tourism or farming potential. For example, in Lemek, the process of allocation of plots was very contentious, and influential people managed to manipulate the process of land subdivision in their favour, acquiring the best land in the wheat belt, sites with tourism facilities, or with good grazing and watering (Thompson and Homewood 2002). There is a long history of politicians, leaders and other elites misusing their power to acquire the best tourism land or gain access to lucrative tourism deals in the MMNR. For example, a former treasurer of the NCC, Livingstone Ole Ntutu, allegedly grabbed 4000 acres

of land inside the MMNR during his time in office (Wikileaks 2007). The current MP for Narok North and a cabinet minister, and former chair of the NCC, William Ole Ntimama, owns the land on which two luxury lodges are built in the MMNR (Honey 1999; Hughes 2007). Another former chair of the NCC, Hassan Ole Kamwaro, owns the land on which a lodge was recently built in sensitive rhino habitat within the MMNR, despite widespread opposition on environmental grounds and a moratorium on any new lodges in the reserve (Kemei & Limo 2010). These and other elites appear to have used their positions within NCC to allocate themselves land inside a national reserve, and thus theoretically under public ownership.

#### **2.4.3 Impacts of privatisation on settlements and land sales**

In the 1950s, before land privatisation, Maasai permanent and temporary settlements were scattered but confined to more northern areas of the Mara due to the presence of a tsetse fly belt which made the grazing unusable (Lamprey and Waller 1990; Lamprey and Reid 2004). By 1967, the first Maasai settlement appeared on the northern border of the MMNR in Talek (Lamprey and Reid 2004). Up until this point the MMNR was not heavily used by people or livestock (Hughes 2007), with only seasonal grazing and settlements. However, as bush was burned and cleared in the 1950s to 1960s, tsetse fly disappeared, and Maasai gradually expanded south towards the reserve to Talek (Lamprey and Reid 2004).

After group ranch registration in the 1970s, the Maasai population in the Mara increased rapidly and the settlement localities of Lemek, Talek, Aitong, and Ol Kinyei became well established (Lamprey and Reid 2004). The density of temporary livestock camps declined rapidly after the 1960s as the Maasai became more sedentary and most grazing areas were now within daily grazing range (Lamprey and Reid 2004). By 1983, large clusters of settlements had established in Talek and Mara Rianda where livestock had access to permanent sources of water in the Talek and Mara Rivers. In 1984, these areas were excised from the MMNR.

Lamprey and Reid (2004) calculated the number of bomas<sup>10</sup> in Koyiaki Group Ranch increased from 4 in 1950 (when the group ranch was not yet established) to 235 in 1999, with a corresponding increase of population from 202 to 8428. Close to the MMNR the rate of increase of occupied bomas was faster, and the density higher, than bomas further away from the MMNR (Norton-Griffiths et al., 2008). The higher concentration of bomas closer to the reserve may

---

<sup>10</sup> Boma is the Swahili word for a Maasai settlement (or *enkang* in Maa), and is a commonly used term in Kenya Maasai areas.

reflect attraction due to the greater economic activities and opportunities in this area due to tourism (Norton-Griffiths et al., 2008).

As group ranches were subdivided, one effect was the movement of people off the land which they had not been allocated. Those who were allocated land, settled on their new parcels, and in the process forced out those who did not have claims to the land (Norton-Griffiths et al., 2008). Settlements proliferated as traditional bomas split into smaller family units, each wanting to settle on their allocated land parcels (Lamprey and Reid 2004). Thompson et al. (2009) found that between 1998 and 2004, mean household size reduced from 8.2 to 6.3 adult equivalents (AE) and the average age of the household head reduced from 46-41 years, as younger sons took up their own land parcels. Much of this actually took place before subdivision with households staking claim to specific sites as part of a tenure strategy (Thompson et al., 2009). Similarly, there were also associated increases in cultivation and fencing used to demarcate plots in the run up to subdivision as way to stake claim to land (Thompson et al., 2009). New settlements constructed tended to incorporate iron roofing and well-secured fences, reflecting a deeper and more permanent investment (Lamprey and Reid 2004).

After land subdivision, land sales increased as more wealthy members within the group ranch tried to increase their landholdings and as interest grew from outside immigrants, tour operators and farmers to purchase land (Norton-Griffiths et al., 2008). In the Olare Orok area adjacent to the MMNR, 14 plots of approximately 50 acres each were sold to outsiders looking to invest in tourism or set up an idyllic bush home (section 4.4). Close to trading centres in Lemek, 13% of households sold nearly 50% of their land as money was used buy cattle, construct new settlements, or simply to buy alcohol (Thompson 2005). Thompson et al. (2009) note a transfer of livestock holdings from wealthier to poorer households in the run up to land subdivision in the Mara suggesting wealthier households were buying land from the less well off. Land values rose sharply as households sold their land, with many households being initially unfamiliar with the registration process and the real value of land.

#### ***2.4.4 Agriculture expansion and contraction***

There have been large changes in land use in the Mara, the most significant of which is the expansion of large-scale mechanised cultivation. This is especially true in higher potential areas further away from the MMNR. For example, in the group ranches to the north of the MMNR, wheat farming increased rapidly from 5000 to 50,000ha from 1975 to 1995, mainly as a result of

land being leased from Maasai to wheat cultivators (Serneels et al., 2001; Thompson and Homewood 2002).

In Lemek Group Ranch, 24% of the land was converted. This compares to just 7% and 5% for Koyiaki Group Ranch and Siana respectively directly bordering the MMNR. In these lower potential areas there has been small rather than large scale cultivation. Cultivation of small plots adjacent to the boma by Maasai for subsistence use was widespread by 1998 (Thompson and Homewood 2002). However, these can be of limited potential and especially closer to the reserve there is high risk from wildlife that raid crops. At Talek, on the border of the MMNR there is no cultivation at all because of its proximity to the reserve, competition from wildlife, increased occurrence of droughts and reliance on income from the tourism industry (Thompson et al., 2009).

The expansion of large-scale agriculture in the Mara has been attributed to changes in national land tenure policy and increased market opportunities for mechanised agriculture (Homewood et al., 2001). The commercial farming sector in the Mara has been dominated by outside entrepreneurs who leased concessions on very large areas of land for growing wheat (Thompson and Homewood 2002). Group ranch members were able to capture higher returns from their land by leasing out land to commercial farming enterprises than through individual efforts. In a survey of 287 households in the Mara from 1998-99, Thompson and Homewood (2002) found that the highest returns potentially available from different land use options were from cultivation.

Norton-Griffiths et al. (2008) analysed the returns available from land uses over a wide range of rainfall values and also found that agricultural returns far outstrip those from livestock or wildlife, thereby creating strong incentives to cultivate land, particularly in higher potential areas. Their estimates suggest potential agricultural land rents<sup>11</sup> in the Mara could be worth US\$181 million. In comparison, they estimated livestock rents over the same area as worth only US\$35 million, with wildlife rents varying from US\$12-57 million depending on the form of wildlife revenue generating activity. However, these figures should be taken with some caution. More recent research using new data on livestock numbers suggests that livestock might be more economically

---

<sup>11</sup> Agricultural rents are the net returns of land from all agricultural activities, of both large and small scale farming, once all the direct expenses of production and marketing have been met. Livestock rents and wildlife rents are calculated in a similar way (Norton-Griffiths et al., 2008).

important than previously thought in comparison to agriculture in Kenya<sup>12</sup> (Behnke and Muthami 2011). These figures, which are based on the value given to the amount of product generated from a given population of animals rather than the recorded sales of products, put livestock's contribution to the economy as only slightly less than that of agriculture, with any small relative deficit to households more than compensated for by the risk management benefits associated with livestock.

The rapid increase in large-scale mechanised cultivation up to the mid-1990s was then followed by a period of decline in cultivation, mostly in lower potential areas, to about 25,000ha (Norton-Griffiths et al., 2008). This can be explained by a number of factors including; lower rainfall levels, rising costs and lower prices, and the difficulties in negotiating leases with multiple landowners following land subdivision (Norton-Griffiths et al., 2008; Thompson et al., 2009). In 2004, Thompson et al. (2009) revisited 85 households in the Mara originally sampled during 1998-99. By this time, Lemek and Koyiaki group ranches had now almost fully subdivided. In Lemek Group Ranch the total area leased to large-scale wheat farmers fell from 788ha to 214ha due to a reduced number of households leasing out land. Wheat farmers reported that this decline was due to land subdivision: whereas contractors could originally negotiate leases with only one or two spokesmen they now had to negotiate with many individual landowners, who increasingly offered land on a short term basis only (Thompson et al., 2009). The extra transaction costs of negotiating with multiple smallholders discouraged contractors from entering lease agreements.

The decline in cultivation was also reflected in small-scale cultivation. The proportion of households cultivating reduced from 68% in 1998 to 28% in 2004, while the proportion of households consuming home-grown crops fell to a third of its earlier value, and the proportion of households receiving an income from crop sales halved (Thompson et al., 2009). By 2004, involvement in small-scale cultivation was less widespread than in livestock, conservation or any other off-farm work (Thompson et al., 2009). The high risks and low returns associated with subsistence cultivation are demonstrated by the failure of harvests for 50% of the households that cultivated in 1998 and 2004 (Thompson et al., 2009).

Poor or failed harvests may have discouraged cultivation between 1998 and 2004. However, it is also likely that cultivation has been affected by land tenure strategies, with households cultivating in the run up to privatisation and then abandoning the activity once they have secured title

---

<sup>12</sup> This is due to the universal failure to capture or factor in the value of milk consumed, as well as other hard-to-measure values of livestock, such as their insurance function.

(Thompson et al., 2009). This illustrates the complexity of processes underlying agricultural land use change, especially following land subdivision. Changes in land tenure policies have both facilitated the conversion of rangeland to agriculture (Homewood et al., 2001) but have also hindered agricultural conversion due to the difficulties encountered when having to negotiate with a number of landholders over their individual land parcels (Thompson et al., 2009), and have provided alternative livelihood opportunities. New types of conservation and tourism arrangements may be now offering landowners income that can compete with agriculture, at least for those near prime tourism sites (Thompson et al., 2009).

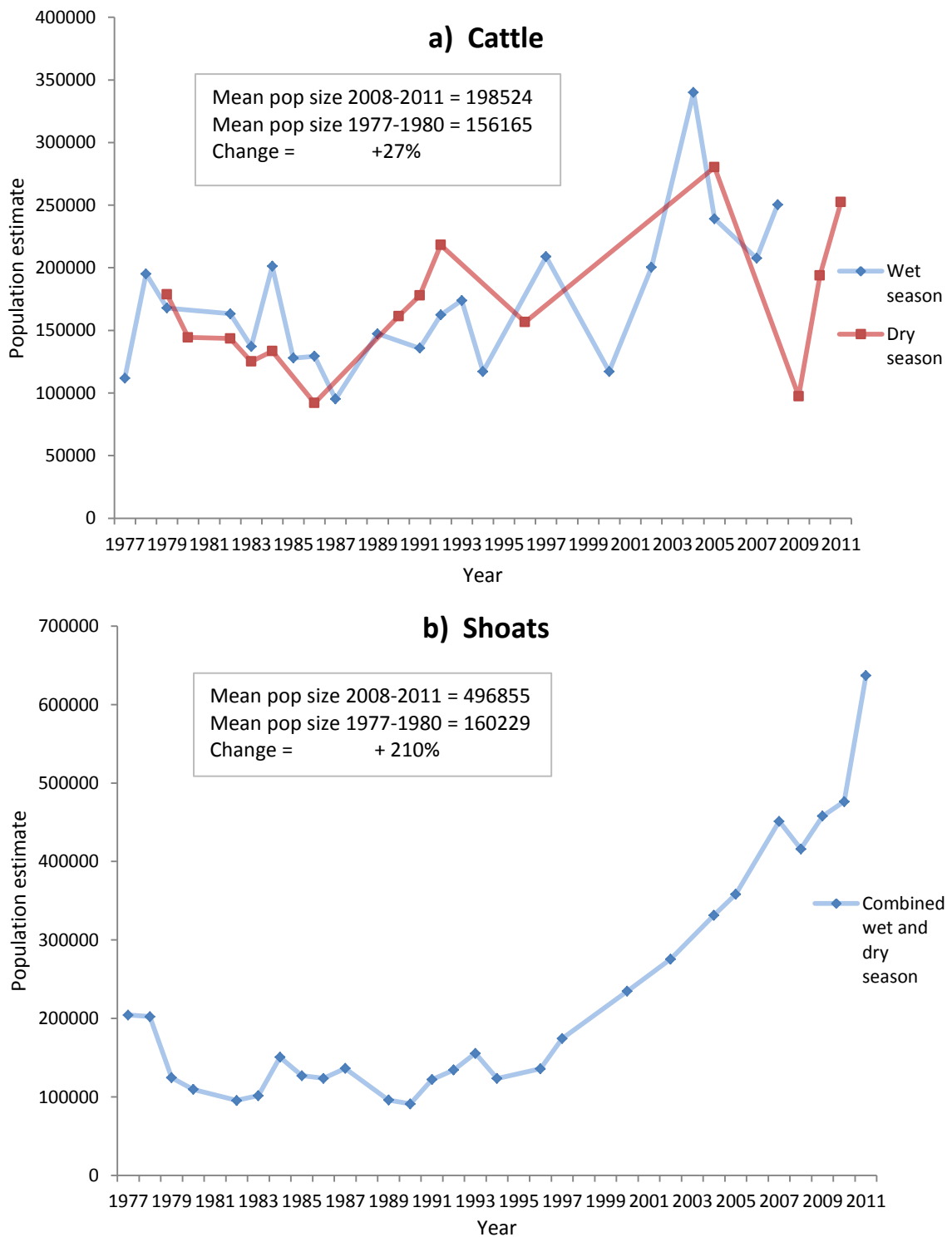
#### **2.4.5 Livestock**

Livestock in the Mara include cattle, sheep and goats, and to a lesser extent, donkeys. Figure 2.4 shows the trends in cattle and shoats (sheep and goat combined) population in the Mara ecosystem from 1977-2011 using data collected through aerial surveys by the Directorate of Resource Surveys and Remote Sensing (DRSRS). The cattle numbers show an evident upward trend between 1977 and 2011 (+27%) but with strong interannual variability and noticeable seasonal differences between the wet and dry season counts. The number of sheep and goats shows an even more marked upward trend during 1977-2011 (+210%) but less interannual and seasonal fluctuations than that for cattle and so the wet and dry season counts have been combined to obtain an overall trend. These patterns reaffirm those of Ogutu et al. (2011), who also found that the number of sheep and goats almost tripled, whereas cattle numbers varied widely but with an apparent overall increase outside and a marked and significant increase inside the MMNR.

The accelerated increase in shoats from around 1995, but little overall increase in cattle, suggests greater reliance on small stock in recent years. The data show that there are now at least twice as many shoats in the Mara as cattle. The striking shift to small stock is likely a response to the contemporaneous widening variability in cattle numbers. The greater variability in cattle numbers probably reflects their greater sensitivity to widening rainfall variability than shoats (Seo et al., 2009; Faye et al., 2012), a variability associated with more frequent and intense droughts in the region in recent decades (Ogutu et al., 2008). Progressive fragmentation and degradation of the pastoral lands by habitat modification, land use change and intensification, by constraining the mobility and flexibility of livestock, especially of cattle that require larger grazing ranges and more forage than sheep and goats, amplifies the vulnerability of cattle in times of drought. Thus, the switch to keeping more shoats at the expense of cattle likely portrays the greater capacity of

sheeps to recover more rapidly from droughts than cattle and a strategy by pastoralists to manage and cope with risks presented by a changing climate by diversifying their livestock herds to reduce the vulnerability of their livestock-based livelihoods to recurrent droughts.

Figure 2.4: Trends in a) cattle and b) sheep and goat (sheeps) populations in the Mara ecosystem from 1977 to 2011. The data are from the DRSRS aerial counts. Further information showing the area counted details of the count methodology, and further application of livestock count data are given in chapter 7.



As rainfall variability widens further as expected due to climate change, and pastoral ranges shrink due to conservation restrictions, expanding settlements and cultivation, the switch towards stocking more sheep at the expense of cattle is expected to become more pronounced. These trends and their implications for the conservancies are discussed further in chapter 7.

Livestock are central to the livelihoods of Maasai in the Mara, and represent the core economic and cultural strategy for rural Maasai (Homewood et al., 2009; Thompson et al., 2009). Thompson et al. (2009) found that in 2004 households across the Mara derived nearly 70% of their income from livestock related activities. Regardless of their wealth status, livestock provided 60-70% of the gross annual income of households. The number of livestock per capita was 13 although this varied widely from 0.5 to 97, with a mean of 12.8 and a median of 6.2, suggesting that a few very wealthy households skew the mean up sharply. There was a strong disparity in livestock wealth among households with only 20% of the Mara households owning nearly 60% of all livestock in 2004 (Thompson et al., 2009).

#### **2.4.6 Wildlife**

The migration of the wildebeest, zebra, and Thomson's gazelle is a well described phenomenon of the Serengeti-Mara ecosystem (e.g. Bell 1969; Pennycuik 1975; Maddox 1979; Fryxell 1995). The migrants use the short grassland plains in the south of the Serengeti National Park during the wet season (January to June). They migrate at the beginning of the dry season to the western corridor and then move further north into the MMNR during the dry season (July to October). A resident wildebeest population of about 30,000 animals migrates locally within the Mara (Serneels and Lambin 2001). The Loita Plains make up their wet season range and calving area, and are used from January to May. During the dry season, the herds migrate to the MMNR and adjacent ranches and mix with the Serengeti migratory population. The MMNR and adjacent land are heavily used by wildebeest from July to October. Year round, the MMNR also supports numerous other resident wildlife species, many of which spill out into the neighbouring ranches of Koyiaki, Olkinyei, Lemek, Siana and Olchoro Oirouwa (Brotten and Said 1995) (Figure 2.2).

Wildlife populations in the Mara have undergone significant and well-documented declines since the 1970s. The expansion of wheat cultivation is thought to be a major cause in the decline of the resident wildebeest population (Ottichilo et al., 2001; Serneels and Lambin 2001). Cultivation is incompatible with wildlife conservation and a major cause of loss of wildlife habitat. The resident wildebeest population declined by 70-80% during the period 1977-1997, as large scale wheat



cultivation in the Loita plains displaced wildebeest from their wet season range (Ottichilo et al., 2001; Serneels and Lambin 2001). Other resident wildlife populations also show drastic declines. Ogutu et al.'s (2011) analysis of long term wildlife data in the Mara found that most wildlife species declined by a third or more between 1977 and 2009. Declines were reported both inside and outside of the MMNR. These declines continue the declines reported in many previous analyses (Brotten and Said 1995; Ottichilo et al., 2000; Ogutu et al., 2009)

Other causes of wildlife decline have been attributed to the increasing numbers of people, livestock and settlements in the group ranches (Ogutu et al., 2009, 2011). Between 1983 and 1999 the number of settlements was reported to have increased by 6.4% per annum in Koyiaki Group Ranch (Lamprey and Reid 2004). Above a certain density, settlements constrain wildlife access to forage, water and their seasonal movements, and settlement density in the Mara is close to the point that is negative for wildlife (Reid et al., 2003; Lamprey and Reid 2004). Furthermore, although the cattle population has not significantly increased, small stock have tripled, and illegal cattle grazing within the MMNR has risen, increasing competition between livestock and wildlife over forage (Ogutu et al., 2009, 2011; Butt 2011b). Land use changes in the group ranches likely intensify this competition, and as wildlife decline and livestock increase, there is a progressive replacement of wildlife by livestock (Ogutu et al., 2011). Despite recurrent droughts, there is no persistent change in rainfall in the Mara that can explain the wildlife declines (Ogutu et al., 2007, 2011).

Poaching is also a likely contributor to the decline of wildlife in the Mara, although poaching is notoriously difficult to monitor. High levels of poaching are reported in the Mara Triangle, allegedly often the result of poor farmers crossing the Kenya-Tanzania border in search of bushmeat (Ogutu et al., 2009; MTMR 2012). A more recent and alarming trend however is an increase in poaching, often using more sophisticated weaponry, in response to rising international prices for ivory and rhino horn. This trend is currently being found in many wildlife areas across Kenya. At the local scale, conflicts between people and wildlife are increasing as the human population and land use changes escalate. Near crop land, human-wildlife conflicts increase as wildlife eat and destroy crops (Sitati 2003). Conflicts are amplified as wildlife predate on livestock, destroy fences and injure or kill people, which can result in the retaliatory killings of wildlife (e.g. Smith 2012).

## 2.5 History of community-based conservation initiatives in the Mara

The Mara has long been a leader in Kenya's tourism industry. In 2009, the MMNR was amongst the top three most visited National Parks or Reserves in Kenya (MoT 2010). Estimates of predicted tourism revenues from the reserve to the Narok and Trans Mara County Councils totalled more than US\$41 million annually in a recent MMNR Management Plan<sup>13</sup> (NCC and TMCC 2011). Despite the Mara's tourism successes, and its acclaim as a major cultural heritage of the Maasai (NCC and TMCC 2011), Mara tourism has not always provided the Maasai community with fair or adequate benefits. Attempts to distribute tourism revenues to the local communities through a continually evolving series of revenue disbursement initiatives have been characterised by problems of mismanagement, unaccountability and inequality.

When control of the reserve was handed over from the National Parks Department to the NCC in 1961, the Mara was one of the first and few examples (also Amboseli and Samburu National Reserves) where the proposition was that through local management, the reserve could provide benefit to the local communities surrounding it (Talbot and Olindo 1990). In theory, under local government control, the reserve offered more for communities than was possible under National Park status and central government control, through what is now the Kenya Wildlife Service (KWS). The NCC collected entry fees to the reserve, and also fees from tourists on communal land outside of the reserve, with the intention that money would be used for the up keep of the reserve and community development projects (Talbot and Olindo 1990; Honey 2009).

As tourism in the Mara began to grow and revenues increase, reports recount this early period in the Mara as a success; the Maasai received good revenue from an increasing tourism and wildlife poaching declined (Talbot and Olindo 1990; Honey 2009). As tourism continued to grow, by 1987, half of the tourism development was on Maasai land outside the reserve (Honey 2009). However, despite this, research showed little money was reaching the local community. In 1987, wildlife tourism generated an estimated KES 445 million (US\$6 million) in the Mara, but the bulk of the profits were captured by international tourism operators (Earnshaw and Emerton 2000). Less than 8% was received directly or indirectly by the local population; 0.6% accrued directly to landowners, 5% was captured by the NCC, and less than 2% was earned by local employees

---

<sup>13</sup> These are only predicted revenues as reported revenues are not available. These estimates are based on what the county councils should potentially be earning from the MMNR based on existing visitor usage in a good year. Revenues only include the MMNRs major revenue types –such as visitor entrance fees, bed night fees and balloon fees. They do not take into account any of the leakages in the revenue collection system that may be occurring (NCC and TMCC 2011, p43). Calculated at a rate of US\$1=KES80.

(Earnshaw and Emerton 2000). Of the revenues acquired by the NCC, very little trickled down to the community level, and community members criticised the NCC for their lack of transparency and accountability (Honey 1999).

### ***2.5.1 19% gate fees to the Group Ranches***

In 1988, in an initiative to direct more money back to the local community, the NCC started to make payments of 19% of all gate receipts collected from the MMNR to the eight group ranches adjacent to the reserve (Thompson et al., 2009). Funds were used to some extent to finance community projects at the group ranch level such as school bursaries and medical expenses. However, little of this filtered down to ordinary group ranch members and was instead mostly diverted to county council and group ranch officials (Thompson and Homewood 2002).

In 1998, there were efforts to better handle this income through the formation of an association of Maasai representatives from the eight group ranches receiving income (Thompson et al., 2009). This however broke down due to disagreements with the NCC over the control of resources. Attempts today in allocating the 19% payments are still associated with a lack of transparency, low accountability from the councillors in charge of this revenue, and little outcome at the community level (KII 31)<sup>14</sup>. This is especially true considering the huge sum of revenue it represents; almost US\$6.5 million annually, based on an estimated US\$34 million accruing to the NCC from the MMNR (NCC and TMCC 2011). Of some hope perhaps is that the MMNR Management Plan recognises the failure of this initiative and proposes new mechanisms to oversee the use of these revenues to make it more accountable, transparent and effective for community needs (NCC and TMCC 2011).

### ***2.5.2 Wildlife associations***

In an effort to capture tourism revenues more directly, group ranch members set up wildlife associations on group ranch land outside of the MMNR. These disbursed game viewing fees from tourists staying in tourism facilities on group ranch land, direct to group ranch members. Prior to this, all revenues from tourism facilities on group ranch land accrued to the NCC (Thompson et al., 2009).

---

<sup>14</sup> KII = key informant interview (see chapter 3 on methods)

Olchoro Oirouwa was the first wildlife association to be established in 1994. Private landowners of Olchoro Oirouwa<sup>15</sup> took NCC to court to be able to collect revenue from tourism facilities on their land (Barrow et al., 2000, Thompson and Homewood 2002; Honey 2009). They were successful, and they began to collect revenue from a lodge on their land, and also from lodges located in neighbouring Koyiaki and Lemek group ranches. Revenues generated were distributed directly to landowners, and due to the small number of families benefiting and the large revenues generated, the association collected high per capita returns (Thompson and Homewood 2002). Funds were also to be spent on management and community development projects.

In 1995, Koyiaki and Lemek group ranches challenged the Olchoro Oirouwa wildlife association for their share of the tourism revenue from the lodges on its land (Thompson and Homewood 2002; Honey 2009). An agreement was reached and the newly created Koyiaki-Lemek Wildlife Association began to collect revenue from tourism facilities on its land (Thompson and Homewood 2002). Registered members of the association were each due a share of revenue.

Although wildlife associations generated considerable sums of money, ordinary members saw very small percentages of the income generated, as the majority of revenue was diverted to association officials and staff (Thompson and Homewood 2002). For example, in one wildlife association, members received an annual return of just US\$70 in 1997 despite total revenues exceeding half a million dollars. This accounted for just 16% of the total income. Another 6.5% was used for educational bursaries, health projects and roads. The remaining 77.5% of income was used for salaries and benefits of the association staff (55.5%) and for operational costs (22%). Individual board members received sitting allowances of up to US\$4000 per year (Thompson and Homewood 2002). Each association was likely to have several officials and staff as, for example, directors, clerks, and scouts, each requiring their share of revenues, leaving little for ordinary association members (KII 15, 18, 22).

Wildlife associations began to fragment as the leadership began to exclude households from payments on the basis they could generate money on their land from another activity, or that the use of their land was not used directly for tourism purposes (Thompson and Homewood 2002; Thompson et al., 2009). For example, the Koyiaki-Lemek Wildlife Association was initially congruent with the 1500km<sup>2</sup> encompassing Koyiaki and Lemek group ranches. However, by 1997 the association excluded all households living north of Lemek centre from receiving returns on the

---

<sup>15</sup> Olchoro Oirouwa was privatised early on and land allocated straight to 8 families. Willy Roberts, a European farmer, and the late Paramount Chief Lerionka Ole Ntutu led the challenge against the NCC to collect revenues from tourism facilities on Olchoro Oirouwa (Kantai 2003; Honey 2009).

basis that they could benefit from leasing their land out for wheat and that they did not have tourist facilities or vehicles on their land (Thompson and Homewood 2002; Thompson et al., 2009). The subdivision of group ranches no doubt helped this process along; as land was divided, those that got land in tourism areas claimed revenues from the facilities there. By reducing the association's overall membership the remaining members were able to benefit from larger payments.

The fragmentation of wildlife associations was heavily linked to politics in the area (Thompson and Homewood 2002; Thompson et al., 2009). Just before the multi-party elections in 2002, Koyiaki-Lemek Wildlife Association split. In Lemek, two smaller associations were formed, each supporting a different parliamentary candidate (Thompson et al., 2009). In Koyiaki, two new associations were also formed. Further splits continued to occur and by 2008 there were 12 different associations in Koyiaki-Lemek (KII 7, 9). Individuals no longer joined associations based on geographical location, but made choices based on political preferences and economic lines, with those associations paying higher returns being the most popular (Thompson et al., 2009).

### ***2.5.3 The Mara Triangle***

In the Mara Triangle, the portion of the reserve in the Trans Mara area, there were similar problems concerning the distribution of revenues to the community; little of the 19% of gate fees entitled to the surrounding group ranches was reaching them (Walpole and Leader-Williams 2001). In 2000, a private protected area management company, The Mara Conservancy, was contracted by the TMCC to manage its portion of the reserve (Walpole and Leader-Williams 2001).

In its first few weeks the Mara Conservancy was reported to have increased revenues at least five-fold (Walpole and Leader-Williams 2001). However, it was also a deal that sparked a lot controversy regarding the legitimacy of the conservancy and its association with political power during establishment (Kantai 2003). Some Maasai viewed it as plot to expropriate more Maasai land (Walpole and Leader-Williams 2001), and still today there are local contestations and claims to that land (MTMR 2012).

### ***2.5.4 Low and declining wildlife incomes to the community***

Despite being one of the most visited tourism destinations in Kenya, generating a potential US\$41 million annually (NCC and TMCC 2011), revenues from tourism to the community have been low. As this figure suggests, tourism can be a highly profitable land use, bringing in large economic

returns for the region and its inhabitants. However, research on household incomes shows that the average annual income from all sources of wildlife and tourism activities to a household in the Mara in 2004 was just US\$600, representing only 20% of its total household income (Thompson et al., 2009). On average almost 70% of a household's income came from livestock, the main economic and cultural mainstay of the Maasai. A multi-site study (Homewood et al., 2009) shows that these results are even more stark in other areas of Maasailand rich with wildlife (e.g. Kitengela, Amboseli, Tarangire); wildlife incomes are consistently a fraction of incomes from other activities, with the Mara the most favourable in terms of the level of wildlife income.

So why are incomes from tourism/wildlife to community members so low? Firstly, the nature of the tourism industry is such that the community, including the local authority, may only receive 5-10% of tourism revenues with the bulk of the profits being captured by tourism operators and the accommodation and transport industries (Earnshaw and Emerton 2000; Norton-Griffiths et al., 2008; Norton-Griffiths and Said 2010). Entry into these industries requires significant capital to start with, which many Maasai do not have, and without this the Maasai are left with the lower paid jobs as lodge employees. Secondly, in the handling of tourism revenues in the Mara, there are widespread and entrenched issues of corruption, mismanagement and a lack of transparency. These cause the misappropriation of revenues at multiple levels. For example, there is misappropriation of visitor entrance fees for the MMNR at reserve gates<sup>16</sup> and other collection points. At the county council level there is misappropriation, with revenues to the council neither reported nor distributed back to the community, e.g. the 19% gate fee. Then at the community level, there is misappropriation as group ranch and wildlife association committees, and other community leaders, are able to grab the best tourism land, negotiate tourism deals, and siphon off tourism revenues for their own benefit (Thompson and Homewood 2002).

This has resulted in a highly unequal distribution of tourism revenues and the accumulation of revenues in the hands of the wealthy few. This trend is revealed in research on household income from tourism across the Mara. Thompson et al. (2009) found a highly unequal distribution of tourism income across households in 1998 and 2004; the top 25% wealthiest households consistently captured around 60-70% of tourism income. Thompson and Homewood (2002) calculated that tourism incomes to ordinary group ranch members were approximately US\$520 annually, whereas for elites this rose to US\$19,450. Much of this extra can be explained by involvement in the more lucrative forms of tourism, such as ownership in lodges or membership

---

<sup>16</sup> An electronic revenue collection system was installed at the reserve gates in late 2011 in an effort to reduce the leakage of visitor entrance fees.

of elite subset associations, which was firmly restricted to local and national elites able to secure ownership of best tourism land during subdivision (Thompson and Homewood 2002). Incomes from tourism in the Mara are also reducing. Between 1998 and 2004 the number of households receiving an income from tourism reduced from 55-41%, and for those that did receive an income, this reduced considerably by almost 80% (from US\$1263 to US\$280 per annum) (Thompson et al., 2009). This corresponds to the period in which wildlife associations began to fragment and exclude members from tourism revenues.

### ***2.5.5 New models of conservation in the Mara – Conservancies***

The fragmentation of wildlife associations eventually led them to break down altogether. The ongoing privatisation of land also encouraged more individualised streams of revenue benefit and created an opening for new tourism revenue sharing institutions to enter the Mara. By 2005, conservancy partnerships with tourism operators began to spring up firstly adjacent to the MMNR, and then further afield. In most cases these partnerships involve individual lease agreements between tourism operators and landowners who agree to set aside their land for conservation in return for a fixed monthly land rent payment.

The conservancies have largely been set up independently by interested and concerned groups of people on the ground. In the Mara they have rapidly grown, being taken on and modified by groups in adjacent areas interested in applying new models of conservation and revenue-sharing. These conservancies form the basis of the enquiry of this thesis, and further details on their institutional design and set up are given in chapter 4.

Reflective of a wider trend in community and private conservation institutions in Kenya (chapter 1), conservancies in the Mara do not follow one particular institutional model and have been set up adaptively and iteratively without a clear legal or policy framework behind them. The term 'conservancy' is more of an informal term used to denote local designation or set aside of conservation areas, covering a wide diversity of unregulated arrangements, rather than an official term circumscribed within wildlife or protected area policy or law. This for example contrasts to the use of the term 'conservancy' in other countries, e.g. Namibia, where conservancies are formalised legal conservation areas with wildlife rights devolved to communities.

## Chapter 3 Methods

### 3.1 Introduction

This chapter begins with a brief background on how the study site and research topic was chosen. I then go on to discuss the mixed methods research approach taken to answer the research questions. I discuss some of the practical details involved in carrying out field research in the Mara, including research permissions, researcher position and ethics. I then describe the methods common to all chapters, which include a household survey, semi-structured interviews and participant observation. Details of methods specific to individual data chapters are introduced here, but provided in detail in the respective data chapter.

### 3.2 Selection of study sites

My interest in the study area and conservancy topic developed a couple of years prior to my starting the PhD. Whilst carrying out other research in the Mara in 2005 and 2006 with the International Livestock Research Institute (ILRI), I began to learn about new conservation approaches that were being introduced and applied in the area. As colleagues, friends and members of the community talked about ‘conservancies’, largely a new term in the Mara at the time<sup>17</sup>, I learnt that this approach reflected a significant change to the way conservation was being done in the Mara with potentially important impacts on local livelihoods, wildlife and the Mara landscape.

A pilot study from May to August 2008 gave me a broad introduction to the conservancy model in the Mara and the extent that the model had been taken up and modified in neighbouring areas. It also exposed me further to some of the upcoming concerns and issues of conservancies for the community. The pilot study also enabled me to choose which study areas and conservancies to focus upon during my research. From January to December 2010, I returned to the field for the main period of field work and data collection. By this time at least another two conservancies had been established, and I was able to carry out a more in-depth analysis of the conservancy model and its outcomes on livelihoods and the Mara landscape.

---

<sup>17</sup> This is except for the Mara Conservancy which is the portion of the Maasai Mara National Reserve (MMNR) in the Trans Mara managed by a private company (see section 2.5.3). However, as a state-owned national reserve, its management is generally perceived differently to conservation on community or privately-owned land outside of the MMNR.



I learnt broadly about conservancies and other conservation initiatives in the wider Mara area, including those in Koyiaki, Lemek, Olchoro Oirouwa, Siana and Olkinyei group ranches or areas. This allowed me to learn about the diversity of conservancy and other conservation approaches in practice. It also offered opportunities to 1) investigate conservancies at various distances from the Maasai Mara National Reserve (MMNR) – ranging from Olare Orok Conservancy (OOC) adjacent to the Reserve, through Motorogi Conservancy a little bit further away to Olchoro Oirouwa Wildlife Conservancy at more than 20km from the reserve, and 2) to investigate conservancies at different stage of establishment – from those formed before my study began (OOC), to those formed near the beginning of my PhD study (Motorogi Conservancy) to those only formed whilst I was in the field (Naboisho Conservancy). However, I undertook a more detailed analysis on the conservancies, the livelihoods of Maasai, and the patterns of settlements and grazing, in the former Koyiaki Group Ranch (also termed here just ‘Koyiaki’), adjacent to the MMNR. This is the area in which the new conservancy concept chiefly originated, and the area which now hosts four different conservancies. Koyiaki also provided a useful frame from which to sample households in a spatially defined and relatively similar socio-cultural context. This enabled a more structured comparison of different households and livelihood activities as a basis for evaluating the effect of conservancies on Maasai livelihoods, settlements and grazing.

### **3.3 Research approach**

I use a mixed methods approach to data collection, involving a range of qualitative and quantitative methods. Due to the interdisciplinary nature of the study, where the objectives are to investigate the social and ecological outcomes of conservancies, methods are taken from both the social and natural sciences. Mixed methods research is a valuable tool in human-environment research, well suited to exploring the multifaceted relationships between people and environment. As a research tool in political ecology, mixed methods research can integrate the socio-cultural and biophysical process to help explain environmental change (Bassett and Zueli 2000). Mixed methods studies are also important in ensuring that findings can be conveyed in ways that are recognised as robust and legitimate by very different audiences.

Each research question is answered using a variety of methods and techniques, necessary to understand the social, economic and ecological outcomes of conservancies. I use social science methods to answer research questions focusing on socio-economic components of Maasai livelihoods and socio-political processes underlying conservancy participation. These include participant observation, semi-structured interviews, and a household questionnaire survey. I then

use impact evaluation techniques to empirically evaluate the outcome of conservancy participation on household wealth. I use geospatial technologies (Geographic Information System (GIS) and remote sensing) to help understand the relationship between conservation land management practices and changing human resource use patterns and displacement. This includes using information from high resolution satellite images to investigate changes in human settlements patterns due to conservancies. I also use ecological methods to analyse long term trends in livestock populations in the Mara, complemented by social methods investigating how, where and why people graze their livestock. Social science methods such as questionnaire surveys and interviews can help document local resource use decisions, and help explain phenomena observed in natural science methods.

The combination of qualitative and quantitative research methods helps provide a combined socio-ecological assessment of conservancies and how they integrate into pastoral livelihoods. Quantitative methods such as the questionnaire, and livestock and settlement analysis, measure impacts and allow for comparison of landscapes or groups of people. The qualitative methods try to explain those impacts and as well as being important in their own right are also an essential precursor to design of quantitative approaches. Quantitative research is important when you want to measure scale and importance of different factors and effects, to discern causality, and allow for generalisation and replication of findings (Bryman 2008), whereas qualitative methods allow for more in-depth, richer and thicker descriptions of what is observed in quantitative methods (Denzin and Lincoln 2002). Although quantitative research is useful for proving generalisations about a population, the complementary use of qualitative research can significantly enhance understanding of the research context, improve internal validity, and strengthen interpretation and analysis of research findings (Drury et al., 2010). The use of mixed methods also allows for 'triangulation', where two or more methods of data collection are combined to cross-check the results derived from one source with the results derived from another source. In triangulation, the combination of quantitative and qualitative research methods supports each other to increase reliability and validity of the data, and thereby reducing potential bias, misinterpretation and inaccuracies (Burton 2000).

Although an important research approach, combining qualitative and quantitative methods is rarely easy in practice (Brockington and Sullivan 2010). Each research approach takes time and comes with its own requirements that need consideration. For example, qualitative research such as interviews, especially if needing transcription in a foreign language, can be long, especially in

post-processing, and requires careful translation to avoid missing meaning or biasing words. Quantitative research such as questionnaires can also be long, repetitive and boring for both the interviewee and the researcher, but require consistency to make the data amenable to replication and population generalisations. Some of these issues are considered in the following sections.

### **3.4 Carrying out the field work**

#### ***3.4.1 Research permissions***

As a foreign student, in order to carry out research in Kenya, it is necessary to hold a research permit and pupil's pass. To apply for this, I needed to establish an affiliation with a Kenyan research institution. I was therefore affiliated with ILRI, based in Nairobi. I obtained a research permit and pupil's pass for three years, at a cost of approximately US\$300.

I also obtained permissions to carry out my research in the Mara. Letters were sent, and subsequent meetings held, with the Warden and Assistant Warden of the MMNR. This was important as access to the different conservancies in the Mara often involved driving through portions of the MMNR and passing tourist entry gates. It was therefore important that the reserve rangers and staff were aware of the research I was carrying out. Meetings were also held with a local chief of Koyiaki Group Ranch and other members of the Koyiaki Group Ranch committee to introduce my intended research. I also introduced myself and my research to managers of different conservancies in the Mara, and sought permission to access and drive through these areas. As most conservancies now enforce a strict entry policy it was important they were aware of my research and the need to enter a conservancy as and when necessary.

#### ***3.4.2 Researcher position***

The position of the researcher in a study and how they engage with people during their field work can have a strong influence on how data is collected in the field. Although I was affiliated, and had worked previously with ILRI, I was careful to introduce myself as an independent PhD student from UCL, and not a representative from ILRI. This was to avoid any association, positive or negative, with an organisation which could affect how people interacted with me or answered my questions.

I invested time learning the local language, Maa. Before going to the field I took Maa lessons in Nairobi, and then I spent further time at the beginning of the field, and throughout, improving my language skills. I also speak conversational Swahili. This was useful during informal exchanges,

especially with younger and more educated people. However, many people did not speak Swahili, and most preferred to converse in Maa, so almost all of the household questionnaires and community interviews were carried out in Maa. Although my Maa language training gave me a basic grasp of the language and I was able to hold simple conversations, this wasn't enough to be able to carry out my research so I also worked with research assistants to assist me in translation. However, even a basic grasp of and interest in learning the language helped improve my working relationships, establish a certain level of rapport with people, and follow the gist of interviews.

I worked with research assistants from the local area who were well known in the areas where I was working. I worked with one main research assistant for the majority of the field period, who was born and raised in Talek and well known to the community. He assisted with language, but was also essential to gain access to people within the community and arrange meetings, help introduce me and my research to people, and aid in familiarisation of the study area. As the study area was large I also worked with additional research assistants when working in new areas further from Talek. This was so people felt more familiar with the research team and therefore more comfortable talking to us. The research assistants constituted an integral part of the research process. Social research methods such as interviews and surveys require skilled interviewers who are able to engage well with their respondents, explain questions, and keep the attention of respondents. It was therefore important they were very familiar with the purposes of the research, and were well-trained in carrying out interviews and questionnaires, with a sufficient period of pre-testing and familiarisation with the questions. All were school leavers, having completed either primary or secondary education.

I lived in the field site accompanied by my 1 year old daughter, and a Maasai woman who helped me look after my daughter. Together with my research assistant/s we first stayed in a small local house close to a Maasai settlement on the outskirts of Talek. However, this area was quite remote and proved too isolated so we later moved closer to Talek and made a small camp alongside a locally-managed campsite with better access to clean water, and good access to facilities. We welcomed and had many visitors over the course of the period. From prior work and trips to the Mara I had a number of good friendships built up over the years with local residents, who made us feel at home and frequently welcomed us into their homes.

### 3.4.3 Ethics

Before carrying out any community interviews or household questionnaire I obtained verbal consent from participants. This was set out at the beginning of our meeting when participants were introduced to me, the research assistants and the purpose of the research. Participants were free to leave the conversations at any time. In the case of semi-structured interviews, I always obtained consent before recording these on tape. In writing up my research although I have used the names of the conservancies and other organisations, I have omitted or changed the names of all individuals to respect privacy.

### 3.4.4 Research gifts

Due to the presence of previous researchers in the area, I was aware during my pilot study that some respondents were interested in being given a reward as had been done on past occasions. I decided to give a packet of tea and sugar to all respondents of the household questionnaire, as this was the most personally probing field research method, requiring the most time. Choosing this gift also compensated for the mugs full of sweet tea I was always offered and frequently drank in people's homes.

## 3.5 Research methods

This section outlines the datasets and the different methods used to collect data. Data sources are from both primary field data and from secondary sources of data. Table 3.1 summarises the different research methods used and in which data chapter they are applied. The following sections describe those methods common to each chapter. Methods only relevant to a single chapter are described in that chapter.

Table 3.1: Summary of different methods used, sample sizes, year collected, and in which data chapter they are applied

	Method	Year collected	Chapter			
			Four	Five	Six	Seven
Primary data	Household questionnaire (n=258)	2010	X	X	X	X
	Extra 'moved' questionnaire sample (n=25)	2010				X
	Community interviews (n=30)	2008/2010	X	X	X	X
	Key informant interview (n=35)	2008/2010	X	X	X	X
	Participant observation	2010	X	X	X	X
	Ground boma mapping	2010/2011				X
Secondary data	Satellite imagery	2006/2011				X
	Livestock trend data	1996-2011				X

### 3.5.1 Household questionnaire

A household questionnaire formed one of the main methods to collect data on the socio-economic conditions of households and the livelihood activities of household members. The idea was that the questionnaire would gather quantitative information on a range of household attributes, thereby facilitating direct comparison between households, between different livelihood activities, and across study areas. Table 3.2 shows the quantitative and qualitative information collected using the questionnaire. The details of each of these topics, and the way they are analysed, are discussed in the data chapter in which they are presented.

A household was defined as the *olmarei* which was used as the unit of analysis. Households may be defined in a number of different ways; a group living under the same roof, sharing the same meal or 'pot', or cultivating or herding together. This can create difficulties in household surveys when allocating people into different households. The *olmarei* has been used as the unit of analysis in previous household surveys amongst the Maasai of Kenya and Tanzania (Coast 2000; Thompson 2002; BurnSilver 2007) and is the most locally meaningful and representative unit of analysis in the Maasai context. The household head was selected to complete the questionnaire. As the ultimate decision-maker in the household they are likely to be most knowledgeable in aspects of household income, production and exchange, although questions were also directed toward other groups if they had more knowledge over a certain topic e.g. women and milk sales.

Table 3.2: Information and topics covered in the household questionnaire

Background information	Conservancy participation
Household demography	Conservancy income and features
Settlement history	Livestock production and sales
Land ownership	Livestock losses
Household features and assets	Crop production and sales
Livestock ownership	Off-farm income
Livestock movements	Household expenditure
Grazing fines	Livelihood importance

The questionnaire was first developed during the pilot study, and was then revised, trialled and tested again early on in the main field period. By starting the final refined version of the questionnaire slightly later on in the field work, I retained the flexibility to incorporate any issues emerging from the semi-structured interviews and participant observation. It also allowed a

period in the field prior to starting the more personally-probing questionnaire to help build a certain level of trust with the community. A total of 33 questionnaires were used as trials and discarded from data analysis.

### Sampling frame

As outlined above, Koyiaki Group Ranch was used as the population from which to sample resident households for the questionnaire. A household list of all resident households in Koyiaki Group Ranch was compiled on an area by area basis with local informants in each area. There was no other list of the population available. The Koyiaki Group Ranch register list was not available for this purpose, nor was it suitable for this research, since the register does not include a number of households resident in Koyiaki who are not recognised as members of the group ranch (especially for land allocation purposes) but who constitute an important part of the population which I did not want to leave out. This includes, for example, those people who are resident in Koyiaki, but might be a member of a neighbouring group ranch, and those people who failed to secure group ranch membership and land within any group ranch.

In forming the household list, there was careful discussion about what a household constitutes and what the household head represents - the one who is primarily responsible for household affairs. Koyiaki Group Ranch was split into subareas, and then settlements or groups of settlements, to aid in capturing everyone and avoid people being missed out, before finally splitting settlements into *olmarei* with an individual household head. Care was taken to include female headed households where these occurred. Also, in cases where one household head managed a household living in two different places (perhaps due to having different wives living in separate settlements), care was taken to ensure this household was only represented once. Sub-area lists were cross-checked against each other to avoid double counting people in such cases. Care was also taken to include those household heads who may have been away working elsewhere outside of the Mara at the time of the survey.

About 20 people (working individually or in small groups) spent two weeks forming the list. Separate people then checked and verified the list afterwards. Some areas and settlements were visited individually if it was unsure who lived there, and the names verified. The exercise revealed how well people knew each other within their community. Most people had lived there all their lives and knew their wider neighbours very well. The list revealed that there were a total of 1825

households identified as resident within Koyiaki Group Ranch. This compares to 1020 members estimated to be on the Koyiaki Group Ranch register in 1999 (Lamprey and Reid 2004).

Individual households were sampled from the list using simple random sampling. I chose this method of sampling as I wanted each household to have an equal chance of being selected from the list to be able to get a representative sample of the different livelihood activities households are involved in in the Mara, including conservancies. Each household head was assigned a number and using Microsoft Excel, I generated random numbers to pick households. In total 258 households were included in the analysis, making-up approximately 14% of the population. If households were not available when approached the research team waited for a convenient time to carry out the questionnaire, or arranged a meeting in advance. If an individual chosen from the sample did not wish to be interviewed, another household was randomly picked from the list instead. This however applied on only very few occasions.

The questionnaire was completed in Maa working either with the main research assistant, and/or another research assistant from the area being visited. I was also present for the majority of questionnaires. The questionnaire was translated into Maa with the research assistants, so research assistants were able to refer to the English or Maa version of the questionnaire as they wished (see appendix one for the English version). Each research assistant undertook a period of training and pre-testing in administering the questionnaire to ensure they were very familiar with the questions. The questionnaire took about an hour to complete, and people were given a gift of a packet of tea and sugar in thanks for participating. Together with the research assistant administering the questionnaire I checked through each questionnaire as soon as possible after completion to find and eliminate any mistakes. I later entered all questionnaire data into a Microsoft Access database.

#### Household sample (n=258)

The final sample captured 13 (5%) female headed households and 245 (95%) male headed households. The few female headed households captured were usually widowed or separated from their husbands, or in rarer cases, those women who were seen as in charge of the household affairs over an incompetent husband. In the sample, 164 (63.6%) household heads reported being members of Koyiaki Group Ranch, another 25 (9.7%) were a member of another group ranch, leaving 69 (26.7%) household heads who were not a member of any group ranch. This confirmed the importance of not relying on official register lists when compiling a list of resident



households in Koyiaki. In the sample, 206 (80%) households owned land, either in Koyiaki or elsewhere. A number of other household socio-demographic characteristics are shown in Table 3.3. Global positioning system (GPS) points were recorded for each household and mapped using ArcMap 10. Since sampling was random, households sampled were spread throughout Koyiaki and their location reflects the distribution of settlements within Koyiaki as found on the ground, and taking into account that most conservancies have few settlements within them (Figure 3.1)

Table 3.3: Descriptive statistics of the household sample (n=258)

	N	Mean	Min	Max	SD	Median
Land size owned, acres	208	147.67	5	500	88.24	150
Livestock owned, TLUs <sup>18</sup>	258	64.84	2.97	389.16	62.88	45.31
Household size	258	9.04	1	24	4.78	8
Household size (in AUs) <sup>19</sup>	258	7.50	1	20	4.04	6.56
Age of household head (years)	258	37.68	20	80	13.81	34
Education of household head (years)	258	3.01	0	14	4.78	0
Percentage of children 5-16yr in school	220	74.5	0	100	30.50	84.5

#### Data limitations and ways to reduce bias

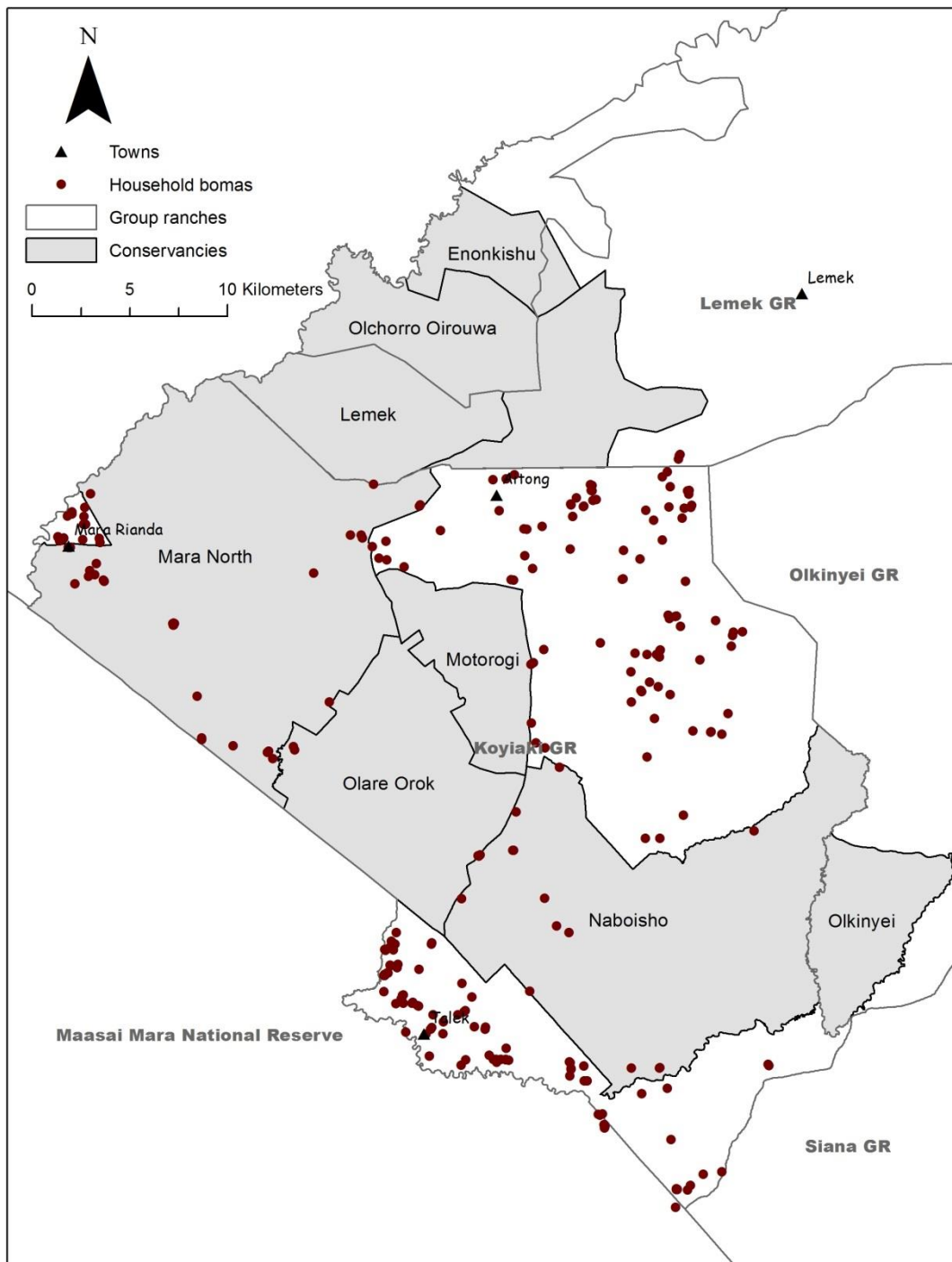
When forming the household list, although we tried to get an accurate and complete list of Koyiaki Group Ranch, most samples suffer from a degree of under coverage, when some groups of the population are left out of the process when choosing the sample. By forming a list of those households resident in Koyiaki Group Ranch this household list does not include those people who own land in Koyiaki but do not live there. These absentee landlords may be members of the group ranch, but have chosen to live elsewhere and have no home or settlement in Koyiaki. Due to land subdivision and resultant land sales, there are a number of people who now own some land in Koyiaki. Unfortunately there is no sure way of accounting for all these people, and such land deals may not be widely known. This potentially leaves out a wealthier group of people. Non-Maasai who have recently bought land and are resident in this area, for example expatriate landowners, were also not included in this sample, since the study and research questions investigate the relative contributions of different livelihood activities to pastoral livelihoods. Similarly, people living directly in the market centres, such as immigrant tradesmen and shop keepers, were also not included in the list. However, those Maasai who may be running a

<sup>18</sup> Tropical livestock units (TLU) take into account a range of livestock types and sizes in a standardized manner where one TLU=250kg. In this study, cattle = 0.72 TLU and goats and sheep = 0.17 TLU (ILCA 1981; Grandin 1988)

<sup>19</sup> <sup>19</sup> Adult equivalents (AU) are a system for expressing a group of people in terms of standard reference adult (RA) units, with respect to food or metabolic requirements. Reference adult units were calculated according to the ILCA system whereby an adult male = 1RA; an adult female = 0.86RA; children 11-15 years = 0.96RA; 6-10 years = 0.85RA; and 0-5 years = 0.52RA (ILCA 1981; Sellen 2003).

business in town, whose family live elsewhere, outside of town, were included in the areas that their family lived. Finally, the *olmarei* household definition misses out the poorest people who get subsumed by richer households as dependents.

Figure 3.1: Map showing GPS points of all surveyed households in study area. Households were spread out through Koyiaki and located both inside and outside of conservancies



Other potential sources of biases in the questionnaire include the misreporting of data by respondents, either intentionally or unintentionally. For example, a respondent may deliberately misreport data if their response is influenced by the race or sex of the interviewer, or if asked about illegal behaviour, or perhaps if they feel under social pressure to give a certain answer (Browne-Nunez and Jonker 2008). This type of bias was mitigated by working closely with research assistants well known to respondents and explaining the purpose of the research, by emphasizing my independent research status, and by ensuring respondent anonymity. Problems with this type of bias for specific types of questions are flagged and discussed in the chapter dealing with the data in question.

A respondent may unintentionally misreport data, perhaps due to recall error and the difficulty of remembering past events, or if they were asked about an activity they were not well aware of, or if questions were not worded well or were confusing. To reduce this type of bias the questionnaire was rigorously pre-tested, piloted and evaluated before its final use, to ensure that questions were clear and well understood by participants, and produced clear responses. Translating the questionnaire into Maa also helped with this. Also, the appropriate periods of recall were set after pre-testing depending on the livelihood activity involved. Also, as much as possible different members of the household were asked to contribute answers where the household head was unsure of the answer and it could be better answered by another household member. Finally, the questionnaire was used in conjunction with more qualitative methods such as semi-structured interviews and participant observation to help validate and cross-check any unusual responses (Burton 2000).

### ***3.5.2 Semi-structured interviews***

Semi-structured interviews are another main data collection method used in the research. Two types of interviews were carried out; 1) with key informants, 2) with community members (see appendix two for people interviewed). The semi-structured interviews gave a broad understanding of a number of issues, and were helpful for targeting questions when designing the household questionnaire. They were also valuable in exploring issues arising from the questionnaire in more depth, and for cross-checking information gained from all other sources. The interviews allowed respondents to discuss issues of concern and interest to them more freely and frequently brought to the surface new points of enquiry. As compared to the questionnaire, interviews are useful to ask the 'why' questions rather than just the 'how many' or 'how often', and they can explore issues with interviewees rather than just simply categorize answers (Stroh

2000). They are however time consuming, especially if tape-recorded as is the case here, and transcription and translation from a foreign language can be extremely demanding in terms of time.

#### 1) Key informant interviews

I carried out interviews with various key informants, including those in management and leadership positions within conservancies, wildlife associations, the group ranch, the MMNR, and tourism operators. These targeted those elites, or 'gatekeepers' who have specialised access to, knowledge of and control over conservation and tourism resources. These interviews varied substantially but were based around a number of prepared questions concerning topics of specific interest. The conversations were informal and free to explore any new topics as they arose. Approximately 35 key informant interviews were held, the majority being conducted in English. These interviews collected information on:

- The history of conservancies and other conservation initiatives in the Mara.
- How conservancies were set up and their organisational and governance structure.
- Participation of different stakeholders in the formation of conservancies, in meetings and in conservancy management.
- Conservancy rules regarding livestock grazing for conservancy members and non-members.
- Nature of the relationship between conservancy members, conservancy management and tourism operators.

#### 2) Community interviews

I also carried out interviews with small groups or individuals from the community. This included conservancy members and non-members, and past members of conservancies if people had since dropped out of a conservancy. It also included those that were displaced when a conservancy was set up. Interviews were held in areas throughout Koyiaki and neighbouring group ranches and targeted men and women equally. The interviews took the form of a guided list of questions to be covered (see appendix three for guided lists of questions), however, questions were revised as new topics of interest emerged and interviews were free to diverge following any issues of interest as they arose. Thirty community interviews were held, and almost all were conducted in Maa with the help of a research assistant. I tried to ensure a second research assistant was also present for these interviews, to specifically help with translation and the transcription of interviews later on. These interviews covered similar topics to the key informant interviews and collected information on:

- Motivations for joining a conservancy.
- People's level of information about conservancies.
- People's participation in conservancies.
- Whether settlement displacement occurred due to a conservancy, and if so, details.
- Conservancy organisation, management and communication.
- Use of conservancies for livestock grazing and grazing fines.
- Opinions about and use of conservancy income if received.
- Other costs and benefits people experience due to conservancies.
- People's views of wildlife in conservancies.

#### Analysis of interviews

With people's permission, interviews were tape recorded and later transcribed. Those in Maa were then translated into English. One research assistant helped with the transcription and translation of interviews in Maa and as much as possible he was also present during these interviews. Together all those who were present during the Maa interviews (including myself) went through and checked each interview translated from English into Maa to ensure as much as possible that meaning was not lost in translation.

I used NVIVO software to aid in the analysis of these interviews through coding of particular topics of enquiry. However, interviews in full were also re-read many times during the course of the analysis to understand issues in their full context. Data from the interviews are used in all chapters and complement quantitative findings. Quotes are used throughout the thesis to highlight individual perspectives on certain issues and emphasise particular points of enquiry.

#### ***3.5.3 Participant observation and unstructured data collection***

I used participant observation as a qualitative research method throughout the field period. This involved observing and talking to people during their daily activities, at various meetings, and during every day and informal conversations. Participant observation generally involves a researcher immersing him or herself in a place for an extended period of time, observing behaviour, listening to and participating in conversations and other activities, and asking questions (Bryman 2008). Participant observation can help to understand and check the validity of findings from other research methods such as interviews or a more structured survey.

By living in the field site for an extended period of time I was able to attend a number of social activities, build up relationships and gradually pick up local perspectives on conservancies and tourism. I attended a number of meetings during my time in the field, including; conservancy meetings, 'community days' organised by conservancies or lodges, and other community meetings. These were very useful to observe how different groups of people interacted with each other in a public setting. I also kept a field diary of various notes and thoughts gathered each day. These notes were very useful to reflect back on when later consolidating and analysing data for the write-up. They were also very important in just aiding my memory of events and conversations that happened during the field work.

### **3.5.4 Methods described in other chapters**

Three further methods were used to collect and analyse data in chapter 7. These are described in more detail in that chapter, but are introduced briefly below.

#### Settlement (boma) identification from satellite imagery

To assess the impact of conservancies on settlement displacement in the Mara, I used remote sensing and GIS technology to identify Maasai settlements from high resolution satellite images taken at different time periods. Remote sensing and GIS is a useful tool in political ecology and human ecology research to understand forms of human-induced environmental change (see Turner and Taylor (2003) and accompanying papers). Related to this study, remote sensing and GIS are expanding opportunities for spatially defined longitudinal analysis of human land uses and environmental change (Turner and Taylor 2003). In the Mara study site, remote sensing and GIS have been applied to help understand nature-society processes, including land use changes, the extent of cultivation, and orbits of livestock grazing (Homewood et al., 2001; Serneels et al., 2001; Butt 2007). However, its application to identify pastoral settlements from satellite images is new to this research.

I acquired two SPOT 5 satellite images of the study area with a resolution of 2.5 meters. The images were first processed and then Maasai bomas<sup>20</sup> were identified using eCognition Developer 8.64.0 (eCognition 2010). Once bomas were identified, the images were overlaid with GIS information of the conservancies and group ranch boundaries in ArcMap 10. Boma maps were made of 'before' (2006) and 'after' (2011) conservancy establishment to investigate the impact of

---

<sup>20</sup> Boma is the Swahili word for a Maasai settlement (or *en kang* in Maa), and is a commonly used term in Kenya Maasai areas. See chapter 7 for the distinction I use between 'settlement' and 'boma' in the eCognition identification process.

conservancies on the density and distribution of settlements due to displacement as a result of conservancy settlement restrictions.

#### Ground settlement mapping

For verification of the boma identification process and for adding social context data, I also mapped settlements on the ground within conservancies using GPS. Both present and abandoned settlements were visited and mapped. Local informants helped find the locations of settlements that had been abandoned, either due to the conservancy or due to another reason. Apart from their location, other social data were recorded on the settlement, for example, the number and type of houses and roofing within a present settlement, or the year and reason abandoned if an abandoned settlement.

#### Livestock trend data

Long term livestock data for the Mara were used to investigate spatial and temporal trends in the distribution of livestock (cattle and shoats) inside and outside of conservancies. I analysed livestock count data collected through aerial surveys by the Directorate of Resource Surveys and Remote Sensing (DRSRS) from 1977-2011. I used ArcMap to map the distribution of livestock over time and in relation to conservancy boundaries within Koyiaki Group Ranch. Livestock and wildlife trends in the Mara are well documented, with many analyses using the DRSRS aerial survey data (Brotten and Said 1995; Ottichillo et al., 2000; Ogutu et al., 2011; Bholá et al., 2012). However, this analysis is a first attempt to look at livestock trends directly in relation to newly formed conservancy areas in the Mara.

## **Chapter 4 Partnership, participation and power in conservancies**

### **4.1 Introduction**

#### **4.1.1 Partnerships**

Partnerships in conservation are common and represent many different forms – between communities, and the state, the private sector, and NGOs (Vermeulen and Sheil 2007; Carter et al., 2008). These ‘hybrid’ forms of governance, and particularly those involving partnerships between the community and the private sector, are typical of the neoliberal approaches to conservation, such as ecotourism or PES (Igoe and Brockington 2007).

In the Mara, conservancies constitute a partnership between local landowners and tourism investors. The premise is that the provision of land on the part of the community combined with the capital, market access and tourism expertise provided by the tourism investors forms the basis of a joint management venture and benefit-sharing arrangements. These types of partnerships are an emerging trend in Kenya, and other parts of Africa (Ashley and Jones 2001; Spenceley 2003; Southgate 2006; Manyara and Jones 2007; Mburu and Birner 2007). Partnerships are seen as crucial to the success of conservation projects (Berkes 2007; Seixas and Berkes 2010).

However, community-private sector partnerships can raise complex issues over rights, ownership and governances of areas (Adams and Hutton 2007). The re-assignment of authority and control over areas newly formed and co-managed for conservation has all too often led to changes in their access and use, and displacement of local people (Igoe and Brockington 2007). Scholars argue that where there are strong local institutions expressing clear legal rights over land and resources, co-managed ventures between communities and the private sector are more likely to work (Ashley and Jones 2001).

Mavhunga (2007) argues the need to consider who wants the partnership and for what purpose. Where there are a number of partners involved in a project there are likely to be diverse motives for participating. Partners may be grossly mismatched in terms of wealth, power, education and access to information (Mavhunga 2007). Care must be taken to ensure that lack of experience and limited understanding of the tourism industry on the part of communities does not lead to imbalances of power where the community takes a passive role (Ashley and Jones 2001; Stronza 1999; Forstner 2004). Mavhunga (2007, p442) likens the unequal power relations typical within



conservation partnerships to a partnership between a rider and a horse, 'where some shoulder the burden whilst others enjoy the scenery'. It is thus important to be aware of any imbalances of power amongst partners. Genuine partnerships should bring communities actively into the management process, rather than work on a command-and-control style (Berkes 2004). This requires a commitment to sharing decisions, rights, responsibilities and also risks, amongst partners (Berkes 2004; Vermeulen and Sheil 2007), which requires close collaboration, transparency, and accountability between the different partners involved (Berkes 2004).

#### **4.1.2 Participation**

The concept of participation is widespread in the narrative of conservation and development projects. It is a key element of the rationale underpinning community-based approaches via providing communities with greater power, responsibility and control over conservation and resource management (Western and Wright 1994; Hulme and Murphree 2001). Preliminary statistical modelling studies show it to be an important predictor of the success of conservation projects, including on conservation outcomes (Salafsky et al., 2001; Andrade and Rhode 2012; Brooks et al., 2013).

However, despite the widespread rhetoric of participation in conservation, qualitatively meaningful participation remains largely absent in practice (Vermeulen and Sheil 2007). Many conservation projects claim to be participatory but fail to actively engage local people. Participation has often been claimed to be lip service to development calls for community involvement and to satisfy donor requirements (Brown 2002). Many forms of participation in conservation are extractive or even coercive, rather than being truly inclusionary or empowering (Brown 2002).

Many of the barriers to effective community participation can be found by looking deeper into the local socio-political context. One such problem is the oversimplification of 'the community', where a common assumption is that a distinct community exists; a homogenous group, territorially fixed, where members share characteristics distinguishing them from 'outsiders' (Agrawal and Gibson 1999; Leach et al., 1999). In reality, communities are internally highly differentiated and made up of multiple actors with diverse interests. Therefore, a more political approach must be taken, and communities examined by focusing on the multiple interests and actors within an area, and how these influence participation and decision-making processes (Agrawal and Gibson 1999). Consideration must also be given to the power relations within the

community and how this affects how resource use decisions are made and benefits shared (Brosius et al., 1998; Southgate 2006).

For example, communities are socially, economically and politically differentiated along gender, age, wealth and ethnic lines. Gender is a key factor in determining the patterns of ownership, use and access to resources. However, gender issues, and particularly the gendered differentiation of household assets, are seldom addressed in conservation projects (Blaikie 2006). As a result, women are often excluded from conservation projects or their benefits and can become further marginalised.

Also, conservation projects seeking to involve the community, and transfer authority over resources, may open up new opportunities for the rich and powerful to manipulate for their own political power and economic benefit (Levine and Wandesforde-Smith 2004; Blaikie 2006). So, in efforts to empower the community, the issue of who gets represented and who makes the decisions, will have profound effects on local democracy and who benefits (Ribot 2006). Conservation projects may provide openings as changes in authority, laws and decision-making provide opportunities for entrepreneurs from both within and outside the community (Blaikie 2006). This can result in the more influential and better positioned (elite) ending up controlling initiatives, and also capturing the greater proportion of benefit (Gillingham and Lee 1999; Thompson and Homewood 2002; Dressler et al., 2010; Leisher et al., 2010).

Viewed in this light, conservation must be recognised as a 'social and political process' and ultimately a result of human action (Brechtin et al., 2002). Thus, a better understanding of the social and political processes inherent in conservation such as the moral argument of who benefits, legitimacy, governance, accountability and the wider political economy is required. Conservation is often portrayed as 'apolitical' and based on technical or scientific reasoning and solutions (Wilshusen et al., 2002; Büscher 2010). This overlooks the deep complexity inherent in conservation work, and fails to take adequate account of the different interest groups involved and how they interrelate.

#### **4.1.3 Research Questions**

Partnership and participation are key concepts widely proclaimed in the governance of conservancies in the Mara. To investigate these concepts I ask the following questions:

- How did the community participate in the formation of the conservancy? To what extent was it outsider- or insider-driven?
- What motivated people to join the conservancy?
- What is the nature of the partnership between the community and tourism investors?
- What are the different interest groups involved in or affected by conservancies, and how does their status and position influence their levels of participation and power in conservancies?

## **4.2 Analytical framework**

An analysis of the nature of the partnership between landowners and tourism investors, and the extent to which there is meaningful participation by different interest groups, requires; a) an understanding of the history of local management in the area, b) an empirical measure of participation, and c) an understanding of the context of power relations both between and within the community.

### ***4.2.1 History of local management***

Conservation is often portrayed as ‘ahistorical’ (Abel and Blaikie 1986). However, history can tell a lot about contemporary problems of resource use or community perspectives (Abel and Blaikie 1986; Hughes 2006, 2007). A historical analysis can help to show what interventions worked and what failed, and the reasons why. A history of local management can also be beneficial for learning from experiences with participation (Lund et al., 2009).

In the Mara, there is a history of evolving conservation and tourism initiatives, most of which have not produced positive outcomes for the local community. Much of the history relating to this is covered in chapter 2; however, important aspects of how history has influenced the way people view and do conservation in the Mara today, are touched upon in the analysis presented below.

### ***4.2.2 Meaningful Participation***

Many conservation projects claim to be participatory and/or that certain groups participate in the management of natural resources. However, participation tends not to be analysed in terms of the differing forms and levels of participation, nor in terms of whom within a community should be participating (Southgate 2006). Lund et al. (2009) reviews a number of studies which investigate and describe participation in forest management and shows there is a tendency for participation to be described in dichotomous terms – either it’s participatory or not. Thus, to be

able to understand whether there is meaningful participation rather than just something being merely called participatory, a certain measure of participation is needed. This calls for an empirically-based analysis of participation.

Lund et al. (2009) evaluate studies for three key characteristics of participation; 1) The degree of local collective action; 2) the powers wielded at the local level; and 3) the local managers' accountability relations. They find that 30% of studies do not empirically investigate any of these three participation characteristics, and so rely on the assumption that it just exists. Only 23% of studies investigated all three characteristics. These findings highlight the need for more detailed assessments of participation, and a better understanding of the actual form and degree of participation (Lund et al., 2009).

This chapter thus uses Lund et al.'s. (2009) three characteristics of participation to judge the extent to which the community participate in conservancies in the Koyiaki. Conservancies are portrayed as partnerships in which landowners participate in conservancy management and decision-making (see ahead). However, to analyse whether and how participation is actually occurring, a certain measure of participation is needed, and Lund et al. (2009) provide a useful framework to enable this. Although they derive the participation characteristics from quite a different governance setting, involving decentralised forest management, these characteristics can be appropriately applied to the more private-sector nature of the Mara conservancies' partnership, as the following sections show:

#### 1) The degree of collective action

Collective action is a main criterion for participation. Collective action refers to any form of action taken by a group in pursuit of members' perceived shared interests (Marshall 1998). Collective action can take many forms, including; the development of institutions (e.g., rules for resource management), resource mobilization (e.g., to hire guards or invest in maintenance activities), coordination of activities (e.g., to avoid crowding), and information sharing (e.g., about techniques or the location of mobile resources) (Poteete and Ostrom 2004). In conservancies, I will look at this in the following ways:

- Whether there is a local management group, with rules that govern the group's access to resources.
- For evidence of practices for collective action, for example through the coming together in meetings, or other types of user groups.

- The extent to which conservancies are perceived as bringing social cohesion or conversely conflict within the community.

## 2) The powers wielded at the local level

Theory suggests that participation in decision-making is the mechanism that results in more efficient, equitable and sustainable forms of resource management (Ribot 2006). When devolving powers over resources in an intervention, this only becomes effective when there is a mechanism to represent local needs and aspirations in decision-making (Ribot 2006). For example, are local actors free to act without rules and directives from higher levels? Are outcomes a result of decision-making at the local level? Agrawal and Ribot (1999) distinguish four broad decision-making powers: a) the power to create rules, b) the power to make decisions, c) the power to implement and enforce rules, d) the power to adjudicate disputes. I will look at how power is wielded in the Mara conservancies through:

- Who holds decision-making powers within the conservancy? For example, who created the rules at conservancy formation? Who is making decisions regarding livestock grazing in the conservancy, and who is enforcing these decisions?
- Other examples of conservancy management which show how power is apportioned between tourism investors, the land committee and conservancy landowners.

## 3) The local managers' accountability relations

Devolving the management of resources seeks to empower local communities, but the issue of who gets represented, and who gets to make the decisions, is not so clear cut. A key issue is whether the actors who receive power are accountable to the local population (Ribot 2006). The people who receive power need to be held accountable to the lower level to broaden the participation of local populations and to ensure local people are represented in meaningful decision-making (Agrawal and Ribot 1999; Ribot et al., 2006). There is good governance at the local level when meaningful powers are transferred to democratically elected and downwardly accountable decision-making bodies (Ribot et al., 2006). Non-elected officials may not be particularly accountable, which highlights the need for regular and competitive elections (Ribot et al., 2006). I will look at the accountability in conservancies in two ways:

- First, through the downward accountability of the land committee to conservancy members, in terms of who is represented on the committee, how they acquired these positions, and presence or absence of regular elections.

- Secondly, through the downward accountability of tourism investors and conservancy managers to conservancy members, in terms of the transparency in the conservancy payment system. Communities in the Mara have suffered from a series of non-opaque and unaccountable initiatives distributing wildlife revenues (see section 2.5 for more on this history), thus this aspect warranted further investigation.

#### **4.2.3 Political ecology analysis**

The chapter develops a political ecology analysis to examine whether and how different groups participate in the conservancies, and to explain their different levels of power. Empowering people to manage natural resources is more than simply the devolution of authority of natural resources from higher levels to 'a community' (Agrawal and Gibson 1999). Community participation does not mean that everyone will be able to participate. What is more required is an understanding of the patterns of social and political differentiation within a community, to ensure that more than just a powerful minority participate or benefit.

Political ecology analyses have shown the diverse means by which power is wielded in struggles for access and control over natural resources (Leach et al., 1999; Paulson et al., 2003; Turner 2004; Humphries 2013). Political ecology recognises the heterogeneity of actors within communities and understands that this can create conflicts over the access to and control over resources. A political ecology analysis can help examine how and why resources are distributed as they are, and to investigate any imbalances of power. It can also take into account the local socio-political power structures that can facilitate or hinder participation.

Like Abel and Blaikie (1986) and Brown (1998) this chapter uses a political ecology analysis to identify the different interest groups involved and affected by conservancies in the Mara and their different levels of power and influence. Abel and Blaikie (1986) identify the different interest groups and their interests, aims, and sources of power in analysing the conflicts between different groups in a Zambian national park. Brown (1998) identifies the different interest groups and interests involved in grassland conservation in Nepal. The political ecology analysis is used here to identify the major interests and influence in conservancies and in the capture of conservancy revenues and access to conservancy land. It examines the uneven relations of power which influence the use, perception, and control of conservancies and their resources.

### 4.3 Methods

This chapter describes community participation in four conservancies set up within Koyiaki, although it focuses in most detail on the partnership structure of one conservancy – the Olare Orok Conservancy (OOC). The OOC was the first conservancy set up which introduced the new partnership between tourism investors and conservancy members, which subsequent conservancies then replicated and modified.

Data used in the chapter were collected predominately from interviews with key informants and community members (see chapter 3 for more on conducting and recording interviews). Key informants included conservancy managers, tourism operators, members of conservancy land committees, and other community leaders. Community members included conservancy members and non-members, including men, women, and the youth. Both group and individual interviews were held, being very much dependent on who was present in a particular setting at a particular time.

Topics and questions asked in interviews relevant to the issues in this chapter include people's involvement and role in conservancies, how conservancies were initially set up, and the general operating and management of conservancies. Key informants were asked further about the governance and management of conservancies in order to construct an organisational and partnership structure of the conservancy model. Community members were asked further about their perception of the formation and aim of the conservancy, and in the case of conservancy members, their motivations for joining, and in the case of non-members, their reasons for not joining if eligible. Community members were also asked about attending conservancy meetings, and their level of information and awareness about conservancies. Both groups were asked about decision-making in regards to conservancy management; what decisions were made and how, who was involved, and what mechanisms there were to enable participation. The rules regarding livestock grazing in conservancies were specifically investigated in relation to participation in decision-making.

This chapter also relies heavily on participant observation and time I spent in various informal discussions, and more formal community meetings related to the conservancies and other community activities. These meetings included conservancy annual general meetings, meetings for the formation and signing-up of conservancy lease contracts, and some smaller conservancy member meetings.

Quantitative data from the household questionnaire is used to support arguments and findings from the other more qualitative methods. Secondary sources of information, including: conservancy workshop and manager reports, websites, and other promotional material, are used to help demonstrate different aspects of the conservancy partnership and management.

#### **4.4 The beginnings of a new tourism model**

In 2005, interested stakeholders introduced a new tourism model to a number of landowners in the Olare Orok area of the former Koyiaki Group Ranch. This area directly borders the Maasai Mara National Reserve (MMNR) and hence is prime conservation and tourism land. The area had been excluded from the Koyiaki-Lemek Wildlife Association in 2003, thereby excluding most landowners from any tourism revenues. A few local elites owned large parcels of land within the conservancy from which they stood to benefit greatly in the event of new tourism ventures (KII 7). There were also a few tourism operators with camps within the area, who were concerned about the effects on their tourism enterprises of the recent land subdivision, and the potential resultant loss of wildlife (KII 7, 18).

Situated adjacent to the Reserve, the Olare Orok area is attractive to tourism investors and expatriate home owners alike. There was an on-going rapid outward sale of land in the area as land was sold to individuals and companies interested in putting up idyllic bush homes or investing in new lodges (KII 7, 18). In the space of a couple of years, 14 plots of approximately 50 acres each were sold on to outsiders, most of these expatriates, tourism operators or wealthy business men (KII 18). One interested land buyer tried to buy a large number of plots in the area; the deal did not go ahead, but it did raise awareness of the significance of the rapid loss of land through sales to non-Maasai (KII 15). As one community member put it:

‘...in the future this place will become land of the *ilashumpa*<sup>21</sup>...Look for example at those who have bought land here, like ‘Simon’ and ‘Fred’. They are members just like us, as they now own land here and many others who come to buy.’

*Junior elder, non-conservancy member, community interview 17*

The tourism operators with camps already in the area were also concerned about the increasing number of tourism lodges and vehicles in the area, ultimately lowering the quality of the tourism product (KII 2). These camps operate at the top-end of the tourism market and had much to gain

---

<sup>21</sup> *ilashumpa* (singular *olashumpai*) in *Maa* translates as ‘white people or Europeans’. This term was used widely in interviews often without clarity on the type of person that was being referred to e.g. between tour operator, conservancy manager, tourist or other white person. To avoid bias, in cases where this wasn’t distinguished, I retain the *Maa* word in interpretation of interviews.



from a more exclusive conservation area to which they could bring their high-paying clients. Tour operators were especially interested in rebranding the Mara as an exclusive destination, using a high value-low volume approach to tourism based on fewer visitors paying a premium for their safari. This would bring the Mara alongside its neighbour, the Serengeti National Park, as a premium tourism destination, and more broadly, alongside Tanzania, Botswana, Zimbabwe and Zambia - Kenya's competitors in safari-based tourism<sup>22</sup>.

Some key people, who had an important stake in the area, were influential in developing and setting up the new model. Porini Ecotourism, a tour operator with a small eco-camp in the area, had already begun to lease out neighbouring parcels of land to its lodge. This was to stem movements of cattle, people and vehicles close to the lodge due to the increasing development of a nearby small trading-centre, its accompanying bars, and the growth of surrounding pastoral settlements. Porini Ecotourism had experience of setting up conservation areas with Maasai communities in Olkinyei Group Ranch in the Mara, and in the Amboseli area. In Olkinyei, they had recently opened an eco-lodge, and they leased the area around the lodge from a group of Maasai which gave them exclusive game viewing access in that area, thereby forming the Olkinyei Conservancy. A former chief also had a large stake in the Olare Orok area. He owns an atypically large parcel of land in the area, directly bordering the Reserve. The former chief and managing director of Porini Ecotourism worked together with the help of two facilitators to develop the idea and introduce the conservancy to the landowner community. One of the facilitators had recently bought a 150 acre plot in the area to retire on after many years in the ranching and tourism industries. The other facilitator was a local Maasai from a neighbouring group ranch, a researcher and community facilitator for an international research institute, and a former employee of the Koyiaki-Lemek Wildlife Association. The two facilitators played key roles in developing the idea and putting it forward to the landowners and tourism partners, as they were respected members of the community with backgrounds in, and vital links to, the local community and tourism industry.

As the concept of the OOC was introduced to its landowners, some landowners were invited to Amboseli to learn about what Porini Ecotourism was doing in partnership with the Maasai community there (KII 2). The boundaries of the conservancy were re-drawn as more people came

---

<sup>22</sup> This is the also the approach outlined and recommended for the Maasai Mara National Reserve in its 10-year Management Plan (NCC and TMCC 2011).

on board and later signed up their land (KII 7)<sup>23</sup>. The small size of the conservancy was thought to be important in helping to manage any disagreements and internal politics within the group of landowners (KII 6, 7). Since the Olare Orok area did not receive any revenues from wildlife associations, there was little objection to the conservancy from prominent people receiving large revenues from the wildlife associations in neighbouring block one (KII 2). The few tourism operators that did have camps within the OOC, as a result didn't have any real competitors and were able to initiate the conservancy with little objection from the part of the tourism industry and its key beneficiaries (KII 2). The area was even viewed by some as little used and not suitable for cattle grazing due to the presence of tsetse fly (KII 6), despite there being some 450 pastoralists resident within the area.

The conservancy model differed to any previous tourism initiative in place in the Mara. Landowners with land inside the conservancy were offered a guaranteed fixed monthly lease payment based on land size, rather than a variable payment based on visitor bed nights, therefore being independent of visitor numbers. The tourism investors agreed to guarantee the payments regardless of visitor numbers and a management company would process the payments straight to landowner bank accounts, and not through any group ranch or wildlife association committee. A designated conservation area was formed to which the tourism partners had full and exclusive access, and landowners and their livestock would be required to vacate their land and settlements, and agree to certain land use restrictions.

The leasing out of land for conservation was a new venture for most people in the Mara. In other areas of the Mara, land was being leased out for cultivation, but these were quite far from the OOC. Landowners were thus initially sceptical about the intentions of the new conservancy and many did not at the outset sign-up (KII 6, 7, 17). A number of the meetings were held with the landowners in the area to introduce the concept of the conservancy and get people on board (KII 6). Since the tourism operators and one of the facilitators were non-Maasai or non-Kenya, many people saw the conservancy as driven by *ilashumpa* who were interested in buying-up their land (KII 7). Some community members later reflected on from where they thought the idea of the conservancies originated:

---

<sup>23</sup> The boundaries of conservancies were determined due to a mix of reasons differing for each conservancy. Boundaries often follow attributes such as roads, rivers or group ranch boundaries. Heavily settled areas or market centres were mostly excluded. Whether a landowner was interested in joining a conservancy or not on occasions determined the boundaries. In the case of the OOC, land parcels which were not benefiting from any other wildlife association in Koyiaki block one were included, whereas those part of an association were excluded.

'...it was the *ilashumpa* who came to find land here that they can settle on and use, and we agreed to give it to them so that we could benefit.'

*One woman, son is an OOC member, community interview 11*

'It was an idea brought by the *ilashumpa* who said they would like to buy this land in exchange of money.'

*Senior elder, member of MNC, community interview 18*

'The *olashumpai* came to meet the people...and came to ask where it is good to put a camp and rent the land. So he approached the owners of the land and that is how he came in.'

*Group of women, husbands are non-members, community interview 24*

These statements show that the conservancies were perceived as steered largely by the *ilashumpa* who wanted to use the land for tourism purposes. Many informants also mentioned a number of community leaders, including group ranch leaders, as those who introduced the idea of the conservancy to the community. As the conservancies started to take shape, these leaders, all who owned land inside the conservancy, later gained positions on the conservancy land committees (section 4.6.3).

In May 2006, a group of approximately 150 landowners in the Olare Orok area signed up their land to the conservancy and began to receive monthly payments from tourism operators with lodges in the area, thereby creating the OOC. Since the OOC restricts settlements and livestock grazing, the 450 or so pastoralists resident in the area, together with their livestock, were moved before the conservancy was operational. The conservancy provided people with transport to move their belonging but no financial compensation was given.

As the OOC began to operate, tourism investors and other interested stakeholders in neighbouring areas saw opportunities to set up and benefit from their own conservancies. Quite rapidly, a number of subsequent neighbouring conservancies were set up, including Motorogi Conservancy in 2007, Mara North Conservancy in 2009, and Naboisho Conservancy in 2010 (Table 4.1). Although all functioning slightly differently, these subsequent conservancies follow very similar models to the OOC with monthly lease payments and similar land use restrictions. Some important points on these conservancies are given below.

### **Motorogi Conservancy**

Motorogi is an extension to the OOC that opened one year after the OOC, and is financed partly by Virgin Limited Editions (Richard Branson's exclusive collection of holiday retreats) and partly by the same tourism partners in the OOC. Richard Branson specifically came in with the interest to

expand the OOC to the Motorogi area following visits to the area in 2007 and 2008<sup>24</sup>. These coincided with the launch of Virgin Atlantic’s new air route from London to Nairobi<sup>25</sup>. Virgin only opened its camp Mahali Mzuru in Motorogi in 2013, a few years after starting to finance the conservancy<sup>26</sup>.

### **Mara North Conservancy (MNC)**

The Mara North Conservancy (MNC) is the largest conservancy in the area with the largest number of landowners and lodges operating inside it. The MNC is formed in the area that was once under the numerous Koyiaki-Lemek wildlife associations (chapter 2), and is the result of a series of attempts since then trying to bring landowners together to form one conservancy. Initially made up of two different conservancies financed by different tour operators, the MNC formed in 2009 when these merged together. The MNC’s large size, and the former history of contention and division in wildlife initiatives in the area, has often caused challenges in trying to bring all members together to agree on conservancy matters (KII 19, 22).

Table 4.1: Arrangements of the four different conservancies in Koyiaki

<b>Conservancy</b>	<b>Group Ranch or area</b>	<b>Size (ha)</b>	<b>Year started</b>	<b>No. of landowners</b>	<b>No. of tourism investors</b>	<b>Payment rate* (ha<sup>-1</sup>/yr<sup>-1</sup>) KES (US\$)</b>	<b>Lease period**</b>
Olare Orok Conservancy (OOC)	Koyiaki	9720	2006	157	5	3800 (48)	15
Motorogi Conservancy	Koyiaki	5466	2007	120	1	3800 (48)	15
Mara North Conservancy (MNC)	Koyiaki and Lemek	30955	2009	900	12	3500 (44)	15
Naboisho Conservancy	Koyiaki	20946	2010	451	6	2500 (31)	15

\* 2012 payment rate

\*\*A few landowners for OOC, Motorogi, MNC are still under the 5 year lease contract

### **Naboisho Conservancy**

Naboisho Conservancy is the most recent conservancy set up in Koyiaki in 2010 after the last area of Koyiaki was subdivided and allocated in 2009. Naboisho Conservancy was introduced and initially donor financed through Basecamp Foundation, whose commercial arm, Basecamp Explorer has a lodge in the conservancy, and one just outside of the conservancy. Basecamp

<sup>24</sup> In 2008, Richard Branson opened new facilities at a primary school in Sekenani town, on the border of the MMNR.

<sup>25</sup> This route was discontinued in 2012.

<sup>26</sup> Virgin delayed building their camp in Motorogi, partly due to the 2008 post-election violence in Kenya and the ensuing drop in tourism, and partly as they waited until a 15-year lease contract was secured (KII 4).

Foundation came in with an interest to set up a conservancy in this area a couple of years before the area had been subdivided. However, they had to wait until the land allocation process was complete as the leases require clear title to land. This process was delayed by a court case where a number of people were contesting that they were not allocated land during earlier subdivisions. There were also delays due to the irregular allocation of parcels in areas earmarked for tourism camps to some prominent community members, which were later reversed (KII 14).

#### **4.4.1 Community perceptions on why the conservancies were set-up**

To understand more about how the community perceived the concept of the conservancies, I asked community members why they thought the conservancies were formed and what their aim was. Most respondents perceived the conservancy to be set up for income generation, e.g.:

‘The conservancy was only formed for generating money and we joined it without really knowing what its aim was.’

*Senior elder, member of OOC, community interview 14*

‘It had no other aim other than that the tourism partners could benefit.’

*Elder, member of Naboisho Conservancy, community interview 9*

‘I think the aim of forming the conservancy is to generate income and as you know there is the county council park and it was said there needs to be introduced other small parks for the community to generate income.’

*Group of men, members and non-members, community interview 10*

‘The aim of the conservancy is just for tourism so that the landowners can benefit from it, instead of having all that land which is of no use.’

*Senior elder, member of Motorogi Conservancy, community interview 29*

These comments show that although the conservancy was perceived to be set up for income generation, there was a mixed view of who it was that benefits from conservancies - the tourism investors and/or the landowners. Although most people thought that the conservancies were set up to provide income to both the landowners and the tourism investors, others (such as in the second quote) were more cynical, and believed it to be for the tourism investors to benefit alone. In the third quote, in which these members thought the conservancies were set up to benefit the community, the expectation was that by leasing out their land to the tourism investors, they would receive benefits from tourism, and this would enable the benefits of tourism to spread out further than does the current income from the Reserve. In the fourth quote, this elder viewed the conservancy as providing income to his land which had little use other than tourism. He had recently bought his land in the Motorogi Conservancy, thereby joining the conservancy in the process. By choosing to buy this land, this might explain his interest in becoming a conservancy member, and also why he did not view his land to have much alternative or competing use.

Women tended to view the aim of the conservancies more sceptically. Much of this centred around the restrictions that conservancies placed on livestock and livestock grazing. For example:

W1: '(the conservancy was set up) just for the purpose of wildlife.'

W2: '..So that they (the wildlife) can have somewhere where they can be taken care of, so that they don't mix up with the cows.'

*Group of women, husbands are members, community interview 25*

'Their aim is that they want us to sell all our cows.'

*Group of women, husbands are members, community interview 15*

Since conservancies place restrictions on livestock grazing, these women perceived conservancies as a place for wildlife, but not for cattle. This means a loss of grazing land for cattle, and might explain why in the second quote, these women view the conservancy's aim was to force people to sell their cows. Many women also said they knew little about the conservancies or their aims because they were little informed about them:

'We don't know anything because it was formed abruptly, it was not much discussed about and we were never told. We heard there were meetings, and we heard that the land was given out but we were never informed.'

*Group of women, husbands are members, community interview 12*

W1: 'We completely don't know, we don't know about the subdivision of land and we don't know about the conservancy. We've just heard that the conservancy was being formed.'

W2: 'We've just heard that this is the conservancy and we don't know how it was formed.'

W3: 'We don't know because we are women and we are not in control. We have just heard that the contract needs to be increased but we don't know how it will be done... Even when the meetings are held we are not included.'

*Group of women, husbands are members, community interview 15*

'Myself, I don't know, it's only men who know...about conservancies. I told you before I only know about our cattle, but anything concerning about the land, it's only men who know.'

*One woman, non-member, community interview 16*

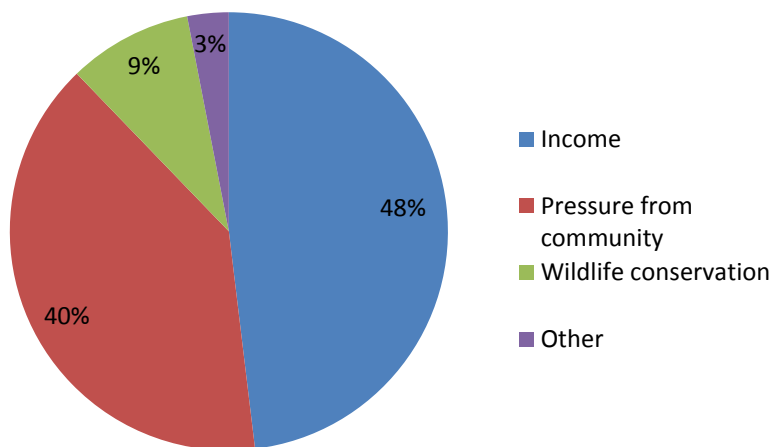
Since women were not allocated land during group ranch subdivision, very few hold title to land, and thus very few are eligible to become a conservancy member. In fact, less than 1% of conservancy members are women (KII 14, 18). In most of these cases, women have inherited land from their late husbands. Even though many women have husbands who are conservancy members, most women said they knew little about conservancies and were unable to give details concerning them. Conservancies were perceived as very much of a land issue, and along the same lines as the subdivision and ownership of land, which is almost entirely in the control of men. Rather, the women were more involved and concerned about cattle, which the conservancies were seen as in opposition to, due to the livestock grazing restrictions. Also, as shown later, few

women participated in conservancy meetings (4.6.1). Together, these issues help explain the largely negative views of conservancies given by many women.

#### **4.4.2 What motivated people to join a conservancy?**

Landowners have the option to join a conservancy if they own land within an area where a conservancy is formed. When I asked conservancy members why they decided to join a conservancy most replied that they did so to receive income. This finding was supported by the questionnaire survey where income generation ultimately provided the greatest motive to join the conservancy for participating households (48% of households) (Figure 4.1).

Figure 4.1: The reasons given by conservancy members to join a conservancy (n=131)



However, another aspect commonly reported on was that people joined simply because they found their land to be inside a conservancy, so they were in fact compelled to join it. Deciding to join a conservancy is theoretically a voluntary decision on behalf of the landowner. However, in reality if someone's land happens to be inside the conservancy, there is pressure to join the conservancy if all their neighbours were joining. As land under a conservancy faces heavy restrictions in terms of other land uses, including for settlement and livestock grazing, there is little use in having an isolated parcel on which to settle and graze if neighbouring conservancy parcels are not accessible. This was also supported by the questionnaire survey where 40% of households participating in conservancies reported they joined due to pressure of the majority (Figure 4.1). As some conservancy members explained:

'I joined it because the majority of people also decided too....I decided to join because I didn't see any other business that I could do with my land since it is very small in size and it is inside the conservancy. So I did not want to go against the conservancy.'

*Senior elder, member of Motorogi Conservancy, community interview 29*

'According to me, the way I see how the conservancy came to be was not the wish of all of us that are here. It was the wish of two people who brought the idea of forming the conservancy and created the boundaries. And since your land is inside the boundary it meant that you would be a member of the conservancy. But that was not your will to join, it's only because you have realised your land is within the boundary.'

*Group of men, members and non-members, community interview 10*

Another member was concerned that their land would be taken away from them if they did not join:

'(we joined) because many people signed, and since our land is inside the conservancy, if we didn't agree to sign then it might be taken back and given to someone else who would agree to sign.'

*Junior elder, father is a member of Naboisho Conservancy, community interview 26*

In the last quote, this elder perceived there was a pressure to join, in case their land might be taken back and given to someone more in favour of joining. By holding title to his land, this concern should be unwarranted, as a conservancy has no power to take away someone's land. However, his concern might stem from the fact that in the case of Naboisho Conservancy, the subdivision and allocation of land in 2009 directly preceded the formation of the conservancy in 2010. With these two processes occurring so close together, and in some ways linked, he might have felt threatened that if he did not join the conservancy, he would lose the land to someone else who was more interested in joining.

Joining was thus not a straight forward yes or no decision for many people, and it was heavily dependent on what other landowners were doing. As a group, landowners came together and joined in the majority to the conservancy – although as shown ahead there were a few people that decided not to join. Another member elaborates on a number of issues in joining a conservancy:

'You know that those other conservancies were formed and people actually joined them. So, some people came up with the idea of forming a conservancy in this place, and we thought it might bring some benefit to us, since it was said that the conservancy gives out some money to its members. So many people decided to join it even though others did not like the idea of forming a conservancy but due to pressure from others they agreed. And those who did not wish to join, moved aside. Since we agreed to give out our land to the conservancy we were not able to continue with the normal life and activities inside the conservancy... So I decided to move to this place since I have two parcels of land. The livestock are not supposed to graze and the people are not allowed to access the conservancy land.... The reason why I even accepted to join this one is because I have another land elsewhere which I am proud of.'

*Elder, member of Naboisho Conservancy, community interview 9*

An important aspect revealed here was that this member said he joined the conservancy because he had other land upon which he could live and graze, without this, he would not have joined.



The importance of owning another piece of land on which to settle and graze, separate to land within a conservancy, is looked at in further in chapter 7.

I also asked women, whose husbands were conservancy members, why they decided to join. Similar to the comments shown above many said that they didn't know why, they weren't informed about it since it is men's business, and they just joined like others did:

'We don't know, we have just seen other people join. Women do not attend the conservancy meetings so we are not aware of it.'

*Group of women, husbands are members, community interview 12*

As mentioned, a few landowners did opt not to join a conservancy. For them, the limitation of not being able settle and graze on their own land, or use it for any other purpose, was too great and they decided not to join. For example, one man interviewed reported opting not to join the OOC, stating that he had nowhere else to move to, and instead his family settled on their land within the conservancy (chapter 7, box 1). The household survey found that out of 147 households who owned land in a conservancy area, 133 joined a conservancy. Out of the 14 who did not to join, 11 chose not to and 3 were delayed in joining for some land administration reason (section 6.3.2)

In other cases, many landowners delayed in joining a conservancy, perhaps because they were still unsure about the conservancy. For example, in the Naboisho Conservancy set up in 2010, six months after opening approximately 50 landowners with land parcels within the conservancy had not joined the conservancy, in comparison to 450 who had (KII 25). By 2012, this had gone down to about 25, as people slowly came on board (KII 33). Those reluctant to join a conservancy often tend to be the wealthier landowners with larger herds of cattle, who want to use that land to graze their cattle, or who have other potentially lucrative plans for their land (KII 25).

A few members have dropped out of a conservancy at a later date after initially joining, perhaps because they were moved by the conservancy (chapter 7, box 2), or because they sold or subdivided their land, or they because did not want to increase from a 5-year to a 15-year lease contract (KII 33, 34). For example, when the OOC, MNC, and Motorogi Conservancy renewed their lease contracts for a 15-year period following the 5-year contract many members were not keen and refused to sign the new contract. Some also negotiated to remain under the 5-year contract but with a lower lease payment (KII 33, 34).

In another example, a group of 14 landowners dropped out of OOC in 2007 to establish their own tourism camp and conservation area on the edge of the OOC (KII 13). They entered a new agreement based on tourism bed nights in the belief this would accrue more income than the fixed land rent system of OOC (KII 13). However, many of these landowners later re-joined the OOC when tourism collapsed in the Mara following the Kenyan post-election violence in 2008 and their income dried-up (KII 18)

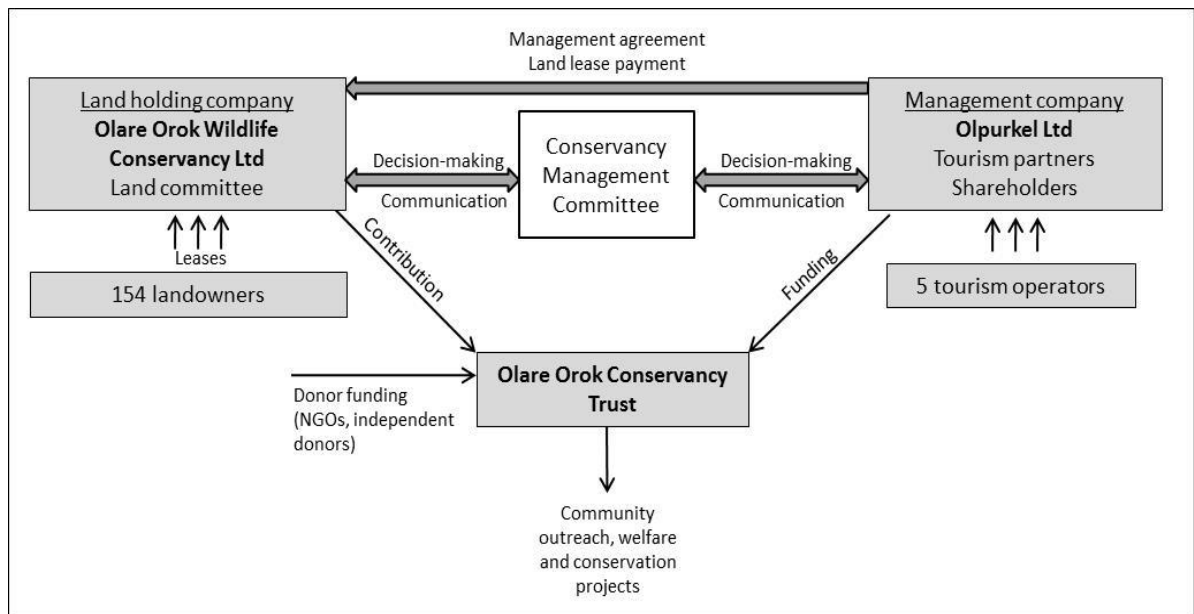
#### **4.5 The landowner-tourism investor partnership**

This section looks at the structure of the partnership between the conservancy landowners and the tourism investors. Since conservancies require clear title to land, only those who hold a title deed for land within a conservancy area are entitled to join. As a result a number of groups from within the community are left out of conservancy membership. This includes people who might own land, but not in a conservancy area. For example, they might live, or own land in an area neighbouring a conservancy. It also leaves out those groups who do not hold title to land, such as women, youth and other marginalised groups who were unable to secure land during subdivision. Thus, the partnership described below is only between the conservancy landowners/members and the tourism investors.

When the OOC was formed, it comprised a new type of partnership between the conservancy landowners and the tourism investors that differed to any previous arrangement administering tourism revenues to people in the Mara. This model was then replicated and slightly modified by subsequent conservancies. Important features of the OOC partnership are described below and a schematic diagram of the partnership is shown in Figure 4.2.

The landowners of the OOC are represented by their own landholding company, the Olare Orok Wildlife Conservancy (OOWC) Ltd. This is a shareholding company under which each landowner's lease is held. Since the tourism investors are not all Kenyan citizens, under Kenyan law they are not permitted to own or lease agricultural land (NCLR 2012), and they would be unable to hold the leases themselves. Within the OOWC landholding company, a land committee was formed to act as representatives of the wider group of landowners. Unlike the previous wildlife associations the committee is not involved in financial distribution of lease payments, with usually only one paid member – a community liaison officer.

Figure 4.2: The Olare Orok Conservancy partnership model



The tourism investors also formed their own not for profit management company, Olpurkel Ltd<sup>27</sup>. Olpurkel have a management agreement from OOWC to manage the conservancy. The Olpurkel board of directors consists of the tourism investors, but also has representatives from the landholding company and the OOC Trust. The five current tourism investors<sup>28</sup> within Olpurkel guarantee the financial payments to landowners. They pay a fixed monthly land lease payment<sup>29</sup> to each landowner who owns land inside the conservancy, and agrees to sign their land to the conservancy. The payment each landowner receives is based on the given land lease rent for a particular conservancy and the size of land a landowner covenants to the conservancy. Olpurkel also finances the management costs of the conservancy. In 2010, Olpurkel employed 23 staff (KII 18), and in 2012, spent approximately US\$140,000 on transaction and operating costs, including: administration, monitoring and compliance of contracts, staff remuneration, equipment and infrastructure maintenance (Philip Osano, per comms).

Olpurkel pays the lease payments monthly direct to landowners' bank accounts<sup>30</sup> through a Conservancy Management Committee (CMC). The CMC is made up of representatives from both OOWC and Olpurkel. The CMC is responsible for overall management of the conservancy, and meets regularly to decide on issues regarding the day to day running of the conservancy,

<sup>27</sup> Olpurkel Ltd also finances and manages the neighbouring Motorogi Conservancy set up in 2007.

<sup>28</sup> The tourism investors' camps include Porini Lion Camp, Mara Plains, Olare Mara Kempinski, Kicheche Bush Camp and Mahali Mzuri.

<sup>29</sup> The 2012 payment rate was KES 3800 (US\$48) ha<sup>-1</sup>/yr<sup>-1</sup> under the 15-year agreement.

<sup>30</sup> In 2013, Kenya Commercial Bank (KCB) opened a branch in Talek centre, from which landowners are now able to withdraw their payments, removing costs and time spent in travelling to Narok.

including, security, infrastructure and maintenance (KII 14). They coordinate a team of rangers who monitor and enforce the conservancy's rules and restrictions, particularly regarding livestock grazing. The conservancy holds annual general meetings (AGM) where the tourism investors, conservancy managers, land committee and conservancy members all meet to discuss conservancy matters. Other meetings are held as required from time to time.

When the OOC first formed, an initial payment rate was set at KES 1500 (US\$19) per hectare per year ( $\text{ha}^{-1}/\text{yr}^{-1}$ ) under an 18-month agreement<sup>31</sup>. Following this the tourism investors negotiated a mutually agreed on 5-year lease contract (the tourism investors preferred 25 years, whereas the landowners 2 years (KII 7)) and the payment increased to KES 2000 (US\$25)  $\text{ha}^{-1}/\text{yr}^{-1}$ . In 2010, the tourism investors introduced a 15-year lease contract to the landowners and the payment increased again. With yearly increments the 2012 payment rate stood at KES 3800 (US\$48)  $\text{ha}^{-1}/\text{yr}^{-1}$  under the 15-year agreement.

The leases are financed through the daily tourist entrance fees into the OOC, which currently stand at US\$80 per person. Marketed as a high-value low-volume safari destination, the OOC only allows one tourist bed per every 300 acres within conservancy (KII 14). At 35% occupancy the tourism partners are able to cover the cost of the guaranteed land rent and pay a management fee to the conservancy. In their management agreement with the OOWC, the Olpurkel must guarantee the monthly land rent regardless of the number tourists visiting the conservancy. In 2008, the Kenyan post-election violence and global economic crisis caused a 19% drop in tourism in Kenya (Lumiti 2009) and there were very few visitors to the OOC or wider Mara (KII 2, 14). The OOC tourism investors continued to maintain the lease payments during this time. Olpurkel have set up a financial contingency fund to guarantee the payments in case of similar future events.

A conservancy trust was also set up to channel donor funding to the conservancy and run community welfare and development projects. These projects benefit the wider community in the Mara and not just conservancy landowners or their families (chapter 5). The OOC Trust supports school, health, finance, water and women's projects, and has employed two women's outreach officers to work with women's groups and schools (section 4.6.1). Conservancy

---

<sup>31</sup> In determining the payment rate the tourism investors sought expert advice and tried to match it to the potential value of the land, including that obtainable from wheat farming (KII 3, 6, 7, 14). The payment rate however did, and still does, fall below this. However, since wheat prices fluctuate and are unstable, they tend to offer less stability than the conservancy guaranteed fixed monthly payments (KII 3, 6, 14).

members contribute a small portion of their payment (KES 150 ha<sup>-1</sup>/yr<sup>-1</sup> in 2010) towards the Trust's activities. This was done so landowners themselves part-finance projects, thereby increasing local commitment and value to these activities (KII 18, 19). The OOC Trust also has representatives from the landholding company on its board so landowners are involved in selecting projects to fund. Subsequent conservancies have set up similar trust companies to develop community projects in nearby areas.

## **4.6 Participation**

This section analyses the conservancy partnership outlined above in terms of how it enables participation by conservancy members in conservancy management and decision-making. It unpacks some of the structures and mechanisms within the partnership, (for example, the companies, the land committee, conservancy meetings) to see whether and how different groups actually participate in conservancy management, and looks at some of the power relations between them.

Conservancy managers and leaders claim that in its design, the conservancy partnership incorporates ways to include members' participation in conservancy management and decision-making (KII 14, 18, 20, 26). Moreover, that the structures and mechanisms within the partnership enable joint management and shared ownership between landowners and tourism investors. Their promotional and marketing material, for example on websites, also claims conservancies to be managed together with the community (e.g. [www.mmconservancy.com](http://www.mmconservancy.com); MNC 2011; Great Plains 2013).

This section looks at evidence to evaluate whether there is actual participation and if so, who is participating in conservancies, and to what extent. I use Lund et al.'s (2009) three characteristics of participation to empirically evaluate participation on the ground.

### ***4.6.1 Degree of local collective action***

#### Local management group

In forming a conservancy, landowners came together and combined their land. Since land was subdivided to individual ownership, land needed to be re-consolidated to form a spatially contiguous conservancy area. Although not typical of collective action to regulate commons resources under a common property management system (Ostrom 1990), conservancy landowners are groups of people who acted collectively to form a conservancy. Land is retained

in a landowner owned Landholding Company, and this provides some basis for collective action within the landowner group. Each landholding group is coordinated by a landowner committee, which is responsible for mobilising the wider group of conservancy landowners for meetings, or specific action where required.

Typical of commons institutions, there are rules which govern how members are able to access and use resources within the conservancy, and how access is limited to outsiders (Ostrom 1990). The extent of collective action by this group is examined further in the following sections by looking at the extent of self-governance by the members themselves, compared to the level of direction from above.

### Meetings

Conservancy meetings are the main way of bringing together conservancy landowners, often along with conservancy managers and tourism investors, to discuss conservancy related issues. Meetings are a way of informing members on conservancy matters and a forum in which conservancy managers and land committees are able to bring up issues to discuss with conservancy members. Meetings are also the main forum through which all members can directly contribute to conservancy management and decision-making. Meetings are thus an important method of communication between the different groups involved in conservancies, and for sharing information, coordinating activities and making decisions. Conservancy meetings thus hold the key potential for collective action.

Meetings inviting all conservancy members to attend, such as annual general meetings (AGMs), were often one of the few opportunities to bring together all conservancy members. These meetings were generally only held yearly due to the large numbers of dispersed members and practical difficulties of bringing people together (KII 17, 20). This seemed more of an issue for the larger conservancies, in both size and the number of members, compared to the smaller conservancies (KII 20, 30). This was reflected in some reports of meeting attendance by conservancy members where members of smaller conservancies, such as the OOC and Motorogi, tended to report attending more meetings (e.g. CI<sup>32</sup> 19, 29) than members of large conservancies, such as Naboisho and MNC (e.g. CI 8, 9). Meetings were also organised on an ad hoc basis, as the need arose and to discuss more urgent issues, inviting all those who could attend. Landowner

---

<sup>32</sup> CI = community interview

committee meetings were held much more often, usually occurring every one to three months (KII 18, 20, 21, 27).

During the meetings I attended in the Mara, a variety of different issues were discussed regarding the conservancy. Meetings usually started with a number of set topics to discuss as per the agenda, but usually wandered off this as members raised any issues of concern. Meetings were a place to discuss potentially contentious issues and try to mediate and resolve any conflicts. Meetings were usually led by the land committee, and mostly by the Chairman of the land committee. Those leading the meetings usually tried to reach consensus on issues on the agenda, although this was not always the case. Members wishing to talk and raise a point were given the opportunity to stand up and speak. If a decision was not reached on a particular issue, the meeting was ended for further discussion another time. As well as the land committee, usually the conservancy managers, but less often a tourism operator was present, depending on the agenda of the meeting. At the larger all-member meetings, food, usually roasted meat, and soft drinks were always offered.

In interviews, some conservancy members talked about inadequate communication between themselves and conservancies, and a lack of meetings and information. This seemed especially related to meetings in raising awareness about a conservancy before it was set up. This seemed to be most in the case of Naboisho Conservancy, which was the newest conservancy starting out the year that I was in the field. Many members of Naboisho reported only having attended the meeting organised for signing up to the conservancy with some claiming they were not fully informed about the conservancy before signing-up (CI 9, 19, 23, 26). Although there were some locality meetings in areas in and around the conservancy, it was recognised there was not sufficient time for people to get to know and understand the conservancy and lease concept at first hand very well (KII 20, 21).

Very few women attended conservancy meetings. The few women I did meet at meetings were conservancy members who had inherited land from their husbands. Although wives of members were reportedly invited to attend meetings, very few attended. In the community interviews, no woman reported having attended a conservancy meeting (CI 12, 15, 16, 24, 25). Women often commented that they knew very little about conservancies since they were not members and did not attend conservancy meetings. Rather, women got information about the conservancy from their husbands who would attend meetings. The lack of women attending meetings is also

highlighted in the quotes earlier, where women commented they know little about conservancies because they are not included in them. Since men hold title to land, as conservancy landowners they attend conservancy meetings, whereas women do not. Women thus tend to be largely uninformed about conservancies, and as shown in section 4.1 quite negative towards them. Community members, who are not conservancy members, also did not report attending conservancy meetings.

### Women's groups

Recognising that women were largely uninformed about and left out of conservancies (Courtney 2009; KII 23), the OOC and Naboisho Conservancy started a community outreach programme with women. In 2010, two female outreach officers were employed by the OOC Trust and set up eight women's groups throughout Koyiaki. These groups meet weekly to raise awareness of conservancies, but also to discuss issues related to the environment and community development more generally.

The women's groups discuss topics such as micro-finance, alternative sources of energy, education, health and family planning. Each group has developed a micro-savings programme, where each woman contributes to a (merry-go-round) system of small loans and to a savings group in Narok. Many of the groups are set up in areas where there is no nearby cultural manyatta where women have the opportunity to sell beads or other crafts, or earn some income from cultural singing or dancing (CI 24). In line with the conservancies' encouragement for sustainable energy sources, women have been introduced to the use of biogas, mixed hay and dung briquettes, and solar power as alternatives to charcoal and firewood. The programme also has a strong capacity-building component. The OOC and Naboisho Conservancy sent a group of Maasai women to India for six months to train to become solar lighting engineers. They have also sent women (as well as youth, elders, and committee members) to Nairobi for training in civic environmental education. They fund bursaries for girls (and boys) for school or higher education. They also help fund girls to train at the Koyiaki Guide School, where school leavers from the local area (and beyond) can train to be safari guides through a one-year recognised guiding course. Many of these guides are then able to get work as guides in lodges in the Mara.

These groups are very active, and an example of conservancies encouraging collective action by women. The groups continue to meet even in the absence of the conservancy outreach officers, implying some motivation and self-drive. The groups attempt to give women more voice, skills,



knowledge, and advocacy around the importance of girls' education. The two outreach officers also visit schools in the local area, and discuss topics related to wildlife, the environment, and education. The women's groups and activities were well received by women spoken to in interviews and at the women's group meetings.

#### Do conservancies bring social cohesion or conflict?

The presence on the ground of meetings and women's groups indicates that the conservancies are bringing people in the community together. *Naboisho* Conservancy is even named after the word 'togetherness' in Maa, as it's seen a place where the community comes and acts together. However, to explore how community members perceived the conservancies' role in bringing the community together or not, I asked conservancy members and non-members whether and how they thought conservancies had brought community cohesion or community conflict.

There were mixed responses. Some people thought that conservancies had brought the community together, by physically creating a reason for people to come together, to discuss and agree on issues, and by having a shared project which together they faced the positive or negative effects from:

'It has brought us together in two ways. First, during the community meetings, anybody you have never seen before you will get to see in person and you will get to know one another. Secondly, this business we are involved in is bringing togetherness, as we now have a reason to come together with many other people and be together. So far, it has not brought any conflicts, we are still together, because this is the kind of business that we have had to agree upon together.'

*Senior elder, member of Motorogi Conservancy, community interview 29*

'If there's a problem, we all have a problem, and if it's an advantage, it's an advantage to the whole community, not just a few people, but for all, and if it's a disadvantage, the conservancy brings a disadvantage for the whole community, so we will be in one side in everything....If I feel pain if my livestock graze in the prohibited place and pay KES 10,000, then someone else must also feel because he may also graze there.'

*Elder, member of MNC, community interview 20*

Another important point was that through the formation of conservancies, landowners now had a shared place which they owned, and were proud of, and this brought them together:

'One thing with *Naboisho* is that people have come to be together and even if they are paid more or less money, they have their own place which belongs to them to be proud of, and I think that is togetherness.'

*One senior elder, non-conservancy member, community interview 22*

However, others saw the conservancy as bringing conflicts within the community, due to the restrictions on livestock grazing and the movement of settlements. As these women put it:

'It has completely brought conflicts because if for example you are living on someone else's land and he sells it (to the conservancy), you will be moved, at any time. And likewise, if there is someone else living on someone else's land, he will also be moved in the same way.'

*Group of women, husbands are non-members, community interview 24*

'For example, this conservancy we are close to - is it not a problem when the livestock cross its border and are caught? And that brings a conflict because you will then be fined.'

*Group of women, husbands are members, community interview 25*

These conflicts are related to the conservancy livestock grazing and settlement restrictions, which are looked at in greater detail in chapter 7. The comments suggest that there is increasing conflict amongst people over access to land for settlement and grazing. Also, the fact that conservancy payments only benefit certain people in Koyiaki and not the whole community, mean that the conservancy will generate inherent conflicts which only magnify this. Beyond the payment, conservancies include more people within their Trust activities and outreach projects, and provide indirect benefits to the wider community through community projects. These benefits, along with conservancy generated employment, are discussed further in chapter 5.

#### ***4.6.2 Descriptions of power wielded at the local level***

##### Making and enforcing livestock grazing rules

As show in section 4.1 much of the initiative in forming the conservancy and setting the rules came from the tourism investors together with some key individuals from both within and outside of the community. To explore whether and how landowners contribute to decision-making in the management of the conservancy, I look at decision and rule-making in terms of access to livestock grazing inside conservancies. Access to livestock grazing has been radically altered by conservancies, and is a major concern for community members. Indeed, livestock grazing was the most contentious topic that community respondents raised during interviews, and the main source of conflict between communities and the conservancies. This effect and the implications of grazing restrictions are discussed further in chapters 5 and 7.

By signing the land lease contract, landowners agree to abide by certain conservancy restrictions. The OOC land lease agreement (dated 1 May 2010) states that the landowner should not 'use or permit the Premises of any part thereof to be used to graze livestock save in accordance with a grazing management plan set out by the Tenant' (Raffman Dhanji Elms Virdee Advocates 2011, cited in Osano et al., 2013a, p6). Thus, powers in writing state that landowners must follow grazing management plans set out by tourism investors and conservancy managers. These plans determine when and where, specific herds are allowed to graze inside the conservancy.

Understanding to what extent conservancy members were involved in setting these rules, and how rules played out in practice was more difficult to establish. Many members did not consider themselves to be involved in setting the rules that governed where and when livestock could graze inside conservancies. They saw it as mainly the tourism investors or land committee or conservancy management who decided on the grazing rules:

‘The man in charge of the conservancy rangers goes all around with his car telling us this part should be grazed and that part should not. So we don’t graze our cows just anywhere unless we get the report from him or the committee members.’

*Elder, member of MNC, community interview 8*

‘For now the tourism partner has been given a chance to lead the conservancy and he is the one that has made the rule that livestock should not mix with the wildlife.’

*Elder, member of Naboisho Conservancy, community interview 9*

‘It is the committee that discuss themselves and then later they come to tell us what they have decided.’

*Junior elder, father is a member of Naboisho Conservancy, community interview 26*

These quotes imply little participation in decisions determining livestock grazing, but rather that they are informed after the fact by the conservancy management or land committee on any decisions that are made regarding grazing. Thus, it is the land committee, conservancy management and tourism investors who are perceived to have decision-making power within the conservancy, rather than the members themselves. Certainly, the conservancy land committees were reported to be very much involved in setting the grazing rules together with the conservancy managers, with roles in passing on information to landowners, reprimanding illegal grazing, and reducing conflict between livestock herders and the conservancy (e.g. KII 20, 22, 25, 32). In some conservancies, sub-committees have even been created for grazing e.g. in MNC (KII 22).

However, others felt more involved in setting the rules regarding the livestock, and many conservancy members said they did participate in some way in decision-making, often during meetings when they were invited to discuss issues and make their own views:

‘It is we as the members (who agree the grazing rules) and those who we have given out our land to.’

*Senior elder, member of Motorogi and Naboisho Conservancies, community interview 19*

This comment gives the impression of more of a shared approach to decision-making, involving both the conservancy members and the tourism investors. In other examples, these members thought conservancy members were able to influence decisions over the conservancy, including regarding livestock:

‘The members sometimes make decisions, for example, if they think the payment is too low, the members may decide to say they do not want this little money, but they want the money for the land to be increased. The members can also decide that since this was formed to be a conservancy, there are some people who are misusing it, such as those people who are being paid money, and at the same time grazing their cows. The members may decide and say those cows should be moved immediately, and if they are defeated, they call for a general meeting and all the members should come to make the rules which cover the cows.’  
*Senior elder, member of Motorogi Conservancy, community interview 29*

‘The rules are that during the drought season, we request that we need to be allowed to graze our livestock in certain areas in the conservancy...(and)..when we decide that we are going to request to the *ilashumpa* to graze inside the conservancy then it needs us all to be there to present our request....’  
*Senior elder, member of MNC, community interview 18*

In these quotes, meetings are highlighted as a way of conservancy members being able to collectively make a decision regarding livestock grazing, or collectively negotiate with the tourism investors over the rules governing livestock grazing. As mentioned above meetings are an important way for the community to come together to discuss issues, and this is one of the main ways community members are able to influence decision-making.

The grazing rules are monitored and enforced by conservancy rangers, overseen via the conservancy management. Herd owners can be fined if livestock are caught grazing in the conservancy at non-stipulated times. Herds are driven to the ranger post or gate and impounded until the fine is paid. Offenders may even be imprisoned and/or given community service (KII 32; Naboisho 2013). Community members also complained of mistreatment of herders by rangers (chapter 5). Money received through fines is put back into conservancy management (KII 18; Naboisho 2013). Grazing fines were widespread and represent a large cost to households. The perception of grazing fines and their costs to the household is discussed further in chapter 5.

During drought times the enforcing of conservancy grazing rules and system of fining can intensify due to the considerable pressure from livestock grazing and conservancies trying to maintain grass for wildlife (see chapter 7 for more discussion on this). At these times, conservancy committees were reported to play a large role in deciding, monitoring and enforcing rules concerning livestock grazing, and also in mediating conflict (KII 14, 19, 32, 35).

Conservancies also enforce rules regarding settlements, by moving people who are living in a conservancy to settle outside conservancies, and by not allowing any new settlements (chapter 7). There are also rules regarding access to the conservancy including, walking, cycling, or collecting resources, such as trees, stones, and plants.

### Imbalance of power

The conservancy partnership retains land ownership with the conservancy landowners via a landowner owned Landholding Company. Secure tenure of land can give greater power for the poor to negotiate and secure benefits from tourism (Ashley and Roe 2002), and give landowners a sense of ownership of the conservancy. This can help strengthen the rights of landowners in the partnership, and enable a level of bargaining power between the tourism investors and the landowners. For example, in determining the length of the lease contract, some landowners were able to negotiate to stay under the 5-year contract.

Nevertheless, signing land to a conservancy effectively relinquishes the rights to use it, and takes land out of the control of landowners for the length of the lease contract. It was common for conservancy members to talk about 'giving out their land' when becoming a conservancy member, an indication that control and power was handed over to the tourism investors in the process to decide on the management of the conservancy land. This point is highlighted in a discussion at an OOC meeting where certain landowners ask for a share of the hot-air balloon landing fees<sup>33</sup> when balloons land on their parcels within the conservancy. The Chairman of the OOC explains the concept of the lease in regards to the issue surrounding the balloons:

'You decided yourselves that you would like to form (the conservancy) with the *ilashumpa* and you told them that whether we get tourists or not we would like you to pay us this amount per month. And the *ilashumpa* agreed but with conditions. When the *ilashumpa* agreed to pay that money to the members, you were all informed that the land will not belong to you anymore; you will no longer own the grass on the land, the trees, the wildlife, and even the balloons and the vehicles which will be accessing the conservancy. Even if you are still holding your title deed, the money you asked the *ilashumpa* to pay you per month whether they have tourists at the camps or not shows that your land has been given out and so it doesn't belong to you, because we signed the agreement between the members and the *ilashumpa*. When the agreement will be coming to an end that is when the land will be yours again. So whatever you are complaining about the balloons is less concerning of you but that is the work of the conservancy management. And that is how the rules are per the agreement.....'

*OOC Chairman, OOC meeting*

Another committee member also gives his explanation of signing over land to the conservancy:

'And I would like to make this an example – you have your own cow and you would like to sell it, so you take it to the market place and you sell it. Will the cow be yours now or will it be for that person who has bought the cow?'

*OOC committee member, OOC meeting*

These comments by members of the land committee show how leasing out land and receiving a payment in return, hands over control and management of the conservancy to the tourism

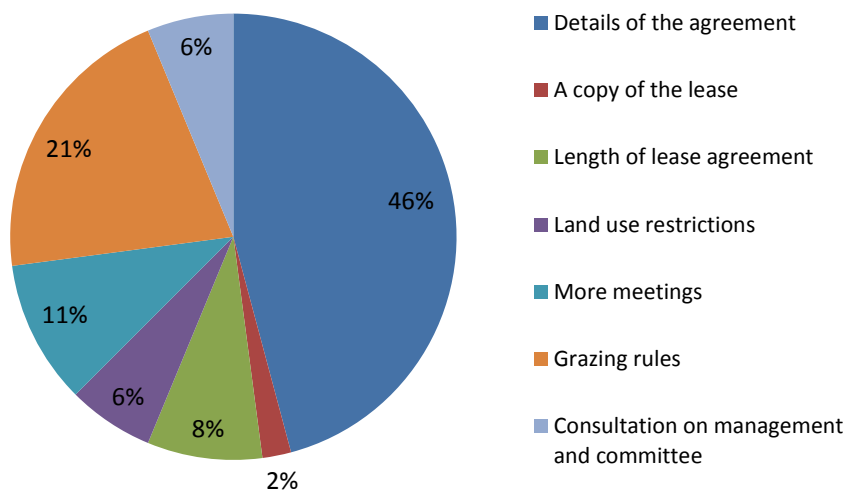
---

<sup>33</sup> Balloon rides are a lucrative business and landowners no doubt want a share. E.g. in the MMNR balloon landing fees are US\$50 per person in the balloon which goes to the Narok County Council.

investors. So, regardless of whether there is community participation or representation in the conservancy, power resides with the tourism investors.

The conservancy model and land lease agreement are also new concepts of which most conservancy members will have had little experience. As already shown, people were initially sceptical of the conservancy when first introduced and were slow to sign-up. In the household survey I asked conservancy members whether they thought they had been well informed about the conservancy before signing their land to it (n=98). More than a third of members thought they were not well informed about the conservancy before joining. The information that they would have liked related mostly to the need for more details regarding the lease agreement (Figure 4.3). Knowledge of grazing rules and other land use restrictions was also important.

Figure 4.3: The information conservancy members wanted before signing up to the conservancy (n=35)



The lack of understanding and awareness of the lease agreement by conservancy landowners points to differential levels of knowledge and power between the landowners and tourism investors. Conservancy landowners, although owners of valuable conservancy land, have less knowledge of the tourism industry, less understanding of the legal mechanisms involved, and less access to capital. This creates an imbalance of power.

Knowledge of the contents of the lease contract continued to be an issue for many members, arising again when asked to re-sign their leases for the 15-year period. For example, during the OOC and Motorogi Conservancy meetings members mentioned wanting to have further details of

the new lease contract, including wanting to be read a copy of the lease, before they would be willing to sign up for 15 years, e.g.:

‘The lease agreement needs to be brought and read in front of everybody so that everyone is able to understand it very clearly. If it is read in Swahili then it must be translated into *Maa* so that everybody can understand it, instead of tricking somebody to get into something he does not understand very well...It would have been good if the new lease agreement could have been brought here today and everybody could have heard for himself and you then decide to sign it or leave it.’

*Conservancy member, Motorogi Conservancy meeting*

Similar comments were made by a number of members concerning the lease contract including being able to take a copy home with them. The unfamiliarity of the lease agreement, combined with the extended length of the proposed contract period, meant that many members were hesitant to sign up. Most of those initially reluctant were later persuaded into it. These examples highlight how the greater level of legal understanding and control and knowledge of the tourism industry on the part of the tourism investors, tips the balance of power between conservancy landowners and tourism investors in favour of the latter.

#### **4.6.3 Local managers’ accountability relations**

##### The conservancy land committee

The conservancy land committee represents the main body through which conservancy members are represented in the conservancy. These are the representatives who hold positions in the various companies or boards in the partnership (e.g. Olpurkel, the CMC and OOC Trust) as a way to include the landowners in conservancy management and decision making. It is the committee’s job to ensure landowners are well informed about the conservancy’s activities and to pass on landowners’ views at meetings with the conservancy management. There is a community liaison officer who has an important role in liaising directly with conservancy members and ensuring community interests are considered in conservancy management (KII 17, 20). The committee is intended to act as a focal point from which members can gather information about the conservancy and to whom they express their concerns or problems:

‘Like during the drought season, you go to them and tell them you have nowhere else to graze your cows, and you request them (a place to graze), and they will allow you.’

*Group of women, husbands are members, community interview 25*

This comment implies a degree of responsiveness (Ribot et al., 2010) of the committee to conservancy members needs regarding livestock grazing. As shown in the section above the land committees do hold decision-making powers over conservancy grazing, and this enables them to be responsive to the needs of their members. Conservancy meetings were one of the ways that

allowed the committee members to be accountable to their representatives, with opportunities for communication and information exchange between the land committee and members. However, this exchange could often take more of a one-sided information flow rather than members being genuinely involved in the decision-making process:

*'It is the committee that discuss themselves and then later they come to tell us what they have decided....We get information only through them when they call for meetings and they tell us what the ilashumpa want done.'*

*Junior elder, father is a member of Naboisho Conservancy, community interview 26*

Theoretically, the committee members should be elected by the landowners and ensure representation of all sub-areas within Koyiaki since landowners, who are in most cases not allowed to live on their conservancy land parcels, are spread out throughout Koyiaki. However, many conservancies members reported that they did not always know how their land committee was elected, or complained that the committee had just been appointed. This was particularly the case with the Naboisho Conservancy land committee, which was formed through the Koyiaki Group Ranch Committee via whom the conservancy idea was initially introduced by Basecamp Foundation (KII 25, 27):

*'Our leaders, they first met and discussed it themselves. And then when they finished they agreed who would be the leaders on the committee...'*

*Junior elder, father is a member of Naboisho Conservancy, community interview 26*

As a result the Naboisho Conservancy landowner committee is largely dominated by prominent leaders within the community. In other conservancies, some members did report attending a meeting in which the land committee was elected:

*'We all gathered together and decided to form a committee and we elected one man, and then another and another, just like they do in any other place that has their own leadership.'*

*Senior elder, member of MNC, community interview 18*

A number of key informants discussed how the land committee would be re-elected at future AGMs (KII 16, 17, 18, 25, 27). However, I found little evidence of this happening at any meetings I heard about or attended. Although, the issue of re-electing the committee members was brought up by some conservancy members at some conservancy meetings I attended, it was never taken any further beyond discussion.

Conservancy land committees are heavily made up of community leaders and elites, including members of the Koyiaki Group Ranch committee, area chiefs, head teachers, and political aspirants. This occurs to the extent that some community members associated the conservancy



leaders as being equivalent to the Koyiaki Group Ranch committee (CI 22). Some prominent members of the community are in fact members of two or three conservancy landowner committees in Koyiaki, most likely able to secure their positions through power and status, and due to the fact they own land in multiple sites. The land committee chairman positions exert the highest status, and these are occupied by those with considerable power and influence. For example, the Chairman of the MNC landowner committee is a former treasurer of the now defunct Koyiaki-Lemek Wildlife Trust, a past candidate for the local governor position in the 2013 election, and a member of at least three conservancies in Koyiaki. The Chairman of the OOC land committee is a former chief of Koyiaki and owner of an atypically large land parcel in the OOC.

As the former structures of the group ranch committee and the wildlife trusts that used to wield considerable power (Thompson and Homewood 2002) are now largely redundant, the conservancies now represent the main forum in which local leaders exert their power. Many of those who once held powerful positions within the previous wildlife initiatives have now taken up leadership roles in these new conservancy initiatives. This has likely implications for the political nature of these committees.

There are no women on any of the conservancy land committees. Although a very small percentage of conservancy members are women, and a few do attend meetings, women have not been included on the land committees, which like previous group ranch leadership structures, are overwhelmingly male dominated.

#### Downward accountability of tourism partners and conservancy managers

The mismanagement and misappropriation of tourism revenues through corrupt wildlife associations and county council structures has been a continuing problem in the Mara with little reaching the household or community level (Thompson and Homewood 2002; chapter 2). This is a main reason why the conservancy payment was designed as it is, through a transparent and fixed land rent system. Payments are processed direct to landowners' bank accounts through a fixed and regular revenue distribution system. People now know what they and others should be receiving, reducing any opportunity for the misappropriation of conservancy revenue. Accountability in the system and distribution of payments has thus greatly improved.

However, without figures on the profits of the lodges and camps (exact figures on profits were not obtainable) there is no transparency as to what percentage these payments represent of total

profits of the conservancy. Under the conservancies' business model, the land payment and management costs are met at a 35% occupancy rate. If occupancy goes above 35% any profit is reportedly put into a financial security fund to avoid tourism downturns, or goes towards conservancy management costs and Trust activities (KII 14). Thus, landowners do not receive a share of the profits if occupancy goes above this minimum, nor do they receive a share of profits from the lodge, nor from ancillary activities such as balloon rides. In some instances, dissatisfied conservancy members have demanded higher payments, and as well as a fixed land rent payment, they also want a share of the business profits (KII 14, 35; OOC AGM).

The conservancies cater for the high-end or wealthy tourist, and camp rates are around US\$500-1000 per person per night depending on the season. Visitors to the Mara, vary considerably throughout the year, and lodges can be near empty during the tourism low season (November, April-June), but full during the tourism high season (July-October, December). Visitor numbers to the OOC were estimated to be approximately 35-45% per year, although this fell to 15% occupancy during 2009, and was not confirmed (although very low) for 2008, due to the drop in tourists following the post-election violence in 2008 (KII 14, 34). By guaranteeing the rent, the tourism investors absorb the majority of the risks in the tourism partnership and in the event of a tourism downturn. Many of the lodges in conservancies have lodges in other parts of the Mara, and some are part of successful national or international tourism chains. This can help spread their risk of investment, and also protect against tourism downturns.

#### **4.7 Political ecology analysis of different interests**

A political ecology analysis is now used to summarise the findings relating to the conservancy partnership and the differing levels of participation and power among the different interest groups. By considering the range of different interest groups and the way they interrelate, this helps to understand why the different groups participate (or not) in the way they do.

An examination of conservancies show a number of (often competing) interests groups. Table 4.2 outlines the different interest groups involved in or affected by conservancies, and summarises their main aims and concerns in relation to conservancies, and their sources of power. Although there will be diversity within groups, each group is simplified to portray the dominant area of interest and source of power. Individuals can also belong to more than one group.

Table 4.2: Different interest groups, their influence at start up, sources of power, interests and concerns

Interest group	Influence at start up	Source of power	Interests/aims	Concerns
Tourism investors	Very strong - introduce concept	Control of capital, tourists, legal and marketing structures	Profits; high quality tourism product; long-term investment security	Exclude livestock and settlement to enhance tourism product; sustainability of funding; land sales and subdivision
Land committee members	Strong – some key members refine, communicate, and mediate concept	Hold local leadership and political positions	Maximise profit; maximise lucrative tourism based ventures; maintain political power;	Maintain sphere of influence and power
Conservancy members	Weak – informed of concept	Title deeds to conservancy land; collective action	Income diversification; maintenance of livestock elsewhere	Lost livestock grazing space; little transparency of investor profits vs community revenues
Youth	Weak – some role in understanding and adapting to new concept	Able to understand and push for change	Employment opportunities; generational inheritance	Lost opportunity to accrue livestock
Conservancy non-members	Very weak – no evidence of involvement	Title deeds to land outside of conservancies	Maintain space for grazing; alternative livelihood opportunities	Lost livestock grazing space; influx of livestock and people to non-conservancy land; increase human-wildlife conflict
Women	Very weak – no evidence of involvement	Limited	Maintain livestock/milk production	Lost livestock/milk production
Landless	Very weak – no evidence of involvement	Limited	Access to land for livestock grazing and settlement	Displacement; loss of customary usufruct grazing rights

The political ecology analysis shows that rather than a homogenous community with common goals and shared norms, Koyiaki residents are socially differentiated in terms of age, gender, wealth, livelihood interests, status, social position and political power. This differentiation creates a variety of conflicts and interactions that influence how people participate in and benefit from conservancies. It highlights how the power relations both within the community and between the community (conservancy members) and tourism investors play out to determine who participates in and benefits from conservancies, and by how much. The different groups are discussed further below in terms of their influence during conservancy set-up and their levels of power and participation in conservancies.

### **Tourism investors**

The conservancy concept was largely conceived by concerned tour operators and community leaders worried about the decline in the quality of the tourism product due to increasing human disturbance and development, and associated loss of wildlife. The influence of outside intervention in setting up conservation or tourism initiatives is a common phenomenon and exists in almost all initiatives (Ashley and Jones 2001; Sexias and Davy 2008). In Kenya, Manyara and Jones (2007) found that external intervention has been a major force driving community-based tourism development, either through the Kenya Wildlife Service (KWS), private investors or conservation NGOs.

The tourism investors wield the greatest level of power in the partnership through their control of capital, their control and knowledge of the tourism industry, and their enhanced legal understanding. Ultimately, it is the tourism investors who market the conservancy, bring in tourists, determine the lease contract, set the payment level, and then present it to landowners for agreement. In tourism ventures, a lack of experience and understanding of the tourism industry on the part of communities can lead to imbalances of power where the community takes a more passive role (Ashley and Jones 2001; Forstner 2004). To overcome this, a long process of mutual learning, trust-building and respect amongst partners is required and greater levels of participation and ownership by the community (Forstner 2004).

In the conservancies there is some balance of power between the tourism investors and landowners due to land ownership, where landowners retain ownership of valuable conservancy land. The partnership respects existing rights to land, and land ownership is retained with the community through a community-owned landholding company. Through privatisation and subdivision, those Maasai who have established secure tenure and strong rights to land have achieved a level of bargaining power and (for conservancy members) a sense of ownership of the conservancies.

The conservancy land leases require clear title to land so tourism investors know who to pay and how much. For example, the formation of Naboisho Conservancy was delayed until the land was subdivided and allocated to individual group ranch members. In other wildlife partnerships in Kenya, Mburu and Birner (2007) found that wildlife initiatives could not begin until community members had acquired title deeds. Title deeds then form a basis for sharing cash benefits. In areas where land is communally-owned, communities often lack the bargaining power to seek out

partnerships since they do not have the incentive of private land ownership (Mburu and Birner 2007).

However, although strong rights to land are important in these types of partnerships (Ashley and Jones 2001), the process of formalising these rights leads to many people being left out. Being based on a privatisation process that leads to the unequal distribution of land (Thompson et al., 2009), those able to secure the largest and best places lands are thus more likely to participate in, and benefit from, a land lease payment system. The trends in land ownership amongst households and in relation to conservancy membership are discussed further in chapter 6. However, it is important to point out here that the land-based conservancy criterion results in a more restricted partnership between tourism investors and the community, and limits the reach and extent to which different groups within Koyiaki can participate in conservancies. Ultimately, since land ownership forms the basis of the partnership, participation is an outcome of the subdivision process in Koyiaki.

This also points to the political nature of participation in conservancies. Previous research shows how the subdivision and allocation of land in the Mara, and other areas of Kenya, was a deeply political, unequal and conflicting issue (Rutten 1992; Galaty 1992, 1993, 1999; Galaty and Ole Munei 1999; Thompson and Homewood 2002; Mwangi 2007b). Land-based conservancy payments inherit and take on these politics and conflicts. The irregular and non-transparent allocation of parcels with tourism potential to leaders before the formation of Naboisho Conservancy shows the distributional conflicts over land subdivision continue.

The tourism investors introduced a new system for the distribution of tourism revenues, more transparent and accountable than previous structures administering tourism revenues to the community (Thompson and Homewood 2002), and current ones, if including the revenues due from the MMNR. However, there is less transparency in how the level of landowner payments compares to profits accruing to the tourism investors. It is well recognized in Kenya that tour operators and associated support services divert the vast majority of revenues from tourism away from the community or landowner (Emerton 2001; Norton-Griffiths and Butt 2006; Norton-Griffiths et al., 2008). Thus, even if significant to local landowners, payments are likely to be a fraction of the total profits accruing from conservancy-based tourism.

Some of this can be explained by the different levels of risk to which each partner is exposed. The tourism investors are exposed to the majority of the risks and must guarantee the monthly payments even when there are no tourists in the conservancy. They also have to recoup their large upfront capital investment (which is why they wanted a longer lease), and pay the management costs of the conservancy. Nevertheless, landowners have demanded higher payments, and as well as a fixed land rent payment, they also want a share of the business profits. The tourism investors need to give landowners a fair share of tourism revenues to maintain landowners' interest in participating. The pressure to give landowners a greater share of the revenues is increased as land values in the area rise, and landowners entertain alternative and competing options for the use of their land. For example, an outside offer by an investor interested in setting up a lodge on a conservancy parcel is an attractive business option and more lucrative than conservancy lease payments (Thompson and Homewood 2002; section 5.3.4). This can threaten the conservancy with collapse if landowners decide to drop out (KII 35).

#### **Conservancy land committee**

Community leaders, together with certain individuals, played an important role in defining the conservancy scheme and introducing it to the community. Some owned large parcels of land within conservancies, some with tourism camps, so they stood to benefit much from a new tourism initiative. Many then gained positions on conservancy land committees. Thus, although the conservancy was largely outsider-driven, there were also strong within-site influences by groups wanting to pursue their own interests. Many studies refer to the presence of key 'charismatic' individuals in setting up initiatives, who often play a critical role by providing vision, motivation and trust for an initiative (Ashley and Jones 2001; Oldfield 2004 in Waylen et al., 2010; Seixas and Davy 2008). Both community leaders and the facilitators played this role. The facilitators also provided a bridge between the community and the tourism investors, helping to encourage communication and local support (Ashley and Jones 2001).

The conservancy land committees are powerful groups; they are the main voice for the conservancy landowners and they participate in conservancy management and decision-making on a regular basis. The lack of elections however raises questions as to how downwardly accountable they are to the wider group of members (Ribot et al., 2006). Many committee members hold, or have held, positions on other conservancy committees, group ranch committees or previous wildlife association committees. In Maasailand, members of these committees wield considerable power; they have been able to manipulate the subdivision process

to acquire the largest and best-placed lands, secure access to the best tourism sites, and control the distribution of wildlife revenues (Rutten 1992; Galaty 1999; Thompson and Homewood 2002; Homewood et al., 2004; Mwangi 2007b). With intended regular elections not materialising, many held their positions for many years in the past (Rutten 1992; Thompson and Homewood 2002)

The fact that some respondents confused conservancy committees with the Koyiaki Group Ranch committee highlights the political nature of these committees, and shows how conservancies are heavily bound up with issues of land and land subdivision. The politics of wildlife revenue control in the Mara have always been intense and conflictual (Thompson and Homewood 2002; Thompson et al., 2009). By entrenching their positions, community leaders have placed themselves on conservancy committees, recreating the former powerful leadership positions that existed on wildlife association or group ranch committees. By taking on these established community leader structures (e.g. in using the group ranch committee in setting up Naboisho Conservancy) conservancies present opportunities for land or resource grabbing by leaders. Thus despite efforts to remove some of the problems of elite capture of tourism revenues in the former corrupt wildlife associations, conservancies can have the unintended consequence of providing new and directly comparable opportunities for the well-placed and powerful to control or benefit (Blaikie 2006; Dressler et al., 2010).

The powerful nature and make-up of the land committee however does mean it has considerable clout and influence in conservancy management and decision-making. This likely gives the landowners a stronger position in the partnership, and balances power when negotiating with tourism investors and conservancy managers. Viewed from a PES angle, their status as intermediaries between the conservancy members and tourism investors affords them a much larger bargaining power in negotiating the conditions of a scheme, and also in capturing a disproportionate part of the benefit (Kosoy and Corbera 2010; Kronenberg and Hubacek 2013).

### **Members**

Many landowners were initially sceptical about the intentions of the conservancy. Although income proved the greatest motivation for landowners to join the conservancy, almost as many members reported joining due to peer pressure of the majority rather than personal economic incentive. Thus, although such payment schemes are in theory voluntary (Wunder 2005), in reality many landowners find they are coerced into conservancies because of the location of their land, and lack of viable alternatives. This has been found in other similar tourism ventures, for example, Bandyopadhyay et al. (2004) found that participation in conservancies in Namibia was

also influenced by peer pressure. Thus, although conservancies are in theory voluntary, landowners may be compelled or coerced to join due to the location of their land or because they are too weak to resist more powerful tourism agendas (Brockington 2004).

There is some evidence of collective action by conservancy members through their reconsolidating previously subdivided land to benefit from conservancies. The grouping together of individual land is important if landowners are to be able to benefit from wildlife (Mburu and Birner 2007). However, being an initiative based on the private ownership of land, conservancy membership is determined according to whether or not an individual holds title to land in a spatially determined conservation area. This contrasts to the collective management and self-regulating resource use typically part of Maasai traditional and cultural norms and deployed to maintain access to grazing land and ensure livestock mobility (Potkanski 1994). It also means what brings people together to form a conservancy is driven from outside, defined by tourism opportunities and by payments from lodges, rather than defined from within.

Participation of members in conservancy decision-making is on many accounts largely limited to participation via the land committee. As landowner representatives, the land committee hold control over most of the decision-making on behalf of conservancy members. There is little evidence in regards to participation by conservancy members in determining the livestock grazing rules, where most respondents thought that it was the conservancy managers, tourism investors or the land committee, who set the grazing rules. Now that many conservancies have established conservancy management and controlled grazing plans, crafted by technical managers, this implies fewer opportunities for input from the livestock owners themselves.

Since members agreed to lease their land to tourism investors for conservation and tourism use, this begs the question- why *should* conservancy members be involved in these types of decisions? Unlike the management of a lodge, or its marketing for tourists, the restriction of access and use to land for grazing directly and significantly impacts their livelihoods. Livestock constitute the primary economic and socio-cultural livelihood activity for Maasai in Koyiaki (chapter 5). Thus with such serious livelihood consequences, participation in deciding livestock grazing strategies should be a basic human right (Goldman 2011). Pastoralists also have important traditional ecological knowledge, based on the long term use of these areas, interacting directly with wildlife, which can contribute to cattle grazing management plans and improve conservation (Fernandez-Gimenez 2000; Goldman 2011). Traditional knowledge can then complement the more technical,



western-based ranching models on which conservancy management plans are founded (Berkes 2007, Ballard et al., 2008; Goldman 2011). Furthermore, participation by members in formulating conservancy livestock grazing and management plans, can lead to better compliance of conservancy policies (Andrade and Rhode 2012). This is important, considering the current extent of illegal grazing by conservancy members (chapter 5).

Meetings provide the main avenue for collective action and for members to contribute to conservancy decision-making and management. However, the efficiency and regularity of conservancy meetings can be constrained by the large number of members who are spread throughout the group ranch. For this reason, smaller conservancies were able to hold more regular and inclusive meetings than larger ones. There were also issues related to the lack of information and awareness-raising in some of the newer conservancies, especially pre-establishment. These findings reflect a trend found elsewhere in conservancies in Namibia, where the size (smaller) and age (older) of a conservancy was an indication of better communication and higher rates of information transfer between conservancy management and conservancy members, and hence better participation of conservancy members in conservancies (Collomb et al., 2010).

Conservancy meetings and women's group meetings create new spaces for community members to physically get together and can increase social cohesion. However, since conservancy land-based payments leave out a number of people, this creates conflicts between those that gain and those that lose. Thus, outside of the partnership there is increasing differentiation in livelihood strategies (chapter 5), wealth (chapter 6), and growing dissatisfaction by those that are left out.

### **Women**

Women were particularly sceptical about the intention of conservancies. They related conservancies to issues surrounding land and land subdivision, which were the business of men. Historically, women in Maasailand have not been entitled to land and their names have not been included on group ranch register lists (Talle 1988, 1999). Few women thus own land and land-based initiatives such as conservancies continue to exclude women. Also, few women attended conservancy meetings, a reflection of the gendered separation of Maasai socio-cultural relations where women are left out of political decision-making processes and relegated to the domestic spheres (Hodgson 1999; Talle 1988). As a result women were not involved nor informed about conservancies.

Women also perceived the conservancies as in competition with cattle due to livestock being excluded from conservancy areas. This has direct implications of lost livestock production, and importantly for women, milk production, which within the household they have more control over (Talle 1990). Furthermore, women are less likely to have access to the conservancy payment which goes in most cases direct to their husband's bank account. Women thus don't see the benefits from conservancies as their husbands might, and so see little value in conservancies. In cases this created a sense of animosity towards the conservancies by women. The women's groups initiated by some of the conservancies, now indirectly involve women in the conservancies' activities. These have encouraged women to learn about a number of environmental, health, social and financial issues and activities, and have been a positive contribution. For the direct involvement of women in conservancies, this will only happen if they are given more decision-making powers within the household and stronger rights to land.

#### **Non-members, youth and landless groups**

I found little evidence of these groups participating in conservancies. Non-members, although often owners of land in areas outside of conservancies in Koyiaki, and despite the implications of conservancy-driven livestock and settlement displacement to these areas (chapter 7), were not included in conservancy management. The youth, who are not usually on the group ranch register lists, do not tend to own land, and thus do not participate in conservancies. They may however benefit through conservancy related employment, either in conservancy management or a job in a conservancy camp. Through generational inheritance of land they do have future opportunities for participation, and some son's do receive payment from their fathers land. The landless, who lost out on land allocation completely for one reason or another, have little power or voice in conservancies as well as many other spheres of Maasai socio-political relations. These groups are looked at further in the subsequent chapters.

The political ecology approach to investigate whether and how different groups participate in conservancies has helped to understand the complexity of social interactions involved in conservation in the Mara. It shows that there are diverse goals and motivations of the different groups that participate, but it also helps to elucidate the interests and concerns of those who are left out. It highlights the need to recognise the social differentiation within the community and how this is critical in determining how different interest groups will be able to access resources or participate in conservation initiatives. This is especially important due to the strong socio-political nature of conservation in the Mara.

## **Chapter 5 The costs and benefit of conservancies to pastoral livelihoods**

### **5.1 Introduction**

Initiatives that combine conservation and development objectives, whether they be ICDPs, PES, ecotourism or others, are based on the premise that by providing benefits to conserve biodiversity, this will compensate the costs of reducing livelihood activities that are threatening biodiversity (Barrow and Murphree 2001; Hughes and Flintan 2001). They thus offer alternative livelihood activities or income sources to act as incentives to reduce or replace activities that are threatening biodiversity.

However, economic analyses of conservation warn that there are a range of costs and benefits that need to be accounted for before local people are likely to achieve any real livelihood gains (Emerton 2001). Initiatives need to go beyond just ensuring a proportion of benefit is returned to a community, and consider amongst others, distributional issues, risk management implications, the costs associated with wildlife, the form benefits are received in, the costs and benefits to conservation of competing livelihood activities, and a range of policy, market and institutions distortions which limit the extent to which communities are able to realise benefits (Emerton 2001; Norton-Griffiths and Said 2010).

There may be a number of costs of conservation that need to be considered, including: the displacement of people from their homes and loss of access to resources (Turton 1987; Ghimire and Pimbert 1997; Neumann 1998; Brockington 2002; Brockington et al., 2006; Brockington and Igoe 2006; Agrawal and Redford 2009), the costs of livestock predation or crop raiding (de Boer and Baquete, 1998; Zimmermann et al., 2005), and the opportunity costs of livelihood activities forgone (Norton-Griffiths and Southey 1995; Ferraro 2002).

Thus, it is rare that revenues from wildlife or tourism constitute a large source of income for all members of a community. Even in some of the most popular tourist destinations local people receive few benefits or sources of income from it (Adams and Infield 2003; DeLuca 2004; Homewood et al., 2009). Even considerable benefits are not able to compensate for the costs and, as a result, the costs and benefits from conservation are rarely commensurate (Emerton 2001; Adams and Infield 2003). Moreover, economic benefits from conservation and tourism interventions tend to be inequitably distributed and captured by elites, so that even when there are considerable benefits many won't get a portion of it (Gillingham and Lee 1999; DeLuca 2004;

Thompson and Homewood 2002; Sachedina 2008). It is also well recognised that most costs accrue at the local level, whereas most benefits accrue at the global level (Wells 1992; Ferraro 2002; Balmford and Whitten 2003).

There may be costs and benefits arising from conservation initiatives for people who don't participate or are involved in an initiative but are directly affected by it. This is pointed out in consideration of PES schemes, where effects on non-participants may either be positive, by increasing resources or jobs available, or negative, by restricting opportunities to access resources or by distorting markets (Wunder 2008).

Incentives such as direct economic benefits can attract communities into conservation activities, although conservation has often failed to offer sufficient incentives for communities to enter into such arrangements in place of alternative competing land uses (Norton-Griffiths 2007; Homewood et al., 2009). Rarely are the benefits from conservation (Norton-Griffiths and Southey 1995; Ferraro 2002) or PES schemes (Corbera et al., 2007; Kosoy et al., 2007) able to compensate for the opportunity costs, or to change the livelihood activities and economic interests of members involved in positive ways (DeLuca 2004; Mburu and Birner 2007). Thus, instead of substituting for other activities, conservation may simply be added to existing livelihood strategies with no change of behaviour into conservation-friendly practices (Salafsky and Wollenberg 2000).

As a result income from tourism or PES is commonly directed to other areas where people have more control and ownership of e.g. livestock or cultivation (DeLuca 2004; Sullivan 2006; Homewood et al., 2009). These types of 'spill-overs' can result in investment of environmentally damaging activities in areas outside of the scheme, ultimately undermining the goals of a scheme in protecting biodiversity (Bulte et al., 2008; Pattanayak et al., 2010; Ferraro 2011).

Conservancies can be viewed as a PES-like approach (Wunder 2008) with qualities of both PES and ICDPs. Conservancies pay conservancy members to put their land into conservation and to observe certain livelihood restrictions. Although payments are not directly based on conservation outcomes, they are conditional on compliance with those restrictions. They offer payments at the household level, thus removing opportunities for benefits to be misappropriated by communal-level institutions (Thompson and Homewood 2002; Norton-Griffiths and Said 2010). They also have benefits of ICDP approaches, such as community development projects and employment.

### **5.1.1 Research questions**

To assess how conservancies contribute and integrate with pastoral livelihoods it is important to have an understanding of the range of conservancy costs and benefits for both conservancy members and non-members. It is also important to understand how these relate to other livelihood strategies. Since livelihood strategies, and the costs and benefits from them, will vary at the intra-household level, this study integrates a gender dimension to assess conservancies for pastoral livelihoods. I ask the following questions:

- What are the costs and benefits of conservancies to conservancy members and non-members, at the household and community levels?
- What is the contribution of conservancy income relative to other sources of household income?
- How do conservancy members perceive the importance of conservancies to their household welfare?

## **5.2 Methods**

### **5.2.1 Conservancy costs and benefits**

A number of methods were used to explore the costs and benefits of conservancies to people in Koyiaki, collecting both quantitative and qualitative data. This included the household survey, interviews with key informants and community members, and participant observation. In the household survey I directly asked people what costs and benefits they experienced from conservancies, and compiled the most important cost and benefit (excluding the conservancy payment) as perceived by respondents. Each of these topics was then explored further using data collected through the household survey and interviews.

For grazing, this included how people perceived the livestock grazing rules, and how these could be positive or negative for their livelihoods. I collected data on grazing fines households received from grazing inside a conservancy and the MMNR in the year preceding the household survey. To understand how conservancies were valued for grazing I asked landowners to rank their land parcels in terms of key livestock grazing attributes: 1) quality of grass, 2) quantity of grass, 3) proximity to salt lick 4) access to water; and also 5) the tourism potential of the land. I used chi-squared tests and t-tests to compare conservancy and non-conservancy land.

I used data from the household survey and interviews to contextualise other perceived conservancy costs and benefits, including; household losses due to livestock predation, household employment in tourism, including in conservancies, and information on conservancy community projects. Data on direct conservancy income through payments was collected alongside incomes from other livelihoods activities, discussed in the next section. Costs and benefits were then related to whether they accrued to conservancy member or non-members or both.

### ***5.2.2 Contribution of conservancy income to household income***

To compare conservancy income to other sources of household income, conservancies were just one livelihood activity amongst others covered by the household questionnaire. Data was collected on each of the livelihood activities households were involved in in the year preceding the household survey, 2009-2010, and the annual household income was calculated for each activity.

Households were asked if anyone in the household was a member of a conservancy, and the monthly payments they received from each conservancy if a member of more than one conservancy. Annual conservancy income was then calculated from the monthly conservancy payments of one or more conservancies accruing to the household.

Data was collected on the composition and number of livestock owned by the household and transformed into Tropical Livestock Units (TLU)<sup>34</sup>. Data was also collected on livestock sales, livestock consumed, livestock exchanges and milk sales. Annual income from livestock production was then calculated as the gross revenue from livestock sold, the value of livestock slaughtered, livestock gifts received and milk sold. Sales of other livestock products, such as hides and skins, were sporadic and not captured here. The value of milk consumption was also not captured here. These were left out due to being unable to reliably estimate them in the questionnaire. Their omission serves to emphasise, rather than obscure, the importance of conservancy income. This is because leaving out these products means the value of livestock production is significantly underestimated; for example, in Kenya, milk provides three quarters of the total gross value of livestock's contribution to the agricultural sector, whilst hides and skins represent 4.3% of total livestock output (Behnke and Muthami 2011).

---

<sup>34</sup> See note in Chapter 3 describing TLUs

For households cultivating, data was collected on the location and size of cultivated fields, crop yields and crops sales. Annual income from crop production was calculated from the income from crops sold and the value of crops consumed.

Households were asked about any other livelihoods activity they were involved in and the revenues earned from each, including salaried employment, livestock trading and other business and trade activities. These were combined to estimate the annual income from off-farm activities, and then broken down into conservation or non-conservation related activities.

After exploring incomes from each livelihood activity, total annual household income for each household was calculated as the gross aggregate household income from all sources. Mean incomes per household per year and per adult equivalent (AU)<sup>35</sup> per day were calculated for comparison amongst each livelihood activity. Only those households involved in the activity were included so as to compare the real returns from each activity. However, mean annual incomes across all households in the sample (n=258) were used to investigate the proportion of total household income contributed by the different livelihood activities.

#### Data quality in livelihood activities and income

This section discusses some of the efforts to improve data quality within a single-round household questionnaire, which tries to elicit information of sensitive topics such as numbers of livestock and income. Further discussion on wider data limitations pertaining to the household survey is given in chapter 3.

Collecting data on the number of livestock owned can be inaccurate in a pastoral setting where people may be reluctant to report the number of livestock they own, or are not sure about their herd sizes. I approached this problem by firstly asking people how many cattle they owned, then secondly asking them to break it down into the different cattle categories. These figures were then compared, and if there was a large difference between them then they were probed into this, and asked to reconfirm or re-estimate. Other household members were also asked if they were able to give more reliable estimates.

To improve accuracy of the income data, appropriate periods of recall were used for each livelihood activity, and these were selected after extensive pre-testing before the questionnaire

---

<sup>35</sup> See note in Chapter 3 describing AUs

was finally implemented. These periods were then repeatedly clarified and checked with respondents. Also, as much as possible other household members were asked about a particular activity, especially if they were directly involved in the activity and were able to give more accurate estimates. For example, women were talked with separately and where possible asked about milk sales. Finally, I worked closely with research assistants local to the area and well-known to the respondent, who were able to encourage the respondents to discuss any issues which were not clear.

### ***5.2.3 Perception of importance of conservancies to livelihoods and use of conservancy payments***

Data from the household questionnaire and community interviews were used to look at the perception and importance of conservancies, and other livelihood activities, to overall household welfare. Conservancy members were asked to rank the livelihood activities they perceived as most important for their overall household welfare. Members were also asked what expenditures they had spent their conservancy payments on in the last three months. Data from interviews and quotes are used to contextualise and support these findings.

## **5.3 Results**

### ***5.3.1 Conservancy costs***

#### Restriction on use and access to conservancy land: livestock grazing and settlements

The main cost of conservancies related to the restriction of access and use to conservancy land. The most significant of these related to restrictions on livestock grazing and settlements, however there were also restrictions regarding other resources, such as collection of firewood, stones, plants, and access through conservancy land on foot, bike, or car (KII 20). These restrictions were usually enforced when a conservancy was first set up, or in instances some time after the conservancy was set up if it was not initially heavily used for tourism. For example, Motorogi and Naboisho Conservancies had few restrictions when first set up (KII 18, 21; CI 19, 12), but later became more formalised when new lodges were built and more tourists started to use the area.

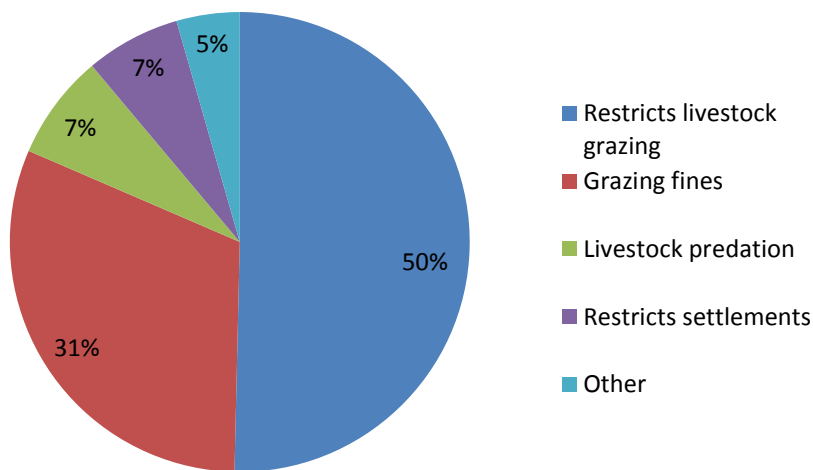
Restrictions on livestock grazing were viewed as the main conservancy cost by household heads (Figure 5.1). All conservancies have introduced controlled grazing plans which set certain rules for grazing inside their boundaries. These usually restrict the number of livestock allowed into the conservancy, the areas where they can graze, and periods limited to specific times of the year. Grazing rules vary depending on the conservancy, but livestock are generally restricted from grazing close to tourist camps, but are allowed periodic grazing in areas further away from camps.



Conservancies also usually allow more flexible grazing during the tourism low season (April/May and November) when there are very few tourists in the conservancy and some camps may be closed.

When allowing livestock in, many conservancies following from the lead of the Olare Orok Conservancy (OOC), now group all cattle into a single large grazing herd, and open up different parts of the conservancy in succession for grazing (KII 14, 17, 18). Sheep and goats, which tend to graze closer to their home bomas, are not allowed access. Usually cattle herds neighbouring the conservancy are allowed access, on a rotational basis, as different parts of the conservancy are opened up at different times (KII 14, 17, 18, 25). Grazing is only usually permitted during the day for ease of monitoring and to avoid conflict with predators.

Figure 5.1: The main cost of conservancies as perceived by the household head in household survey (n=135). Includes responses from both conservancy members and non-members.



Despite the grazing rules there is a lot of illegal grazing in conservancies by both conservancy members and non-members. Grazing rules are monitored and enforced by conservancy rangers, and herd owners are fined if herds are caught grazing in the conservancy at non-stipulated times and places.

The restriction of grazing and reduction of space for livestock grazing in conservancies has been a contentious issue within the community, creating much conflict. Large areas of former grazing land have been for the most part removed from pastoral use. Livestock owners complained that conservancies had seriously reduced the grazing areas available to them, and prevented access to areas they once relied on. Moreover, during dry times this issue became accentuated in the

search for forage for livestock. Thus, many viewed the livestock grazing restrictions very negatively, as imposing a big cost on their livelihoods:

'The worst rule is the one about grazing because you see the other issues like preserving the forest and stones are not bad. But it's completely not good when they say the livestock should not graze up to a certain distance.'

*Group of men, members and non-members, community interview 10*

'I see it as a cost if the livestock are not allowed to graze in the conservancy because they will die during the drought season.'

*One woman, son is a member, community interview 11*

Women especially commented on the cost of grazing restrictions, since their livelihoods depended on livestock. They explained that the grazing restrictions might cause their livestock to die, and this would mean they would not have food since they did not have anything else to depend on:

W1: 'We think it is a cost because our livelihood depends on the livestock only and if there are no livestock we have nothing to depend on.'

W2: 'I see that life is starting to change as the number of your livestock will not be the same and the Maasai livelihood only depends on the livestock. If you don't have livestock you don't have food.'

*Group of women, husbands are members, community interview 12*

'The bad thing that we have seen about the conservancy is that they have refused us to go the places where we have been grazing our cows, and they are what we depend on. So when they are refused to go to those places they have been grazing, they will die. And that will be difficult for us since what else will we be doing since our cows are what we depend on?'

*Group of women, husbands are members, community interview 25*

People frequently mentioned that the payment received from the conservancy was not enough to compensate for livestock not being allowed to graze in the conservancy. Frequent comparisons were made between the size of the conservancy payment and the cost of livestock, as many saw the payment as low, and not worth the cost of livestock that might die due to drought:

'when I receive that little money it's a benefit, but there is not much benefit as that very little money is not worth the price of all of my cattle when they are dead due to the drought.'

*Senior elder, member of MNC, community interview 18*

'...if you own 200 cows, and you are only paid KES 10,000, and your 200 cows are not allowed to graze, they will be finished. You are only paid this money at the end of the month, and the money is not enough for your family needs like educating children. It is not enough.'

*Group of men, members and non-members, community interview 10*

'Somebody might decide that that (the grazing) is not a problem because they are receiving money. But according to my point of view, when the conservancy will come to change and it does not allow the grazing of the cattle, it will not have any benefit. For both those who are receiving money and those who are not, we'll not be getting any benefit. We used to graze, even up to the guiding school, and already they are refusing this. We are now forced to the other side, so don't you see that it is already starting to change?'

*Senior elder, non-member, community interview 22*

In this last quote, this elder explains how conservancy grazing restrictions were an issue both for conservancy members and non-members. Although, grazing restrictions are applied to both members and non-members, there was discussion that when conservancies do allow livestock grazing, conservancy members' livestock get preferential access (KII 16, 26; CI 8, 17, 19, 29). Thus, non-members may be excluded from grazing inside a conservancy area, but they will likely have to accommodate conservancy members' livestock on their land throughout the year (KII 6, 14, 26; CI 19). For this reason, many people thought that non-members should be allowed to graze in the conservancy the same as conservancy members, e.g.:

'Yes, according to our wish we would like all the cows (including non-members) to be given a chance to graze in the conservancy since we are also grazing our cows on their land.'  
*Senior elder, member of Motorogi and Naboisho Conservancies, community interview 19*

However, others thought that non-members should not be allowed to graze in the conservancy, since then there would be too much pressure on the area, e.g.:

'No, they should not be allowed to, otherwise so many people from elsewhere will come and graze inside, and the area will not be good.'  
*Elder, member of MNC, community interview 8*

Data on household use of conservancies for grazing, show that conservancy members and non-members both equally reported grazing inside of conservancies, either legally or illegally (section 7.3.3). However, since members have better access to conservancy committee members, conservancy managers and tourism investors, they likely receive greater opportunities to graze legally in the conservancy when it is permitted. Also, as conservancy landowners, they have greater bargaining power to push their case to be allowed to graze.

Restrictions on settlements and the displacement of settlements from conservancies, was another major cost mentioned by both conservancy members and non-members. Settlements are not allowed inside conservancies, and in particular in the core area of conservancies and many people who were previously living inside a conservancy have been displaced outside, or to the periphery areas. The displacement of settlements is measured and discussed in depth in chapter 7 and thus not expanded upon further here. However, it is important to note that as settlements and livestock are excluded from conservancies, as well as the direct cost of lost grazing or settlement space, this also has implications for the livelihoods of people living in non-conservancy areas as they become increasingly more crowded.

### Grazing fines

Grazing fines were a major direct cost of conservancies reported by community members (Figure 5.1). If herds are caught grazing in the conservancy at non-stipulated times, they are driven out of the conservancy to the ranger post or gate and impounded until the fine is paid (CI 28). Herds are fined either KES 5000 or KES 10,000 depending on the conservancy<sup>36</sup>.

In the household survey, 27% (n=67) of households reported receiving at least one fine for grazing in a conservancy in the preceding year (Table 5.1). Both members and non-members were fined, although members reported being fined more and spending more on fines than non-members.

Table 5.1: Number of households fined for grazing in a conservancy and reserve in the preceding year to the household survey, and amount spent on fines (n=258)

		No. of HHs	No. of times fined Mean	Total spent on fines (KES) Mean	Median
Conservancy	All HHs	69	3	10053	5500
	Cons. member HHs	34	3.5	12275	6000
	Cons. non-member HHs	35	2.2	7894	5000
Reserve	All HHs	84	7.1	25468	14300
	Cons. member HHs	35	8.6	29000	15000
	Cons. non-member HHs	49	6.1	22945	14000

Grazing fines were perceived as a big cost by many people interviewed and many commented that the fine was higher than what they received in the conservancy payment. Even worse was the fact that people were being caught and fined for grazing on their own land:

M1: 'It is a cost if you are caught grazing your livestock on your land, and you have to sell the livestock to pay the fine'.

M2: 'The bad thing that I can tell you now about the conservancy is when I am caught (grazing) on my own land, I am forced to sell my livestock, as they need me to pay KES 10,000, and that is the same amount I am paid by the conservancy.'

*Group of men, members and non-members, community interview 10*

'That there is too much grass there, which the livestock are not allowed to feed on. It is also bad because we are caught and fined and this (land) is our property.'

*Senior elder, member of OOC, community interview 14*

'Also, it is a cost for me as I am fined for grazing in the conservancy. The amount of money that a member receives is the same as that being taken for the fine. The conservancy may take more money than what you receive as you might have to sell cattle four times in a month to pay for the fines, and the conservancy payment is only KES 10,000 per month.'

*Elder, non-member, community interview 13*

<sup>36</sup> The fine for illegal grazing in the MMNR was also KES 10,000 or US\$ 125 (US\$1=80 KES).

‘According to how I see it, the bad thing is the way people are being fined, because they can even fine somebody who doesn’t have any other job to depend on, and this will force him to sell his cows. I don’t see this as good at all.’

*Junior elder, non-member, community interview 27*

In these quotes, both conservancy members and non-members spoke about having to sell their livestock to pay for the fines. Although conservancy members are able to use their payments to pay for the fine, this option is not there for non-members. Another problem mentioned by some was that when the livestock were caught grazing in the conservancy they were left alone in the conservancy, perhaps because the herder ran away rather than face a fine or conflict with rangers, thus increasing the chance of livestock being attacked by predators:

‘For example, like in the last drought season, the livestock have been disturbed a lot because we used to graze inside the conservancy and we were being chased away, and when we left the livestock alone the predators would attack them and kill them. And it is too bad because they do chase the livestock during the daytime and they do not allow us to graze at night. So that is another problem’

*Junior elder, non-member, community interview 17*

W1: See here there are two things my child, if you are found in that place you will be beaten to death and you will have to pay such a high amount of money that you’ll always remember it.

W2: Your cattle will be killed by predators and you cannot go to anywhere....

W3: And you cannot kill the predator, and you will not be paid back your cow.

W1: I told you when you’re found in that place you’ll be beaten to death, you’ll be fined, and even if you see the predator killing the cow you are not allowed to kill it. Right now we are paying up to KES 5000 in fines. So there is no benefit. It’s only a cost. It’s only those who are in charge that are benefiting by getting money, not everybody benefits.

*Group of women, husbands are members, community interview 15*

In the last quote, the group of women mention that on top of the cost of the high grazing fine, livestock may be killed by predators in the conservancy, and made worse by the fact that they would not be compensated for it. They thus saw little benefit from the conservancy or its payments, which they would be unlikely to receive either (see below). Another issue mentioned concerns herders being beaten by rangers when caught grazing with livestock. Mistreatment of herders is a problem that has been also reported when livestock are caught grazing in the MMNR (Butt 2011a). In some cases, herders or livestock owners caught grazing illegally in the conservancies have been imprisoned or given community service (KII 32; Naboisho 2013).

During the dry season livestock owners may face an extra risk of being fined. As the ability of herds to find available forage during the dry season decreases, conservancies can come under considerable pressure from livestock grazing during this critical time (chapter 7). During these periods there are incidents of heavy fines for livestock herds. For example, during a dry period in July 2013, Naboisho Conservancy rangers collected almost KES 250,000 (US\$3125) in fines from 50 separate fining incidents over the course of the month (Naboisho 2013). On another occasion,

during a drought period in 2009, the OOC collected KES 220,000 (US\$2750) over a 3-month period (KII 18). Thus drought times are not necessarily times when the grazing rules are relaxed.

As comparison, many households (34%, n=84) also reported being caught and fined for grazing in the MMNR (Table 5.1). The higher cost of the MMNR grazing fine<sup>37</sup> (KES 10,000 vs KES 5000 for the conservancy) is reflected in the higher amounts spent on MMNR fines, although households also reported being fined more often for grazing in the MMNR than the conservancies. More conservancy non-members reported being fined grazing in the MMNR than conservancy members; however conservancy members reported spending more on fines than non-members.

#### Livestock predation due to increased wildlife

As shown in the previous quotes, there was a perceived high risk of cattle being killed by predators in the conservancy. Although, livestock predation is a risk across the Mara, and was present before conservancies were set up, this risk might be greater now in conservancy areas since they are now more heavily managed for tourism and wildlife, and specifically for charismatic predators which tourists wish to see. Although not differentiated by area, the mean cost of predation estimated through livestock killed in the year preceding the household survey was KES 24,774 (n=258, SD 29,467) or US\$310. The cost of livestock predation can thus be substantial and of concern to households in the Mara. There was no significant difference in livestock predation costs between conservancy members and non-members (t=-1.054, df=256, p=0.293).

Indeed, many people did perceive lions and other predators to be increasing now in the conservancies (e.g. CI 8, 15, 20; KII 17, 18). Increased livestock predation can create increased conflict between people and the conservancies, and also between people and wildlife. As shown above, people complained that their livestock were being killed by predators in the conservancy, but there was no compensation. This can intensify conflicts as people aren't allowed to graze in conservancies, and they receive a fine if they do, and on top of which they do not get compensation for livestock killed by wildlife:

'For example, you are charged KES 10,000 if your animals go close to the animals like lions or elephants. But if the lion comes and kills your animal in the boma there is no payment.'

*Elder, member of MNC, community interview 20*

---

<sup>37</sup> Since 2013 the MMNR has introduced a 'per animal' fine system where a cow caught grazing will be charged KES 200 and a sheep or goat KES 50 (Ringa 2013). Their market values are: cow (KES 9500), sheep (KES 1900) and goat (KES 1900) (household survey data).

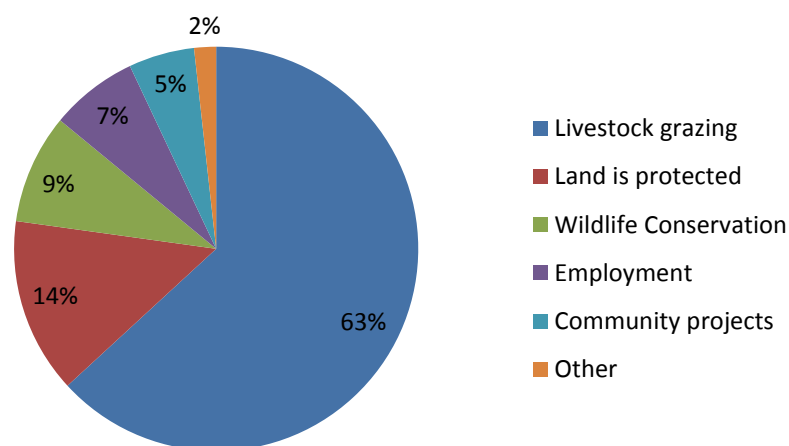
The issue of wanting compensation for livestock killed by predators was raised by many people I spoke to. The Mara North Conservancy has set up a predator compensation programme through their Trust's activities however other conservancies were reluctant to do so because of the difficulties of monitoring and verifying kills (KII 18, 32). Members contribute a portion of their payments to help finance the scheme (KES 100 ha<sup>-1</sup>/yr<sup>-1</sup>). Compensation is paid to conservancy members only, and compensation does not apply to livestock killed when grazing in a conservancy illegally (KII 32). Conservancies are also working on predator-proofing bomas by improving the fencing, to reduce the risk of predation on livestock.

### 5.3.2 Conservancy benefits

#### Livestock grazing

As well as conservancies being viewed as a cost to livestock due to grazing restrictions, livestock grazing within conservancies was also seen as a benefit to livestock. Many spoke about conservancies having good livestock grazing, and when they did get to graze in the conservancy it was a benefit. Excluding the conservancy payments to members, livestock grazing was seen as the most important conservancy benefit (Figure 5.2). Conservancies were thus perceived as both a benefit (when allowed to graze) and a cost (when caught and fined) to livestock grazing (CI 10, 16).

Figure 5.2: Most important conservancy benefit perceived by household head, outside of the conservancy payment (n=57). Includes responses from both conservancy members and non-members.



In some cases the positive view of livestock grazing in conservancies was linked to those members who also said that they had set, or agreed, the grazing rules with the conservancy managers and tourism investors (e.g. CI 18, 19, 29). Thus, during the agreed time which conservancies were opened up for livestock grazing, it was a benefit.

An important aspect of conservancies for livestock grazing was that the conservancy preserves the grass to be used during drought (CI 13, 23). Since livestock are not allowed to regularly graze in conservancies this allows the grass to grow for use when it is needed, such as in the dry season or drought time. Thus, the conservancy acts as a grass bank or grazing reserve:

‘Yes it helps the community by preserving grass, and when it becomes the dry season, we are allowed to graze, and that grass will last us some time.’  
*Elder, non-member, community interview 13*

‘We do like the way they are managing the grass because for those people who live nearby, they will get a chance (to graze inside).’  
*Junior elder, non-member, community interview 27*

‘Because nowadays we have plenty of grass because we don’t graze just anywhere. So during the drought season there is plenty of grass, and they can allow us to graze also there.’  
*Elder, member of MNC, community interview 20*

Thus, by preventing widespread livestock grazing, conservancies remained with grass, which when accessed was a big benefit. This was seen as particularly important during drought times.

Conservancies were perceived as valuable pieces of land for livestock grazing. Households valued conservancy land significantly higher than non-conservancy land in terms of four key livestock grazing attributes: grazing quality, quantity, water, salt lick, and also tourism (Table 5.2). When all five attributes were combined into a total score, conservancy land was rated significantly higher than non-conservancy land ( $t=9.826$ ,  $df=365$ ,  $p<0.001$ ).

Table 5.2: Chi-squared tests for significant difference between how people valued conservancy land (n=200) vs non-conservancy land (n=167). ‘Conservancy land’ includes 20 pieces of land in a conservancy but which was not joined to the conservancy

	Value $\chi^2$	df	Sig
Quality of grass	12.7	3	0.005
Quantity of grass	29.1	4	0.000
Water	11.4	4	0.022
Salt lick	53.8	4	0.000
Tourism	111.9	4	0.000

Conservancies are thus considered important areas for livestock, and of higher value than non-conservancy areas. In support of this, households located inside a conservancy (mean=74.62, n=50) did own significantly more livestock (as measured in TLU per AU) than households located outside of a conservancy (mean=65.32, n=208) ( $t=2.118$ ,  $df=256$ ,  $p=0.035$ ). This suggests that



households living within conservancies were able to access more favourable grass conditions, enabling them to accumulate more livestock, than households outside of conservancies.

### Community projects

Community members may receive benefits from conservancies through conservancy trusts and their activities. The trusts administer donor funds towards a number of community welfare and development projects. These projects benefit the wider community in the Mara and not just conservancy landowners or their families. The trusts have initiated a number of projects with women and youth as already outlined in section 4.6.1. Other activities and projects include helping to build and finance health centres, and provide the infrastructure for the drilling of wells and boreholes for access to water for livestock and people. They have helped to build and renovate schools, and provide funds for bursaries for school or higher education. Other capacity building components include training community members in the use of computers, setting up local centres to facilitate this, and sending people for different types of environmental or civic training in Nairobi or Narok. They also look at introducing alternative and more sustainable sources of energy to charcoal and firewood, including biogas, hay/dung briquettes, solar power. As mentioned above, to reduce human-wildlife conflict, trusts are trying to predator proof bomas to reduce lion attacks on livestock, and some have set up predator compensation programmes.

The trusts provide community-level benefits from conservancies that reach out further than the land lease payments do, thus benefiting the wider community in the Mara. These are potentially valuable benefits in a remote rural area with poor infrastructure and little development by government. The importance of these benefits was acknowledged by some community members interviewed. However, many people, although aware of many of the community projects described above, did not always relate these benefits to the conservancies when asked about them in the household survey or in interviews. Very few mentioned community projects as the most important benefit they received from conservancies (Figure 5.2). People did not seem to consider the community projects to be motivated or developed by a conservancy. This might be because it was still early on in conservancy lifetime of some conservancies when I was in the field, and their trust activities were only starting to gain momentum. Also, it might be because many of these services are expected to be delivered by the government anyway.

### Conservancy employment

Conservancies employ people through jobs in a conservancy lodge or camp, or through jobs in conservancy management, e.g. as lodge employees, guides and conservancy rangers.

Conservancies market themselves as offering a culturally integrated tourism experience which contributes to the socio-economic development of the area and capacity building of the local community, e.g. on their websites, and other promotional material (e.g. MNC 2011; Great Plains 2013). As such they stipulate they aim to employ local people as much as possible - rather than hire staff from outside the Mara, which is more common practice in many of the larger lodges, and lodges outside of conservancies.

On many accounts they are doing this. For example, the OOC employ 22 Maasai from the local or nearby area, plus a conservancy manager from outside (KII 14, 18). Porini camp inside the OOC has 32 staff, of which 28 are Maasai and four are non-Maasai (KII 17). In a Mara-wide conservancy report (Naboisho 2011), it was outlined that the conservancies in the Mara directly employ 93 people, and that 22 tourism camps in the conservancies create 863 jobs, which mainly went to local people. The Mara North Conservancy Brochure advertise that they alone employ over 600 people from the community in their camps, in conservancy management, ranger positions, and maintenance work (MNC 2011).

In the household survey, I found that of 106 households with someone having a job in conservation or tourism, 25 jobs (23%) were related to a conservancy compared to 79 jobs (72%) that were not. Five percent of jobs were not specified. The 25 jobs related to a conservancy include 19 in a conservancy lodge and 6 within conservancy management.

Conservancies thus provide employment opportunities to households in the Mara, extending beyond the conservancy payments that accrue to members only. However, conservancy members or their relatives can often be favoured for these positions, and have the added advantage of being more closely connected to the conservancy. For example, of the 25 households who had a household member with a job in a lodge in a conservancy or as conservancy employee, 15 of these households were members of a conservancy, and 10 were non-member households. It could also be argued many of these income streams would be there even without the conservancy. For example, many of the lodges were present before the conservancy was set up.

#### Conservancy payments

Monthly conservancy payments accrue to all conservancy members. In the household survey, 52% of households (n=133) were a member of at least one conservancy and were thus receiving

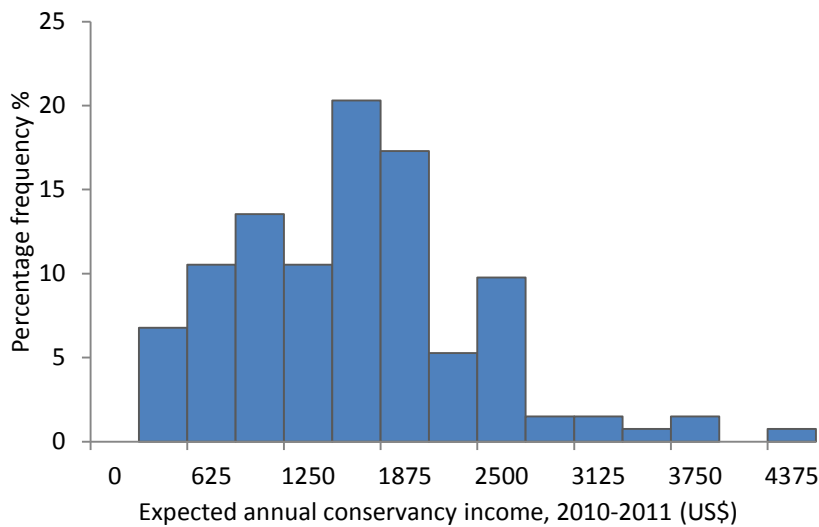
income from conservancy payments. The mean annual income from conservancies for these households was KES 90,790 (US\$1135) for the preceding year, 2009-2010. Incomes varied widely however (min US\$23, max US\$4000); partly because households have different sizes of land under a conservancy, conservancies have different land lease payment rates, and households can be members of one, two or three different conservancies (see chapter 6 for more on details of participation in different conservancies). However, the timing of the survey was also a contributing factor to this variation, because the households who had just joined Naboisho Conservancy in March 2010 had only received a few months' income by the time of the survey. These households had therefore received less income compared to households who were members of other conservancies operating for at least the preceding year or longer.

In order to explore how conservancy income is spread amongst households that receive it, I therefore take the year ahead of the survey to look at what a household would receive in conservancy payments after March 2010 when Naboisho Conservancy started. To calculate this I use the following fixed land rent payment rates for each conservancy, as they were reported for the majority of 2010:

- Olare Orok Conservancy                      KES 3000 (US\$38) ha<sup>-1</sup>/yr<sup>-1</sup>
- Motorogi Conservancy                        KES 2500 (US\$31) ha<sup>-1</sup>/yr<sup>-1</sup>
- Mara North Conservancy                    KES 2500 (US\$31) ha<sup>-1</sup>/yr<sup>-1</sup>
- Naboisho Conservancy                        KES 2000 (US\$25) ha<sup>-1</sup>/yr<sup>-1</sup>

The predicted mean annual income from conservancies for the year ahead, 2010-2011, increased by 20% to US\$1434 (SD 784) compared to 2009-2010. The distribution of conservancy income amongst households receiving it is slightly skewed with a few households receiving much higher incomes than the rest (Figure 5.3). Although each member of a particular conservancy receives a payment based on the same land lease payment rate, conservancy members own varying sizes of land within a conservancy (section 6.3.2). This explains the widely varying distribution found in annual conservancy income amongst households as shown in Figure 5.3.

Figure 5.3: Distribution of conservancy payments amongst households that receive them, for the year ahead, 2010-2011 (n=133)

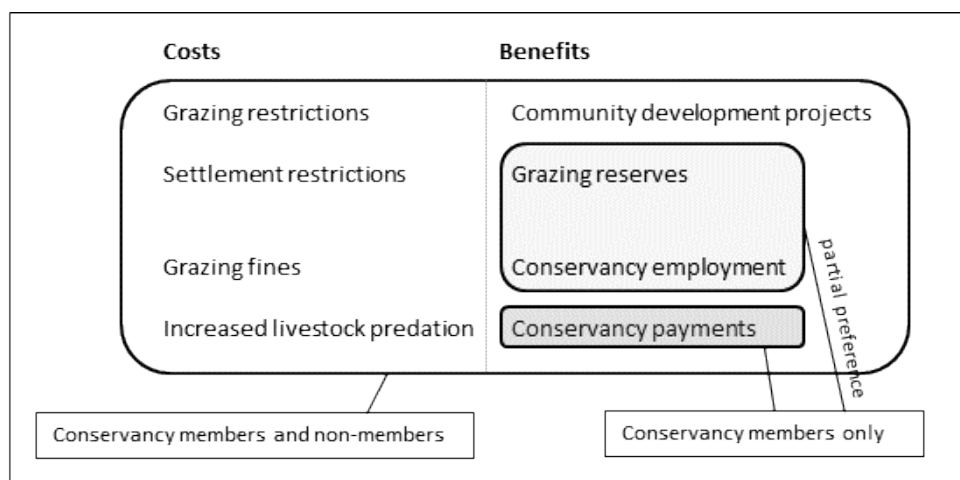


### 5.3.3 Summary of costs and benefits

Figure 5.4 shows a summary of the costs and benefit discussed in this chapter, accruing to conservancy members and non-members. The diagram shows that all costs from conservancies accrue to both conservancy members and non-members. However, for benefits this is more mixed. Conservancy payments accrue only to conservancy members. Community development projects are widespread throughout Koyiaki and any associated benefits thus accrue to both members and non-members. Benefits from livestock grazing reserves and conservancy employment accrue to both members and non-members, but conservancy members are often in a better position to receive these benefits and thus can be favoured over non-members.

This reveals that although conservancy members face a number of costs from conservancies, they receive a number of benefits which can act as trade-offs. In comparison, conservancy members receive at least the same costs, but receive far fewer benefits in return. Also, it could be argued that the main benefit from conservancies (payments) accrue direct to conservancy members at the household level. In comparison, non-members receive few household level benefits (although potentially some employment), whereas other benefits accrue much more indirectly at the community level.

Figure 5.4: Diagram showing summary of costs and benefits accruing to conservancy members and non-members



#### 5.3.4 Contribution of conservancy income relative to other sources of household income

Maasai in Koyiaki are diversified into a number of livelihood activities. Table 5.3 shows the number of households involved in different livelihood activities in the year preceding the household survey, and the mean annual household income and mean daily income per adult equivalent (AU) earned from these activities. Livelihood activities are grouped into five broad categories: livestock production, crop production, off-farm income related to conservation, off-farm income not related to conservation, and conservancy income. Each of these livelihood activities are described in more detail further below.

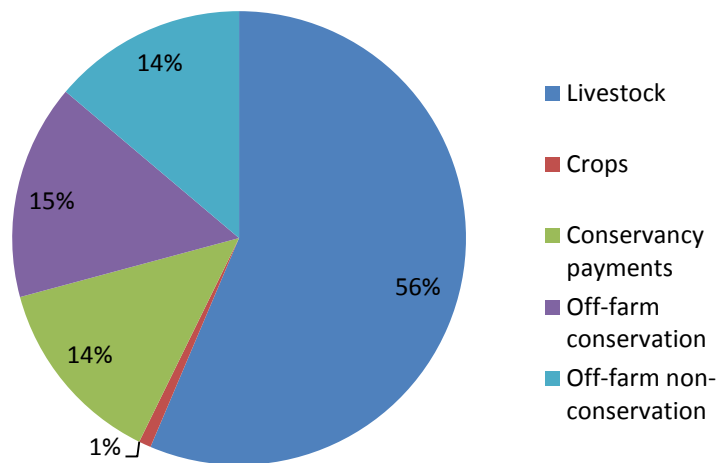
The mean total annual household income was US\$4079 for the year 2009-2010. The distribution of income amongst all households was highly skewed with the mean heavily influenced by a few very wealthy cases. The median of US\$2868 is hence a better representation of household income.

Table 5.3: Mean incomes from the different livelihood activities and all activities combined into a total income. Mean incomes are shown per household per year, and per adult equivalent (AU) per day. Only includes those involved in the activity (standard deviation in parenthesis).

Livelihood activity	HHs involved	%HHs	per HH/year US\$ (SD)	per AU/day US\$ (SD)
Livestock production (n=248)	241	97	2504 (3014)	0.91 (0.93)
Crop production (n=258)	29	11	336 (474)	0.19 (0.29)
Off-farm conservation (n=258)	158	61	1081 (1097)	0.49 (0.48)
Off-farm non-conservation (n=258)	130	50	1185 (1437)	0.46 (0.51)
Conservancies (n=258)	133	52	1135 (827)	0.41 (0.34)
Total income	248	100	4079 (3847)	1.70 (1.19)

Figure 5.5 shows the contribution of these different livelihood activities to total annual household income. These data take the mean across all households, whether involved in an activity or not. Livestock is the most important livelihood activity to Koyiaki households contributing 56% of total annual income. This is a minimum contribution estimate since it leaves out the value of milk consumption, which could substantially increase livestock’s contribution. Conservancy payments contribute 14%, and off-farm conservation activities contribute another 15%. Off-farm non-conservation income contributes 14%. Cultivation is negligible at 1%. Conservancy payments plus other forms of conservation income thus together contribute 29% to total household income.

Figure 5.5: Proportion contribution of different livelihood activities to total annual household income (income is across all households even if not involved in an activity).



### Livestock production

All households owned some livestock. The mean number of TLUs owned per household was 65, however this varied considerably between households from 3 to 390 TLUs (Table 5.4). Livestock ownership was skewed with just 19% (n=50) of households owning 50% of livestock. Households whose head held a leadership position owned significantly more livestock (104 TLU) than those that didn’t (57 TLU) ( $t=3.946$ ,  $df=65$ ,  $p<0.001$ ). The number of TLUs per adult equivalent (AU) also varied greatly from 0.6 to 40, with a mean of 9 TLU/AU. Thirty-three percent of households owned less than 5 TLU/AU – the lowest estimate of the threshold value required to support a

purely pastoral lifestyle as estimated from a range of studies exploring the numbers of livestock per capita<sup>38</sup>.

Table 5.4: Number of livestock owned and household annual incomes (US\$) from the different livestock production activities

Livestock	% of HHs	Mean*	Min	Max	SD	Median
Livestock owned, TLUs	100	64.8	3.0	389.2	62.9	45.3
No. of TLUs per AU	100	9.0	0.6	40.0	6.7	7.7
Value of livestock sold (n=249)	92	2276	18	21313	2923	1199
Value of livestock consumed (n=249)	73	182	11	1198	158	143
Value of milk sold (n=257)	12	280	19	1755	356	141
Total livestock production (n=248) **	97	2504	21	22073	3014	1510

\*Only includes those households involved in a particular activity

\*\* Total livestock production = livestock consumption + livestock sales + livestock gifts received + milk sales

Most households (92%) reported selling livestock, and the income from livestock sales (cattle, sheep, goats) brought in a mean cash income of US\$2276 per household annually. Milk sales were not common amongst households with only 12% of households selling milk in the last year, bringing in a mean income of US\$280. The mean annual gross value of livestock production (defined here as the value derived from livestock and milk sales plus the value of livestock slaughtered and livestock gifts received) was US\$2504, with a median of US\$1510, showing that a small number of wealthy households skew the mean up. This is a minimum estimate since it leaves out the value of milk consumption. Including the total value of milk could potentially put estimates from livestock 300% higher than are currently found here (Behnke and Muthami 2011).

### Cultivation

Very few households (n=34, 13%) in Koyiaki cultivate, either at home or elsewhere. The size of cultivated fields were small (mean=2.6 acres), and most households that did cultivate did it for subsistence requirements, with fewer households reporting selling crops (Table 5.5). The mean annual gross value of crop production (income from sales plus consumption) was US\$336, but did vary considerably. Although a few households had high incomes from cultivation most households involved in cultivation received little or none due to poor or failed harvests.

Only 24% of cultivating households were cultivating on their own land, compared to 44% who were renting land to cultivate, and 32% who were cultivating on someone else's land without paying rent, or on un-subdivided land in neighbouring group ranches. Only 38% of households

<sup>38</sup> Estimates of the minimum number of livestock required to support pastoral livelihoods vary considerably amongst studies. See Lamprey and Reid (2004) for a useful synthesis and a range of estimates on this.

were cultivating on land inside Koyiaki with the remaining cultivating in neighbouring group ranches, or further afield in Trans Mara, Narok and Mau. The areas in Koyiaki with cultivation were predominately along the northern edges close to Aitong. Further south nearer the MMNR there was no cultivation, except for patches in Sekenani and Nkoilale, due to poorer rainfall, wildlife damage and competing interests of tourism. No cultivation was reported in any conservancy in Koyiaki.

Table 5.5: Area under cultivated fields, and the annual household incomes (US\$) from crop production

<b>Cultivation (n=258)</b>	<b>% of HHs</b>	<b>Mean*</b>	<b>Min</b>	<b>Max</b>	<b>SD</b>	<b>Median</b>
Area under cultivation, acres	13	2.6	0.5	10.0	2.3	2.0
Value of crops consumed	9	168	26	735	173	108
Value of crops sold	4	527	53	1969	565	565
Total crop production**	11	336	0	2106	474	193

\*Only includes those households involved in a particular activity

\*\*Total crop production = consumption + sale. This includes those households with a failed harvest, but excludes those households who had not yet harvested

#### Off-farm income – including conservation and non-conservation sources<sup>39</sup>

The majority of households (87%) were involved in at least one off-farm activity, with a mean of 1.8 activities for these households (Table 5.6). Slightly more households (61%) were involved in an off-farm activity related to conservation, than to an off-farm activity unrelated to conservation (50%). The mean annual off-farm income was US\$1444 when including all sources of off-farm income. When separating off-farm income into conservation related and unrelated activities, those unrelated to conservation had a non-significantly higher mean income of US\$1185 compared to a mean of US\$1081 for conservation-related activities.

Table 5.6: Households involved in off-farm activities, and household annual income (US\$) from off-farm conservation and non-conservation sources income

<b>Off-farm activities (n=258)</b>	<b>% of HHs</b>	<b>Mean*</b>	<b>Min</b>	<b>Max</b>	<b>SD</b>	<b>Median</b>
Number of off-farm activities	87	1.8	1.0	5.0	1.0	1.0
Total off-farm income	87	1444	4	10409	1560	956
Off-farm conservation income	61	1081	47	7500	1097	816
Off-farm non-conservation income	50	1185	4	7904	1437	724

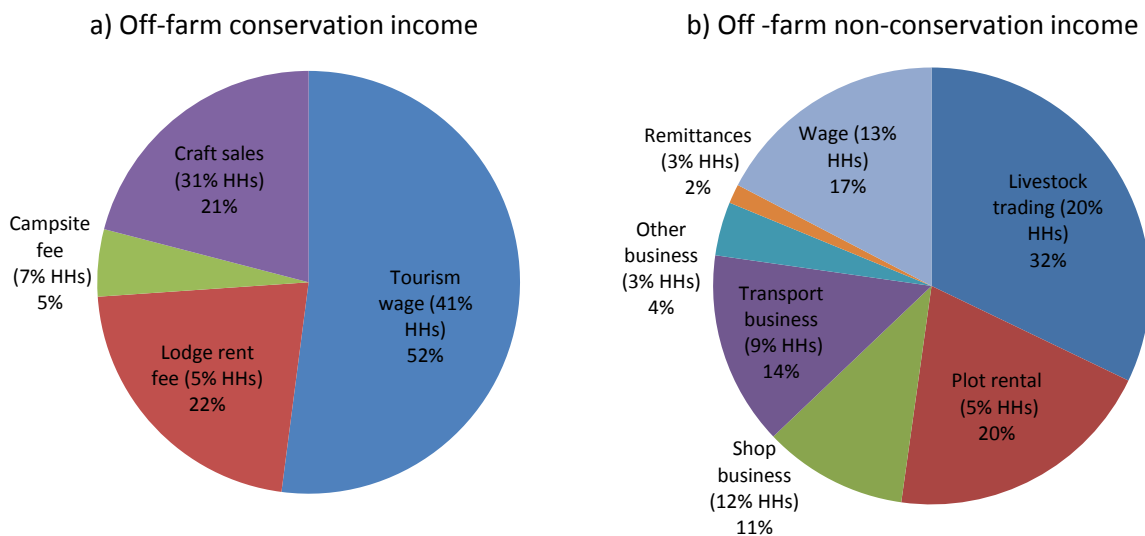
\*Only includes those households involved in a particular activity

<sup>39</sup> It is difficult to completely separate out conservation and tourism activities from non-conservation or non-tourism activities. Market centres, shops and transport will all be affected by tourism as more people, including service workers, come into the area. This grouping has however tried to distinguish those directly related to conservation and tourism, from those that are possibly indirectly related in some way.



Figure 5.6 shows the contribution of different off-farm activities to total off-farm conservation and off-farm non-conservation income. Activities related to conservation include: salaried jobs in the tourism industry such as lodge workers, tour guides and rangers; income from curio and craft sales; rent fees from shares in small-scale campsites; and rent from a lodge usually located on the household's land. Salaried employment in the tourism industry was the most common activity involving 41% (n=106) of households, and providing 52% of income to households. Being adjacent to the MMNR there are a number of opportunities for work in the many lodges or camps located in the MMNR and also in Koyiaki. These jobs were very varied including camp managers, guides, drivers, chefs, waiters, security guards, room stewards and gardeners. Outside of lodges there were also people employed as reserve or conservancy rangers, on hot air balloon crews, and in regular positions at cultural *manyattas*.

Figure 5.6: Contribution of the different off-farm activities to, a) total off-farm conservation income and b) total off-farm non-conservation income. Percentage of households involved in each activity is shown in parenthesis, (n=258)



Those not-related to conservation include: salaried jobs such as teachers, health workers, or casual workers; remittances (here defined as money coming into the household from someone outside of the household); livestock trading; renting out a plot in a market centre; businesses related to transport (e.g. a motorbike or *matatu*), and to vending shops (such as selling food items from home or in the market). Many of these activities are indirectly related to the increased flow of people coming to the Mara due to tourism – for example, local hotel, restaurant, shop and transport industries have grown to accommodate more tourists, and more tourism industry workers. Talek market centre, located right next to one entrance to the MMNR, has mushroomed to accommodate these extra service industries. Business and trade activities, although less

common, tended to be more profitable than the other groups. Plot rental is a particularly lucrative business opportunity for those who are able to secure a plot in the market centre, through arrangement with the Narok County Council, and then to build and rent out their building to other businesses. Trading of livestock was a regular activity for 20% of households, although there was huge variability in the intensity and time spent livestock trading. A few households reported trading only in the tourism low season, when lodges are closed and they are at home with more time on their hands.

How does conservancy income compare to other forms of conservation income?

Conservancy payments contribute the greatest source of conservation income to households in Koyiaki, making up 47% of total conservation income (Figure 5.7). This is followed by a tourism job, making up 28% of total conservation income, and then lodge rent fee and craft sales, both making up 11%.

Conservancies are the most widespread conservation activity, while involvement in lodge renting is the most lucrative conservation activity with a mean of US\$2668 for the few households (n=14, 5%) involved (Table 5.7). When combining all conservation activities (i.e. conservancies plus off-farm conservation activities), the number of households involved in any type of conservation-related activity is high at 81% (n=208).

Figure 5.7: Proportion of total conservation income from different sources (n=258)

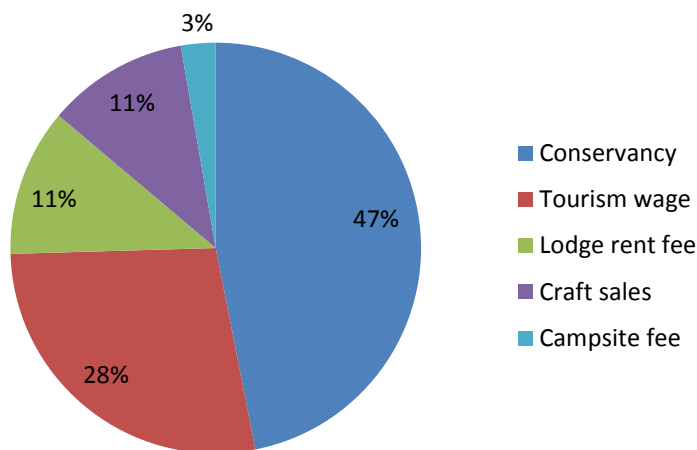


Table 5.7: Proportion of total conservation income made up from different conservation income sources (n=258)

Conservation activity	HHs involved	% HHs	per HH/year US\$ (SD)	per AU/day US\$ (SD)
Conservancy	133	52	1135 (827)	0.41 (0.34)
Tourism wage job	106	41	839 (619)	0.41 (0.34)
Lodge rent fee	14	5	2668 (2261)	0.86 (0.81)
Craft sales	80	31	448 (349)	0.24 (0.29)
Campsite fee	18	7	487 (310)	0.16 (0.13)
All conservation	208	81	1547 (1438)	0.64 (0.55)

Difference between conservancy members and non-members – income

When disaggregating households into conservancy member households and non-member households, conservancy payments contribute 21% of the total annual income of member households (Figure 5.8). This figure rises to 29% when looking at conservancy payments for the year ahead, 2010-2011, as discussed above. The off-farm and cultivation contributions for member and non-member households are roughly similar. However, livestock contribute a much larger portion of income for conservancy non-member households (70%) than for conservancy member households (48%), though in both cases this proportion remains a minimum estimate since it does not include milk consumption.

Figure 5.8: Proportion of gross annual household income from different activities disaggregated to conservancy members (n=127) and non-member (n=121) households

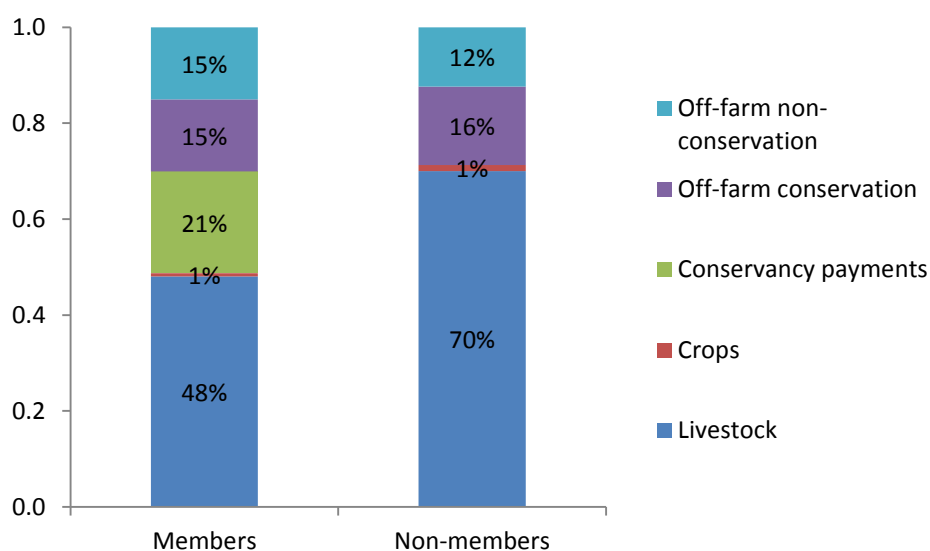
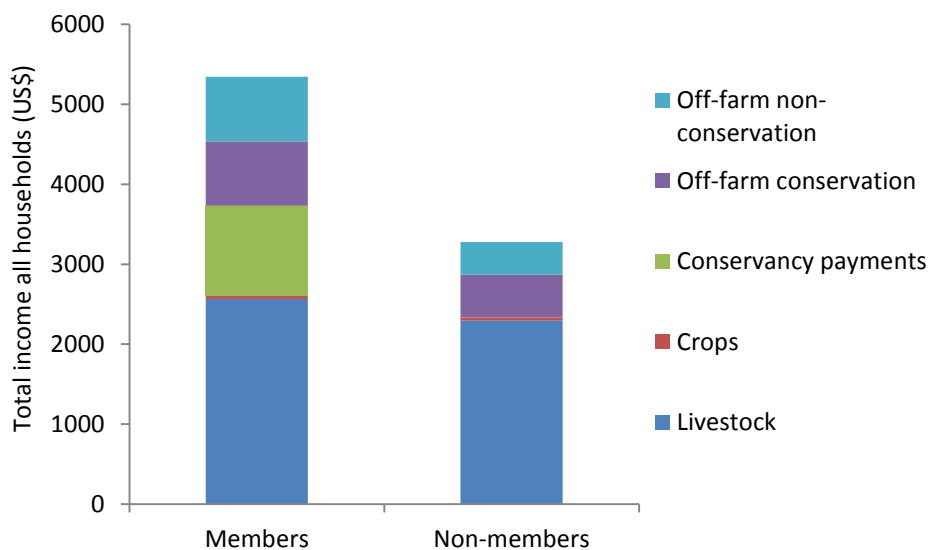


Figure 5.9 shows the differences in absolute incomes between members and non-members. Conservancy member's total annual household income (US\$5342) is significantly higher than non-member's income (US\$3277) ( $t=4.410$   $df=233$ ,  $p<0.001$ ) equal variances not assumed). However, incomes from livestock are almost comparable. Further differences in incomes between conservancy member and non-member households, and their significance, are explored in chapter 6.

Conservancy payments although valuable to those households that receive them, are thus of limited value to the wider community, since in this random sample of households in Koyiaki, only half of households were involved in a conservancy. For those households that are not members, livestock become far more important and make up the extra contribution, whereas the other activities remain comparable across member and non-member households.

Figure 5.9: Total incomes per livelihood activity for all households, disaggregated to conservancy members (n=127) and non-members (n=121)

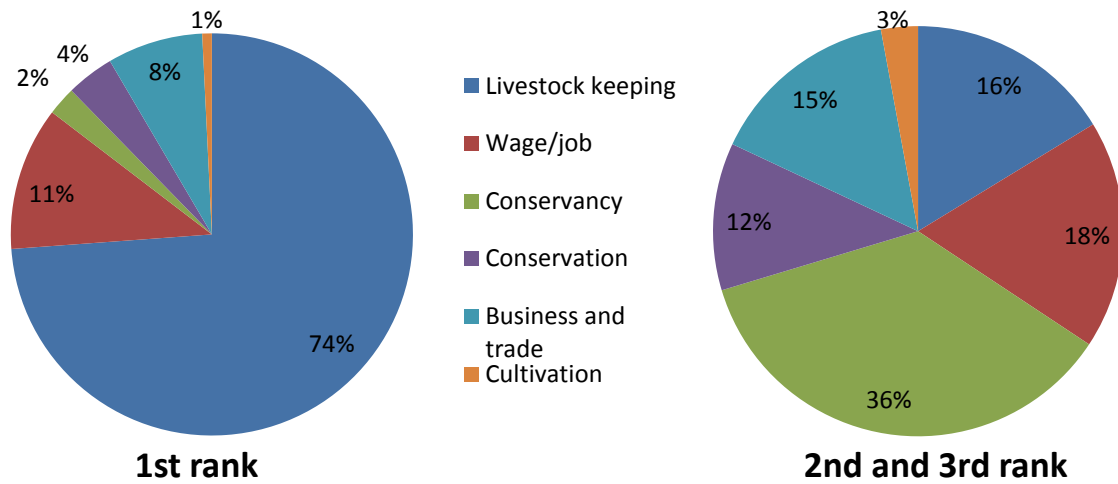


### 5.3.4 Perceived importance of conservancies to household welfare

Respondents were asked to rank the three livelihood activities they perceived as most important for their overall household welfare. Data are shown for conservancy members only so as to compare how conservancies are perceived in comparison to other livelihood activities by those involved (Figure 5.10). Conservancies were ranked as the household's primary livelihood activity for household welfare by only 2% of members, compared to livestock keeping at 74%. However, conservancies were consistently ranked as the most important second or third livelihood activity by those involved. This indicates that members do not perceive involvement in conservancies as

their main livelihood activity, which remains overwhelmingly livestock-based, but do consider it an important supplementary livelihood.

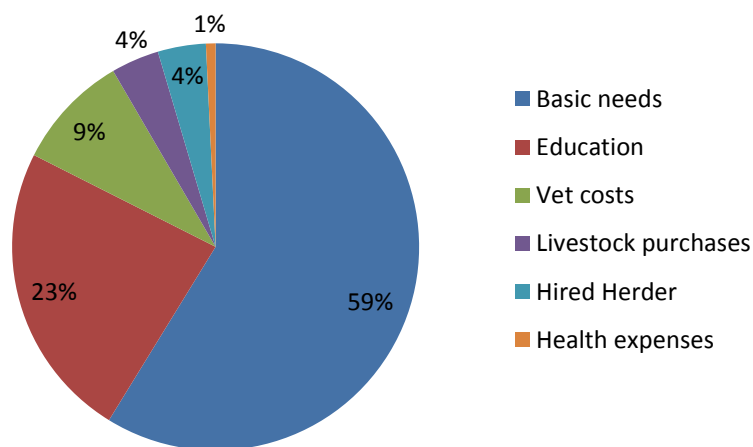
Figure 5.10: Perception of importance of different livelihood activities to household welfare: conservancy members only (n=131)



Reported use of conservancy payments

Conservancy members were asked what they spent their payments on. Almost half of respondents reported spending their payments on basic needs, such as food, clothes (Figure 5.11). Education and veterinary costs for livestock were also commonly reported, although very few reported using the money to actually buy livestock.

Figure 5.11: First ranked expenditure of conservancy income, conservancy members only (n=131)



When asked what people thought of the level of the conservancy payment and what they used it for, many people considered the conservancy payment to be very low. Many considered it enough for some basic needs of the family, and potentially to pay for school fees or veterinary costs, but still not an important part of their income:

'I use it to buy children's clothes, veterinary costs and food.

*C: Do you consider it an important part of your income?*

'I just receive it, but it's not very important money that can be enough for my 10 children who are at school.'

*Senior elder, member of MNC, community interview 18*

'I use the money to pay school fees, buy food, but it's not enough to buy even a sheep.... I am not happy about it because it has been oppressing us, since in the beginning we had an agreement that there would be an increment of the lease payment. So at the next meeting, we will need to decide just two things – for the money to be increased or...we better break-up the conservancy. And there should be free grazing since the lease fee is not worth the value of a steer.'

*Senior elder, member of OOC, community interview 14*

W1: 'I see it as very little because even when you sell your cow the amount that you receive from it you can buy more with than that which you receive from the conservancy'

W2: 'I just use it to buy foodstuff and then it is finished.'

*Group of women, husbands are members, community interview 12*

In these examples, the payment is compared to the value of livestock, against which it fell short in the respondents' perception. This was a common comparison made by both men and women I spoke to. Although it is likely that the payment was enough to buy a cow in some cases, and certainly a sheep, many perceived it as too low for this. People's valuing of livestock over income from a conservancy, together with the restrictions on livestock grazing, creates some animosity. As shown by the elder in the second quote, the conservancy payment is not enough to make up for not being able to graze in the conservancy. This likely has a big influence on how people view the conservancy and its payments.

Women often tended to view the payment as being small, since they don't have direct access to it. The payment is sent to their husband's bank account, and they may or may not receive a portion of it:

W1: We use the little that we get, but it's not much that we can say it will provide for all our family needs.

W2: It's only enough for the needs of the husband unless he decides to buy some food stuffs, since he will not give you any portion of it.

*C: If the women were the ones that received the money what would you do with it?*

W2: We will do many things with it such as buying clothes and food, and paying to educate our children

W3: And if some remains you can also buy a cow.

W2: But I don't think it is enough to buy food and also a cow.

*Group of women, husbands are members, community interview 25*

Others I spoke with found the payment useful as it helped pay for school fees, or in buying certain items:

'I am happy because I don't sell my livestock anymore and I also use the money to pay for school fees for the children....I use the money for the education of my children.'

*One woman, son is a member, community interview 11*

'I can use the money to build a house like this one, which can be used for rent by other people (i.e. urban rental). I can also use it to take care of my livestock and family.'

*Elder, member of Naboisho Conservancy, community interview 9*

In these examples, although these respondents do not mention that they use the conservancy payment to buy livestock, they say that they use it to provide for their livestock as well as their family. The payment also helps prevent them from selling their livestock for cash needs.

Although not ranked as a primary use, a few people reported how they would use their payments to pay for conservancy grazing fines. As discussed earlier both conservancy members and non-members perceived grazing fines to be a large cost, and in the case of conservancy members, as a sum similar to that received per month from the conservancy.

## **5.4 Discussion**

Conservancies have a number of costs and benefits which vary in how they accrue: 1) to conservancy members or non-members or both; 2) direct to the household level or more indirectly at the community level; and 3) at the intra-household level, and specifically in terms of gender. Although this chapter hasn't attempted to empirically measure all costs and benefits, it has looked at what the range of costs and benefits from conservancies might be and who may or may not receive them.

### Benefits

The main financial benefit of conservancies is the monthly payment received by conservancy members. For conservancy members, income from conservancy payments contributes an important portion of their annual household income. In the year 2009-2010, conservancy income made up 21% of total household income of participating households. During this year not all the conservancies in the Mara were fully established, hence it is likely that in following years this percentage would increase. Indeed, it was expected that conservancies would contribute at least 29% of total household income of participating households the following year. Conservancies involve more households than any other conservation activity in the Mara, and make up almost half of the total conservation income accruing to households in the Mara. Conservancies are thus

expanding the reach of conservation revenues to many people in the Mara. The proportion of income now available from conservation is higher than that before any conservancy was started. Conservation contributed an estimated 29% of total annual household income in 2010 to all households, compared to 21% in 2004 (Thompson et al., 2009).

Despite the importance of conservancy payments to overall household income, the reach of conservancy payments is limited to conservancy members only. This study found that only half of households resident in Koyiaki were a member of a conservancy; the other half were thus non-members and ineligible to receive a conservancy payment.

### Costs

In comparison, all households resident in Koyiaki experience the costs of conservancies, the most important of which relates to restrictions on livestock grazing. Conservancies limit livestock grazing to specific areas and to specific times of the year, thus removing large areas of former grazing land. Associated with this, the main direct monetary cost to the household was due to grazing fines when grazing in the conservancy when it was not permitted. These costs were experienced equally by conservancy members and non-members. Conservancy members complain that these costs are often more than what they may receive in payments, such that payments neither compensate for the loss of livestock grazing nor the cost of grazing fines. Furthermore, conservancy non-members also experience the cost of lost grazing space, but do not receive any payment as compensation in return.

The restrictions on livestock grazing point to the large opportunity costs that both conservancy members and non-members experience due to conservancies in Koyiaki. This is particularly pertinent given that livestock is overwhelming the most important activity for Koyiaki households.

### Livestock importance

All households surveyed owned livestock and livestock contribute 56% to overall household income. Livestock was also rated as the most important activity for overall household welfare. For those who don't receive conservancy payments, the contribution of livestock to household income is far higher – 70% compared to 48% who do receive payments – and these households depend much more on livestock than any other household activity. This study also undervalues the contribution of livestock, as milk consumption, and products such as hides and skins were not included in total livestock production income. Other studies have pointed to the huge importance



of milk production, which contributes three quarters of the total gross value of livestock's contribution to the agricultural sector (Behnke and Muthami 2011). Thus estimates of livestock's contribution to pastoral livelihoods found in this study could be as much as 300% higher, with conservancies by extension contributing proportionally less.

Livestock thus remain central to the livelihoods of most rural Maasai, and represent their core economic and cultural strategy (Homewood et al., 2009). There are multiple and flexible ways that livestock are integrated into Maasai livelihoods: as a wealth store; as an investment yielding growth in herd numbers; as a food source (milk); and as production of animals for sale. There is also the cultural and social value attached to owning livestock, outside of its economic value.

In comparison to conservancy payments, which are banked by the individual landowner and thus not as unquestioningly redistributed or shared amongst the family, livestock offer benefits to the whole household in both direct and indirect ways. Livestock income is more easily distributed in cash and in kind amongst various members of the family, including, for example women, who typically accrue small but significant sums from milk and hides sales. Even if not under their direct control or ownership, livestock are a source of subsistence, income and social status to women through control of livestock products (Talle 1988; Njuki and Sanginga 2013). Conservancy payments thus offer little comparative benefit and significant disadvantages to women, especially when considering the restrictions conservancies place on livestock. This can explain why people, and especially women, saw little value to the conservancy payments, and valued them lower than livestock.

The importance of livestock to the community in Koyiaki can be further demonstrated by the fact that when accessed, livestock grazing in conservancies was the most important benefit households received from conservancies, besides the conservancy payment. Conservancies retain a good quality and quantity of grass, when other areas have been heavily grazed and diminished. They are thus important grazing areas, if accessible during drought times. People valued conservancy land significantly higher in terms of livestock grazing attributes than they did non-conservancy land. However, the extent that the benefit of grazing is realised is very much dependant on people being allowed to graze within the conservancy.

### Opportunity costs

This study did not estimate the opportunity costs of lost livestock production or other livelihoods activities such as cultivation. However, given that livestock contribute very much more to total household income than conservancies, and that livestock are valued higher than conservancies, these opportunity costs are likely to be substantial for livestock production.

Norton-Griffiths and Said (2010) argue that wildlife at returns of US\$50 ha<sup>-1</sup>/ya<sup>-1</sup> (similar to those currently available from conservancies in the Mara) are competitive against the returns from cultivation and livestock in areas receiving a mean annual rainfall of approximately 700mm and 900mm respectively, levels which are encompassed within the rainfall gradient covered in the Mara of 500-1200mm/year (Brotten and Said 1995). However, such economic analyses ignore a number of other crucial factors, including the risk management benefits associated with livestock, the cultural and social values attached to livestock, and uncertainties around the long term sustainability of tourism, that need to be considered beyond the economic returns. Furthermore, other more recent research puts livestock as much more economically important than previously thought in Kenya. Behnke and Muthami (2011) estimate the value of livestock at 150% higher than previously thought and only slightly less than that from crops and horticulture combined. This under-estimation, due largely to the difficulties of capturing and integrating the value of milk consumed, applies also to the present study.

Although the highest returns are potentially available from cultivation (Norton-Griffiths and Said 2010), cultivation is not an activity widely taken up in Koyiaki, due to poor yields, unpredictable rains, and recurrent wildlife damage (Thompson et al., 2009). Few people in Koyiaki cultivate, and those who do, are not gaining very much from it. In line with this, cultivation was rated as of very low importance to household welfare. There were no households involved in leasing out land for cultivation as has been reported in other studies in Lemek Group Ranch (Thompson et al., 2009). This is a trend seen outside of Koyiaki and is not touched upon in this study. Thompson et al. (2009) show how involvement in cultivation has declined across the area in recent years. This is thought to be related to cultivation being used as a tenure strategy, with cultivation peaking prior to land titling, and thereafter reducing once title is secured.

### Trade-offs

For conservancy payments to match at least the opportunity costs of forgone livelihoods (Wunder and Albán 2008), they would need to be commensurate with the opportunity costs of lost milk

and livestock production. Since they do not do this, landowners therefore experience large trade-offs when participating in conservancies. This is a common outcome of projects trying to address both conservation and development goals (Adams et al., 2004; McShane et al., 2011). These trade-offs can also explain why some landowners decided not to join a conservancy, or dropped out of it at a later date, choosing rather to live and graze on their land instead (chapter 4; also see case studies in chapter 7).

Since payments do not adequately compensate conservancy members for the restrictions they put on their other livelihood activities, members did not perceive conservancies as their main livelihood activity, but as an important supplementary livelihood. This is shown in the ranking of the importance of livelihood activities to household welfare – conservancies commonly came third, after livestock and a wage/salaried job. This is a common finding from research assessing tourism's contribution to pastoral livelihoods; pastoralists rarely view tourism as a substitute for their usual livelihood activities, but rather as a possible way of supplementing them (DeLuca 2004; Homewood et al., 2009). The fact that people conceptualised the payment amount against the value of a cow, tends to show they value livestock more. It also tends to show how the conservancy and its payments are considered in competition with livestock keeping.

However, conservancy payments are an important source of cash income, and were reported to be used to buy food, pay for school fees, and other household expenses. The study found little evidence of the conservancy payment being used to buy livestock, and thus no evidence of a spill-over effect, although veterinary expenditure was an important use of payments. The extra source of cash, conservancy payments provide, however, can help households to avoid selling their livestock for cash needs. Also, since the conservancy payment is a guaranteed monthly payment, this provides a reliable all-year round source of income to conservancy members, and can prevent households from selling their animals during times of drought. Payments can then be viewed as an important drought coping and risk mitigation strategy helping to reduce pastoral vulnerability (Osano et al., 2013b).

#### Conservancy members versus non-members

The way costs and benefits accrue to the community in Koyiaki varies on conservancy membership. Conservancy members receive payments direct at the household level, and they are also favoured for other benefits, such as access to conservancy grazing, conservancy employment, and also participation in conservancy-related schemes such as predator compensation

programmes. Although non-members do receive a level of these co-benefits, because they tend to accrue at the community level rather than the household level, they are not able to compensate people for the loss of livelihood activities (Gibson and Marks 1995). Moreover, they cannot offset the extra costs that non-members experience in receiving displaced people, settlements and livestock from conservancies (see chapter 7 for more on settlement and livestock displacement).

This disparity in costs and benefits between conservancy members and non-members (where non-members receive all of the costs, but few of the benefits) creates increasing differentiation between conservancy members and non-members. Conservancy members have significantly higher overall incomes than non-members. In chapter 6, I evaluate whether this difference can be attributed to conservancy membership, or possibly to other underlying differences between conservancy members and non-members.

#### High overall importance of conservation in Mara

The data show that overall conservation is an important livelihood activity for Koyiaki households, second only to livestock. The vast majority of households (81%) in Koyiaki are involved in some kind of conservation activity, and conservation income contributes 29% of total household income. A flourishing tourism industry in the Mara creates opportunities for direct tourism employment, or indirect opportunities within the associated tourism supported industries – such as in retail, transport or construction. It also creates business opportunities within these industries. On the more lucrative end, there are very large potential incomes available from renting out a plot in a market centre or from lodge rental fees for those with a lodge or camp on their land. However, these are available to the few who are (or were earlier) able to secure access to such profitable sites. In other areas of Maasailand, conservation incomes are much lower and reach far fewer people. Homewood et al. (2009) found that in other areas of Maasailand across Kenya and Tanzania (Kitengela, Amboseli, Longido, Tarangire) conservation related income was received by only 3-14% of households, contributing only 1-6% of mean of total annual income. The Mara thus has significant wildlife earning potential compared to other areas.

## **Chapter 6 The impact of conservancy participation on wealth**

### **6.1 Introduction**

#### ***6.1.1 Equity of direct payments***

There are compelling theoretical arguments that PES and direct payments for conservation can be more economically efficient than indirect approaches such as ICDPs (Ferraro and Kiss 2002; Ferraro and Simpson 2002). Direct payments allow for more precise targeting of conservation funds thus maximising environmental benefits per dollar spent (Ferraro and Simpson 2002). Also, since the link between payments and conservation is clear, practitioners can be confident their interventions will have an effect on the areas targets for conservation rather than elsewhere (Ferraro 2001).

There is however concern over the equity issues in direct payments approaches (Corbera et al., 2007; Sommerville et al., 2010). Payments made under such approaches usually benefit landowners since environmental services are the result of particular kinds of land use (Pagiola et al., 2005). Furthermore, PES is often linked to formal land ownership where formerly communal land becomes privatised. The distribution and ownership patterns of land can thus have important poverty and equity implications for PES schemes (Pagiola et al., 2005). Since PES schemes tend to be concerned with issues of efficiency rather than equity, they use existing property rights systems as given and equitable (Lele et al., 2010). Most participants in PES schemes tend to be relatively well-off landholders (Zbinden and Lee 2005), and the poor, who are less likely to hold title to land, may then be excluded from participating (Pagiola 2008; Wunder 2008). PES tied to land ownership can thus lead to further concentration of wealth into the hands of a few and the exclusion of the poor from their land or resources (Kronenberg and Hubacek 2013).

#### ***6.1.2 Need for evaluation studies***

Conservation science and practice suffers from a lack of evaluations in understanding and measuring the effectiveness of conservation interventions. This is true for a number of different approaches to biodiversity conservation (Miteva et al., 2012) including, PES (Engel et al., 2008; Wunder et al., 2008; Pattanayak et al., 2010), protected areas (Schmidt-Soltau and Brockington 2004; Wilkie et al., 2006; Coad et al., 2008), ICDPs (Hughes and Flintan 2001) and ecotourism (Kiss 2004). There is a lack of in-depth empirical assessments of conservation interventions, either for conservation or development (Hughes and Flintan 2001; Wilkie et al., 2006; Ferraro 2011). Thus,

there have been several calls for better evidence of the impact of conservation interventions, and specifically for more credible evaluations and systematic reviews based on scientific evidence and research (Pullin and Knight 2001; Ferraro and Pattanayak 2006; Sutherland et al., 2004).

A wide concern is that many conservation decisions are not based upon evidence but rather anecdotal sources (Pullin and Knight 2001, 2003; Pullin et al., 2004; Sutherland et al., 2004; Ferraro and Pattanayak 2006). Assessments of conservation interventions often only provide qualitative case study narratives rather than evaluation of evidence (Ferraro 2009). Perception based methods of conservation impact can be unreliable as people's perceptions are highly subjective and can be shaped by many factors such as livelihood concerns (Lund et al., 2010). Thus, conservation assessments require evaluation methods that go beyond the anecdotal reporting of results (Ferraro and Pattanayak 2006; Caplow et al., 2011).

### **6.1.3 Impact evaluation**

Impact evaluation is a tool that can be used to assess the outcomes of a conservation intervention. In recent years, impact evaluation has become a growing field in the analysis of environment and development interventions (Andam et al., 2008, 2010; Jagger et al., 2010; Caplow et al., 2011; Arriagada et al., 2009, 2012). Impact evaluations assess the degree to which changes in outcomes can be attributed to a particular intervention, rather than to any other (confounding) factor that also affects the outcomes. Impact evaluations help to establish causation - i.e. that the observed change is a true impact of the intervention and not from anything else. Impact evaluation thus aims to identify the causal impacts of an intervention on one or more outcomes by estimating the counterfactual – the outcome that would have happened in the absence of the intervention (Ferraro and Pattanayak 2006).

To estimate the counterfactual, control groups are needed to differentiate intervention impacts from impacts caused by confounding factors. Confounding factors are found in nearly all environmental programmes and can affect both intervention assignment and the measured outcomes (Ferraro 2009). For example, confounding factors may 1) affect the measured outcome by being correlated with the intervention and the outcome, and 2) affect intervention assignment through selection bias – e.g. where treated units (in this case landowners) are selected, or select themselves, into the intervention on the basis of characteristics that also affect the outcome (Ferraro 2009). Confounding factors can thus misrepresent evaluations of impact by masking programme failure or mimicking programme success (Ferraro 2009).

Propensity score matching (PSM) is a technique that attempts to reduce the effects of selection bias by seeking to achieve a balanced distribution of observable covariates across treatment and control groups (Rosenbaum and Rubin 1983). By controlling for possible confounding factors between treated and control groups, matching can help establish causation between an intervention and a measured outcome. In the evaluation of social outcomes, PSM has been used to assess the impacts of protected area on poverty (Andam et al., 2010), and the impact of participation in an ICDP on income and wealth (Weber et al., 2011).

#### **6.1.4 Research questions**

To understand who benefits from conservancy payments in Koyiaki, and the impact participation has on household wealth, this chapter asks the following questions:

- What are the trends in land ownership amongst households in Koyiaki?
- To what extent do households participate in conservancies?
- What are the determinants of conservancy participation?
- What is the impact of conservancy participation on household wealth, measured through income, assets and expenditure?

## **6.2 Methods**

### **6.2.1 Data**

The majority of the data used in this chapter were collected through the household questionnaire survey. Sampling was random based on a list of all Koyiaki households. The questionnaire was administered on 258 households resident in Koyiaki, and captured 133 conservancy members and 125 non-members. The questionnaire enquired about a household's socio-economic status, land ownership and conservancy participation. More details on the questionnaire and sampling are given in chapter 3.

The household survey gathered information on a range of household variables for use in an analysis of conservancy participation and its influence on household wealth. These comprise socio-demographic, spatial, and some asset variables that are used as independent or predictor variables (Table 6.1), and household income, expenditure and other asset variables that are used as indicators of wealth (Table 6.2).

## **6.2.2 Analysis variables**

### Independent household variables

A number of household variables were first used as predictor variables to investigate the determinants of conservancy participation, and then used as matching covariates to match conservancy member and non-member households. These variables are in the main, structural variables, i.e. variables that are not a function of conservancy participation, and so do not necessarily change as a result of participation. These variables were chosen through a qualitative analysis of the main household characteristics or factors that will influence or explain whether a household participates in a conservancy and which may also affect household wealth. This is an important part of the matching process; to make sure appropriate variables or covariates are identified and used in matching (Ravallion 2008). The variables chosen were known *a priori* to be strong determinants of household livelihood strategies and wealth based on existing studies in the Mara and the wider Maasailand (Nkedianye et al., 2009; Thompson et al., 2009).

Land size owned, although considered a household asset, is used as an independent variable in this study. This is because conservancy participation is conditional upon land ownership, which is thus a direct determinant of participation. Although a measure of wealth, I do not expect land size to change as a result of conservancy participation due to the restrictions on selling land registered to the conservancy. Although this does not rule out the possibility of conservancy members having more cash to buy land outside of a conservancy, the pool of available land will be greatly reduced. Thus, the size of land owned per household was included as a predictor variable in the logistic regression and a matching covariate in PSM.

Livestock herd size is a known important determinant of household wealth in the study area and beyond (Nkedianye et al., 2009; Thompson et al., 2009). However, due to the strong possibility that herd size is influenced by conservancy membership, because conservancy members may either, 1) invest their incomes in livestock, or 2) reduce their livestock in response to conservancy land restrictions, it is excluded as a matching covariate. However, I retain its use as a predictor variable to investigate the determinants of participation.

A number of household socio-demographic characteristics were also considered for use as independent variables (Table 6.1). Holding a leadership position is shown to be an important factor in the acquisition of wealth (Homewood et al., 2004). In this analysis, a household head's leadership status is used as a binary indicator variable with levels: leadership or no leadership



position. Since conservancy land committees are only occupied by conservancy members, these leadership positions are not used in this analysis so as to avoid biasing leadership positions towards conservancy members. Other household characteristics used as regression variables include household head age and education level, and household size and education.

Table 6.1: The range of independent variables collected, and those used as predictor variables in logistic regression (LR) of determinants of conservancy participation, and as matching covariates in propensity score matching (PSM)

Category	Variable	Description	LR	PSM
Household socio-demography	Household head age	Age of household head in years	X	X
	Household head education	Education of household head in years	X	X
	Household all education	Percentage of children aged 5-16 years in school	X	
	Household head leadership position	Whether the household head currently holds or previously held a leadership position or not – conservancy positions left out	X	X
	Household size in AUs	Size of household as measured in adult equivalents (AU) <sup>40</sup>	X	X
	Total productive workers	Number of productive workers in households, aged 6+, not in school		
	Total land size owned, acres	The size of land owned by the household in acres	X	X
	No. of parcels owned	The number of different land parcels owned by the household		
	Livestock owned, TLUs	Number of tropical livestock units (TLU) owned by the household <sup>41</sup>	X	
Household spatial factors	Distance to MMNR (km)	Distance from boma to nearest border of the MMNR	X	X
	Distance to town (km)	Distance from boma to nearest town/market centre	X	X
	Boma inside or outside a conservancy	Whether the household's boma is located inside or outside of a conservancy	X	X

Although participation in conservancies is strongly dependent on gender – since generally males hold title to land and participate in conservancies, whereas women do not - gender of the household head is not included as a variable in this analysis. This is because the sampling of households in the survey was biased towards men, and few women were captured.

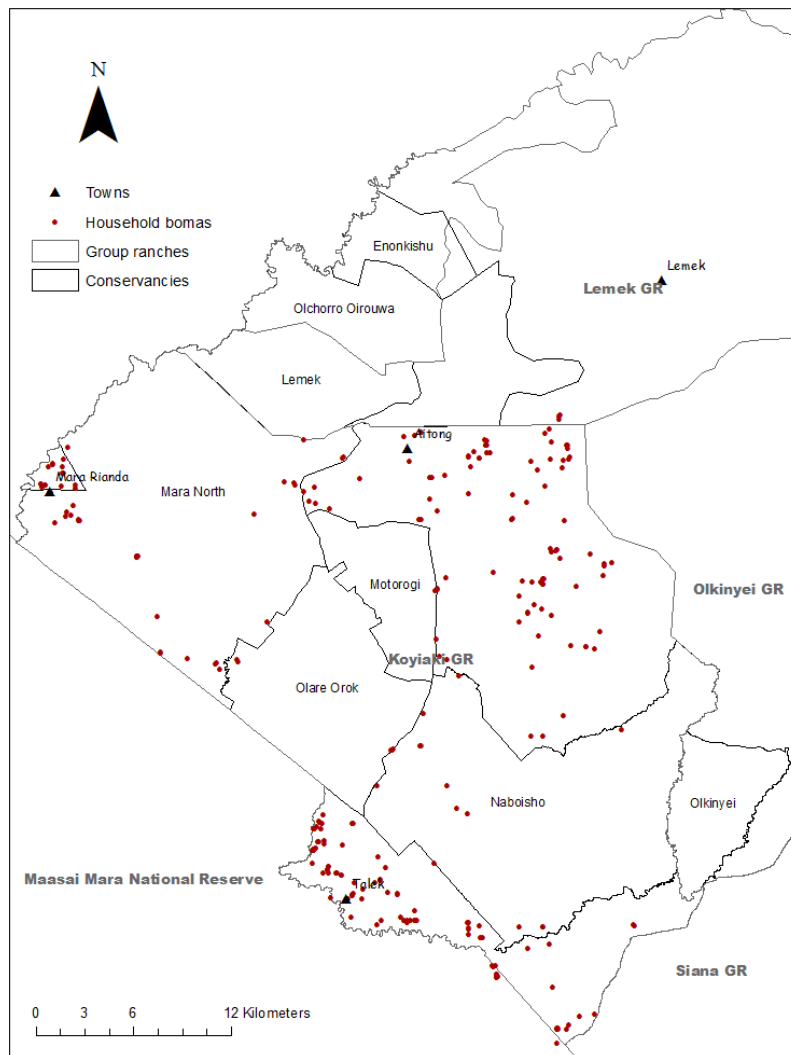
Three spatial variables were chosen for use as independent variables in this analysis. Spatial attributes consisting of the distance to high wildlife densities, and the distance to town have been shown to be important predictors of wealth in the study area (Thompson et al., 2009). Global Positioning System (GPS) points were taken for each household and the distance from a household's settlement (or boma) to: 1) the nearest town, 2) the Maasai Mara National Reserve

<sup>40</sup> See note in Chapter 3 describing AUs

<sup>41</sup> See note in Chapter 3 describing TLUs

(MMNR) border, and 3) whether the household is located inside a conservancy or not, determined in ArcMap 10. Figure 6.1 shows a map of the location of all surveyed households.

Figure 6.1: Map showing GPS points of all surveyed households. Conservancies, towns and other group ranches are also show. Households were spread out through Koyiaki Group Ranch and located both inside and outside of conservancies.



### Indicators of household wealth

Different sources of household income, assets and expenditure were used as indicators of wealth (Table 6.2). These indicators are the potential outcomes of participation; for example, conservancy payments generate more household income, which can be used to buy more assets, and result in higher expenditures. Following the matching of conservancy member and non-member households, these wealth variables were used to determine the impact of conservancy participation on household wealth (see matching section below for more details). The mean total

annual household income was used and was also disaggregated into incomes from different livelihood activities. Household incomes and sources are explored further in chapter 5.

Table 6.2: Variables used as indicators of wealth

Category	Variable	Description
Household economy	Total annual income	Gross aggregate household income from all sources – including livestock income, cultivation income, off farm income, and conservancy payments
	Annual income from livestock production	Gross annual revenue from livestock and milk sales, plus value of livestock slaughtered and livestock gifts received. Value of milk consumption is not included
	Annual income from cultivation	Gross annual revenues from crop sales, plus value of crops consumed
	Annual income from off-farm activities	Total annual revenues from off-farm activities – including both conservation and non-conservation related activities (but excluding conservancies)
	Annual income from off-farm activities, related to conservation	Total annual revenues from activities related to conservation only (excluding conservancies)
	Annual income from off-farm activities, unrelated to conservation	Total annual revenue from activities not related to conservation
Household assets	Household asset index	Index of items owned by household. (Index range: 0 - 3.05)
	Housing quality index	Index of quality of houses used by household
Household expenditure	Monthly household expenditure	Households monthly expenditure on a number of household items and requirements
	Monthly expenditure per AU	Monthly expenditure per adult equivalent

Household assets were measured through two asset indices; a household asset index and a housing quality index. A household asset index was constructed using principal components analysis (PCA) with seven household assets (Table 6.3). Data were only collected on the presence of an asset rather than the number of an item, so PCA was done using binary responses corresponding to whether or not an item is owned by a household. The Kaiser-Meyer-Olkin value was  $KMO = 0.58$ , verifying the sampling adequacy for the analysis (Kaiser 1974). Bartlett's test of sphericity ( $X^2=167.92$ ,  $n=21$ ,  $p<0.001$ ) indicated that correlations between items were sufficiently large for PCA (Bartlett 1954). Three components were extracted from the analysis, which jointly explained 61% of the total variance. Only the first principal component was used to calculate the index, which used on its own captures 27% of the variance. The household asset index value was calculated as = (presence of phone x 0.446) + (presence of radio x 0.549) + (presence of TV x 0.650) + ..... + (presence of solar x 0.694).

Table 6.3: Principal components analysis used to develop the household asset index

Asset	Component <sup>‡</sup>		
	PC1	PC2	PC3
1. Phone	0.446	0.683	-0.146
2. Radio	0.549	0.583	-0.136
3. TV	0.650	-0.391	0.61
4. Bicycle	0.203	0.307	0.411
5. Motorbike	0.429	-0.86	0.691
6. Car	0.512	-0.256	-0.634
7. Solar	0.694	-0.384	0.066
Percent of variance explained	27%	18%	16%

<sup>‡</sup>Extraction Method: Principal Components Analysis, 3 components extracted

A household quality index was constructed using the quality of housing index as used by the International Livestock Research Institute (ILRI) as a livelihood indicator (Njuki et al., 2011). The index was adapted to data collected in this survey which collected information on the material of a house's roof and walls, and is shown in Table 6.4. The roof and walls of each house in the household was scored appropriately and then combined to calculate a housing quality index.

Table 6.4: Housing quality index (adapted from CASHPOR's quality of housing index as used in ILRI's livelihood indicators (Njuki et al., 2011).

Wall material	Roof material
Mud=0	Mud or Grass=0
Iron sheets or wood=2	Iron sheets =2
Cement or Bricks=6	

Household expenditure measures the estimated monthly expenses on a number of household items including, food, education, livestock purchases, health expenses and veterinary costs. All expenses were summed and then calculated as a monthly cost per household. Household expenditure was also calculated per adult equivalent.

### 6.2.3 Methods of analysis

#### Trends in land ownership

As an important element of conservancy participation, land ownership amongst households was first investigated. The total size and number of parcels owned by households was explored, as well as the method through which land was acquired, and the year in which it was acquired. Land ownership was analysed in relation to the household head's group ranch membership status, gender, age, and leadership position using chi-squared tests and Pearson correlation coefficients.

Land ownership is a potentially sensitive issue, leading to concerns over the quality of data reported by household heads. Although this must be taken into consideration in the analysis of results, I or my research assistants did not feel that respondents were misreporting data regarding the size of land they owned. This was partly due to working with research assistants who were well-known to the respondents, but also partly because land allocation of two blocks in Koyiaki was just completed in the months preceding the survey and so it was a subject many people were already talking much about.

#### Participation of households in conservancies

Households were asked whether or not they had a household member who was a member of a conservancy. If so, data were collected on the size of land that was joined to a conservancy. If more than one household member was a member of a conservancy, or if household members were members of multiple conservancies, details were recorded about all the conservancies that the household participated in. Differences between conservancy members and non-members in terms of their household characteristics were explored using t-tests (for continuous data) and chi-squared tests (for categorical data).

#### Determinants of conservancy participation

Since owning land is a prerequisite to conservancy participation, further analysis of the determinants of participation, and in the matching of members and non-members, only uses land owning households. This dataset includes 133 conservancy member and 73 non-member households. However, the implications for the full set of households are returned to at the end of the chapter for a comparison of wealth between conservancy members and non-members.

First, differences in household characteristics were again explored between conservancy members and non-members for the landowning only dataset. I then used logistic regression to establish which variables best predicted whether a household was a member of a conservancy or not. Ten independent variables from Table 6.1 were used in the model. I left out productive workers and the number of parcels owned as these were highly correlated with household size and total land size owned respectively, and so caused multicollinearity.

Logistic regression uses a binomial model where one or more independent variables are used to predict the response variable which has only two possible outcomes - i.e. being a conservancy member or not – where participation = 1 and non-participation = 0. I carried out logistic

regression in SPSS 20 and tested for multicollinearity among the predictors using the Variance Inflation Factor (VIF) and correlations between pairs of predictors. Multicollinearity means high correlations between variables which can adversely affect regression estimates and make it difficult to assess the individual importance of a predictor variable. I left out variables which had correlations greater than 0.7. The model was assessed to see how well it fit the data, using the Hosmer-Lemeshow goodness-of-fit test, as was the contribution of individual predictors. The Nagelkerke  $R^2$  value tested the overall fit of the regression model, whereas the regression coefficients of individual predictors tested the contributions of the individual predictors to the model. Residuals were checked for homogeneity and normality (in the case of t-tests). Although transformed independent variables in some cases satisfied the model assumptions better, the significance of variables in the model and conclusions did not change - hence for ease of interpretation the untransformed data and models are presented.

#### Propensity score matching: assessing the impact of conservancy participation on wealth

To investigate the impact of conservancy participation on household wealth I matched conservancy member and non-member households based on similar observable household characteristics. The aim of the matching processes is to identify a control group that is similar to the treated group with respect to their observable characteristics with only one difference; the control group did not participate in the programme.

Matching reduces bias caused by confounding variables which affect the measured outcomes and participation (Ravallion 2008). It is misleading if the effects of a particular variable are already correlated with those of other variables; for example, in the case of land size owned, which is correlated with participation but which can also likely affect the observed outcome – wealth (Ravallion 2008). Matching, by looking at changes in one variable whilst all other factors are fixed, reduces the chances of confounding variables influencing the results in unknown ways.

In an evaluation of conservancy impact, selection bias is also a problem because members are not randomly allocated into a conservancy, but their participation is based on owning land in a particular area and also their decision to join their land to the conservancy. It is likely that many of the factors that influence participation will also influence the outcomes – so there must be a general presumption of selection bias when comparing outcomes between members and non-members (Ravallion 2008).

Propensity score matching (PSM) uses regression of a number of observable household characteristics (or covariates) to calculate a propensity score for each household (Rosenbaum and Rubin 1983). The propensity score is a single number summary based on all the available covariates that express the probability that a given subject is assigned to the treatment condition, based on the values of the set of observed covariates. Using the propensity score, the matching procedure (see below) then attempts to imitate the conditions of a randomised experiment to be able to evaluate the causal effect of participation. The resultant matched pairs dataset is then used to investigate differences between member and non-member households in a number of household wealth indicators.

In setting up the data for matching I left out landless households in the matching (n=52), because conservancy participation is conditional upon land ownership so those households that do not own land are not eligible to participate and cannot become conservancy members. The basic premise of matching the controls to the treated is to uncover the 'average treatment effect on the treated' (Rosenbaum and Rubin 1983), which is essentially asking 'what is the effect of participation on those households that did participate?' Therefore, the presumption is that only those households able to participate qualify for such consideration.

#### The PSM model

PSM was carried out in SPSS 20 using the PSM add-on developed in R software (Thoemmes 2012). Only variables which are not likely to be affected by participation in conservancies were included in the matching. Eight independent household variables as used in the logistic regression were then used as matching covariates (Table 6.1). The number of livestock owned was left out because of the strong possibility of herd size being influenced by conservancy participation. Productive workers and the number of parcels owned were left out due to multicollinearity. The percentage of children 5-16 years in school was also left out due to incomplete data not being handled within SPSS's propensity score matching package. The model used nearest neighbour matching, where in finding matches in the two groups each member (or treated) unit is matched to a unit in the non-member (control) group that has the closest propensity score (i.e. the nearest neighbour). The other options selected for fine-tuning matching included:

- *Matching with replacement* – in which a single unit in the control group is reused to be matched to more than one unit in the treated group. This reduces the overall imbalance

between the two groups, because the closest possible unit in the control group can be used for matching, even if this unit also has been used for a different match.

- *Matching 1:2* – where one treated unit can be matched with up to two control units with similar propensity scores. This is helpful when the sample sizes of the two groups differ substantially and 1:1 matching would discard many units that could be potentially matched (Thoemmes 2012).
- *A caliper of 0.2* – this prevented ‘bad’ matches – i.e. matches of units that have very dissimilar estimated propensity scores and hence are most likely imbalanced on their covariates as well. Defining a small caliper usually results in better balance at the expense of finding fewer units that can be successfully matched (Thoemmes 2012).
- *Discarding units outside the area of common support in both treated and control group* - the area of common support is the region of the distributions of estimated propensity scores in treated and control groups for which units in both groups are observed. Discarding units outside of this region helps to improve balance on covariates, and avoid extrapolation to units in one group that were so dissimilar on their covariates that no comparable units in the other group were found.

Matching in this way ensured that only few units were unmatched, but it also resulted in good balance. Univariate and multivariate balancing tests were done to evaluate the matches by comparing the matching variables in the treated and matched control groups (see results).

#### Evaluation against wealth indicators

To investigate the effect of conservancy participation on household wealth, I compared the income, assets and expenditure of matched member and non-member households. First, the data were weighted using the propensity score weight, then t-tests were carried out on a number of different wealth indicators to assess the difference in means between conservancy members and non-members.

To explore the effect that matching has on evaluating wealth, I compared the differences in means tests for unmatched (naïve) comparisons and the matched comparison. I thus evaluated wealth differences between conservancy members and non-members on three different datasets:

- 1) Unmatched full dataset (n=258)
- 2) Unmatched landowners only dataset (n=206)
- 3) Matched dataset (n=183)



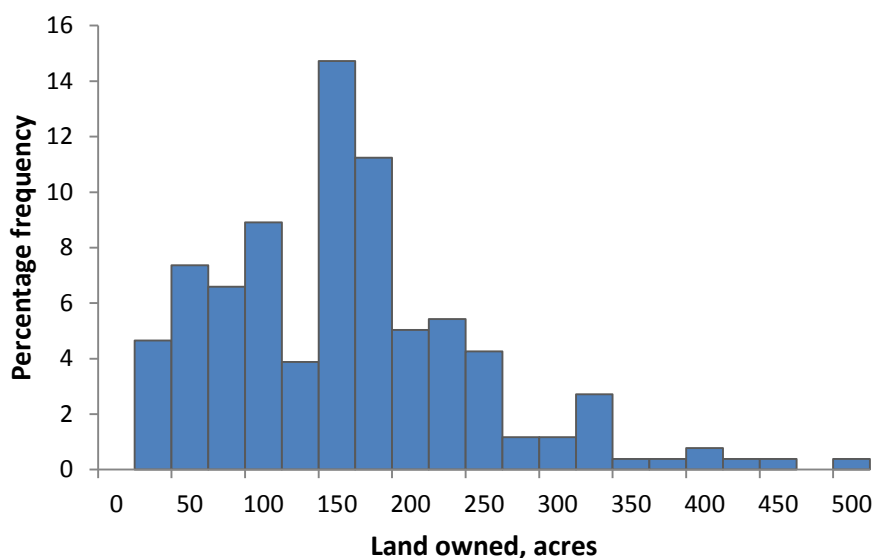
## 6.3 Results

### 6.3.1 Land ownership

In the survey sample, 80% (n=206) of households owned land whereas 20% (n=52) did not. Owning land was significantly associated with the group ranch membership status of the household head ( $\chi^2=83.70$ ,  $df=1$ ,  $p<0.001$ ). For those households whose head was a member of a group ranch (Koyiaki or neighbouring group ranch), 93.7% (n=177) owned land. The few household heads who were members of a group ranch but did not own land (n=12), were in almost all cases members of group ranches neighbouring Koyiaki (e.g. Olkinyei and Siana), which were not yet subdivided. This implies that all group ranch members received, or were due to receive, land through group ranch subdivision. In comparison, 69 households in the household survey were not members of group ranch, and 29 (42%) of these households owned land whereas 40 (58%) had no land. Those owning land had either acquired land via another means (e.g. buying or inheriting it, also see Figure 6.4) or in rare cases another household member was a group ranch member and had received land through land subdivision.

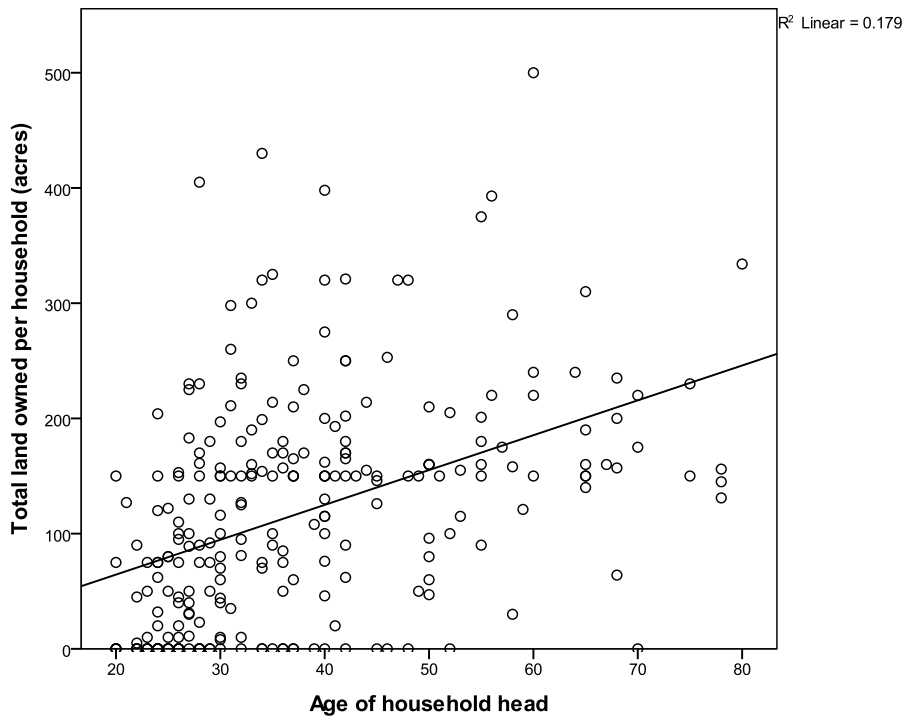
For landowning households, the mean size of land owned per household was 148 acres (SD=88, median=150) although this varied widely from 5 to 500 acres (Figure 6.2). Many households did own 150 acres (the expected land size due to each group ranch member from land allocation) however many owned far more than this.

Figure 6.2: Distribution of total land size owned per household (n=206)



Household land size was positively correlated with the age of the household head ( $r = 0.424$ ,  $n=258$ ,  $p<0.001$ ) (Figure 6.3). Household land size was also significantly associated with a household head holding a leadership position ( $r_{pb} = 0.280$ ,  $n=258$ ,  $p<0.001$ )<sup>42</sup>, such that households whose head held a leadership position, owned significantly more land.

Figure 6.3: Relationship between the age of the household head and total land size owned per household (n=258)



The majority of households that did own land owned more than one parcel of land (Table 6.5). Ownership of two separate parcels was most common and 53% of households owned two or more parcels. The mean number of parcels owned was 1.66 (SD=1.31). Total land owned per household can thus be fragmented into a number of separate parcels rather than forming one continuous whole. Collectively, the 206 sampled households owned 427 parcels of land. These were predominately located within Koyiaki, although 38 parcels were located in neighbouring group ranches.

<sup>42</sup>  $r_{pb}$  is Pearson's point-biserial correlation coefficient, used to quantify the relationship between a continuous variable and a categorical variable with only two categories (yes/no), as in the case of land size vs leadership position.

Table 6.5: Number of parcels owned per household

No. of parcels owned	No. of households (n=258)	% of households
0	52	20%
1	70	27%
2	81	31%
3	38	15%
4	11	4%
5-8	6	2%

In the majority of cases (87%), land owned by the household was owned by the household head. The remaining 13% was owned by other members of the household. Only 12 households (5%) had a woman who owned land; in 6 households the female household head owned land, and in the other 6 a female relative to the household head owned land. Since women are not included on the group ranch registers, they are not entitled to land during allocation, and thus very few own land. In all but one case a women had inherited the land she now owns, except for one woman who had bought 10 acres of land.

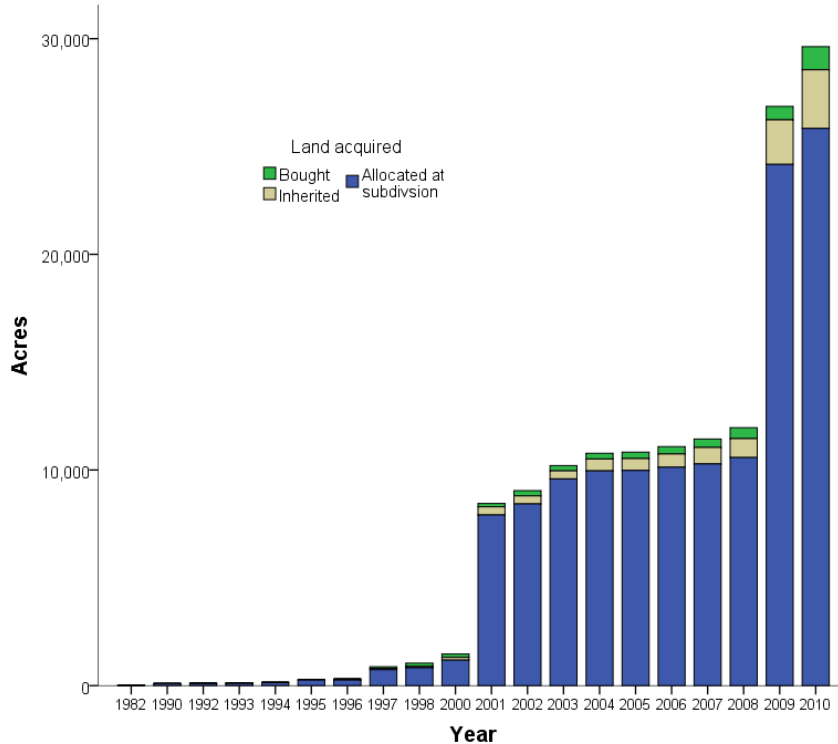
Of the 427 parcels of land owned by the sample households, 72% (n=308) of these had been acquired through subdivision, 20% (n=84) through inheritance and 8% (n=35) through land purchases. As described in chapter 2 land allocation in Koyiaki occurred over a period of 25 years in a number of stages, with the Talek area being the first in 1985, blocks 1 and 2 in 2000, and block 3 and 4 in 2009. These are reflected in Figure 6.4 which shows how land ownership amongst study households rose sharply between 2000 and 2001, and then again between 2008 and 2009. Land acquired through subdivision was many times larger than land acquired through inheritance or land purchases.

### ***6.3.2 To what extent do households in Koyiaki participate in conservancies?***

Landowners are eligible to participate in a conservancy if the land they own falls within a conservancy area. They can then choose whether to join the conservancy or not. As shown above, 206 (80%) households in Koyiaki Group Ranch owned land. However, only 147 (57%) households owned land in a conservancy area. The remaining 111 households (43%) either did not own any land, or the land they owned was remote from a conservancy, making them ineligible to join a conservancy. Not all those households who owned land in a conservancy had

joined that conservancy. Of the 14 households who owned land in a conservancy, 11 chose not to join and 3 had not joined for some reason related to land administration<sup>43</sup>.

Figure 6.4: How land was acquired amongst households over time (n=206)



This leaves 133 (52%) households in which a household member was a member of at least one conservancy in the Mara (Table 6.6). Conservancy members receive a payment, usually monthly, but in some cases less often, from the conservancy. If a household owns multiple parcels of land it is possible they can be members of multiple conservancies. Indeed, 22 households (9%) were participating in two or three conservancies. In these cases, the household head owned land in, and thus became a member of, two or three conservancies or, in rarer cases, another member of the household owned land in, and was also a member of, a separate conservancy.

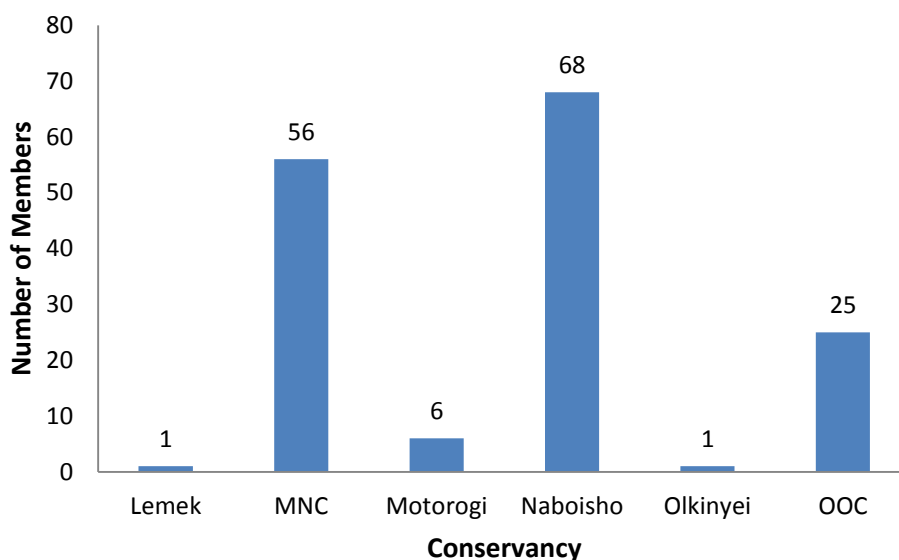
Table 6.6: Participation of households in conservancies (n=258)

Participation of household	N	%
In 0 conservancies	125	48.4
In 1 conservancy	111	43.0
In 2 conservancies	21	8.1
In 3 conservancies	1	0.4

<sup>43</sup> This includes for example, a case where a household head had just purchased land, but had not acquired the title deed documentation as yet, and a case when due to a land allocation error, a parcel of land had been allocated twice.

As a result of these multiple memberships within households, the 133 households owned a total of 157 land parcels joined to a conservancy. These parcels were spread amongst the different conservancies in the Mara as shown in Figure 6.5. Naboisho Conservancy (43%) was the most common conservancy for households to participate in, followed by the Mara North Conservancy (MNC) (36%) and the Olare Orok Conservancy (OOC) (16%). Membership of different conservancies as represented here is reflective of the size of the conservancy and the number of members. For example, MNC and Naboisho Conservancy are the biggest conservancies with the most members (see chapter 4, Table 4.1), thus these were the most commonly reported amongst sampled households.

Figure 6.5: Membership of the 133 households to different conservancies. Since some households are members of more than once conservancy, a total of 157 land parcels are joined to a conservancy.



In terms of gender, only 3% (n=4) of parcels under conservancy were owned by women compared to 97% (n=153) by men. Gender is not looked at further for differences between members and non-members since the survey captured too few female household heads to analyse.

What is the distribution of land size joined to a conservancy?

The distribution of the size of individual parcels joined to the six different conservancies reported above shows that the most common size of parcel under conservancy is 150 acres (mean=104, SD=50.8) (Figure 6.6). Many parcels are this size because this was the intended land size due to each group ranch member during land subdivision and allocation. There are a number of parcels

which are less than this, and few parcels larger than this. This distribution of parcels thus indicates that there are few households set to benefit widely disproportionately to the others in particular conservancies based on a land-based rent system. However, when investigating the total land that conservancy members have when all their conservancy land is pooled together, we see more households with disproportionately larger land sizes than the average size (mean=122, SD=65.1) (Figure 6.7). In these cases, households own land in, and have joined, two or three conservancies. They would therefore have much more to benefit than most others under the land-based rent system.

Figure 6.6: The distribution of combined parcel size for the six conservancies (n=154 parcels)

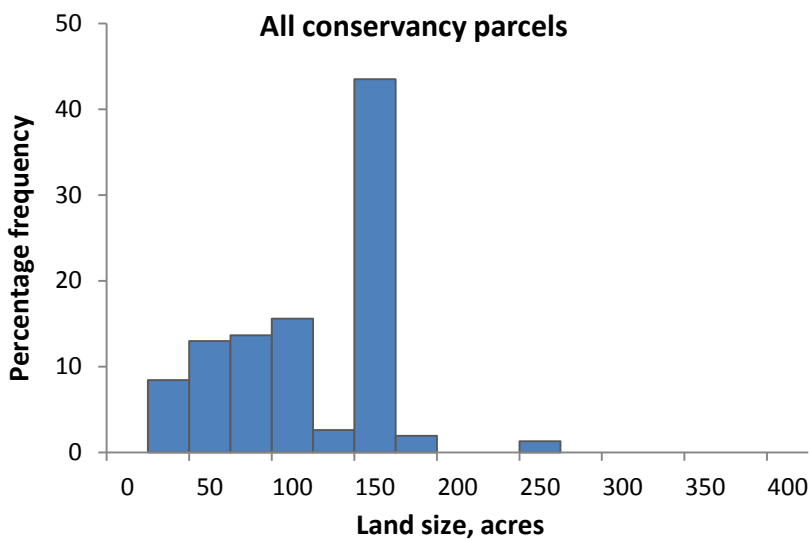
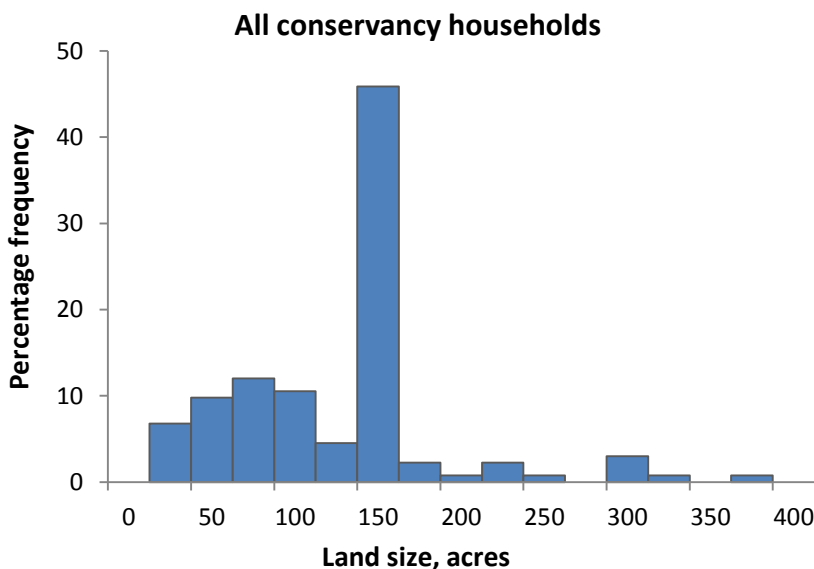


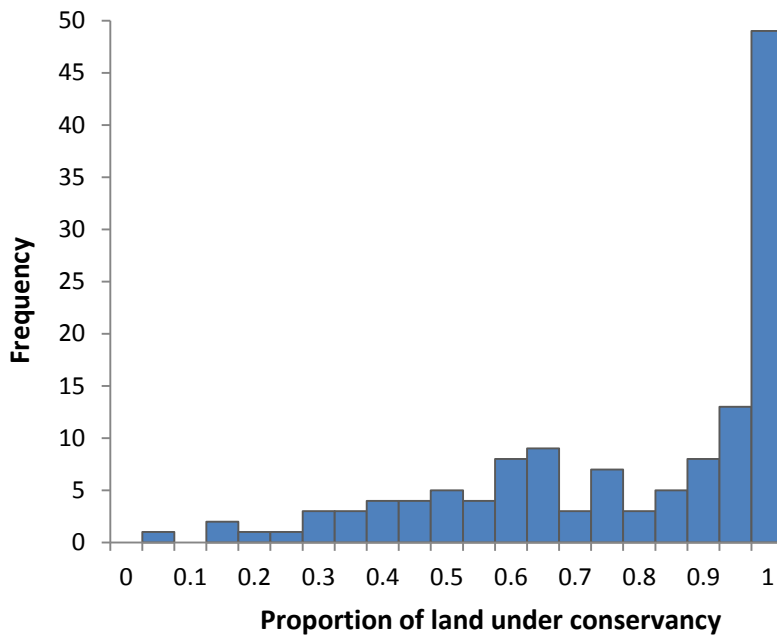
Figure 6.7: The distribution of the total land size under conservancy for all conservancy member households (n=133)



What proportion of their land do conservancy members have joined to a conservancy?

The mean proportion of their land conservancy members had joined to a conservancy was 0.77 (Figure 6.8). Most conservancy members thus had more of their land joined than not joined to a conservancy. In fact, 37% of conservancy members had all their land joined to a conservancy. This has implications to where people will settle and graze outside of conservancies (chapter 7).

Figure 6.8: Proportion of their land conservancy members have joined to a conservancy (n=133)



**6.3.3 How do conservancy members and non-members differ in their household characteristics?**

I compared conservancy members and non-members in terms of their household characteristics – including socio-demographic, land, livestock and spatial variables (Table 6.7). The household head was significantly older and more likely to hold a leadership position in conservancy member households than in non-member households. As mentioned earlier any leadership position created by a conservancy was excluded to avoid biasing the analysis of leadership positions towards conservancy members. However, many of those that did now hold a conservancy leadership position had held, or currently held, other often-conservation related leadership positions.

Conservancy member households were significantly larger than non-member households. Conservancy member households also owned significantly more land than non-member households. This trend is expected since owning land in a conservancy area is a prerequisite to

being able to participate in a conservancy. Conservancy member households on average own 2.6 times more land than non-members households. Conservancy member households also owned significantly more parcels than non-member households.

Conservancy member households also owned significantly more livestock than non-member households, although there was no significant difference when looking at TLUs per AU. There was no difference between conservancy members and non-members in terms of any of the three spatial characteristics, or any other characteristic.

Table 6.7: Summaries and difference in means tests for household variables between conservancy member (n=133) and non-member (n=125) households (full dataset)

Household variable	Member HHs (SD) (n=133)		Non-member HHs (SD) (n=125)		t or $\chi^2$
Household head age, years	40.80	(13.87)	34.35	(13.00)	3.849***
Household head education, years	3.02	(4.90)	3.00	(4.67)	0.038
Household education, 5-16 yrs sch, %	74.42	(31.18)	74.67	(29.78)	-0.060
Household size, AUs	8.36	(3.91)	6.59	(3.98)	3.596***
Productive workers	4.77	(2.34)	4.10	(2.65)	2.159
Distance to MMNR, km	8.88	(8.48)	9.67	(9.17)	-0.717
Distance to town, km	6.96	(5.06)	7.85	(4.55)	-1.484
No. of livestock, TLUs	76.60	(65.20)	57.03	(58.92)	2.524*
TLUs per AUs	9.40	(7.31)	8.63	(5.99)	0.917
Total land size, acres	167.14	(87.75)	65.53	(81.32)	9.630***
No. of parcels owned	2.20	(1.09)	1.08	(1.28)	7.550***
					<u>Chi-square (<math>\chi^2</math>)</u>
Household head leadership position	27.8%		12.8%		8.906**
Boma in/out conservancy	18%		20.8%		0.313

\*significant at p<0.05 level; \*\*Significant at p<0.01 level; \*\*\*Significant at p<0.001 level

#### **6.3.4 What are the determinants of conservancy participation?**

A logistic regression was done to identify the determinants of conservancy participation. Only land owning households were included in the analysis since conservancy membership is conditional upon land ownership, so landless households would thus be unable to participate. Leaving out landless households enables the importance or strength of variables that predict participation to be better assessed. First, for the land owning only dataset conservancy members and non-members were compared in terms of their household characteristics (Table 6.8). Total land size owned and household head leadership status remained as significantly different between conservancy members and non-members. In addition, distance to the MMNR is now significant; conservancy members live significantly closer to the MMNR than non-members.



Ten regression variables were then used in the logistic regression (Table 6.9). The model produced a significant overall result:  $\chi^2(10)=40.891$ ,  $p<0.001$ . The Nagelkerke  $R^2$  of 0.275 indicates a good relationship between prediction and grouping, indicating that the model explains 28% of the total variation. The Hosmer and Lemeshow goodness of fit test is not significant indicating that the model is a good fit to the data ( $\chi^2=10.514$ ,  $df=8$ ,  $p=0.231$ ).

Table 6.8: Summaries and difference in means tests for household variables used in logistic regression between conservancy member (n=133) and non-member (n=73) households (landowners only dataset)

Household variable	Member HHs (SD) (n=133)		Non-member HHs (SD) (n=73)		t or $\chi^2$
Household head age, years	40.80	(13.87)	37.56	(14.16)	1.593
Household head education, years	3.02	(4.90)	2.75	(4.69)	0.383
Household education, 5-16yrs in sch, %	74.42	(31.18)	76.52	(28.44)	-0.444
Household size, AUs	8.36	(3.91)	7.83	(4.27)	0.905
Distance to MMNR, km	8.88	(8.48)	12.01	(8.96)	-2.483*
Distance to town, km	6.96	(5.06)	8.25	(4.50)	-1.892†
No. of livestock, TLUs	76.60	(65.20)	71.81	(68.95)	0.494
Total land size, acres	167.14	(87.75)	112.21	(77.97)	4.467***
					<u>Chi-square (<math>\chi^2</math>)</u>
Household head leadership position	27.8%		12.3%		6.521**
Boma in/out conservancy	18%		23.3%		0.813

†significant at  $p<0.1$  level; \*significant at  $p<0.05$ ; \*\*significant at  $p<0.01$ ; \*\*\*significant at  $p<0.001$

Table 6.9: Logistic regression of determinants of participation for landowners only

Independent variable	B	SE	Wald	Sig.	Exp(B)
Total land size	0.014	0.003	19.546	0.000***	1.014
No of TLUs	-0.008	0.004	4.930	0.026*	0.992
HHH age	-0.001	0.016	0.004	0.952	0.999
HHH leadership position	-0.758	0.495	2.346	0.126	0.469
HH size, AU	-0.047	0.061	0.580	0.446	0.954
HHH education	-0.002	0.042	0.002	0.965	0.998
%, 5-16yrs school	0.145	0.627	0.054	0.817	1.156
Distance to town	-0.008	0.039	0.045	0.832	0.992
Distance to MMNR	-0.056	0.023	6.026	0.014**	0.946
Boma in/out conservancy	-0.563	0.449	1.573	0.210	0.570
Constant	1.016	1.102	0.850	0.356	2.763

\*significant at  $p<0.05$ ; \*\*significant at  $p<0.01$ ; \*\*\*significant at  $p<0.001$

As expected, the size of land owned was the most significant variable predicting participation at  $p<0.001$ . The number of livestock was also a predictor of participation at  $p<0.05$ , but with a significant negative relationship. Thus, households with more livestock were less likely to be conservancy members. The distance from the household's boma to the MMNR was also significant at  $p<0.01$ , showing a negative relationship, thus indicating that non-member households tend to live further away from the MMNR than member households.

### 6.3.5 What is the impact of conservation participation on household wealth?

#### Matching of conservancy member and non-member households

Eight variables were used to estimate a propensity score for each household (Table 6.1). Member and non-member households were then matched based on similar propensity scores, although a few households remained unmatched, and a few fell outside the region of common support and so were discarded (Table 6.10; Figure 6.9). Covariate balance tests showed that matching worked well and no covariate exhibited a large imbalance (with standardized mean difference larger than .25). The relative multivariate imbalance L1 was .992 before and after matching (Iacus et al., 2009). The standardised differences before and after matching showed that covariance balance was massively improved in the matched sample (Figure 6.10).

Table 6.10: Number of members and non-members matched, unmatched and discarded

	Members	Non-members
All	133	73
Matched	126	60
Unmatched	0	7
Discarded	7	6

Figure 6.9: Distribution of propensity scores of individual units in the member and non-member groups, either matched or unmatched (Graph was produced using routines from the MatchIt package). Due to the use of one to many matching, weights are represented as dots of differing sizes in the control group. The region of common support spanned almost the entire distribution of the propensity score; only in tail regions were no appropriate matches found.

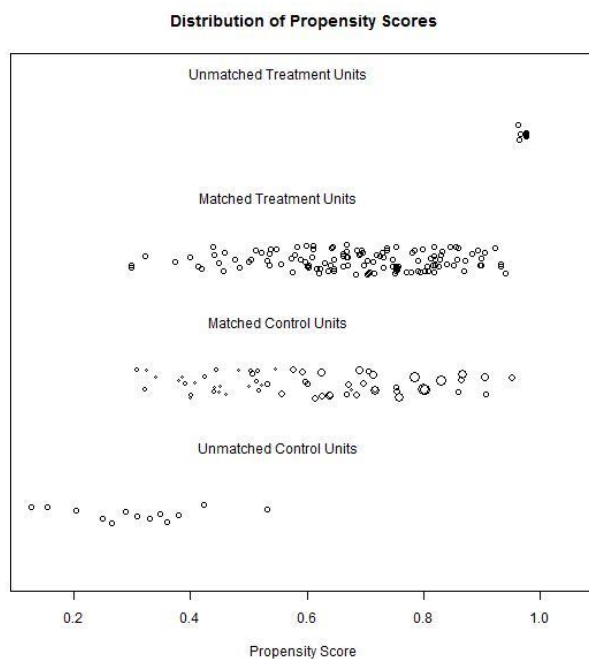
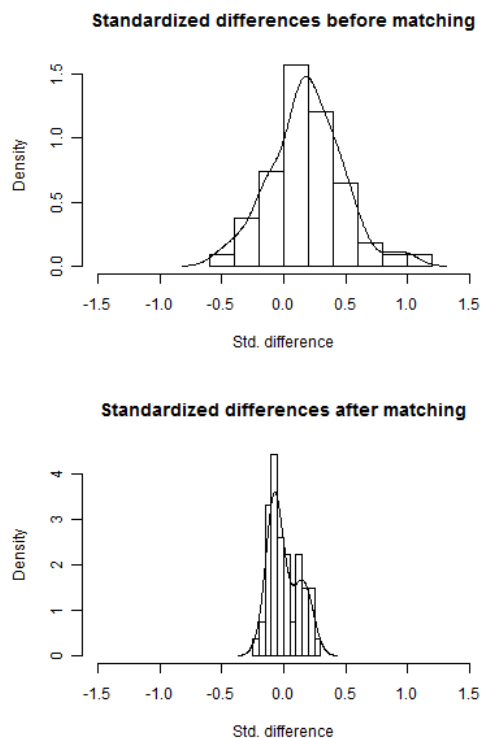


Figure 6.10: Histograms of standardized differences before and after matching. The comparative view of the matched and unmatched samples shows the magnitude of differences before and after matching. Standardised differences after matching are centred on zero and no systematic differences exist after matching.



#### Impact of conservancy participation on wealth – the matched comparison

To assess the impact of conservancy participation on household wealth, I compared incomes, assets and expenditure between conservancy members and non-members using the matched dataset. There was no significant difference in the total annual incomes of members and non-members although members had slightly higher incomes (US\$5142) than non-members (US\$4641) (Table 6.11, column 3). Members had significantly higher off-farm incomes than non-members but this was only weak significance (10% level). There was no significant difference in any other source of income. These results imply that participation in conservancies does not have an impact on household income. Non-members have higher livestock and cultivation incomes than members, but not significantly so. Non-members also had significantly more livestock than members, but this was only weak significance (10% level). Members did have significantly higher expenditures (5% level) than non-members, but not when measured per adult equivalent. Members also had significantly higher household assets (5% level).

Table 6.11: Results of t-tests showing differences in means between conservancy members and non-members in the unmatched (full dataset (1) and landowners only dataset (2)) and the matched dataset (3).

Income (US\$) or asset	<b>(1) Unmatched full dataset (133:125)</b>			<b>(2) Unmatched landowners only (133:73)</b>			<b>(3) Matched landowners only (126:60)</b>		
	Members	Non-members	t-test	Members	Non-members	t-test	Members	Non-members	t-test
No. of livestock, TLU	76.60	57.03	2.524*	76.60	71.81	0.494	71.11	92.97	-1.686†
Total income	5342	3277	4.410***	5342	3963	2.285*	5142	4641	0.737
Livestock income	2450	2221	0.617	2450	2707	-0.550	2379	3115	-1.367
Cultivation income	36	39	-0.153	36	54	-0.619	36	53	-0.499
Off-farm income	1575	924	3.546***	1575	1005	2.773**	1483	1087	1.891†
Off-farm conservation income	789	528	2.137*	789	502	2.135*	743	597	1.074
Off-farm non-conservation income	786	396	2.734**	786	503	1.735	739	492	1.485
Household monthly expenditure	340	220	3.346**	340	239	2.573*	317	239	2.033*
Household monthly expenditure per AU	43	43	0.019	43	39	0.597	42	38	0.475
Asset Index	0.96	0.81	2.151*	0.96	0.82	1.751†	0.94	0.75	2.175*
Housing Quality Index	3.05	1.70	3.103**	3.05	2.03	1.949†	2.83	2.25	1.06

†significant at  $p < 0.1$  level; \*significant at  $p < 0.05$  level; \*\*significant at  $p < 0.01$  level;

\*\*\*significant at  $p < 0.001$  level

#### Comparison of three datasets on differences in wealth between members and non-members

I compared the differences in wealth between members and non-members using the matched pairs dataset (3) with the differences in wealth between conservancy members and non-members using the unmatched full dataset (1) and landowners' only dataset (2) (Table 6.11). The unmatched full dataset (1) finds a number of significant differences between member and non-member households. Members have significantly more income (total, off-farm –both conservation and non-conservation sources), more assets and higher household expenditures than non-members. Evaluating the impact on wealth using these results would thus suggest that members have much higher sources of wealth than non-members, and imply that participation is contributing this effect.

When non-landowner households are removed from the sample (2), most of the differences between members and non-members are still present but are weaker in significance. For example, members still have significantly higher total and off-farm incomes but the significance level has reduced from the 0.1% level to the 1% or 5% level. For assets, there is weak significance for both household and housing quality assets (reduced from the 1% or 5% level to the 10% level).

Household expenditure is still significant, but this has reduced from the 1% level to the 5% level. Thus, taking away non-landowner households reduces the wealth differences between members and non-members, but members are still shown to have higher sources of wealth.

After matching (3), almost all the differences in wealth between members and non-members fall away again, except for household expenditure and households assets which remain at the 5% level, and off-farm income at the 10% level. Thus, much of the effect of participation on members originally observed is reduced after matching members and non-members. This implies that some of the effect originally observed was simply due to confounding influences of covariates and not due to the causal effect of participation. Interestingly, after matching, the number of livestock owned was significantly higher in non-members than members (10% level), the reversed trend to that found in the unmatched datasets.

## **6.4 Discussion**

### Land ownership

Land ownership is the key variable determining conservancy participation, and as a result drives who is able to participate and benefit from conservancies and by how much. Land is a prerequisite to participation; without which, it is not possible to participate in a conservancy. Moreover, participation is spatially determined by owning land within a defined conservancy area.

This study found that 80% of households in Koyiaki owned at least some land, but only 57% of households owned land in a conservancy area and were thus eligible to participate. For different reasons, not all households decided to join their land to a conservancy, leaving 52% of households as members of at least one conservancy and recipients of conservancy payments. Almost as many households (48%) were thus not members of a conservancy, but still resided in and around them. Conservancy income thus does not reach half of households in Koyiaki.

So, who tends to own land in Koyiaki and how much? Although 80% of households owned at least some land, the distribution of land amongst these households was highly variable. Many households did own 150 acres, the expected land size due to each group ranch member during land subdivision (Thompson et al., 2009) but many owned far less than this, and a few owned much larger land sizes. There was also large variability in the number of separate parcels owned by the household. Many people owned two or more parcels of land, being able to secure more land during subsequent land allocations, thus increasing their land holdings in this way.

Land subdivision and allocation in the Mara and other areas of Kenyan Maasailand is well-known to have been a contentious and inequitable process (Rutten 1992; Galaty 1992, 1993, 1999; Galaty and Ole Munei 1999; Thompson and Homewood 2002; Homewood et al., 2004; Mwangi 2007b). Elites, group ranch committee members and those that had more influence in the subdivision process were able to secure the largest and best placed lands during land subdivision. The irregularities in land allocations of the last blocks subdivided in 2009, and the contested nature of the group ranch membership lists (sections 2.4.2 and 4.4), highlight the continuing political nature of the process.

Following the subdivision of the last blocks of Koyiaki, this study found that land ownership was significantly associated with the age and leadership status of the household head, a trend similar to that found in other studies (Galaty 1992; Mwangi 2007b; Thompson et al., 2009). Conservancy payments based on land ownership and size thus incorporate the inequitable subdivision outcomes and can reinforce and perpetuate these inequalities, with some able to gain much more than others. Though conservancy payments are promoted as being transparent and equitable, conservancy payments are pegged to land size, so those who own more, and in the best tourism and wildlife sites, will benefit more. Thus, those able to secure the best-placed and largest land during land subdivision do best.

Although few conservancy members earn significantly more than others in any particular conservancy (although this is true in some circumstances, for example the Chairman of OOC, section 4.6.3), there are a number of households with land in two or three conservancies who are therefore earning significantly more in aggregate than most conservancy members. Being able to secure more land, and in favourable conservancy locations, means they are able to benefit more.

A common tendency of land-based payments is that they often exclude those without land or those with the fewest initial land-use rights, or the 'poorest of the poor' (Grieg-Gran et al., 2005; Wunder 2008). The 20% of households found in this study who do not own land were thus not eligible to participate. These households have fewer assets, lower incomes and expenditures, which becomes more evident when they are removed from the sampling comparing wealth between conservancy members and non-members. These households also tended to be smaller, with younger household heads who were not on group ranch lists to receive land in Maasai allocations. Although they have the potential to receive generational inheritance of land from their fathers, this becomes more complex when considering the many sons that each want a

portion of it, and the conservancy payment. Many more without land were not captured in this household survey as they have dropped out of the system completely, or have been absorbed into larger and wealthier households after land subdivision (Homewood et al., 2009). Conservancy settlement displacement will also have had an effect in pushing landless households away (chapter 7).

For the most part, conservancy land-based payments also exclude women. Very few women owned land and so very few were able to become conservancy members. Women are not included on the group ranch register lists and thus were ineligible for land during subdivision. Women who did own land in this study had inherited it from their deceased husbands. Under Kenya's new constitution in 2010, there is improved scope for women to own land through increased rights over land and property (RoK 2010). However, in a strongly patrilineal society, Maasai women face customary laws which can be hard to override in practice and which can have greater influence than civil property laws.

#### Determinants of conservancy participation

Conservancy member households owned significantly more land than non-member households. This was true even after removing non-landowning households. Total land size owned is also the strongest determinant of participation. Those who own more land are more likely to own more land in a conservancy. This implies that members were able to secure more land during allocation. So despite the standard rate representing an equitable payment system there is an unequal starting point due to the extent of land ownership. Conservancy member households also had significantly older household heads, and those with a leadership status, than non-member households, mirroring the trends observed above in land ownership.

The number of livestock owned was also an important determinant of conservancy participation. This was a negative predictor, implying that households with more livestock were less likely to be conservancy members. Given that the number of livestock is a known predictor of wealth status (Nkedianye et al., 2009; Thompson et al., 2009) the reverse would be expected. However, it is possible that there is an alternative dynamic at work, where those households with many livestock choose not to be conservancy members so as to use their land for grazing, or that non-member households invest more in livestock compared to member households. These findings are discussed further in the next section when considering the impact of conservancy participation on livestock.

Distance to the MMNR was also an important determinant of participation. Difference in means tests show that conservancy members live significantly closer to the MMNR than non-members. Closer to the MMNR there are greater wildlife-viewing opportunities and land is of high tourism potential. This attracts interest from tourism investors to set up a conservancy and thus gives households living closer to MMNR more opportunities to participate in a conservancy. Most conservancies in Koyiaki are situated directly adjacent to the MMNR (Figure 6.1). However, this assumption presumes that households are living on the land which they join to a conservancy, which in most cases is not permitted under conservancy restrictions. Nevertheless, this analysis does indicate that conservancy members are more likely to live (either through owning land or living on someone else's land) in areas of greater tourism potential and value than conservancy non-members.

#### The impact of participation on wealth

In unmatched tests there were many significant differences in wealth between conservancy member and non-member households, even when just considering landowners only. After matching conservancy member and non-member households based on land and other household characteristics, most of these differences fall away. For example, sources of income which were significantly higher in members before matching (e.g. total income) were no longer significant after matching. This indicates conservancy participation is not having an impact on conservancy members' household income.

Significant differences in wealth based on household expenditure and assets remained after matching, indicating that conservancy members do spend more and own more household assets than non-members. This might be reflective of their conservancy payments providing them with higher disposable cash incomes, which they use to buy more assets. However, this trend is not apparent when expenditure is measured per adult equivalent, most likely because conservancy member households are larger than non-member households (Table 6.8). This implies that there is no difference in wealth (as measured through expenditure) between members and non-members when taking into account household size.

After matching, conservancy members own significantly less livestock than non-members. This implies that participation in conservancies might be causing a reduction in the herd size of conservancy members. It is possible that member households are reducing their herd size in order to cope with conservancy grazing restrictions, and reduced space for livestock grazing.



In agreement, once matched, conservancy member households do have lower livestock incomes than non-member households, although this is not significant. These findings possibly indicate a shift where conservancy members are becoming more cash-based and reliant on their cash incomes and less reliant on their livestock sources of income as they reduce their livestock in order to cope with the reduced space for livestock grazing. Although exploratory, these findings have potentially important implications for Maasai livelihoods and the rangelands in the Mara.

Overall, this analysis shows that matching member and non-member households removes many of the confounding differences between the two groups. It shows that despite significantly higher observed incomes in conservancy members compared to non-members, this is not due to participation in conservancies. These differences are better explained by their original starting household characteristics rather than conservancy participation. The analysis also shows that landless households represent some of the poorest households in Koyiaki. When these households were removed from the analysis there was a drop in the level of significance for all the wealth variables (except livestock and cultivation income) between conservancy members and non-members, implying that the groups became more similar in their wealth characteristics than they were when landless households were included. Since these households are left out of participating in conservancies, this questions the poverty alleviating ability of conservancies and land-based PES schemes. The findings also point to a level of elite capture of conservancy payments, a trend found in previous conservation initiatives in the Mara (Thompson and Homewood 2002) and elsewhere in Maasailand (DeLuca 2004; Sachedina 2008; Homewood et al., 2009). Thus, although payments are based on a fixed rate payment system, and are a likely improvement on the inequitable distribution of revenues from wildlife associations (chapter 2), they incorporate the outcomes of a widely recognised inequitable process of land subdivision in the Mara and wider Maasailand.

#### Limitations to the matched evaluation

Propensity score matching is a useful, and relatively easy to implement, evaluation technique used here to assess the impact of conservancies on household wealth. This is especially important given the lack of empirical evaluations of initiatives for either conservation or livelihood goals (Barrett et al., 2011). However, there are also some limitations to its use in this study:

- This evaluation was done early on in the lifespan of conservancies, and households had joined a conservancy up to only four years before the survey. Thus, there would have been less time for the conservancy to have had any long-term impact on household wealth. At this early

stage, any effect might not be seen, and/or it might change through time. A similar analysis should thus be repeated in the next few years.

- Since the variables used to match households were measured after conservancy establishment it is possible that they could have been directly or indirectly affected by participation in conservancies. Although care was taken to ensure only those variables unlikely to be affected by participation were included and used as matching covariates, to eliminate the chance that variables are affected by participation, these data would be needed before conservancies were established.
- There may be important covariates that are not included in the matching. The selection of covariates is the single most important aspect to ensure an unbiasedness of causal effect (Ravallion 2008). Impact estimates obtained by PSM will therefore depend on the variables put into it. The sample size, especially of the non-members (controls), was also quite small.

This chapter has found that land ownership is the most important factor that determines who is able to participate in conservancies, and the level of benefit that they receive. Although most households in Koyiaki do now own land, only just over half owned land in a conservancy area and were thus eligible to participate in a conservancy. All the remaining households are left out of conservancies as non-members. Land-based payments also exclude the landless, women and other marginalised groups that were not able secure land during subdivision. Conservancies and other types of land-based payment approaches can therefore not be viewed as poverty reduction tools (Pagiola et al., 2005; Wunder 2008)

Land-based payments take on the outcomes of a widely acknowledged inequitable distribution of land (e.g. Rutten 1992, Galaty 1993, Homewood et al., 2004; Mwangi 2007b). Land size owned varied widely amongst the sampled households, and household heads with a leadership status owned significantly more land than ordinary community members. Households with the biggest land sizes and those who lived closer to high value wildlife and tourism sites were more likely to participate in conservancies. These results point to a level of elite capture of land and thus conservancy benefit. That significant wealth inequalities exist between conservancy members and non-members, which cannot be explained by participation in conservancies, indicates that the better off have been able to participate and benefit in these schemes, increasing existing wealth inequalities between members and non-members.

## **Chapter 7 Displacement of people and livestock: livelihood and landscape effects**

### **7.1 Introduction**

#### ***7.1.1 Pastoral displacement due to conservation***

In East Africa, the displacement of pastoralists due to conservation has been a common occurrence. Many protected areas have been carved out of pastoral land, with negative impacts for pastoral populations. During the colonial era, protected areas were established in the rangelands, displacing pastoral people from their ancestral lands (Neumann 1998). Strictly protected game reserves set up for hunting, followed by national parks influenced by the Yellowstone model for 'wilderness' and the preservation of 'pristine' habitats, involved the eviction and exclusion of local people. This continued post-independence, and in Kenyan and Tanzanian Maasailand large areas of land were excised for wildlife conservation (Homewood 1995). In Kenya, the Maasai lost large areas of land to Amboseli National Park and the Maasai Mara National Reserve. In Tanzania, similar land expropriation occurred as pastoralists were moved from the Serengeti National Park, Tarangire National Park, and Mkomazi National Park (Brockington 2002). In these cases, pastoralists were cajoled or forcibly removed from their former rangelands, and lost access to their traditional grazing sites.

Even more recently, rangelands continue to be removed from pastoral use as protected areas are set up. In Tanzania in 2006, hundreds of herders and 300,000 cattle were forcibly removed from the Usangu Game Reserve and Ihefu swamp, to expand Ruaha National Park (Walsh 2012). Evictions continually threaten the pastoralists from the Ngorongoro Conservation Area despite this being a joint land use area (MRGI 2009). In 2011, 300 Samburu families were evicted from Laikipia in Kenya, after The Nature Conservancy (TNC) and the African Wildlife Foundation (AWF) purchased their land, allegedly from former president Daniel Arap Moi, and gifted it to the Kenya Wildlife Service (KWS) to create the new Laikipia National Park (Letai and Lind 2012; Cultural Survival 2010). In many cases, prime dry-season grazing areas and permanent water resources have been excised from pastoral use.

Displacement is based on the ideals of the wilderness. The construction of the idea of 'wilderness' led to a separation of people from nature (Adams and McShane 1992). Protected areas as separate from humans reflect a conceptual division between nature and humans that has deep roots in Western thought (Adams and Hutton 2007). Protected areas and the ideals of

wilderness became the dominant global model of national parks and the colonial approach to protected areas in Africa. The idea of wilderness, free from human habitation became a strong motivator of conservation, justifying the removal of local people (Neumann 1998). However, this ignores the social histories of local land use and traditional resource management measures that see community groups regulating their own resource use and residence (Brockington et al., 2006). Many indigenous groups view use and protection as one and the same thing (Berkes 2009). Human intervention has had an important role in shaping biodiversity, and many depopulated 'wilderness' areas originated as man-made landscapes (Neumann 2004). Wilderness ideals have the effect of alienating local resource users and therefore may evoke resentment towards protected areas by communities, who may resort to revenge killing of wildlife (Hulme and Infield 2001) or destroying and chopping down trees (Brandon 1998) in protest. Similarly, alienation may reduce resource users' socio-economic dependence on protected area resources providing them with no incentives to safeguard those resources in the long run.

### ***7.1.2 Displacement from protected areas***

There is concern over the impact of protected areas on local livelihoods (Brockington 2002, Colchester 2002; Brechin et al., 2003). The greatest social impact of protected areas relates to the displacement of people from their homes and land. There have been vigorous debates over estimates of the scale of conservation displacement (Brockington and Igoe 2006; Brockington et al., 2006; Cernea and Schmidt-Soltau 2006; Schmidt-Soltau and Brockington 2007; Agrawal and Redford 2009; Schmidt-Soltau 2009; Curran et al., 2010). For those whose livelihoods depend on the use of resources, loss of access can be as serious, or more serious, than physical displacement (Brockington and Igoe 2006; Cernea 2006). For example, for pastoralists, the alienation of land can have serious impacts on pastoral production if key grazing sites and water resources are taken out of use. For example, the Mkomazi Game Reserve was particularly valuable for its nutritious wet season grasses, which enabled stock to recover from the dry season. After evictions took place, cattle became concentrated in the narrow strip of land between the reserve and the Pare and Usambara mountains, and many died of disease and starvation (Brockington 2002).

A call for a predictive model to anticipate the impacts of protected area displacement (West and Brechin 1991) led to the development of a conceptual model of the risks of impoverishment intrinsic to the process of displacement and resettlement of populations (Cernea 1997). These include the risks of landlessness, joblessness, homelessness, marginalization, food insecurity, increased morbidity and mortality, loss of access to common property, and social disarticulation

(Cernea 1997). Recognising the importance of access to resources rather than just to land itself, the model was later extended to include the restriction of access to resources even when people are not physically removed (Cernea 2006). Thus, where protected area adjacent people are denied access to certain resources, this constitutes a form of displacement.

### **7.1.3 The conservation impacts of displacement – spill-over effects**

The displacement of people and their livelihood activities from a conservation area can lead to spill-over effects— where conservation efforts displace resource pressure or human impacts to neighbouring un-conserved areas (Armsworth et al., 2006). This is also commonly termed in the literature as ‘leakage’ (Ewers and Rodrigues 2008; Pattanayak et al., 2010)<sup>44</sup>. In such cases, conservation may reduce human impacts and lead to positive ecological impacts inside a conserved area, but lead to negative impacts on areas outside or neighbouring the conserved area. Thus, spill-overs can lead to the impression that restrictions are reducing impacts, when in fact they might simply be displaced across space and/or time (Ewers and Rodrigues 2008). This can ultimately undermine conservation effectiveness (Oliveira et al., 2007; Andam et al., 2008; Ewers and Rodrigues 2008). Any analysis of protected area or conservation effectiveness thus needs to consider spill-over effects.

The problem of spill-over or leakage is recognised in the implementation of payment for ecosystem services (PES) schemes (Engel et al., 2008; Wunder et al., 2008; Pattanayak et al., 2010). Where PES restricts land use activities in an area under a scheme, it might inadvertently displace environmentally-damaging activities to areas outside of the scheme. If this occurs, the environmental benefits from a PES scheme may be overstated (Engel et al., 2008; Ferraro 2011). ‘Spill-overs’ can also result from PES or conservation incomes being reinvested into environmentally damaging activities (Bulte et al., 2008; Pattanayak et al., 2010; Ferraro 2011), which is considered in chapter 5.

### **7.1.4 Research questions**

In the Mara, wildlife conservancies are restricting access to land for settlement, livestock grazing and other livelihood activities. In return for conservancy payments, conservancy members agree to vacate their land of people and livestock. Although in theory voluntary, landowners may be compelled or coerced to join due to the location of their land or because they are too weak to

---

<sup>44</sup> Pattanayak et al. (2010) use the term spill-over to mean effects which are positive to conservation (e.g. enhanced law enforcement or establishment of reserves nearby), and leakage as effects which are negative to conservation (e.g. displacement of damaging environmental pressures).

resist more powerful tourism agendas (Brockington 2004; chapter 4). Conservancy non-members must also vacate conservancy land, but play host to those displaced.

This chapter aims to look at the extent to which displacement is occurring due to conservancies in the Mara, and the implications of this for pastoral livelihoods and the Mara landscape. I investigate the effectiveness of conservancies in reducing settlements and livestock inside of conservancies, but balance this with an exploration of their increasing it outside of conservancies – a case of spill-over effects. I ask the following questions:

- What is the impact of conservancies on settlement distribution and density in Koyiaki?
- To what extent has settlement displacement occurred and with what spill-over effects?
- How do conservancies affect livestock grazing inside and outside of conservancies?
- How do people perceive settlement and livestock displacement?
- What are the social implications of displacement for pastoral livelihoods and the ecological implications for the wider landscape?

## **7.2 Methods**

### ***7.2.1 Identification of bomas from satellite imagery***

Alongside other methods, this chapter applies high resolution satellite imagery to identify pastoral settlements in the Mara. High resolution images have been used to map human settlements in a wide range of different contexts; e.g. dwellings in refugee camps in Sudan (Kemper et al., 2011) and Tanzania (Giada et al., 2003), urban roof tops in Canada (Aldred and Wang 2011), and slums in Nairobi (Veljanovski et al., 2012). However, no previous research has been found on mapping pastoralist settlements using satellite imagery. To date, this has been limited to ground and aerial surveys.

In the Mara, previous studies have mapped pastoral settlements using aerial photography between 1950-1974 and using ground and aerial counts in 1983 and 1999 (Lamprey 1984; Lamprey and Reid 2004), and using ground counts in 1999 and 2002 (Reid et al., 2003). Here, I use high resolution satellite images to identify Maasai settlements, adapting a new and innovative technique designed and developed from the same imagery and data, but described in detail elsewhere (Musyimi et al., in prep).

Using satellite imagery can reduce problems or inaccuracies of field work, including: accessing hard to reach or remote areas, missing certain settlements during surveys, and possible inaccuracies when recording global positioning system (GPS) points. Satellite imagery can also reduce the cost associated with the acquisition of aerial photographs, and expensive field or aerial surveys. However, there are also limitations, which are described further ahead.

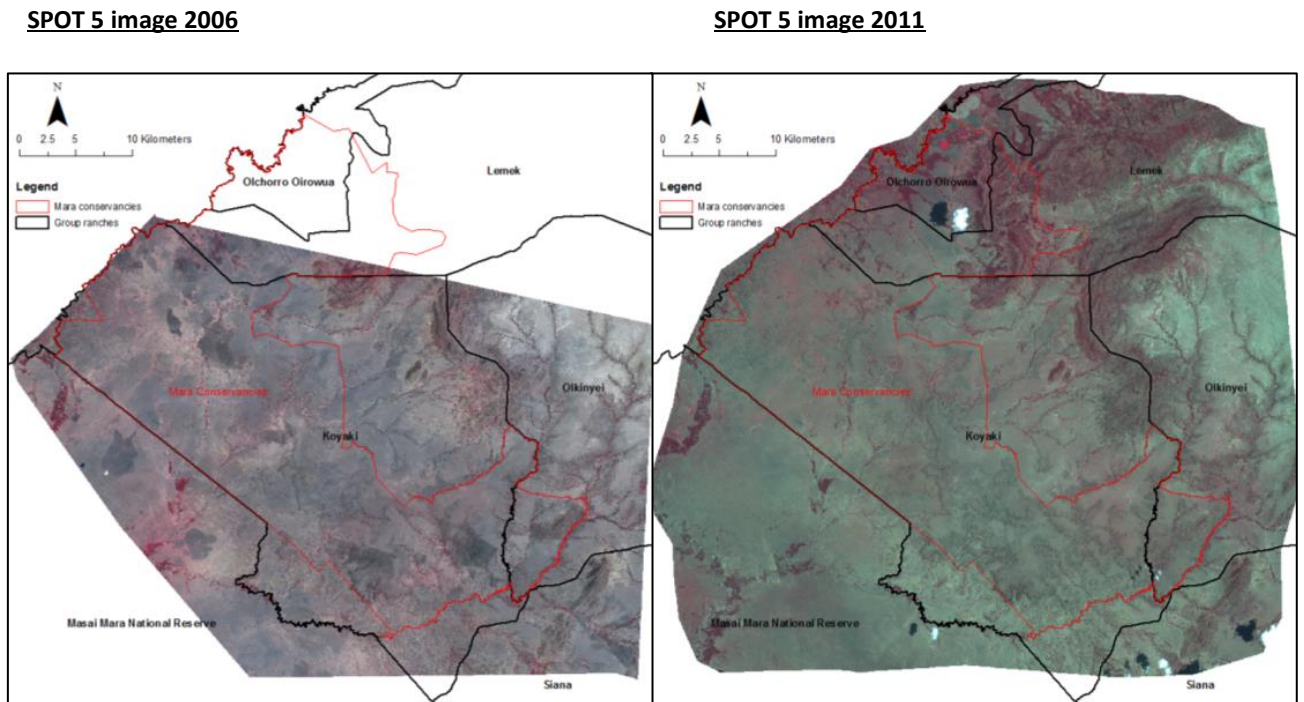
#### The imagery and study area

High resolution SPOT 5 images with a resolution of 2.5 metres were acquired for the identification of livestock bomas. Images were acquired for free from Planet Action – a non-profit initiative by SPOT image that supports projects related to climate change through the provision of satellite images and expertise.

The first image used in this study captured an area of interest that I requested directly from SPOT in January 2011, and was taken on the 3<sup>rd</sup> March 2011. The second image used in this study was sourced from the SPOT imagery catalogue library and was taken on the 21<sup>st</sup> February 2006. This image only covered a part of the area covered by the 2011 image (see Figure 7.1 for coverage of the images). Both images were taken during the usual wet season period, with only two weeks difference between them. However, there was a shift in seasonality in 2006, such that February 2006 was a much drier period than March 2011. The implications of this in terms of image contrast and in comparison between years are discussed further ahead. Both images contained minimal cloud cover.

My study area comprised the pastoral areas, including the group ranches and conservancies surrounding the MMNR in Narok County only. Areas west of the Mara River, in the Trans Mara area, were excluded and not used for the identification of bomas.

Figure 7.1: The extent of the 2006 and 2011 SPOT images and the Mara conservancies and group ranch layers



### Identification of bomas from satellite images

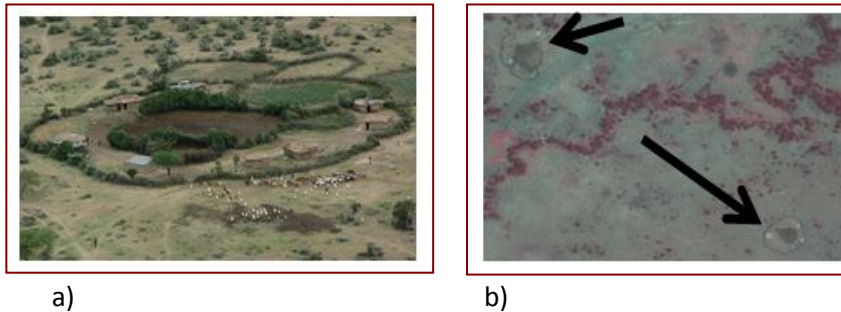
#### eCognition method

The process used to identify bomas was applied from a recently developed methodology described in Musyimi et al. (in prep). Bomas were identified using object oriented image analysis using eCognition Developer 8.64.0 (eCognition, 2010).

The technique identifies livestock bomas, which comprise the fenced, and in most cases, circular enclosure used to keep cattle and/or sheep and goats at night, to protect them against wildlife predation. When in regular use, this enclosure is characterised by the accumulation of dung, which forms a distinct dark circular patch contrasting with the surrounding area. The dung is further darkened by livestock urine which keeps it wet, and hence provides further contrast with the surrounding area. Surrounding the livestock boma are houses and in most cases an outer fence (Figure 7.2). In this study I use the term settlement to include the livestock boma plus surrounding houses, to distinguish it from the livestock boma which is just used to keep livestock. The reason I do this is because the objects identified from the image using eCognition are the dung accumulated patches (livestock bomas) rather than the entire settlement.



Figure 7.2: a) An aerial photo of a typical Maasai settlement showing the central circular livestock boma enclosed by a fence, and the surrounding houses and an outer circular fence, (b) a Maasai settlement as seen from a pan-sharpened SPOT 5 image – in this case the surrounding houses and outer fence are visible. (Figure 7.2a image courtesy of Kenya Wildlife Service).



In object oriented image analysis the image is segmented into image objects. Objects of interest, such as a livestock boma, are then identified using specified parameters which follow a given set of rules. Musyimi et al. (in prep) describe a two stage process to identify bomas:

- 1) Identify the livestock boma through the colour, size, shape and other parameters of the accumulated dung.
- 2) Identify the houses surrounding a livestock boma which have corrugated iron sheet (*mabati*) roofs. These are most visible compared to other types of roofing due to their reflective nature.

In Musyimi et al. (in prep) both of these stages were used to identify a boma which was then classified as present on the landscape. In this study I use the first stage of boma identification alone to identify bomas in the image. The reasons I do this are because:

- 1) The second stage identifies houses surrounding a livestock boma, but it is less likely that houses without *mabati* roofs will be identified, as this is dependent on the degree of reflection. Therefore, a boma surrounded by non-*mabati* roofed houses may be missed.
- 2) Many Maasai settlements in the Mara do not have a house with a *mabati* roof, and hence including stage two in identification would leave out a number of settlements with only traditionally roofed houses (e.g. dung or grass). Field collected settlement data verify that many settlements do not have *mabati* roofs (see below)<sup>45</sup>.

<sup>45</sup> Other research also points to the large number of Maasai houses with *mabati* roofing; almost 50% of Maasai households sampled in Kenya owned at least own house with an iron roof (Coast 2002). This modernisation of housing represents a shift away from houses being solely associated with construction and maintenance by women, as men need to purchase, measure and cut materials to build the house. It

- 3) Since the 2006 image was taken during a dry period, there is less contrast in the image compared to the 2011 image. As a result houses are less likely to be captured in 2006 than in 2011. Therefore to avoid biasing one image over the other I use the first stage alone in both images.

#### Post-interpretation and verification of the eCognition process

All bomas identified during the first stage of the eCognition process for the 2006 and 2011 images were then manually verified through visual interpretation. The limitation of the eCognition process in identifying settlement houses means that it was possible, although infrequent, that a bush or other vegetation patch that resembled a boma was identified during the first stage of eCognition. This is especially so considering the particular way high-nutrient past bomas sites re-vegetate (Muchiru et al., 2008, 2009). The resolution of the image was sufficient enough to quite confidently determine this through visual interpretation. I therefore manually verified each boma identified to determine that it was actually a boma, and not a similar looking object such as a bush or vegetation patch. If an eCognition identified boma was seen not to resemble a true, current boma then this point was deleted.

The combination of the eCognition and manual identification processes allowed the addition of an experienced interpreter with knowledge of the field setting and Maasai settlements to an automated process. The eCognition process was useful for first identifying possible bomas which were then visually checked and confirmed on the images. Manual interpretation however can be time-consuming, and since it is dependent on the interpreter, it is subject to interpreter bias. The manually verified bomas were also cross-checked against a set of field-collected settlement points in 2010 (see below). Table 7.1 shows the different number of bomas identified in both stages of eCognition, and then the final manually verified file used. For both images manual verification dropped some bomas flagged during the first stage of eCognition, but not as many as were dropped by the second stage of eCognition. Manual verification was therefore seen as the best way to use and adapt the eCognition technique to this study.

---

also reflects the degree of permanency of the buildings as livelihoods change from traditional transhumant pastoralism towards more sedentary living (Coast 2002).

### Cross-checking using ground count settlement point data

A ground survey collected data on 124 present and 48 abandoned settlement GPS points in the study area. These were collected between November 2010 and April 2011 and so encompassed the date the 2011 SPOT image was taken (3<sup>rd</sup> March 2011) and hence are useful in ground truth verification of the boma identification process. For each present settlement I collected data on, amongst others, the number and type of houses and the age of the settlement. For abandoned settlements I collected data on the year of abandonment.

This data was first used to measure the occurrence of *mabati* roofed houses in settlements in the study area to verify the level of eCognition process to use. I found that 32% of present settlements did not have a house with a *mabati* roof. This justified leaving out the second stage of the eCognition process as outlined above.

The field data were also used to cross-check the results of the combined eCognition plus manual identification process I describe above. Firstly, I checked that settlements surveyed in the field were not missed in the identification process, and found that of the 124 surveyed present settlement points only nine were not identified in the 2011 image, so the identification process was 93% accurate as judged by the field survey as the benchmark. Moreover, those nine settlements that were missed were all less than one year of age and hence still relatively new in terms of their dung accumulation, and five of these were in fact temporary cattle camps. Secondly, I checked that the identification process was not identifying old abandoned bomas, and found that of the 48 surveyed abandoned settlement points only four (8%) of these were identified as active bomas during the image identification process. Again, these four abandoned settlements had only recently been abandoned, one to two years before the image was taken. In the absence of field data for 2006, the identification process of the 2006 SPOT image could not be verified in this way, but despite slight differences in image contrast, I make the assumption that the technique would be similarly justified.

Table 7.1: Comparison of bomas identified in the first and second stages of eCognition and the final manually verified file used in this study, for both the 2006 and 2011 SPOT images.

	2006 image (clipped area)	2011 image (full area)	2011 image (clipped area)
eCognition stage 1	893	1702	N/A
eCognition stage 2	741	1576	N/A
Stage 1 manual verification	884	1612	1080

### SPOT image boma identification limitations

As the first application of a new technique, there are limitations to this analysis:

- Despite the images being taken at very comparable times during an expected wet season, February 2006 was a much drier period than March 2011. The high-inter annual variability of ecological conditions is a distinctive aspect of savanna ecosystems. Since the process of identifying bomas using eCognition will vary from one image to another depending on the image colour and contrast, the dark dung-covered bomas were more visible against the surrounding green grass on the landscape in 2011 compared to 2006, when the surrounding grass had dried out and was browner. These differences in contrast might have affected the ease with which bomas were identified using eCognition. The implications of this when comparing the number of bomas across the two images are discussed in the next section.
- The SPOT image resolution of 2.5m is not very good at identifying houses, especially houses without *mabati* roofs. So, to not exclude non-*mabati* roofed houses in this study, I only use the first stage of the eCognition process, which does not consider houses surrounding bomas.

This has a number of associated limitations:

- 1) Vegetation or bush patches resembling bomas may be mistakenly picked up as potential livestock bomas, as described above. Hopefully the verification and cross-checking steps described above reduce this limitation.
  - 2) Abandoned bomas (old pastoral bomas no longer in use, where the houses have been removed or burned) might be identified. If this was the case however, it is likely that only recently abandoned bomas, where the dung is still dark, would be identified. In older abandoned bomas, where vegetation starts to cover the dung site (probably about 1 year after abandonment) the dung dries out and contrasts less to the surrounding area, and therefore is less likely to be identified.
  - 3) It is not possible to reliably distinguish a temporary boma from a permanent boma from the image. Temporary bomas usually do not have or have very few houses surrounding them since they are used seasonally and for short periods. However, as with abandoned bomas, it is likely that a temporary boma will only be identified if it has been recently used and the dung is still dark and contrasts well with the surrounding area.
- The eCognition process identifies the dung which forms the livestock boma. Therefore, a Maasai settlement on the ground which might be counted as only one settlement, maybe made up of two (or even more) livestock bomas - perhaps because there are separate cattle and shoats bomas or perhaps because one livestock boma has just been abandoned and a

new one created directly adjacent to it. Therefore, some caution should be taken when comparing image and ground surveyed points, which might take the entire settlement as a one boma point. This study just uses SPOT images to identify bomas so this bias is absent.

- Only livestock bomas are identified in this study. Other types of houses which are not located close to a boma are not recognised. This misses out on some recent activity where sons split from their father's settlements and build more modern houses, often at some distance from the livestock boma. A fenced area used for grazing or cultivation will also be missed. A separate analysis would be required to identify rectangular or fenced areas.

### ***7.2.2 Spatial and temporal analysis of bomas in the Mara***

Once bomas were identified from the images the next step was to investigate the spatial and temporal change in boma densities in the Mara. Identification of bomas from the two images allows a before and after comparison of the density and distribution of bomas. The 2006 image corresponds well to a 'before' conservancy period, since only one conservancy was present at this time<sup>46</sup>. The 2011 image corresponds well to an 'after' conservancy period, since by this time at least seven conservancies had been set-up.

As well as looking at the temporal change in bomas in the Mara, spatial data consisting of the location of conservancies and group ranches allowed a spatial comparison of boma density and distribution. Areas were classified as 'inside' a conservancy or 'outside' of a conservancy and the boma density in each was compared. Taken together, this spatial and temporal analysis of settlements allows for an assessment of the impact of conservancies on the distribution and density of Maasai settlements. By using data before and after conservancies were started, and inside and outside of conservancy areas, this design attempts to separate out the changes that are occurring due to conservancies, from any other outside pressure (e.g. population growth, subdivision etc.). This can be thought of as a before-after-control-impact (BACI) design useful for measuring the potential impact of an intervention. This design also allowed a look at the occurrence of spill-over effects, where conservancies although effective in reducing human impact inside of conservancies, merely displace human impact elsewhere on the landscape. The baseline measure of settlement pressure before conservancy creation, compared to the level of settlement pressure inside and outside of conservancies, allows a test for the positive effect of the conservancy and the negative effect of spill-over (Ewers and Rodrigues 2008).

---

<sup>46</sup> Olkinyei Conservancy formed in 2005 was the first conservancy in the Mara to restrict settlement and livestock grazing, although other wildlife initiatives were operating before this, e.g. the Koyiaki-Lemek Wildlife Association and the Olchorro Oirouwa Wildlife Association (see section 2.5.2)

### Locating bomas inside or outside of conservancies

To understand where bomas are located in relation to conservancy boundaries I developed a GIS map of the conservancy boundaries together with local informants and conservancy managers, and using other conservancy maps. This was based on the International Livestock Research Institute's (ILRI) GIS conservancy layer. This map should be taken with some flexibility. Most conservancies did not have formal maps of their boundaries, which can be fluid and change frequently as land parcels are added or dropped from the conservancy.

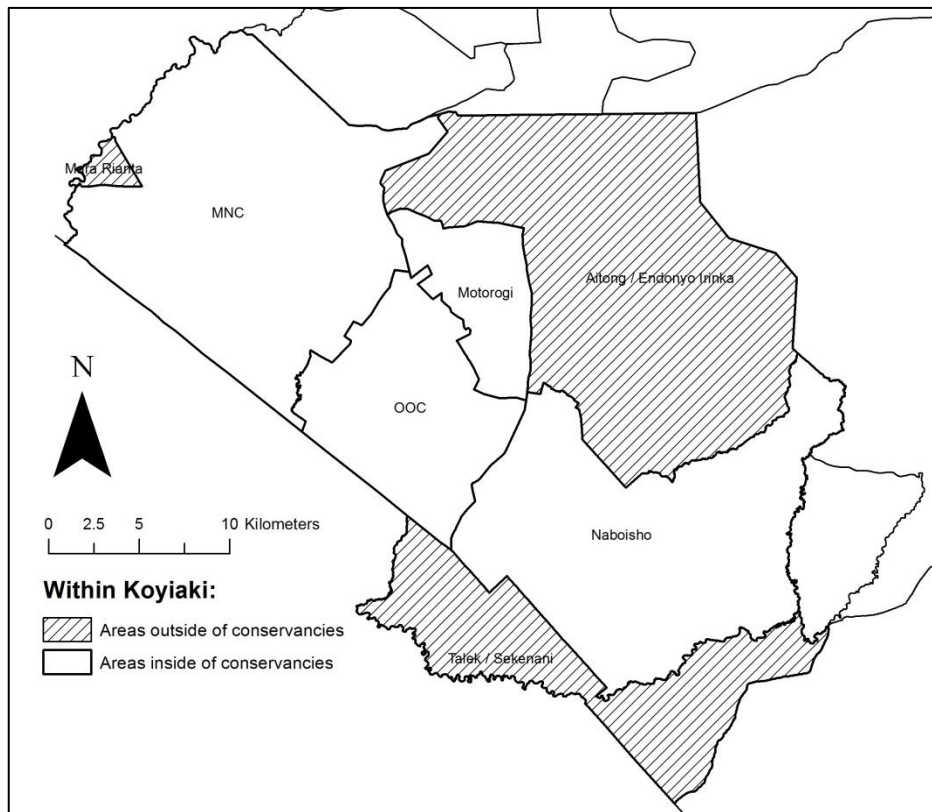
The number of bomas identified in each conservancy and the area of the conservancy was used to determine the density of bomas in each conservancy (where image coverage allowed) for the 2006 and 2011 images. These densities were then compared to determine the magnitude and direction of any change in density over the 5-year period.

Since the two SPOT images covered different study areas (Figure 7.1), I decided to do a comparison of boma densities in areas inside and outside of conservancies for Koyiaki Group Ranch (KGR) only. This is because: 1) it is covered almost in its entirety in both images, 2) KGR has been the main focus of my research in this thesis, and 3) as data will show in the following sections, when people were displaced from conservancies, most moved outside to non-conservancy areas, but remained within the boundaries of KGR. Using the conservancy boundary layer, KGR was separated into areas which fell inside and outside of a conservancy (Figure 7.3). Areas under conservancy currently comprise 61% of KGR. This enabled a (temporal) comparison of boma density of the entire group ranch and conservancies over time, and a (spatial) comparison of areas inside and outside conservancies.

### Status of bomas in 2011

Using the 2011 image the number and density of bomas was calculated for each conservancy, totalled for all conservancies, and compared in areas inside and outside of conservancies within KGR. This analysis used the larger study area as captured by the SPOT 2011 image.

Figure 7.3: Areas inside and outside of conservancies in Koyiaki Group Ranch



#### Change analysis of bomas from 2006 to 2011

For the before and after analysis using the 2006 and 2011 images the study area was limited to that captured by the 2006 image (Figure 7.1). Therefore for this 'clipped' area, the total number of bomas identified, the number and density of bomas in each conservancy, and totalled for these conservancies, was compared between 2006 and 2011. Next, the number and density of bomas was compared in areas inside and outside of the conservancies within Koyiaki between 2006 and 2011. To investigate displacement, the magnitude of change in density in each case was quantified and labelled as either positive or negative. A chi-squared test, with the number of bomas weighted by area, was used to test for a significant association between the numbers of bomas observed over time and between the two areas.

Due to the differing levels of contrast in the 2006 and 2011 images as mentioned in the previous section, it is possible more bomas were identified in 2011 due to better image contrast than in 2006. The possibility of this therefore needs to be considered in the interpretation of results of the change in number of bomas. This might inflate the growth of bomas from 2006 to 2011. However, since this bias operates in the opposite direction to the reduction in bomas expected

inside of conservancies due to settlement displacement, it is of less concern to the enquiry of conservancy impact on settlement displacement in this chapter.

#### The spatial distribution of bomas in 2006 and 2011

The distribution of bomas was analysed visually by creating a density surface map for the bomas (in the clipped study area) in 2006 and 2011. This was created using the spatial analyst tool in ArcMap 10. The density surface map allows a better indication of the distribution of bomas over a surface for a visual comparison of distribution (i.e. whether bomas are more dispersed or more clumped). As people are moved out of conservancies, I would expect bomas to become more clumped, and congregated nearer towns in 2011 than in 2006.

#### **7.2.3 Qualitative experiences of household displacement from conservancies**

Imagery analysis of bomas over time spatially related to conservancies measures the physical change caused by displacement. To understand the social context of displacement I talked to people about how they had been moved around the landscape due to conservancies and the implications of this for their livelihoods. I asked each household sampled in the main questionnaire survey (n=258) if they had been moved from a conservancy, and if so, where or who did they move to. I also asked households if they had received people displaced from a conservancy.

I also sampled another set of households that had been moved from the Olare Orok Conservancy (OOC) when it was formed in 2006. Together with local informants I formed a list of all households displaced from the OOC and tried to track locations to which they had moved. This list comprised 103 households. I then randomly sampled 25 households from this 'moved' list to complete the same household questionnaire as I did the main household sample (see chapter 3 for more on sampling) to understand more about their movement. In addition to the household questionnaire, these households were also interviewed in more depth about conservancy movement. All 'moved' households (as captured in the main sample and the OOC moved sample combined) and 'not-moved' households (from the main sample alone) were then compared to investigate any differences in household characteristics, conservancy membership, and land and livestock ownership between the two groups using t-tests and chi-squared tests.

The quantitative data are complemented by a wealth of qualitative interview data on people's experiences and perceptions of settlement displacement due to conservancies (see chapter 3 for



more on collection of interview data). The implications of conservancy displacement for livelihoods are discussed here in the context of land subdivision and land ownership in the Mara. I use two case studies of people who were moved due to conservancies as examples.

#### ***7.2.4 Livestock grazing within conservancies and grazing displacement***

To understand how conservancies affect livestock grazing, in areas both inside and outside of conservancies, I used a mixture of quantitative and qualitative techniques. I asked key informants about the grazing rules within conservancies and how livestock grazing was managed. I also asked community members about their views on the way conservancies interacted with livestock grazing and how this affected their livelihoods. Through interviews, conservancy meetings and participant observation, I was able to learn a lot about the current struggles people were experiencing in their livestock grazing strategies due to conservancies and also land subdivision.

##### Use of conservancies and the MMNR for livestock grazing

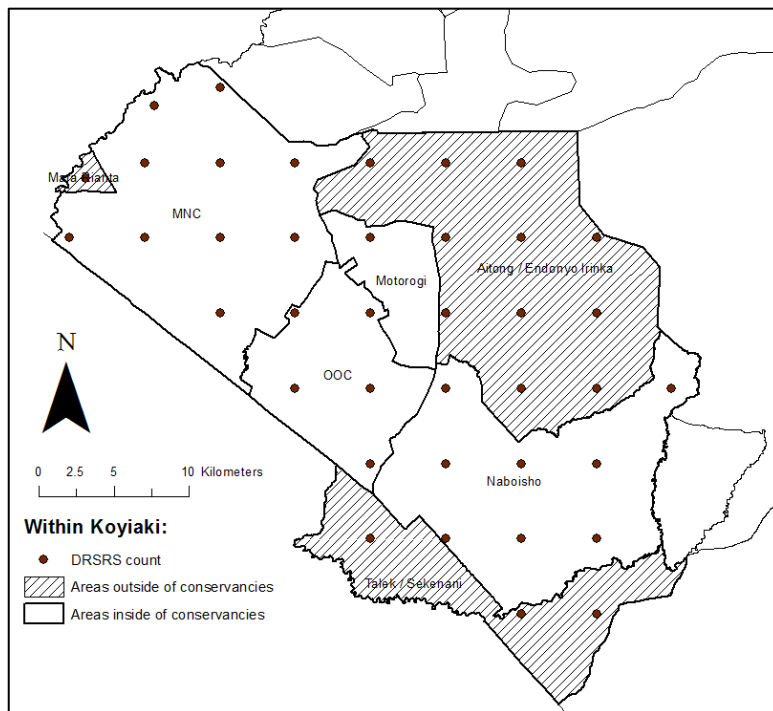
To investigate the importance of conservancies and the MMNR for livestock grazing, I used the household questionnaire to investigate the use of conservancies and the MMNR for grazing in the year preceding the field study (2009-2010). I gathered data on the timing (seasonal and day/night) and length of grazing by conservancy members and non-member households in different conservancies and the MMNR. As the questionnaire sampled Koyiaki Group Ranch residents only, I limited the conservancies in this analysis to the four in Koyiaki only. I developed monthly calendars of reported usage of the conservancies combined and the MMNR for the year 2009.

##### Livestock trend analysis inside and outside of conservancies in Koyiaki from 1996-2011

Long term livestock data for the Mara were used to investigate spatial and temporal trends in the distribution of livestock (cattle and shoats) inside and outside of conservancies within Koyiaki. I analysed livestock count data collected through aerial surveys by the Directorate of Resource Surveys and Remote Sensing (DRSRS) available from 1977-2011. Using the same areas as delineated for inside and outside of conservancies in Koyiaki, I compared the densities in livestock inside and outside of conservancies in Koyiaki between 1996 and 2011. I chose this shorter time frame to be able to investigate any trends related to the formation of conservancies. I show the trends in cattle and shoat density inside and outside of conservancies over this time period.

Livestock and wildlife trends in the Mara are well documented, with many analyses using the DRSRS aerial survey data (Broten and Said 1995; Ottichillo et al., 2000; Ogutu et al., 2011; Bhola et al., 2012). This analysis is a first attempt to look at livestock trends directly in relation to newly formed conservancy areas in Koyiaki. DRSRS population density estimates are based on 5x5km<sup>2</sup> transects, and each transect count point was identified as falling inside or outside of a conservancy in Koyiaki (Figure 7.4). Further details of the method of counting animals can be found in Norton-Griffiths (1978) and Ogutu et al. (2011).

Figure 7.4: DRSRS 5x5km transect count points inside and outside of conservancies in Koyiaki Group Ranch



## 7.3 Results

### 7.3.1 Settlement displacement

Most conservancies have introduced settlement restrictions which deter or restrict settlements all together, depending on the conservancy. People are asked by conservancy managers and leaders or in some cases by the owner of the land parcel on which the settlement is situated to abandon their settlement and relocate to areas outside of the conservancy. No new settlements are then permitted inside the conservancy. This was most strongly seen in the OOC, as almost all settlements were displaced when the conservancy formed. In other conservancies many settlements were allowed to remain, but in the peripheral areas, and generally not close to tourist camps or in the core conservation areas.

### 2011 boma distribution and density

The identification of bomas from the 2011 SPOT 5 image is shown in Figure 7.5. There were 1612 bomas identified from this larger study area, and 293 of these were found within a conservancy. Table 7.2 shows the number and density of bomas identified in each conservancy. Boma density varied depending on the conservancy; the MNC and Motorogi Conservancy had the highest boma densities, whereas the OOC and Olkinyei Conservancies the lowest, with Olkinyei having no bomas present at all.

Table 7.2: Area, number and density of bomas for each conservancy in 2011

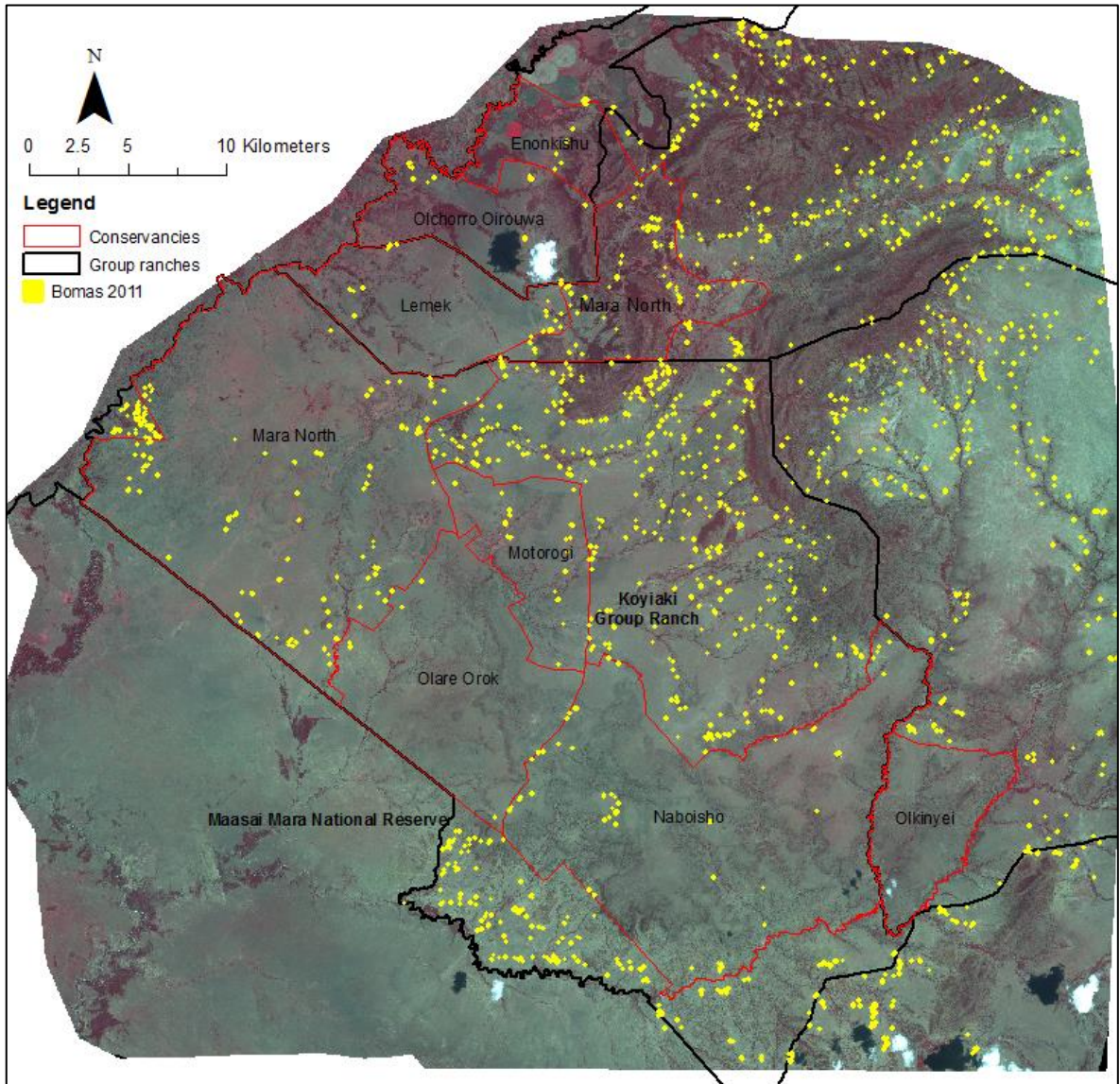
Conservancy	Area (km <sup>2</sup> )	No. of bomas	Density (Bomas/km <sup>2</sup> )
Enonkishu	30.61	7	0.23
Olchorro Oirouwa	55.31	17	0.31
Mara North	295.53	168	0.57
Lemek	60.39	20	0.33
Motorogi	46.95	22	0.47
Olare Orok	102.33	5	0.05
Naboisho	207.97	54	0.26
Olkinyei	43.11	0	0.00
Total in a conservancy	842.22	293	0.35

The image shows quite clearly that there are fewer bomas situated inside of conservancies than there are outside of conservancies. Measuring this for Koyiaki we see that areas outside of conservancies have a clearly higher boma density (1.595 bomas/km<sup>2</sup>) than areas inside of conservancies (0.315 bomas/km<sup>2</sup>) (Table 7.3). The overall boma density for Koyiaki is 0.815 bomas/km<sup>2</sup>. Although the area of Koyiaki under conservancy is slightly greater than the area not under conservancy (61% vs 39%), only 23% of all Koyiaki's bomas are inside a conservancy compared to 77% outside of any conservancy.

Table 7.3: Area, number and density of bomas inside and outside of KGR in 2011

Koyiaki Group Ranch (KGR)	Area (km <sup>2</sup> )	No. of Bomas	Density (Bomas/km <sup>2</sup> )
KGR All	981.45 (100%)	800 (100%)	0.815
KGR inside of conservancies	597.77 (61%)	188 (23%)	0.315
KGR outside of conservancies	383.69 (39%)	612 (77%)	1.595

Figure 7.5: Bomas identified from the 2011 SPOT image with conservancy and group ranch boundaries and the MMNR shown. The image shows the extent of the SPOT image captured in 2011



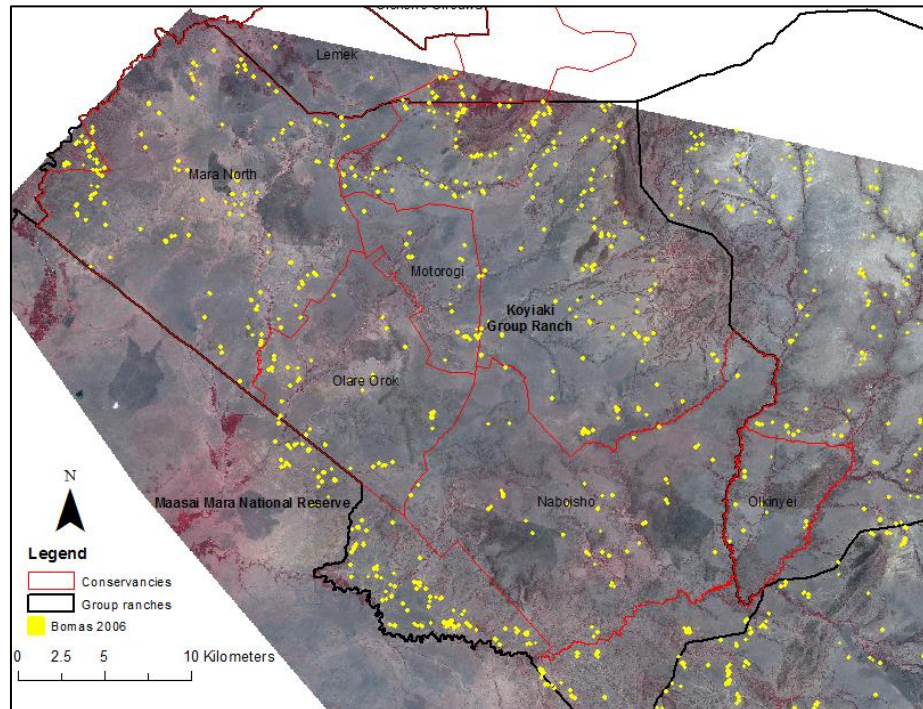
Change in bomas from 2006-2011

Figure 7.6 shows the bomas identified from the 2006 and 2011 images for the smaller study area as captured by the extent of the 2006 image. In this case the 2011 image is clipped to match that of the 2006 image. A total of 884 bomas were identified in 2006 and 1080 in 2011 showing an overall increase in the number of bomas (by 18%) over the 5 years.

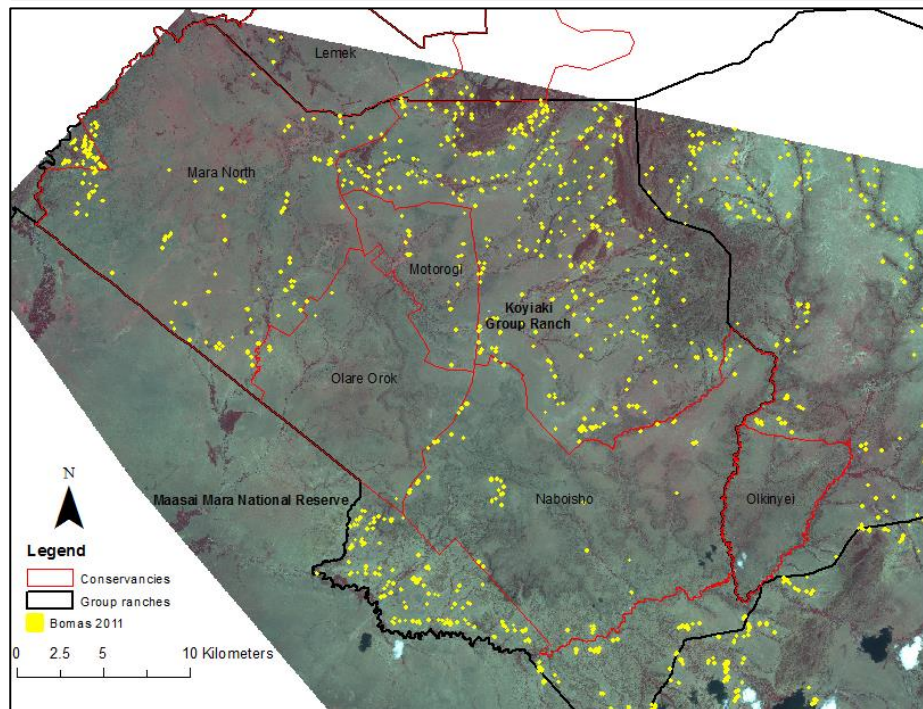


Figure 7.6: Bomas in 2006 and 2011 – showing the extent of image captured in 2006 SPOT 5 image and the 2011 image clipped to match.

**2006 image**



**2011 image**



This trend is also shown in Koyiaki. There were more bomas ( $0.815 \text{ bomas/km}^2$ ) in 2011 than in 2006 ( $0.591 \text{ bomas/km}^2$ ) (Table 7.4). This corresponds to a 37.9% increase in the number of bomas over the 5-year period. However, when looking at the number of bomas in areas inside conservancies compared to areas outside conservancies in Koyiaki, we find a 17.9% decrease (from  $0.383\text{-}0.315 \text{ bomas/km}^2$ ) in bomas from 2006-2011 inside of conservancies, compared to a

74.4% increase (from 0.915-1.595 bomas/km<sup>2</sup>) in bomas from 2006-2011 outside of conservancies.

Table 7.4: Differences in bomas between 2006 and 2011 inside and outside of Koyiaki Group Ranch

<b>Koyiaki Group Ranch (KGR) in</b>	<b>Area (km<sup>2</sup>)</b>	<b>2006 Bomas (%)</b>	<b>Density (Bomas/km<sup>2</sup>)</b>	<b>2011 Bomas (%)</b>	<b>Density (Bomas/km<sup>2</sup>)</b>	<b>% change in density</b>
KGR All	981.45	580 (100)	0.591	800 (100)	0.815	+37.9%
KGR inside of conservancies	597.77	229 (39)	0.383	188 (23)	0.315	-17.9%
KGR outside of conservancies	383.69	351 (61)	0.915	612 (77)	1.595	+74.4%

In Koyiaki, fewer bomas were found inside of conservancy areas in 2006, even before the conservancies had been set up, than there were outside of conservancy areas (i.e. 39% vs 61% of Koyiaki's bomas). Reasons for this possibly include: the presence of previous wildlife initiatives discouraging bomas, the presence of tsetse deterring livestock grazing, and the fact that these areas often have poorer access to water and to market centres (KII 15). However, over the ensuing five years the number of bomas fell inside of conservancies (from 39 to 23% of all of Koyiaki's bomas) but increased outside of conservancies (from 61 to 77% of all of Koyiaki's bomas). Thus, despite an overall increase in bomas from 2006 to 2011, the number of bomas reduced inside of conservancies but increased outside of conservancies. This suggests people are moving out or no longer settling inside of conservancies, but settling outside of conservancies instead, implying displacement and spill-over effects from conservancies. There was a significant association between location inside or outside of a conservancy and the year of observation ( $\chi^2 = 24.8$ ,  $df = 1$ ,  $p < 0.001$ ).

Similar results are found when looking at the change in boma density for each conservancy covered by the 2006 and 2011 images (Table 7.5). In each conservancy, apart from Naboisho, there were more bomas in 2006 than there were in 2011. This is most strongly seen for the OOC and Olkinyei, where almost all bomas completely disappeared. In the case of Naboisho Conservancy, as the newest conservancy only forming in 2010, conservancy managers and community members reported that there would be few restrictions on settlements or grazing for the first three years. When combining all conservancies together - the overall boma density inside of conservancies decreased by 21.7% from 2006 to 2011.

The decrease in boma density inside of conservancies from 2006 to 2011 provides reassurance that even if some of the observed increase in bomas in 2011 is the result of an artefact of the 2011 image having better contrast than the 2006 (dry period) image, this is not so great as to obscure real trends on the ground.

Also of interest is the large increase in boma density in areas outside of conservancies (+74.4%). This increase is almost 20% greater than expected after accounting for the decrease in bomas inside of conservancies and the overall background increase in bomas in Koyiaki (i.e. 74.4%-17.9%-37.9%=18.6%). It is possible this could be explained by in-migration of people into the non-conservancy areas in Koyiaki, possibly attracted by the economic opportunities created by tourism. However, it could also be explained by settlements splitting into smaller family units, possibly as they are displaced out of conservancies, and/or due to greater individualisation following land subdivision (Lamprey and Reid 2004).

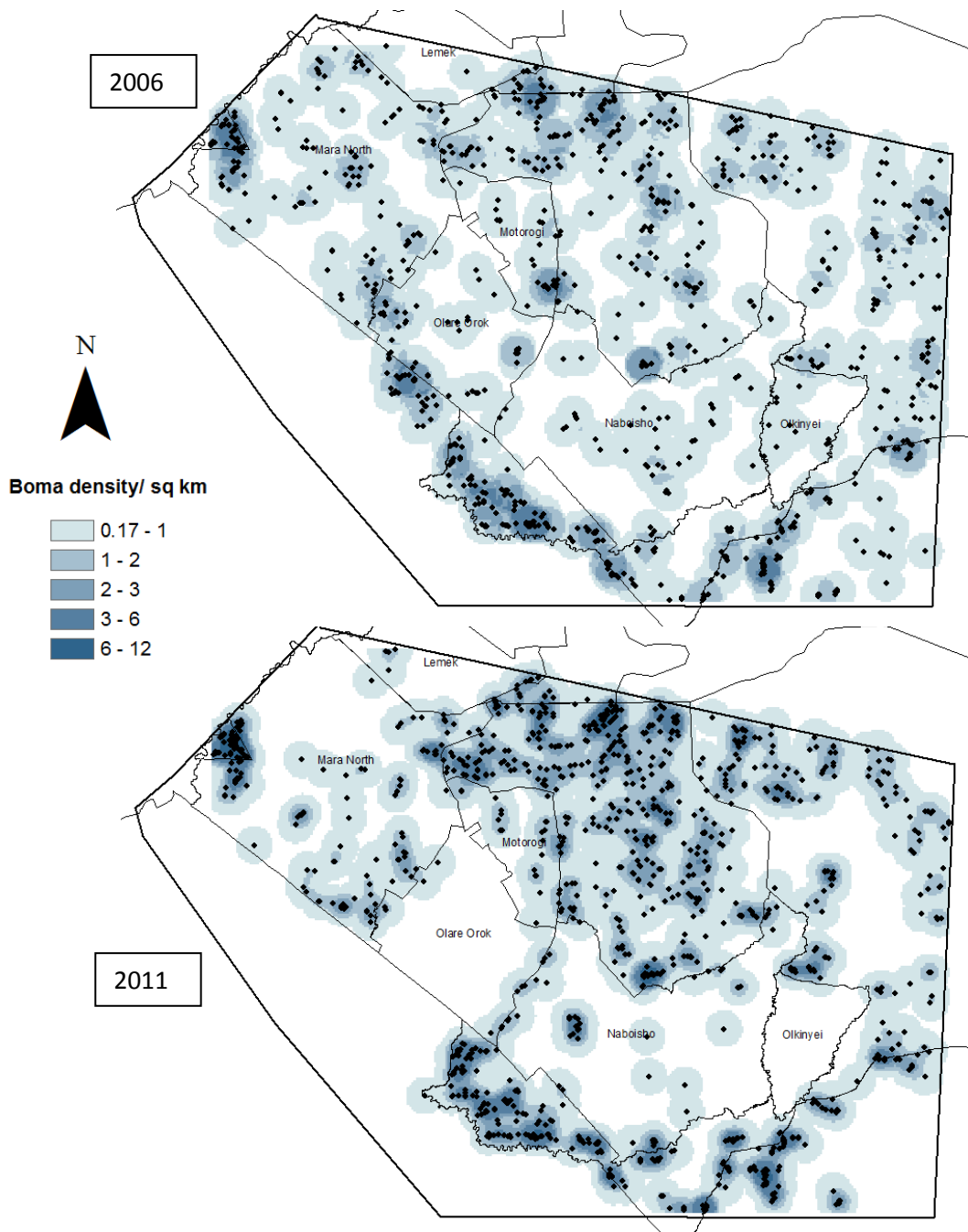
Table 7.5: Difference in bomas between 2006 and 2011. Includes conservancies in Koyiaki and Olkinyei.

Conservancy	Area (km <sup>2</sup> )	2006		2011		% change
		Bomas	Density (Bomas/km <sup>2</sup> )	Bomas	Density (Bomas/km <sup>2</sup> )	
Mara North (Koyiaki only)	240.51	117	0.486	107	0.445	-8.5%
Motorogi	46.95	25	0.532	22	0.469	-12%
Olare Orok	102.33	41	0.401	5	0.049	-87.8%
Naboisho	207.97	46	0.221	54	0.260	+17.6%
Olkinyei	43.11	11	0.225	0	0.000	-100%
Total	640.87	240	0.374	188	0.293	-21.7%

#### Spatial distribution of bomas

The boma density surface map (Figure 7.7) shows that the distribution of bomas was more clumped in 2011 than in 2006. The distribution of bomas in 2006 was more continuous as people occupied areas both within and outside of conservancies. By 2011, the map shows that there were a number of areas then devoid of bomas, and that some had become more crowded than in 2006. This is a potential effect of people moving out of conservancies and settling in areas outside of conservancies, and especially closer to market centres -e.g., there is an even more dense aggregation of bomas around the areas of Mara Rianda, Aitong, and Talek in 2011 than in 2006. The role of conservancy creation in producing this effect is however confounded by people being attracted to these areas for many other reasons – e.g., schools, markets, and other opportunities.

Figure 7.7: Density surface map of bomas for 2006 and 2011



In the following sections the displacement of settlements found here are contextualised as people describe moving out of conservancies and settling in areas outside of conservancies.



### 7.3.2 Household displacement from conservancies

This section looks at household displacement from conservancies, using results from two datasets, and supported by interview data. The first dataset consists of the 258 households sampled in the household survey, 45 (17%) of which reported being moved from a conservancy (Table 7.6). The second consists of 25 households moved from the OOC when it was formed (Table 7.7). Taken together these samples are used to examine some of the details concerning who was moved from a conservancy and where they went to. A total sample of 70 households were 'moved', compared to 213 households 'not moved'

Most of the households who reported being moved from a conservancy, had been moved from the OOC and MNC (Table 7.6). Only three households had been moved from Motorogi Conservancy, and there were no reports of anyone being moved from Naboisho Conservancy, again most likely because this conservancy had just started, and there were no immediate settlement restrictions.

Table 7.6: Households reporting being moved from a conservancy. Data from the main household survey

Moved from	Moved to	Moved to make a new boma	Moved to someone else's boma	Conservancy membership		
				Members	Non-members	
OOC 18	Within Koyiaki 45	22	Family 20 Friends 3	OOC	6	22
MNC 24				Naboisho	9	
Motorogi 3				MNC	4	
Naboisho 0				Motorogi	1	
				MNC+Naboisho	2	
				OOC+Naboisho	1	

Table 7.7: Sample of 25 households moved from the OOC when it was formed in 2006 (from an estimated 103)

Moved from where	Moved to where	Moved to make a new boma	Moved to someone else's boma	Conservancy membership		
				Members	Non-members	
OOC 25	Within Koyiaki 23	18	Family 6 Friends 1	OOC	5	16
	Siana GR 2			Naboisho	3	
				Motorogi	1	

When the OOC was formed, an estimated 24 different settlements, making up 103 independent households were moved. No financial compensation was given, although transport was provided to move people's belongings (CII 2, 3). Displacement occurred mainly in two areas - Olare Orok and Iseketa. This movement is shown in the satellite image maps of 2006 and 2011, where in

2006, 41 bomas were identified in the OOC area, and only 5 remained in 2011 (Figure 7.6; Table 7.5).

Just before the OOC was set up there was also a large movement of settlements from a nearby area, 'Nguengueny', just inside the MMNR boundary. People living here reported that in 2005, Narok County Council officials asked them to move since they were living inside the Reserve. Many however believed this to be linked to the formation of the OOC. This movement is shown in Figures 7.6 and 7.7, where 26 bomas adjacent to OOC and just inside the MMNR in 2006 had all disappeared by the 2011.

#### Who was moved?

Almost equal numbers of conservancy members and non-members had been moved from a conservancy. Settlement restrictions and displacement from a conservancy thus applied to both conservancy members and non-members. In agreement, when comparing 'moved' households to 'not-moved' households, there was no significant association between being moved and being a member of a conservancy ( $\chi^2=0.741$ ,  $df=1$ ,  $p=0.389$ ). There was also no significant association between being moved and owning land ( $\chi^2=0.307$ ,  $df=1$ ,  $p=0.579$ ). In fact, 76% of households moved owned land, either in a conservancy or elsewhere. Moved households also owned very similar sizes of land to not-moved households ( $M=113$  vs  $115$  acres) ( $t=-0.154$ ,  $df=281$ ,  $p=0.887$ ). There was also no significant association between being moved and the household head's leadership status ( $\chi^2=1.385$ ,  $df=1$ ,  $p=0.239$ ) or age ( $t=1.029$ ,  $df=281$ ,  $p=0.305$ )

Moved households did however own significantly more livestock than not-moved households ( $M=10.9$  vs  $8.5$  TLU/AUs) ( $t=2.586$ ,  $df=281$ ,  $p=0.01$ ). Since moved households were previously living within (the often core) conservancy areas, these areas typically have good access to a high quantity and quality of forage compared to areas outside of conservancies. This might have allowed herd sizes to grow larger compared to areas households moved to outside of conservancies. Also, since the majority of moved households were moved from the core areas of OOC or MNC, these areas have very good access to the MMNR for grazing, with both being directly adjacent to the MMNR. Areas inside of conservancies also have fewer settlements (Figure 7.6 and Table 7.4) and fewer livestock (see Figure 7.9 and 7.10 ahead) compared to area outside of conservancies, thus reducing competition amongst livestock for grazing and enabling herd sizes to grow. In support of this hypothesis, data from the household survey ( $n=258$ ) show that those households currently living inside a conservancy ( $M=10.8$  TLU/AUs,  $n=50$ ) do own significantly

more livestock than households located outside of a conservancy ( $M=8.6$  TLU/AUs,  $n=208$ ) ( $t=2.118$ ,  $df=256$ ,  $p=0.035$ ). Conservancy areas are also valued higher in terms of key livestock grazing attributes than non-conservancy areas (section 5.3.2).

#### Where did people go?

From both datasets, almost all households reported moving to another location within Koyiaki, often not far from their original settlement site but to an area just outside of or on a conservancy boundary. This was also true for most of the 103 households moved from the OOC; only seven households moved to Siana (these households had a member who was a registered group ranch member of Siana) and one household moved to relatives across the border in Tanzania.

Many households moved from OOC, moved to other areas which are now on the periphery of other conservancies, for example in the MNC and Naboisho Conservancy. Almost all those that were living in the Iseketa area in the OOC moved just across the Talek-Aitong road, which marks the eastern boundary of the OOC, to blocks 3 and 4 of Koyiaki, part of which later became Naboisho Conservancy. Many households displaced from the nearby Motorogi Conservancy also moved to this area. At the time, this land was still communal and people moved there in the hopes of eventually being allocated land there during land subdivision. When this land was eventually subdivided and sections turned into Naboisho Conservancy, those who were not fortunate enough to receive land allocations, were again asked to move on, and deliberated as to where they were to move next.

As more areas in Koyiaki have become conservancies, there are increasing difficulties for many people in finding a place to settle. The issue of running out of space for settlement and grazing was widely perceived as a real problem. In the MNC, residents of one large boma located in the core conservation area of MNC commented:

M1: There is no one moved, but they are always coming to us, telling us we should move.

*C: And what do you tell them?*

M1: They used to tell us they would buy land for us somewhere else, and we then tell them to go and buy for us so that we can move.

*C: Where do they suggest that you go?*

M6: We will not move to anywhere.

*C: And what about the management where do they tell you to go?*

M7: They don't have anywhere to take us.

M8: They are only having the conservation land.

M9: They are also not willing to buy land for us.

*Group of men, members and non-members, community interview 10*

The same group of men go on to discuss the implications of land subdivision in blocks 3 and 4, and the subsequent formation of Naboisho Conservancy, which has meant there are now fewer places to move to:

‘Before, the land on the other side of the road from Aitong up to Talek was not subdivided nor a conservancy. All people were allowed to graze their cows beyond the road, whether you were from block 1 or 2. During that time they used to tell us to move to places on the other side of that road. But now, if you go across the road to places like Enesikiria, they have already been given out.’

*Group of men, members and non-members, community interview 10*

They then go on to talk more generally about the problems of moving and lack of space now that Koyiaki has been subdivided:

‘Before Koyiaki was subdivided, and we were said to be in a group ranch, people didn’t mind leaving their land and going to settle over there (implying block 3 and 4 across the Aitong-Talek road). Nor did we mind when people moved to our place for settlement and grazing. People were allowed to graze their cows all over. But right now, as you have heard, every place has been subdivided. All the land has been given out and there is no place someone can move to, and that is a problem. For example, if someone from there (implying block 3 and 4) should come to settle here (implying block 1 and 2), then whoever is here must go and settle over there to create space for the one that is coming, since he can’t settle in the sky.’

*Group of men, members and non-members, community interview 10*

In these comments the issues of land subdivision and conservancies are closely integrated and mixed-up. As implied in the above quote, land subdivision has had the effect of constraining mobility, and preventing people from freely accessing other areas. Conservancies that restrict settlement and grazing have thus added to this constraint.

On occasion, conservancies have allowed some settlements to remain in a conservancy, usually on the periphery areas, and not their core conservation areas close to tourism camps. For example, this was true for some Motorogi Conservancy members who were living on their own piece of land and were allowed to remain as a member of the conservancy, but at a lower lease payment. However, these parcels were to have their leases discontinued after 2012 and before the new camp was opened (KII 14).

Those people living on land they do not own, have less bargaining power to remain, and are often asked to move by both the landowner (to maintain eligibility for payment) and by the conservancy management. Conservancies may thus have the effect of reducing any previous tolerance of landowners to others living on their land following land subdivision, or in speeding up the movement of people to their own or other parcels of land (see Box 1 and 2 for case studies as examples of this). The intolerance of others living on their land can even extend to family members as one woman gives an example:

*'Yes (we are going to be moved), because where we are living now is not our land....The owner, even though one of our family, is going to move us....My husband's land is inside the conservancy.'*  
*Group of women, husbands are members, community interview 12*

Nevertheless, kin relationships were found important in taking-in people who were displaced from a conservancy. In both 'moved' samples, a number of households displaced from conservancies went to join family or friends in their settlements (Tables 7.6 and 7.7). Households also reported receiving others displaced from a conservancy. For example, in household survey (n=258), 35 households reported receiving displaced people, either their friends or family from a conservancy, including: 18 from OOC, 13 from MNC, 2 from Motorogi Conservancy, 1 from Lemek Conservancy, and 1 from Olkinyei Conservancy.

When Naboisho Conservancy started in 2010, settlements were largely allowed to remain in the conservancy as their conservancy management plan was drawn and a number of new camps were built. Naboisho Conservancy has generally had few bomas especially considering its large size (Table 7.5), and many of these bomas were used only seasonally. This is in part due to the area being historically infested with tsetse fly and because there is a lack of water in many parts. Now that a number of new camps have opened inside the conservancy and the area is more heavily used by tourists, the conservancy management are asking bomas to move (KII 33; Naboisho 2013). In the main settlement area in the conservancy, with a more dense aggregation of bomas (see Figure 7.6 for the growth of settlements in one area from 2006-2011) the conservancy management held a number of meetings asking people to move, enlisting the support of conservancy landowners to stop people accessing that land, and sending warning letters in the process (Naboisho 2013). However, many people complained that they did not have any other land to move to and were afraid to move to someone else's land and being asked to move again (Naboisho 2013).

This reiterates the lack of space and options for people to move to as discussed above. Realising the problem of the lack of space for settlement and the pressure to find space outside of conservancies, some conservancy managements are now leasing 'host parcels' outside of conservancies (KII 33; Naboisho 2013). Here, the conservancies pay landowners outside of conservancies to allow others to settle on their land. This then encourages those living inside a conservancy to move out. A similar suggestion was given by case study 2 (see box 2) as a way to help solve some of the settlement problems due to conservancies. In another example, tourism investors have offered to advance money to those conservancy members who still reside inside a

conservancy, so they can buy land, which will then be taken off their lease payments, to encourage them to move out (Naboisho 2013).

#### Having other land to settle on

Some people choose not to join a conservancy but rather to live and graze on their own land. At least three households who were displaced from their boma in the OOC went to settle on another location inside the OOC –to land either they or their relatives owned - effectively deciding not to join the conservancy. An example of this is given in case study 1 (see box 1) where this family when asked to move from the land they were living on inside the OOC (but did not own), decided not to join the conservancy and went to settle on their own land in another location of the OOC. In this case the formation of OOC was an impetus for them to move to settle on their own land which they had until then not chosen to occupy. In another similar example (see box 2), this member of MNC decided to drop out of the conservancy when he was moved from where he was living, and went to settle on his own land in another part of MNC. In these cases, being able to live and settle on their land proved more important than joining the conservancy.

The issue of not having anywhere else to live or graze on when joining up (what might be a sole household's parcel of) land to a conservancy, was commonly raised. This problem was already mentioned in section 4.4.2 when discussing what motivated people to join a conservancy. It is brought in again here in the context of being moved and having a place to settle:

'If you do receive this money, it is little but it's not bad. But I think the only problem is if you don't have anywhere else to settle, because where will you go if you are told to move from the place you are living? That will be the biggest problem of all. For example, if you decide to sign your land (to the conservancy), and if the predators are found there, and probably the *ilashumpa* would want to camp there, you will be told to move. And where will you go to live? And no one will accept to receive you.

*Senior elder, member of OOC, community interview 30*

Although a member of OOC, this elder said he did not join another parcel of land he owned to Naboisho Conservancy, but chose to use that parcel for settlement and grazing. This can explain his view of the importance of having somewhere to settle. He goes on to say that those who do join a conservancy are themselves to blame for joining when they run into problems of having nowhere else to live:

'It's not good, but if you try to look at it, it is only the owners of the lands who have themselves to blame. Because when someone decides to sign the only land he owns for all those years, and is then told to move out of that place, isn't that a problem that you have created for yourself? Why don't you refuse to give out your place and decide to stay on it whatever its size? I don't think those people (tourism investors) have problems, it is the landowners who are not being very careful, creating problems for themselves.....It was not by their wish (to join), but by the wish of getting money, and once they come to realise, it is too late....Let me just try to show you - If you have enough food, but you don't have anywhere good to rest and enjoy your meal, does that make sense? Do you think that is ok?'

*Senior elder, member of OOC, community interview 30*

At the end of the quote he uses a metaphor to elaborate on how there is little point of someone getting the conservancy payment if they have nowhere to live to use that payment. Therefore, it was a problem if someone joined their land to a conservancy but did not have another land parcel to depend on. For those fortunate to have more than one land parcel (as he has), especially if one falls inside and one outside a conservancy, they are able to join one parcel of land to a conservancy but still have somewhere else to settle and graze. Conservancy managers also recognised that those members with another parcel outside of the conservancy were in a better situation regarding settlement and grazing than those that did not (KII 7). However, settlement restrictions are faced by both those who decide not to join a conservancy (or don't have the option of joining a conservancy in the first place) and those that do join, since the land available to move to is reduced by the conservancy:

'..If you have not agreed to sign, you will be fixed to your own place and told not to move to anyone else's land. And for those who have agreed to sign, you will also have nowhere else to depend on/move to.'

*Senior elder, member of OOC, community interview 30*

The restrictions of settlements inside conservancies are thus felt community-wide in Koyiaki, by both conservancy members and non-members, and represent one of the main conservancy costs (chapter 5).

**Box 1: Case study 1: Deciding to settle on conservancy land, community interview 27**

'John's' family owns land in OOC and decided to settle on it when they were moved off the land they were living on elsewhere in OOC. This is the only parcel they own, so they decided not to join the conservancy. They were previously living on another parcel in OOC and were asked to move by the conservancy, so they moved to their own land. The conservancy advised them not to settle on their land so that they could join the conservancy, but without another piece of land to go to, John's family settled on their land in the OOC: *'Yes, before we came to settle, they told us not to settle (on our land) so we could join (the conservancy)...I told them I will not join since I have nowhere else to go.'*

John's livestock live and graze inside the conservancy. As a result they are told by the conservancy how, where and when they should graze their animals:

*'We are told that we should remove the bells on the cows to be allowed to graze, also we are told to graze only at night, and the cows should return early before dawn...We are also told that we should not go too close to the camps'*

*'the cows are no longer grazing in all the areas like they were doing before. Now we are just grazing on one part. So it has really changed since we are not allowed to graze in all areas.'*

But despite the restrictions they face on grazing their animals, John's family still benefits from having their cows inside the conservancy:

*'Yes sometimes it is good because we may be allowed to graze during the dry season in some places.'*

*'It can be a benefit if we are allowed to graze everywhere during the drought season.'*

*'There's a benefit because the settlements in the conservancy are restricted, so the cows get more places to graze, more so than if settlements were allowed everywhere.'*

*'We do like the way they are managing the grass (as it allows the grass to grow high) because for those people who live nearby, they will get a chance (to graze inside).'*



**Box 2: Case study 2 – Deciding to drop out of a conservancy, community interview 21**

'Mark' was a member of MNC for 3 years but decided to drop out of it in 2010 when he was moved from the land he was living on inside of the conservancy. The conservancy management asked Mark to move since the owner of the land he was on had passed away and the land was inside the conservancy. He then decided to move to a 70 acre parcel of land that he owns inside the core area of MNC. He no longer receives his conservancy payment. He also owns land in Naboisho Conservancy. He was given no help or compensation to move:

*'It was a suggestion from the conservancy since the owner of the land is not alive. So I'm not sure whether it was the (conservancy) warden, director, or chairman but they all drove in with their vehicles and ordered us to move immediately, in one day. So we moved on that day.'*

*'Since these people don't know where your land is located, they just tell you to move, and they don't know whether that part of your land you'll move to is the main point of where the wildlife is in the conservancy. They don't know if that is an important part of the conservancy. I decided myself to live together with the wildlife, since they told me you're not going to be paid the money, because you have decided to settle on your land. So I decided to continue living on my land in the normal way.'*

*'I only went to one meeting. I was told I would need to pay for where I was living and I decided that I'm not going to agree to pay to live on somebody else's land when I have mine. So (we requested that) if you would like us to continue to be in the conservancy without any conflicts then it would be advisable if we could be allowed to settle in one part of the conservancy, but they said that was not possible. That's why I decided that I'm not going to rent somebody's land while I have mine, and if you see that it's not possible for you to continue leasing my land then give me a chance to settle on my land*

Mark thinks the issue of settlement needs to be better planned for, and thinks others could settle in the conservancy if there was a specific area for settlement:

*'If these people could come with a better way so that people could be allowed to settle together on a certain part of land, that is the only way that people will not occupy everywhere. There should be, for example, two parcels of land where all people could gather to live together. And if all the people could settle on these two parcels of land the owner should be paid money. But if he's not paid money, he will move you to your own land. And that is what is creating all those problems'*

*'The suggestion that I can make is that people should be given the chance to settle in a certain place, on one part, and everything else should be given the rest of the space. That is the only thing that could help the conservancy. Because if everybody decides that they want to settle on their own land, since they have a right to, then I'm sure the conservancy will collapse in one day. So that is the only way and there's no other idea you can make except for people to be given maybe three parcels of land to settle on'*

*'It can be possible that up to five bomas can settle on one piece of land because a 150 acre parcel of land is quite big, and it will be enough for these bomas. It's only a place where the bomas should be built, but not where the livestock are grazing around, because the livestock will be moving to all the other places.'*

Mark grazes his livestock just around the boma, but is unsure of what grazing restrictions he will face in future:

*'The restrictions they have given out is that my cows should not be stepping on anyone's land....what they have said is that they are going to think about whether they will restrict me or not. And if it happens that they bring their restrictions I can also restrict them (the management) from stepping on my land, but if they don't bring their restrictions, we can just stay in a free and open way.*

### **7.3.3 Livestock grazing in conservancies and displacement**

As people have been moved out of conservancies so have their livestock. Livestock grazing within conservancies now follows controlled grazing plans, determining when and where, specific herds are allowed to graze inside the conservancy. The grazing rules are monitored and enforced by conservancy rangers, and livestock owners are fined if herds are caught grazing outside of the specified times. During the tourism low season (around April/May and November), it was reported that livestock were allowed to graze more flexibly since a number of the camps would be closed, compared to the tourism high season (July-Oct), when the conservancy is full of tourists. Similarly, grazing is restricted close to tourism camps, but allowed more flexibly in areas further away from camps.

Much of the reason given for the strict grazing restrictions was due to the fact that the tourism investors did not want cattle in the conservancies (KII 14, 18, 32). Where livestock grazing was initially completely excluded by conservancies, some persuasion was required to convince the tourism investors to allow some level of cattle grazing (KII 14). Much of this centres on the marketing and idea of conservancies as wild people-free places. Conservancies are marketed and portrayed as exclusive, low density tourism destinations that offer a private and authentic safari experience. For this reason, tourists do not expect, and thus want, to see cattle in the conservancies, and this is the argument the tourism investors give for not wanting cattle grazing in the conservancy (KII 32). Hence, grazing is carefully monitored within conservancies to avoid being seen by tourists. When cattle are allowed in, then the herders must wear their traditional Maasai *shukas*<sup>47</sup>. This argument generally takes precedent over any threat that livestock grazing might cause on the environment. In fact, the benefits of cattle grazing in maintaining a rich assembly of wildlife in these areas are well recognised by conservancy managers (KII 14, 19, 32).

#### Use of conservancies for grazing

Despite the grazing restrictions, people still reported using the conservancies for grazing. Many households reported grazing inside conservancies, even outside of the stipulated times. In the household survey (n=258), 87% of households reported grazing in at least one conservancy in Koyiaki in the year preceding the study (2009-2010). Many of these households (n=49, 19%) reported grazing in two or more conservancies. About half (46%) of all the grazing in conservancies was reported as being regular or almost daily, whereas 47% was reported during

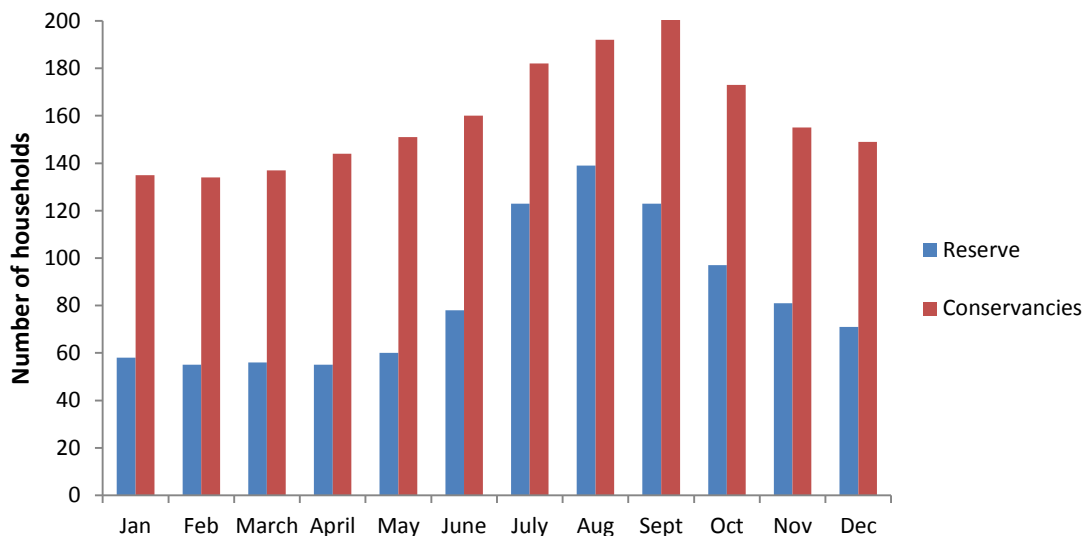
---

<sup>47</sup> A *shuka* is the traditional Maasai blanket or cloak, which is usually red in colour.

dry times only, and 7% for other occasional or seasonal use. Conservancy members and non-members both equally reported grazing inside a conservancy ( $\chi^2=1.687$ ,  $df=1$ ,  $p=0.204$ ).

Figure 7.8 shows the monthly reported usage of the (four) conservancies in Koyiaki and the MMNR for grazing reserve during 2009. Conservancies were used for livestock grazing throughout the year, but this increased during the dry season. Conservancies thus remain important livestock grazing areas for many people in the Mara. As was shown in chapter 5, livestock grazing in conservancies, when accessed, is one of the main benefits of conservancies as perceived by community members. People also valued conservancy areas significantly higher than non-conservancy areas for livestock grazing (section 5.3.2). There were also instances where people moved their settlements closer to the conservancy boundaries so livestock were able to better access the grass within conservancies (KII 33).

Figure 7.8: Monthly calendar of the use of the MMNR and Conservancies (OOC, MNC, Naboisho, Motorogi) grouped during 2009-2010 (n=257)



#### Conservancy grazing during dry times

Livestock grazing in conservancies intensified during the dry season, from July to Oct. During 2009 there was a bad drought in the Mara, made worse by an influx of cattle from far off areas to seek grass (KII 14, 19). Many people from Koyiaki sought grazing in the conservancies, as the grass in areas outside became scarce. People reported grazing most heavily in the MNC and OOC during this time, as these conservancies retained grass for longer than areas outside of conservancies, and the drier Naboisho Conservancy to the east. Many people and their cattle also passed through the OOC and MNC on their route out of the Mara as they journeyed west to

Lolgorien in the neighbouring Trans Mara area, a higher area with more rainfall, where grazing conditions were more favourable. In fact, 86% of households in the household survey reported moving their cattle to Lolgorien during 2009 due to drought and the lack of grass in Koyiaki.

During this time, conservancy managers reported conservancies were under considerable pressure from livestock grazing (KII 14, 15). Many wildlife were dying due to lack of forage, so conservancies closed their boundaries for livestock grazing. During this time, the OOC rangers worked round the clock, and particularly at night, removing cattle from the conservancy, and collected KES 220,000 (US\$2750) over a 3-month period (KII 18). Thus, although, drought periods are a time when there is much pressure from livestock owners to graze within conservancies, these are not necessarily periods when the grazing rules are relaxed. Much of this can be explained by the fact that the dry season (July-Oct) is also a time which coincides with the high tourism season in the Mara due to the wildebeest migration coming from the Serengeti. This thus creates conflicts between livestock herders and the conservancy during this critical period.

#### Use of the MMNR for grazing

The MMNR is also an important livestock grazing resource. Although grazing in the MMNR is illegal, the MMNR rangers have often in the past turned a blind eye and tolerated grazing if only at night when there are no tourists inside the Reserve. In the household survey (n=257), 66% of households reported using the Reserve for grazing in the last year. Most of this (47%) was during the dry times only, but a large portion (19%) said they used the Reserve for grazing most days. For those who reported grazing in the MMNR (n=170), most (64%) did so at night only. Since, this was the time it was (unofficially) allowed, most people grazed at night to avoid the risk of being fined at other times by the Reserve rangers<sup>48</sup>. Very few reported grazing in the MMNR during the day only (6%), although some reported a mixture of day and night grazing (29%). Like the conservancies, the heaviest livestock grazing pressure in the MMNR was found during the dry season (Figure 7.8). Again, by coinciding with the peak tourism season in the MMNR, this creates conflicts between herders and the Reserve at this time.

#### Lack of space for livestock - conservancy or land subdivision?

The restrictions on livestock grazing in conservancies were perceived to be a real problem in being able to find space for livestock to graze. This was especially because of the simultaneous

---

<sup>48</sup> Commonly when I stayed close to one of the Reserve gates I would hear cow bells entering and leaving reserve at dusk and dawn.

restrictions of grazing in the conservancies and also in the MMNR. Some reported that space was now so limited that livestock could only graze around the settlement:

‘Yes, it has really changed, until we are just grazing the cows around the bomas, as you can see here they are (the cows), they have nowhere else to go because here is the park and on the other side is the conservancy.’

*Group of women, husbands are non-members, community interview 24*

With 61% of Koyiaki under conservancies, this does restrict grazing to more confined areas. Some people saw the reduction of livestock as a goal of the conservancies, since there was less space for cattle to move to:

‘...sometimes the grass becomes very green and long but our cattle cannot move far...they tell us to reduce the number of our cattle. For example, our cattle here are about 200, and they will not allow us to increase the number of cattle to be above that.’

*Elder, member of MNC, community interview 8*

‘their aim is that they want us to sell all our cows’

*Group of women, husbands are members, community interview 15*

Others viewed the reduction of livestock as an inevitable occurrence, and because of the conservancies people would need to reduce their herds to cope with the lack of space:

‘According to how I see it, this is something that the landowners are coming to realise, that there is no longer enough space for them. When the *ilashumpa* tell us to keep away from here, and the landowners also tells others to keep away from here, don’t you think that a clever person will decide to reduce the number of this cows and keep only enough that his land can accommodate?’

*Senior elder, member of OOC, community interview 30*

The issue of the lack of space for grazing is also heavily tied up with issues of land subdivision creating the same problem:

‘It’s a problem since we don’t have anywhere else that our cows are grazing, because everywhere is occupied due to the demarcation of land, whereby you can only own a small piece of land and maybe you are having a lot of cows and also sheep and goats. So where do you think you will take them? And the other person who is next to you might decide to put a fence for his own livestock.’

*Group of women, husbands are members, community interview 25*

These quotes highlight the perceived problem of running out of space for livestock, either due to conservancies or due to the land subdivision. However, the argument that conservancies were *creating* space that land subdivision had reduced was also made. This counter argument, often made in support of conservancies, followed that that conservancies kept land together, and provided space for livestock by keeping the rangelands open:

'I also heard somebody saying that the livestock should be given priority to graze everywhere in the conservancy. It is true that all of us here like the livestock but there is one thing I would like to remind you. Many of us are taking advantage of grazing because of the conservancy, otherwise if for example, the conservancy was dissolved and everyone given his land, I am sure everybody will fence his land and you will not be able to step on anyone's land to graze. We are benefiting through the conservancy because we are getting the lease payment and the livestock are grazing on some areas and probably you will use this money for paying school fees.'

*OOC Chairman, OOC meeting*

This argument was made in regard to the subdivision of land, in that without the conservancies people would not be able to graze freely because of increasing individualisation, and people being restricted to their own parcels. These arguments, supportive of conservancies, were put forward by committee members and conservancy members when discussing extending the OOC lease contract from 5 to 15 years during an OOC meeting. It was argued that if conservancy members decided to drop out of the conservancy they would not be able to graze freely anymore anyway because of land subdivision:

'If you decide that you will move to settle on your land, everyone will have to depend on his own land and that will result in a decrease in your livestock since our lands are not the same in size. You will need to have water in your land to avoid any further movement of livestock and we all know that not every land has water. Look for example, before this area was subdivided when we were living in group ranches, even one person could own the whole of Koyiaki. But now, everywhere is subdivided and we all own small land which is not enough for our livestock keeping. And now we have a conservancy and everyone is allowed to graze in some areas without thought if your own land is big or small.'

*Conservancy member, OOC meeting*

In the above quote, this member compares conservancies, in their aspect of bringing land together, to pre-subdivision times, when people were able to access any piece of land. There was also the further argument that since so much land has been sold to outsiders, people would not be able to graze as freely as if the conservancy wasn't there:

'If for now we end up dissolving the conservancy, some of you will not even manage to keep your livestock since most of you have sold off most of your land. And those lands were sold to non-Maasai. So when you say that you would like to settle on your land, some of you are surrounded by those people who have bought land and they will also move to settle on their land. And this will be very difficult for you as a Maasai who keeps livestock because they will not allow you access to their land. So this is why I'm trying to advise you to support this issue so that we can have a conservancy for a long time otherwise you will not have any land to move to.'

*OOC Chairman, OOC meeting*

The points raised here show that although restrictive, conservancies, *when* open for grazing, help maintain pastoral mobility, and prevent land being fenced, sold, and lost out of pastoral use completely. Conservancies thus keep land together, and re-aggregate individual pieces of land similar to pre-subdivision times. However, the management and use of these areas has changed so dramatically, that they are *de facto* removed from pastoral use for much of the year. The comments also highlight the efforts of persuasion used by some committee members and

conservancy members to encourage others to continue as members of the conservancy and sign up to the 15-year lease contract.

#### Efforts by conservancies to reduce cattle numbers

Realising that space for livestock and livestock grazing is reduced, conservancies are encouraging landowners to reduce their numbers of livestock. Conservancy managements are promoting improved or exotic livestock breeds, which when crossed with local breeds, can be more productive and ultimately marketed for higher prices. The idea is that this will then encourage landowners to own less livestock, but of a higher quality and production, than traditional breeds. Keeping fewer more productive animals will also reduce the impact of livestock on the environment – an outcome ultimately favourable to wildlife. Through their cattle management plans, conservancies aim to increase the value and productivity of cattle, and thus maximise their profitability. This involves introducing strict stocking rates, crossing cattle with improved breeds, and fattening up cattle for profit and sales. Cattle management plans are influenced by commercial ranching models and many are based on experience and expert opinion from ranchers and land managers in other mixed livestock and wildlife areas. Some conservancies have initiated exchange visits to ranches and conservancies in Laikipia, so landowners are able to learn about their livestock management practices.

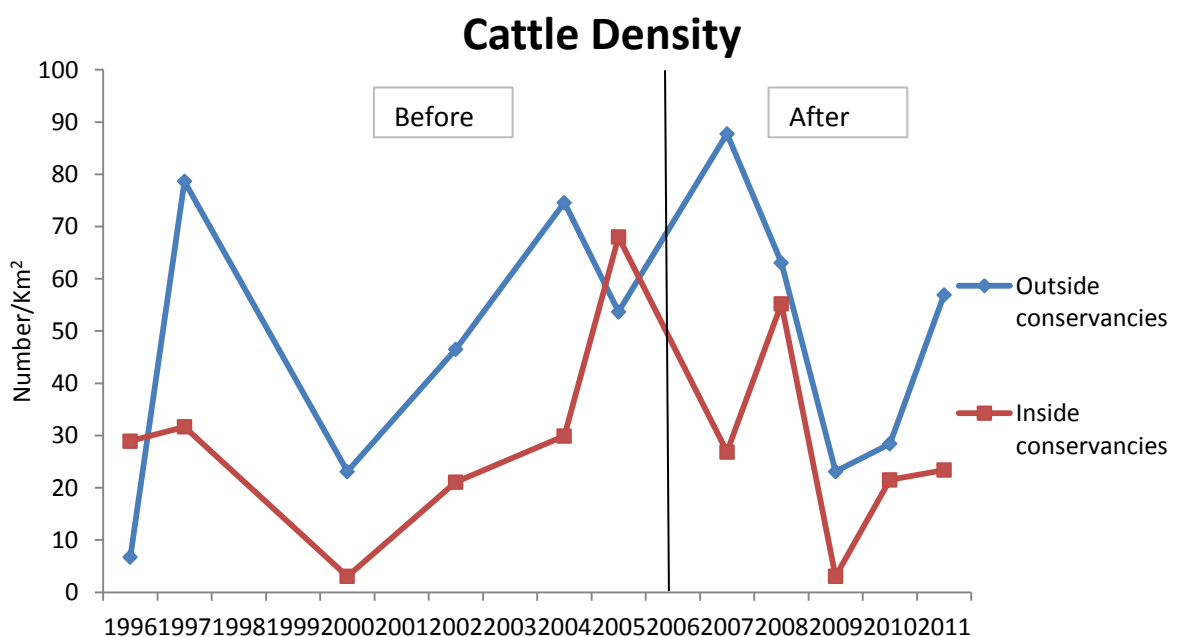
Although improved breeds can result in improved production levels, there are a number of factors that should be considered before introducing them into a particular system (Marshall 2014). Although more productive, improved breeds are likely to require more food, more water, and more animal health care. When introducing new breeds, consideration must also be given to: whether the associated livelihood gains will be accessible to all household members (since men tend to control more valuable assets) (Njuki and Sanginga 2013); the level of risk in a pastoral system when maintaining resilience is of key concern; and to the environmental impacts if improved breeds also require increased feed and water resources (Marshall 2014). Improved cattle breeds have higher market values, but they are less resistant to drought (Nkedianye et al., 2011). There is also no evidence that adoption of more productive breeds translates into keeping fewer animals (Marshall 2014). There are thus likely to be trade-offs between higher productivity levels and environmental sustainability when introducing improved breeds.

Discussion on new breeds in the Mara was gaining momentum when I was in the field and many community members seemed interested and discussed possibilities of introducing new breeds to their herds. However, few had done so at this stage.

### Are livestock reducing inside of conservancies?

Medium-term data (1996-2011) on cattle densities in Koyiaki are highly variable with little discernable change in cattle density over time (Figure 7.9). Densities vary widely from one year to another, and severe drops in cattle density are evident during well-known drought periods in 1999-2000, 2005-2006 and 2009. However, the density of cattle is lower inside than outside of conservancies, for most years throughout 1996-2011. Due to the high variability in cattle numbers, and only a few years since conservancies were set up (2006-2011), no obvious trend is discernable from the data regarding the conservancies' influence on cattle density.

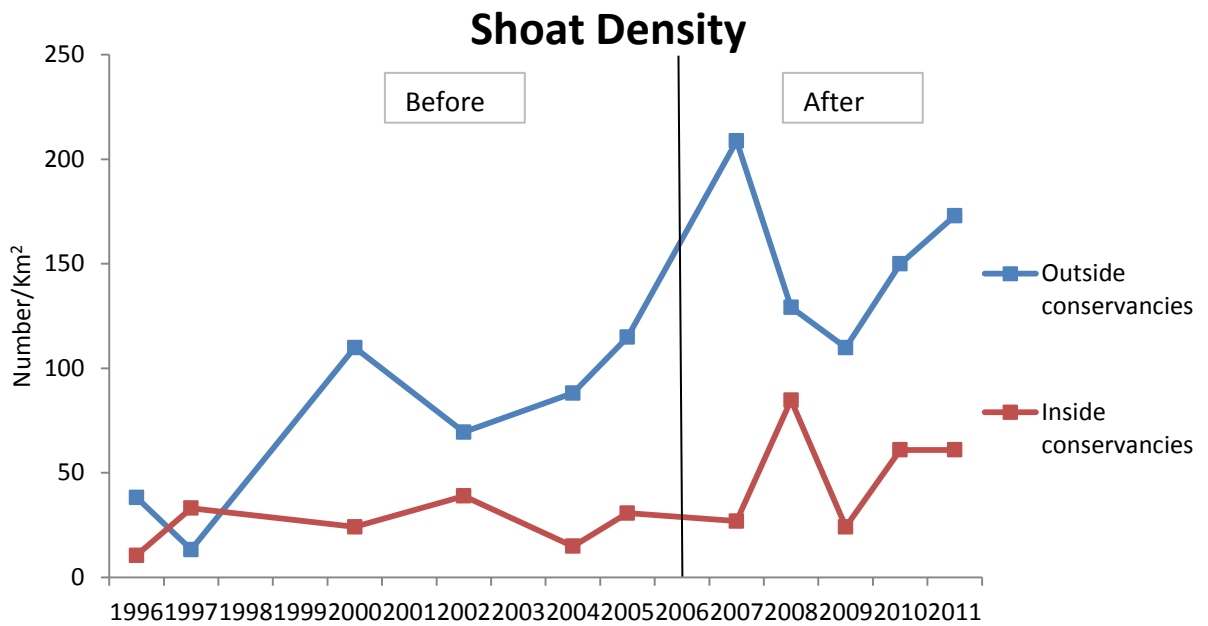
Figure 7.9: Trend in cattle density, inside and outside of conservancies, and before and after conservancies were set up in Koyiaki



A more obvious trend is shown by shoats (Figure 7.10). As for cattle, fewer shoats were found inside, than outside of conservancies, although their trend is much more clearly apparent. Also, as per the wider trend in shoats in the Mara (section 2.4.5; Ogutu et al., 2011), the graph shows a large increase in shoats from 1996 to 2011, although this increase appears to be larger outside than inside of conservancies. Conservancies may have therefore reduced the extent to which shoats use conservancies for grazing due to settlement and grazing restrictions. This might cause more shoats to now use areas outside of conservancies where their numbers are quickly rising. However, due to the few years of available data, and the variability in shoat numbers, these trends need to be interpreted cautiously.



Figure 7.10: Trend in shoat (sheep and goats combined) density, inside and outside of conservancies, and before and after conservancies were set up in Koyiaki.



#### 7.4 Discussion

This chapter used a mixed methods approach to investigate the extent to which settlement and livestock grazing displacement are occurring in Koyiaki due to conservancies, and the implications of this for pastoral livelihoods and the wider landscape. Data show that conservancies, and the promotion of wildlife conservation and tourism within them, are radically transforming where people live and graze. The conservancies are also concentrating livestock outside of conservancy areas. This intensifies livestock grazing pressure and elevates the vulnerability of livestock to droughts.

##### Settlement displacement

Analysis of spatial trends in bomas shows that in both 2006 and 2011 there were fewer bomas inside than outside of conservancies. However, between 2006 and 2011, despite an overall increase in bomas in Koyiaki, the number of bomas reduced within conservancies but increased outside of conservancies. A similar trend is shown for each of the different conservancies; boma density reduced in all but one conservancy from 2006 to 2011. Overall, there were 21.7% fewer bomas in conservancies in 2011 than there were in the same areas in 2006. In some conservancies there are very few or no bomas at all. This is despite Motorogi and Naboisho Conservancies not having at the time introduced strict settlement restrictions. These data imply that conservancies have had an impact on the location of settlements and caused a spill-over

effect, reducing settlements inside of conservancies, but displacing them to areas outside of conservancies. The effect of this is that settlements which were once more dispersed in the Koyiaki landscape are now clumped as people are squeezed to settle in the remaining non-conservancy area. This is even more so since few people reported moving out of Koyiaki to settle elsewhere in the wider Mara.

Furthermore, results also indicate a higher than expected increase in boma density in areas outside of conservancies possibly explained by 1) in-migration into Koyiaki as people seek tourism or other business opportunities that being so close to the MMNR and the conservancies can offer, or 2) the splitting of settlements into smaller family units with fewer people per settlement. This latter trend is shown to be one result of the land subdivision and privatisation process, where settlements proliferated as people split into smaller family units, each wanting to settle on their allocated land parcels (section 2.4.3; Rutten 1992; Coast 2002; Lamprey and Reid 2004; Thompson et al., 2009). This is quite likely to have occurred since the main contiguous non-conservancy area (Figure 7.3, Aitong/Endonyo Irinka) was only subdivided at the end of 2009. It could have also been accentuated by people being displaced out of conservancies and encouraged to move to settle on their own land parcels elsewhere.

With 61% of Koyiaki now under conservancy protection, conservancy members and non-members alike have become increasingly constrained as to where they may settle. A few people displaced from conservancies in Koyiaki went to neighbouring areas, or moved away from the Mara completely. Although these were only few cases, there are others that might have been absorbed by other households (or dropped out of the system completely) which this study has not been able to capture.

Both conservancy member and non-member households were equally moved. However, whereas conservancy members receive compensation in the form of conservancy payments, non-members do not get this benefit. For some households who owned land within a conservancy, the payment was not enough of an incentive, thus they decided not to join the conservancy but rather to settle and graze on their own land instead. A point raised by some respondents was the importance of conservancy members having another parcel of land, separate to their conservancy land which they could use to settle and graze. For some, this was an important factor in deciding to join a conservancy, although for others this likely made little difference. In chapter 6, I found that the average proportion of their land members had joined to a conservancy was 0.77, and there were

many conservancy members who had all their land under a conservancy. The implications of this are that conservancy members are reliant on land outside of conservancies, which they do not own in most cases, for their settlement and grazing needs. Cooperation and pasture sharing thus remain ever important.

#### Grazing displacement

Due to livestock grazing restrictions, conservancies have also reduced the space available for livestock grazing. This effectively concentrates livestock in the remaining non-conservancy areas. However, due to the mobile nature of livestock, the high variability in livestock trends, and the relatively short time frame (2006-2011) since conservancies began, there is little evidence from livestock count data to show that livestock numbers have reduced within conservancies. Some key points are however:

- 1) Conservancy areas have tended to always have fewer livestock than areas outside conservancies.
- 2) There has been a large increase in the number of shoats in Koyiaki, and this increase is apparently greater outside than inside of conservancies.
- 3) Cattle numbers are highly variable, and respond to climatic fluctuations. However a slight increasing trend is evident in cattle in the Mara (see Figure 2.4).

The restrictions on livestock grazing do however mean that people are now constrained to find grazing space. A possible response to this might be a shift to greater reliance on small stock since shoats require smaller grazing ranges and are able to graze closer to the bomas compared to cattle, and are less vulnerable to droughts. This would agree with the large increases found in shoats in recent years in Koyiaki and the wider Mara (section 2.4.5; Ogutu et al., 2011).

People do still use conservancies for cattle grazing, and especially during dry periods. This is despite the risk of being fined by the conservancy management. Conservancies are important grazing areas during drought times when areas outside of conservancies have little grass. As found in chapter 5, conservancy grazing when accessed is one of the most important benefits of conservancies. Correspondingly, people value conservancy land for grazing more than they do non-conservancy land (section 5.3.2). Before conservancies were set up, these areas had fewer settlements and livestock, possibly because lack of permanent water, presence of tsetse, and long distance from towns prevented heavy settlement and livestock grazing. Furthermore, households that currently live in conservancies, or were recently moved from conservancies tended to own

greater herd sizes. Many conservancies also have direct and close access to the MMNR. Together, these findings point to the favourable conditions for livestock (and thus also wildlife), especially as seasonal grazing areas and their particular importance in drought times, and the reasons why community members still graze inside conservancies despite the restrictions.

#### Conservation implications of displacement and spill-over effects

Higher densities of settlements and livestock exist outside of conservancies than within conservancies. This can be directly attributed to the exclusion policies of conservancies in the case of settlements, although only partially for livestock. As people and livestock are excluded from conservancies, they concentrate in conservancy periphery areas, in towns, or in other settlement areas. This creates secondary problems in these areas as they become increasingly overcrowded and over-used for livestock grazing. Indeed, outside of conservancies, fences are increasing rapidly in many areas (personal observation), being used to enclose and protect grass for the exclusive use of the landowners' herd. In some cases, conservancy members are fencing additional land they own outside of conservancies

These spill-over effects show that although conservancies might have a positive conservation impact on areas inside of conservancies, there is a negative impact on areas outside of conservancies. This can exaggerate the perceived effectiveness of a conservation area in reducing human impacts on biodiversity, because spill-over leads to the impression that land-use restrictions are reducing impacts when in fact they might simply be displaced across space (Ewers and Rodrigues 2008). The conservation effectiveness of conservancies must thus be taken in light of these findings.

Research shows that the buying or leasing of land for conservation displaces development pressure to neighbouring areas, and this can undermine conservation goals, especially if neighbouring areas are of similarly high conservation value (Armsworth et al., 2006). This becomes even a greater issue if larger areas are set aside for conservation and the available land remaining becomes limited (Armsworth et al., 2006). For real conservation effectiveness, biodiversity across the entire landscape (including inside and outside of conservancies) needs to benefit from the creation of conservancies (Ewers and Rodrigues 2008).

Conservation impacts and spill-overs can be shown by comparing the density of bomas inside and outside of conservancies to those thought favourable to wildlife. In 2011, the boma density inside

of conservancies in Koyiaki was 0.315 bomas /km<sup>2</sup>; almost comparable with the density of bomas thought to be compatible with wildlife (approximately 0.2 bomas/km<sup>2</sup> (Reid et al., 2003)). However, outside of conservancies boma density has increased to 1.595 bomas/km<sup>2</sup>; a level far beyond the boma density at which wildlife density significantly declines (approximately 0.5 bomas/km<sup>2</sup> (Reid et al., 2003)). Thus, although areas inside of conservancies are positive for wildlife conservation, areas outside are far less so.

Spill-over effects might also be undermining the goals of the MMNR. This study has shown the importance of the MMNR as a grazing resource, which although illegal, is heavily used by livestock keepers. Many livestock owners reported using the MMNR for cattle grazing, and more so during dry periods. The exclusion of livestock grazing in conservancies has likely put pressure on the MMNR as a livestock grazing resource. Cattle have always used the reserve during drought times. However, more recently, Butt (2011b) has shown that cattle use the MMNR at all times, regardless of seasonality. Ogutu et al. (2011) also found increasing use of the MMNR by cattle. It is likely that as more areas have become conservancies, reducing areas for grazing and imposing restrictions, they have encouraged the increased movement of cattle to graze in the MMNR. In fact, Butt (2011b) found that pastoralists like to graze inside the MMNR rather than inside the conservancy to maintain eligibility of being paid by the conservancy. Although, they also risk being fined for grazing in the MMNR, conservancy members are able to maintain their payments by avoiding grazing in the conservancy. The simultaneous restrictions that now exist both in the MMNR and in the conservancies highlight the challenges that pastoralists face in their contemporary livestock grazing strategies in the Mara. The restrictions also highlight the conflict that exists between the conservancies and the reserve due to increased livestock grazing pressure.

#### Conservancies maintaining mobility

As shown above, conservancies restrict access and use to large areas of pastoral rangeland. However, as argued by some conservancy members, conservancies also maintain livestock mobility by keeping land together that otherwise might have been fenced or sold. Conservancy members argued that due to the subdivision of land, people would not be able to settle and graze as freely as they might want to anyway. Land subdivision and individualisation causes land fragmentation and thus reduces access to grazing land and constrains livestock mobility (Galvin et al., 2008). By pooling land together and prohibiting activities such as fencing and cultivation, conservancies help maintain open rangelands and promote conservation. Conservancies also

offer incentives, which discourage landowners from subdividing or selling their land. Thus, the post-subdivision aggregation of parcels can facilitate open rangelands and be beneficial to both wildlife and pastoralism. However, this argument dismisses pastoralists' ability to negotiate and maintain access through social networks, which allow reciprocal use and pasture sharing (BurnSilver and Mwangi 2007). In the neighbouring Kajiado County of Kenya, BurnSilver and Mwangi (2007) describe how Maasai landowners re-aggregated their land parcels post-subdivision through pasture sharing and swapping mechanisms to maintain access to resources. This is built upon pre-existing cultural norms, such as herd redistribution and stock-sharing relationships.

The effects on livestock might therefore be quite mixed, and different in the short-term than the long-term. Nevertheless, conservancies are encouraging landowners to reduce their herds, partially by introducing improved breeds to mix with their traditional breeds. Much of this centres on conservancies being viewed as people-free wild areas set aside for wildlife and low-density tourism. As a result, tourists do not expect or want to see cattle in the conservancy. This is the argument that the tourism partners give for not wanting cattle grazing in the conservancy. Butt (2011a) in his research on tourist satisfaction in the MMNR, found the same thing; tourists did not expect to see cattle in the MMNR and complained widely to hotel managers and rangers when they did. Accordingly, this was the main reason rangers prohibited cattle from entering the reserve.

Through more integrative livestock grazing plans, conservancies can be beneficial to both wildlife and livestock. Conservancies can also be better marketed to tourists to include livestock to enable better livestock integration. The Maasai are well-known, commonly marketed on conservancy and lodge websites. However, their cattle are often left out. There are therefore opportunities for integrating Maasai and their main cultural and economic livelihood, livestock, into conservancies. Then, Maasai seen herding their cattle within conservancies can be appealing to sensitised tourists.

## Chapter 8 Discussion

### 8.1 Introduction

The aim of this thesis was to investigate how conservancies contribute to the livelihoods of pastoralists in the former Koyiaki Group Ranch in the Mara. I have done this through: 1) a socio-political analysis of who participates in conservancies, 2) an evaluation of the different costs and benefits of conservancies to members and non-members, 3) an assessment of the contribution of conservancies relative to other livelihood activities, and 4) an evaluation of the impact of conservancy participation on household wealth. I also looked at the impact of conservancy land use restrictions on settlements and livestock, and the implications of this for pastoral livelihoods and the wider landscape. In this chapter, I synthesise these results into a broad socio-ecological assessment of conservancies for pastoral livelihoods and conservation. First, I revisit the rise of the narrative of neoliberal conservation and see how this can be applied to the cases of conservancies.

In recent years, there has been an increase in the use and promotion of market-based approaches to conservation such as PES, direct payments and ecotourism, as a way of protecting nature and benefiting livelihoods. These approaches align with the new narrative of neoliberal conservation that is evolving in the conservation literature (e.g. Brockington and Igoe 2007; Brockington et al., 2008; Brockington and Duffy 2010; Büscher et al., 2012). These types of approaches essentially refer to the increased combination of conservation and capitalism witnessed in many of today's current conservation efforts.

In the Mara, elements of conservancies can be seen to conform to this neoliberal view. Conservancies operate in a privatised setting where once communal rangelands are now subdivided and individually owned. Conservancy payments are based on a given land value in each conservancy determined by tourism investors. Conservancies are driven and funded through ecotourism markets. Tourism investors link conservancy landowners to the global tourist through the use of direct payments. The management and use of conservancies is realigned according to the tourism market, and specifically the high end tourism market. Conservancy areas privately-owned by Maasai landowners are managed in partnership with tourism investors, with engagement and facilitation by supporting NGOs, but virtually no state involvement.

Conservancies in the Mara arose at a time when the Mara was viewed as being in crisis (e.g. see Kepher-Gona 2006) with uncontrolled tourism, wildlife declines, unsustainable land use, and a lack of benefits to local communities. Scholars argue that the view of a crisis legitimates capital expansion and the role of the market as the (only) solution (Büscher et al., 2012). In this neoliberal view, the setting up of conservancies was thus justified by the idea of an ecological crisis that could only be saved through submission to capitalism, and so by forming the conservancy (Büscher et al., 2012). This has also been aptly labelled 'selling nature to save it' (McAfee 1999; Brockington and Duffy 2010). In the Mara, conservancies were seen to come at just the right time before the uncontrollable subdivision and selling of land would have seen it lost forever. This thus motivated the need for an intervention such as PES.

Conservancies have restructured the rules and access to conservancy land based on the market, removing previous subsistence use and replacing it with landscapes based on tourism ideals. Nature is thus being neoliberalised to conform to tourism markets and ideals (West and Carrier 2004; Duffy and Moore 2010). In conservancies, landscapes once used for grazing, settlement and other things local, are appropriated by the market and used for tourism. The dependence on ecotourism means that conservancies have to appeal to tourists' preferences (Cousins et al., 2008; Butt 2011a). In this way, conservancies, like neoliberal conservation, involve a reconstitution of relationships between people, and between people and nature according to the market (Büscher and Dressler 2012). Thus, cattle exclusion is based on wilderness ideals of what conservancies should look like, and what tourists prefer, rather than based on long-term human-environment processes (Neumann 1998).

As well as elements of neoliberal conservation evident in conservancies, there are also elements of the other conservation narratives. Conservancies have synergies with community conservation; for example, the widely publicised view that they are community-owned and managed in partnership with the community. Conservancies also have elements of fortress conservation, as people and livestock are excluded, resource use curtailed, and herders caught and fined. Therefore in conservancies, the narrative of neoliberal conservation overlaps with other conservation narratives. Conservancies can thus be seen as a hybrid approach between neoliberal and other conservation narratives (McCarthy 2005) or a PES-like approach (Wunder 2008), with elements of PES but also other approaches. This mix of narratives and approaches in conservancies enables them to draw in more support and a more diverse group of people with different views and beliefs of how to do conservation. This in turn creates wider networks of



actors supporting and governing conservancies, again typical of neoliberal conservation approaches (Igoe and Brockington 2007). It is in this way that conservancies, as other neoliberal approaches, have become so popular, risen in number so rapidly, and are now viewed by conservation practitioners, NGOs, and other stakeholders, as the way to do conservation in the Mara, and wider Kenya.

However, with few in depth studies on these types of approaches for local communities, how they support livelihoods is not always apparent. Like other studies, I find that the effect of neoliberal conservation approaches on livelihoods is not always positive (Igoe and Brockington 2007; Brockington and Duffy 2010; Igoe et al., 2010). Resources that were once used for livelihoods now support the production of commodities for markets owned by others, and this loss of local livelihoods often reinforces marginalisation. This can then result in a situation similar to that outlined Brockington et al. (2008, p175), where ‘conservation is increasingly compatible with capitalism and, rather like capitalism itself, it unevenly distributes fortune and misfortune’. In line with this, the present study found mixed results, where there are both winners and losers from conservancies, and also trade-offs in the ways they can integrate with current pastoral livelihoods in the Mara.

Here, I discuss the research findings of how conservancies contribute to pastoral livelihoods in the Mara, and the trade-offs and synergies with pastoralism and pastoral livelihoods, by revisiting the three main research questions:

- What kinds of partnerships are emerging from conservancies and who within the community gets to participate?
- To what extent do conservancies contribute to and integrate with pastoral livelihoods?
- What are the implications of conservancies and their restructuring of rules over use and access to conservancy land, for the wider landscape?

## **8.2 Partnership and participation**

Calls for partnerships in conservation are common. As conservation efforts have moved beyond state protected areas, to community or privately-owned land, partnerships can now take diverse forms with a range of different actors. Diverse partnerships and hybrid forms of governance, as well as a reduction in the role of the state, are typical of neoliberal approaches to conservation (Igoe and Brockington 2007). Conservancies involve new types of conservation partnerships that

align well with neoliberal approaches to conservation. They are primarily a partnership between conservancy landowners and private tourism companies, however a range of other local and non-local actors are also involved in setting up, funding and selling conservancies, including NGOs, Trusts, private companies, individuals and support agencies. There has been little involvement of the state in setting up or managing these initiatives, except through a regulatory role of issuing licences (e.g. in the registering of land leases and licensing of tourism camps).

Through the creation of new markets and opportunities for investment, conservancies have attracted more high profile investors and entrepreneurs. Although there have always been tourists and tour operators coming to the Mara, there are now prominent celebrity investors such as Richard Branson, and more international hotel chains investing in tourism in the Mara. Conservancies and PES schemes are thus facilitating capitalists' reach towards the Mara.

Neoliberalism is characterised by deregulation, privatisation, marketization, and reregulation (Castree 2008a). In deregulation, the state deploys policies that facilitate privatisation and marketization. Privatisation it is argued opens up opportunities for the poor to unlock the capital potential of the assets they hold (de Soto 2000). The formalisation of property rights, including land titling, thus increases investment opportunities, and can provide access to credit and markets. Privatisation of land is seen as being able to offer economic opportunities, enhance wealth, and offer opportunities at the household level (Norton-Griffiths and Said 2010). For conservation it can enable revenues to be directly captured at the household level, bypassing the problems of capturing revenues through corrupt, poorly managed community level institutions (Thompson and Homewood 2002).

Privatisation has opened up opportunities for some Maasai to enrol in PES or tourism, but at the same time disenfranchised and left out others completely. Privatisation has also opened up opportunities for the capture of resources by private investors, facilitated by the use of market-based instruments such as PES and conservation land leases. Market-based approaches inscribe new values on wildlife and conservancy land, and put them up for capture by outside investors. So, conservancies, enabled through PES and ecotourism mechanisms are opening up new spaces for partnership and participation by different actors (Igoe 2007). The commodification of nature through PES has thus been shown to create new socio-economic hierarchies, a repositioning of actors, and produce unequal power relations (Kosoy and Corbera 2010).

The nature of the partnership, involving a land lease agreement between tourism investors and landowners, means that power resides most heavily with the tourism investors. The tourism investors determine the type of contract and the level of payment; they also market, manage, and enforce conservancy areas. This creates an unequal level of bargaining power in conservancies, as commonly found in conservation (Mavhunga 2007) and also in PES (Kosoy and Cobera 2010; Kronenberg and Hubacek 2013).

Privatisation as the basis for participation has enabled some landowners to directly capture tourism revenues at the household level through new conservancy institutions. But, concurrently, the poorest groups are prevented from participating in these schemes. Conservancy land-based payments take on the outcomes of land subdivision, a process widely acknowledged as corrupt and unequal in the Mara and wider Maasailand (Rutten 1992; Galaty 1999; Homewood et al., 2004; Mwangi 2007b).

Investigation of the determinants of participation (section 6.3.4) showed that households who owned the most land and lived in the best tourism locations were more likely to participate in conservancies. Participation thus favoured those who were well-positioned to receive favourable land subdivision outcomes. The landless, women, and other groups who did not receive land during subdivision, are not eligible to participate. PES initiatives that are based on land title therefore leave out the poorest groups (Grieg-Gran et al., 2005; Engel et al., 2008; Wunder 2008). Payments made under PES scheme are recognised as going to relatively well-off landholders who participate more, whereas participation by the poor can be limited (Zbinden and Lee 2005; Kosoy et al., 2007). Payment schemes based on land privatisation therefore risk further marginalizing those already marginalised.

Furthermore, the matching evaluation (section 6.3.5) suggested that most of the observed differences in wealth between conservancy members and non-members were not due to participation in conservancies, but due to the inherent differences between them as a result of their different land ownership and other household characteristics. Thus, despite large differences in income between members and non-members this cannot be attributed to conservancy participation. Therefore, contrary to de Soto's argument for privatisation, the poor are less able to participate in such schemes, since as the Kenya privatisation case shows, these processes run the risk of elite manipulation and capture and thus the inequality of land ownership.

Land-based payments can favour the participation of elites in conservancies, but it can also mean that elites are better placed to control initiatives. This study has shown that within the conservancies power resides most heavily with the land committee, who are heavily dominated by community leaders (chapter 4). Some conservancies took on established leadership group ranch leadership structures, opening up opportunities for the well-placed to exert control (Blaikie 2006; Dressler et al., 2010). In choosing who to empower in the community in conservation initiatives, decisions as to who gets represented will have impacts on who gets to control and benefit from initiatives (Ribot 2006). Despite the rhetoric and the media images there is little clear evidence of meaningful landowner participation in conservancies, but rather participation of landowners in conservation related decision-making is largely limited to through the land committee. This creates concerns over their downward accountability to conservancy members due to infrequent elections (Ribot et al., 2006).

As history shows, the political dimension of conservation in the Mara is strong. As a high earning enterprise, political and conflictual outcomes can be rife, and this is the main reason for the breakdown of the previous wildlife associations (Thompson et al., 2009). Since conservancies are heavily tied up with issues of land and land subdivision this makes their establishment and management inevitably political. Labelling such schemes as 'apolitical' can overlook the socio-political nature of conservation (Büscher 2010). A dominance of leaders on committees and in cases using established existing leadership structures means that conservancies will inevitably be political (Ribot 2006) with committee members holding the greatest power. In applying PES schemes, much focus has been on how to *do* PES, and on its technical aspects, however it is increasingly recognised that more attention needs to be given to the socio-political situation of an area before implementing a scheme (Kronenberg and Hubacek 2013).

Conservation schemes that target the land title holder can cause limited intra-household participation, beyond the male household head. Since women are excluded by virtue of not owning land, women view conservancies, as they do issues of land, primarily a male activity. Women do not participate in, and are little informed about conservancies. Instead they are more concerned with the domestic and livestock activities of the household, and thus their sceptical or negative view of conservancies is determined by their direct experiences of restrictions to their main livelihood activity. It is common for conservation not to address gender concerns (Blaikie 2006). Gender inequalities also limit women's participation in PES, as PES lacks sensitivity to the gendered nature of resource use and existing inequalities in access to land and resources (Corbera

et al., 2007; Silvestri et al., 2012). For PES to become more gender integrative, constraints concerning land ownership and use rights, exclusion from participation and decision-making on natural resources, and inequities in household income control need to be overcome (Silvestri et al., 2012). There is however little in the literature on the gendered impacts of PES, and this warrants further attention.

### **8.3 Conservancies and pastoral livelihoods**

There is currently an ongoing proliferation of conservancies in the Kenyan rangelands. Many of these schemes are premised on the assumption that wildlife returns provide incentives to pastoralists not to engage in livelihood activities incompatible with wildlife. Also, that the possible synergies between pastoralism and wildlife mean that there are opportunities for win-win outcomes in conservation and development. However, these synergies are now questioned given the steep wildlife declines on Kenya's rangelands (Western et al., 2009), the poor contribution of wildlife revenues to pastoral households (Homewood et al., 2009), and the many efforts, as shown here, to replace pastoralism rather than to fully integrate it with wildlife.

#### Contribute or conflict with livelihoods

Conservancies are an important livelihood activity for those that participate, and make a significant contribution to overall household income. However, due to the limitations on livestock grazing, payments come at the expense of livestock production - the most important livelihood activity for the majority of households in Koyiaki. There are thus opportunity costs of participating in conservancies and livelihood trade-offs (Wells and McShane 2004; Barrett et al., 2005; McShane et al., 2011; Salafsky 2011). Other research shows that even large benefits from conservation or PES may fail to compensate for the opportunity costs (Ferraro 2002; Corbera et al., 2007).

Conservancy members value their livestock higher than their conservancy payments, so conservancies are not a substituting livelihood activity, but an addition to them. Members still graze in conservancies illegally (and in cases also fence or develop land outside of conservancies) so conservancy payments have not been able to alter the behaviour of members to stop conservation incompatible behaviour (Ferraro and Kiss 2002; Ferraro and Simpson 2002). Thus, the premise in such schemes that conservation payments can provide incentives not to engage in livelihood activities incompatible with wildlife is not wholly supported here.

Other studies in Maasailand argue that conservation is a complementary livelihood activity and not a substitute for existing livelihood strategies (DeLuca 2004; Homewood et al., 2009). However, this study has shown that due to land use restrictions pertaining to livestock, conservancies may be an increasingly competing livelihood activity. Conservancies work on the presumption that tourism revenues will compensate people for the livelihood impacts of conservation restrictions. However, the view that conservancy payments justify the lack of access to grazing land, and the discourse that local people will turn from cattle keepers to conservationists (Osano et al., 2013a) does not recognise people's long term socio-cultural livelihoods and histories. It has already been shown that Maasai land use decisions do not support (national and international) assumptions about the benefits of wildlife and tourism or about the lower economic importance of livestock production (Homewood et al., 2009; Homewood et al., 2012). This study shows that despite conservancies offering some of the highest payments available from wildlife in Kenya (see below) these are not able to compensate for the loss of access to resources, and the restrictions on mobility, due to the higher value placed on livestock.

For payments to offset the increasing opportunity costs of conservation, increasing levels of compensation might be needed (Muradian et al., 2013). Payments should also be viewed in light of new valuations of livestock that put it much higher than previously thought (Behnke and Muthami 2011). Thus, even larger payments would be needed to offset the opportunity costs.

This study reinforces findings from other studies about the key role of livestock in Maasai livelihoods (Homewood et al., 2009). Compared to involvement in conservancies, livestock provide benefits to all members of the household and can be integrated into pastoral livelihoods in multiple and flexible ways. Conservancy payments are banked by the individual landowner with fewer opportunities for sharing with the rest of the family. For these reasons, women see little value in conservancies, and receive few of the benefits, but more of the costs given the restrictions placed on livestock. Efforts have been made to include women in co-benefits such as community training and women's groups. Although worthy endeavours, these cannot compensate for the loss of livelihood activity because of the still central contribution of livestock to family food systems, income and sociocultural well-being.

However, conservancy payments are an importance source of cash income that can prevent households from selling livestock for cash needs. Although people did not report using their

payments to buy livestock, payments are being used for the upkeep of livestock, and other household expenses. Also, as regular, stable, and dependable payments, they have the potential to play an important role in buffering droughts when other sources of income decline. Osano et al. (2013b) found that conservancy payments became particularly important in drought when income from livestock declined.

#### Integrate with pastoralism

The way in which conservancies integrate with pastoralism, can be seen from two viewpoints. On the one hand, as shown above, conservancy grazing and settlement restrictions remove access and use of pastoral grazing land, which ultimately undermines pastoral mobility and production. However, at the same time, conservancies also keep the rangelands open by pooling individual parcels of land together and keeping them free of fences, cultivation and other land-use developments, thereby being consistent with mobile livestock keeping. Conservancies slow down the rate of land being further subdivided, sold and fenced; so if you ignore the restrictions on livestock grazing, conservancies are important in keeping land open for wildlife.

The subdivision of land increases fragmentation as landowners may opt to fence, develop, cultivate or sell their land - all threatening the mobility of both livestock and wildlife. The re-aggregation of parcels allows land to revert to something resembling its pre-subdivision state, and helps maintain open rangelands in the Mara. Subdivision resulted in most people having parcels too small for their livestock to depend on. Conservancies can now maintain livestock mobility over large grazing area if and when allowed. Given the large extent and recent change in ownership in areas such as the Mara, schemes which keep land together are potentially an optimistic outlook for such open rangeland areas. These arguments point to the mix of synergies and trade-offs with conservancies and pastoralism, and also the possible positive potentials. In the short term then conservancies might undermine pastoral mobility, but in the long-term they might enhance it.

Conservancies are not fully integrative, and like other schemes in Maasailand (Homewood et al., 2012) they aim for tourism to replace pastoralism within conservancies, and for tourism and pastoralism to exist alongside one another in the larger landscape. Well thought out carefully integrated grazing management plans are required for better integration of pastoralism and tourism within conservancies, and the wider landscape. The higher value placed on livestock means that grazing plans should be strongly linked to traditional grazing strategies and values.

This can enhance and maintain landowners' interests in participating in conservancies, and also better incorporate the needs and concerns of non-members in grazing strategies. Well planned integration of livestock grazing can also help with heterogeneity required in these landscapes, that can attract and what wildlife prefer.

It is not yet clear what the effects of conservancies are on livestock. This study is still early on in the life of conservancies in Koyiaki. The matching evaluation (section 6.3.5) showed some evidence that conservancies might be encouraging conservancy member households to keep fewer livestock. This can certainly be one presumed scenario given the reduced space now available for livestock; this is also an aim of conservancies to reduce grazing pressure and conflict with wildlife and tourism. This study found an average of 9 TLUs per adult equivalent in 2010, down from 13 in 2004 and 15 in 1998-2000 found by Thompson et al. (2009). However, whether this is a real trend and whether it is attributable to alternative causes such as rising human populations, increased frequencies of droughts, greater livelihood diversification and increasing habitat fragmentation is not known. However, there has been a rapid increase in small stock in Koyiaki in recent years, suggesting a potential switch to small stock, a common strategy where mobility is increasingly curtailed (Dahl and Hjort 1976).

#### Equity and poverty implications

The potential for conservancies to contribute to livelihoods must also take into account those people that are not members of conservancies but might still reside in and around them. This study found that half of residents in Koyiaki are not conservancy members, but are still affected by them. These people still experience the restricted grazing space, but do not receive compensation in return, on top of which they have to cope with an increased influx of people and livestock from conservancy areas, and potentially increased levels of wildlife from adjacent conservancy areas. They thus receive few of the benefits, but suffer most of the costs from conservancies. Thus, there is an unequal distribution of costs and benefits in conservancies. Payments for conservation should reach all those incurring costs (Emerton 2001; Balmford and Whitten 2003), however conservancies are not doing this. There is a sense of a growing dissatisfaction of non-members in not receiving any conservancy payment, but tolerating increased wildlife, livestock and people from conservancies on their land. Care must be taken that the inequality in the distribution of costs and benefits does not lead to conflict or local destructive behaviour (Songorwa 1999).



With conservancy payments based on land size, this questions the equitability of such schemes, as those with larger lands benefit more. Other studies have shown how PES, especially when tied to land ownership, can lead to further concentration of wealth (Landell-Mills and Porras 2002; Kronenberg and Hubacek 2013). That large landholders have greater chances of participating, and that the significant differences in income between conservancy members and non-members could not be attributed to conservancy participation, suggest that wealthier households are benefiting most from conservancies. Conservancy payments may be therefore be increasing the existing wealth inequality between members and non-members. Similarly, Osano et al. (2013a) found increasing wealth differential between members and non-members in conservancies. These findings point more broadly to the tendency for elite capture of benefits in many types of conservation approaches (Thompson and Homewood 2002; DeLuca 2004; Blaikie 2006; Sachedina 2008; Dressler et al., 2010; Leisher et al., 2010).

These findings question the impact of conservancies on poverty reduction. Since the poor are less likely to participate, and the poorest groups such as the landless are left out, conservancies might be having little positive effect on the 'poorest of the poor' (Grieg-Gran et al., 2005; Wunder 2008). This perhaps is not so surprising since scholars argue that PES is not designed as a poverty reduction tool (Pagiola et al., 2005), though any effect on poverty reduction is a welcome side effect (Pagiola et al., 2005; Wunder 2008).

New research points to the huge potential of tourism for poverty reduction. Ferraro and Hanauer (2014) estimate that nearly two thirds of poverty reduction associated with the establishment of protected areas in Costa Rica was attributable to opportunities from tourism. One would thus expect that for the Mara as a high earning, popular tourism destination, the opportunities and potential for poverty reduction would be larger than many other places. Indeed, Mara incomes are much higher than other mixed wildlife and livestock areas in Maasailand (Homewood et al., 2009). The conservancy payments in the Mara are also some of the highest available from conservation compared to other areas. In comparison, the Kitengela Wildlife Lease Programme, adjacent to Nairobi National Park, offers its landowners' US\$10 ha<sup>-1</sup>/yr<sup>-1</sup> to leave their land unfenced and free for wildlife (Reid et al., 2008). In Simanjiro, Tanzania, an easement scheme designed to prevent cultivation and settlement pays an annual village payment and scout salaries that works out at less than US\$1 ha<sup>-1</sup>/yr<sup>-1</sup> (Nelson et al., 2010). Osano et al. (2013a) show that the PES schemes in the Mara are on average sufficient to close the poverty gap; however they acknowledge the differentials for members and non-members. For greater poverty alleviating

potential, the non-members, the poor and the landless, would need to be better integrated into such schemes.

#### **8.4 Implications of conservancies for the wider landscape**

This study did not measure the impact of conservancies on wildlife. However, it looked at some of the implications of conservancies for conservation in the wider landscape. Conservancies increase the area under protection for wildlife, by directly expanding wildlife habitat. In Koyiaki, directly adjacent to the MMNR, over 60% is now set aside for mainly wildlife and tourism. As a key wildlife dispersal area of the MMNR, this is important wildlife habitat to protect. Nationally, conservancies are viewed as one strategy among others to secure wildlife dispersal areas and protect migratory corridors (MEMR 2012). Globally, conservancies can be seen as one strategy that could help achieve the Aichi Target 11, which aims for 17% of terrestrial land to be protected by 2020.

Nevertheless, the positive effects of increasing conservation land through conservancies should be viewed in light of the negative impacts on neighbouring areas. Conservancy land use restrictions create spill-over effects as settlements and livestock are displaced to surrounding non-conservancy areas or to the MMNR. This study has found increasing densities of settlements in non-conservancy areas of Koyiaki as a result of settlements being restricted within conservancies. Although non-conservancy areas have always been used more heavily for livestock grazing, this use is now increased, as grazing is limited within conservancy areas. Conservancy restrictions also create increased development pressure in non-conservancy areas, for example through increased human populations, fencing, and most likely land sales. This pressure is a result of both conservancy members and non-members struggles to find space to settle and graze in increasingly squeezed non-conservancy areas.

By displacing grazing pressure, conservancies undermine the goals of the MMNR. Butt (2011b) and Ogutu et al. (2011) show how cattle use of the reserve has increased in recent years. Data presented here also show continuing use of the MMNR for cattle grazing (section 7.3.3). Conservancy restrictions therefore create increased conflict between the conservancies and the MMNR.

Conservancies might have mixed effects on human-wildlife conflict. Through payments and, less commonly, predator compensation programmes, conservancies can help to reduce conflict

between members and wildlife. However, as many are left out of conservancies and their benefits, it can result in increased conflict between non-members and wildlife, especially in areas neighbouring conservancies, where wildlife are likely to disperse to. As non-members receive few benefits, but may experience increased costs perhaps due to livestock predation and human injury or loss of life, this can cause retaliation and the killing of predators. This is particularly important considering that conservancies are managed for high predator densities. The restriction of grazing in conservancies can then accentuate this conflict. The issue of better including non-members and non-conservancy areas into conservancy planning is recognised by conservancy management in the Mara, and there is dialogue over how to incorporate these people and these areas (e.g. Mara EcoStorm 2013).

The conservancies in Koyiaki evolved quickly from 2006 to 2010, being set up opportunistically and adaptively, and therefore without a specific landscape or ecosystem plan. Conservancies are now trying to remedy this shortcoming through the Maasai Mara Wildlife Conservancies Association, which has been formed as an umbrella organisation to bring all the conservancies in the Mara together. One aim is that conservancies can coordinate their activities and plan better at the landscape scale. It is not clear yet what the impact of conservancies on wildlife is, with little broad-scale wildlife monitoring, although there is some monitoring of specific species such as lions. A long term monitoring programme for different species measured inside and outside of conservancies is recommended to be able to assess the impact of conservancies on wildlife.

## **8.5 Conclusion**

Conservancies are a new approach to conservation in the Mara after a string of initiatives, heavily mixed up with politics, failed to distribute revenues equally, and eventually broke down (section 2.5.2; Thompson et al., 2009). In conservancies, the premise is that the conservancies' more equitable system of payments offers landowners incentives to put their land under conservation and therefore promote conservation as well as improve landowners' incomes. As one of Kenya's most visited tourism areas, the economic opportunities available from wildlife and tourism are high. So, are conservancies contributing to conservation and development goals?

More broadly, research has shown that efforts to achieve win-win outcomes in conservation and development rarely deliver on their promise. One of the problems is that there has been a lack of credible efforts to evaluate initiatives for conservation and development outcomes (Ferraro and Pattanayak 2006; Barrett et al., 2011). There is also a scarcity of good data on which to base

credible evaluations. Even, more recent reviews show the paucity of evaluation of different conservation approaches for conservation and development outcomes (Miteva et al., 2012). This leaves win-win claims to be typically described anecdotally, which often exaggerates the success of outcomes (Ferraro and Pattanayak 2006; Barrett et al., 2011).

This study has used a combination of methods to evaluate conservancies for pastoral livelihoods and conservation goals. I used matching methods to evaluate the impacts of conservancies on wealth, and historical and current data on settlements and livestock to assess the effects of conservancy restrictions on the wider landscape. I also learnt much from different groups within the community about their livelihood opportunities, constraints and concerns of living within or adjacent to conservancies.

I found there are synergies for pastoral livelihoods and conservation; both pastoralism and wildlife benefit from the re-aggregation of subdivided land parcels to facilitate and restore mobility. Payments can also help encourage coexistence between landowners and wildlife (Dickman et al., 2011). However, there are also trade-offs. Since, conservancies restrict existing patterns of resource use, leading to loss of livelihood opportunities, there are large trade-offs for livelihoods. Furthermore, many people are left out of participating in conservancies, but still experience resource use restrictions and increased pressure in their areas. There are also trade-offs for conservation as the displacement of settlements and livestock cause negative spill-over effects in neighbouring areas.

These trade-offs make it hard for claims of success or win-win to be taken. In the literature on the inter-linkages between conservation and poverty reduction, much more attention is being given to the need to recognise trade-offs as the more realistic outcome of conservation interventions (Barrett et al., 2011; McShane et al., 2011; Salafsky 2011). Rather than win-win, the dominant relationship is a trade-off between conservation and development goals. In reality, most interventions are at the best 'win-settle', where they enhance the objectives of one goal, but settle for a do-no-harm in the other (Barrett et al., 2011; Wunder 2013). Thus, rather than focusing on win-win, more attention needs to be given to how to tackle trade-offs (Muradian et al., 2013).

The study has shown many of the successes of conservancies, and their many good intentions, but also highlighted some of their challenges. Much of the scholarship on neoliberal conservation

tends to be negative critique even if an initiative produces positive outcomes (Ferguson 2010; Büscher et al., 2012). I have found that the conservancies in the Mara, like neoliberal conservation, are not 'unremittingly negative' (Castree 2008b, p166). Conservancies have been successful in their rapid expansion in the Mara, and across Kenya, as they have been widely taken up by both tourism operators and local communities. They are also successful in providing transparent revenues to conservancy members thus trumping previous corrupt wildlife initiatives. They have brought wider attention and increasing donor funds for the community and for conservation in recent years. However, more attention needs to be paid to the socio-political processes of who gets to participate in such initiatives and who gets left out. As conservation increasingly combines with capitalism under neoliberal approaches, there are winners and losers of conservation endeavours (Brockington et al., 2008; Brockington and Duffy 2010). Thus, efforts must be made to ensure that the marginalised are not further marginalised, and the powerful become more powerful.

More efforts also need to be placed on integrating livelihood concerns, especially regarding access to livestock grazing. Livestock is shown to consistently be the primary economic, social and cultural activity for rural Maasai. More integration will also encourage landowners to be part of such schemes and support conservation efforts. Only then is there hope to get closer to conservation solutions for both social justice and environmental concerns.

## References

- Abel, N., & Blaikie, P. 1986. Elephants, people, parks and development: the case of the Luangwa valley, Zambia. *Environmental Management*, 10(6), 735–751.
- Adams, J., & McShane, T. 1992. *The myth of wild Africa: conservation without illusion*. New York: Norton.
- Adams, W.M., Aveling, R., Brockington, D., Dickson, B., Elliot, B., Hutton, J., Roe, D., Vira, B., & Wolmer, W. 2004. Biodiversity conservation and the eradication of poverty. *Science*, 306, 1146-1149.
- Adams, W.M., & Hulme, D. 2001. Conservation and communities: changing narratives, policies and practices in African conservation. In: Hulme, D., & Murphree, M. (Eds.), *African wildlife and livelihoods: the promise and performance of community conservation*, pp. 9-23. Oxford: James Currey and New Hampshire: Heinemann.
- Adams, W.M., & Hutton, J. 2007. People, parks and poverty: Political ecology and biodiversity conservation. *Conservation and Society*, 5(2), 147-183.
- Adams, W.M., & Infield, M. 2001. Park outreach and gorilla conservation. In: Hulme, D., & Murphree, M. (Eds.), *African wildlife and livelihoods: the promise and performance of community conservation*. Oxford: James Currey.
- Adams, W.M., & Infield, M. 2003. Who is on the gorillas payroll? Claims on tourist revenue from a Ugandan National Park. *World Development*, 31, 177-190.
- Adams, W.M., & Redford, K.H. 2009. Ecosystem services and conservation: a reply to Skroch and López-Hoffman. *Conservation Biology*, 24, 328–329.
- Agrawal, A., & Gibson, C.C. 1999. Enchantment and disenchantment: the role of community in natural resource conservation. *World Development*, 27, 629-649.
- Agrawal, A., & Redford, K.H. 2006. Poverty, development and biodiversity conservation: shooting in the dark? Working Paper No. 26. WCS.
- Agrawal, A., & Redford, K.H. 2009. Conservation and displacement: an overview. *Conservation and Society*, 7(1), 1.
- Agrawal, A., & Ribot, J.C. 1999. Accountability in decentralization: a framework with South Asian and West African cases. *The Journal of Developing Areas*, 33, 473–502.
- Aldred, D.A., & Wang, J. 2011. A method for obtaining and applying classification parameters in object-based urban rooftop extraction from VHR multispectral images. *International Journal of Remote Sensing*, 32(10), 2811-2823.
- Andam, K.S., Ferraro, P.J., Pfaff, A., Sanchez-Azofeifa, G.A., & Robalino, J.A. 2008. Measuring the effectiveness of protected area networks in reducing deforestation. *PNAS*, 105, 16089-16094.

- Andam, K.S., Ferraro, P.J., Sims, K., Healy, A., & Holland, M. 2010. Protected areas reduced poverty in Costa Rica and Thailand. *PNAS*, 107, 9917–9918.
- Andrade, G.S., & Rhodes, J.R. 2012. Protected areas and local communities: an inevitable partnership toward successful conservation strategies? *Ecology & Society*, 17(4), 14.
- Armsworth, P.R., Daily, G.C., Kareiva, P., & Sanchirico, J.N. 2006. Land market feedbacks can undermine biodiversity conservation. *PNAS*, 103, 5403–5408.
- Arriagada, R.A., Ferraro, P.J., Sills, E.O., Pattanayak, S.K., & Cordero-Sancho, S. 2012. Do payments for environmental services affect forest cover? A farm-level evaluation from Costa Rica. *Land Economics*, 88(2), 382–99.
- Arriagada, R.A., Sills, E.O., Pattanayak, S.K., & Ferraro, P.J. 2009. Combining qualitative and quantitative methods to evaluate participation in Costa Rica's program of payments for environmental services. *Journal of Sustainable Forestry*, 28(3–5), 343–67.
- Ashley, C., & Jones, B. 2001. Joint ventures between communities and tourism investors: experience in Southern Africa. *International Journal of Tourism Research*, 3, 407–423.
- Ashley, C., & Roe, D. 2002. Making tourism work for the poor: strategies and challenges in southern Africa. *Development Southern Africa*, 19(1), 61–82.
- Ballard, H.L., Fernandez-Gimenez, M.E., & Sturtevant, V.E. 2008. Integration of local ecological knowledge and conventional science: a study of seven community-based forestry organizations in the USA. *Ecology & Society*, 13(2), 37.
- Balmford, A., & Whitten, T. 2003. Who should pay for tropical conservation, and how could the costs be met? *Oryx*, 37, 238–250.
- Bandyopadhyay, S., Humavindu, M.N., Shyamsundar, P., & Wang, L. 2004. Do households gain from community-based natural resource management? An evaluation of community conservancies in Namibia. DEA Research Discussion Paper No. 68, Windhoek Namibia: Directorate of Environmental Affairs.
- Barrett, C.S., & Arcese, P. 1995. Are integrated conservation and development projects sustainable? On the conservation of large mammals in sub-saharan Africa. *World Development*, 23, 1073–1084.
- Barrett, C.B., & Arcese, P. 1998. Wildlife harvest in integrated conservation and development projects: Linking harvest to household demand, agricultural production and environmental shocks in the Serengeti. *Land Economics*, 74, 449–465.
- Barrett, C.B., Brandon, K., Gibson, C., & Gjertsen, H. 2001. Conserving tropical biodiversity amid weak institutions. *Bioscience*, 51(6), 497–502.
- Barrett, C.B., Lee, D.R., & McPeak, J.G. 2005. Institutional arrangements for rural poverty reduction and resource conservation. *World Development*, 33(2), 193–197.
- Barrett, C.B., Travis, A.J., & Dasgupta, P. 2011. On biodiversity conservation and poverty traps. *PNAS*, 108(34), 13907–13912.

- Barrow, E., Gichohi, H., & Infield, M. 2000. Rhetoric or reality? A review of community conservation policy and practice in East Africa. Evaluating Eden Series, No. 5. London: International Institute for Environment and Development.
- Barrow, E., & Murphree, M. 2001. Community conservation: from concept to practice. In: Hulme, D., & Murphree, M. (Eds.), *African wildlife and livelihoods: the promise and performance of community conservation*, pp. 24-37. Oxford: James Currey and New Hampshire: Heinemann.
- Bartlett, M.S. 1954. A note on the multiplying factors for various chi square approximations. *Journal of the Royal Statistical Society*, 16, 296-298.
- Bassett, T.J., & Zueli, K.B. 2000. Environmental discourses and the Ivorian savanna. *Annals of the Association of American Geographers*, 90(1), 67-95
- Bedelian, C. 2012. Conservation and ecotourism on privatised land in the Mara, Kenya: the case of conservancy land leases. Land Deal Politics Initiative, Working Paper 9.
- Bekure, S., De Leeuw, P.N., Grandin, B.E., & Neate, P.J.H. 1991. Maasai herding: an analysis of the livestock production system of Maasai pastoralists in Eastern Kajiado District, Kenya. ILCA Systems Study Report No.4, Nairobi: ILCA.
- Behnke, R.H., & Kerven, C. 2013. Counting the costs: replacing pastoralism with irrigated agriculture in the Awash Valley, north-eastern Ethiopia. IIED Climate Change Working Paper No. 4.
- Behnke, R.H., & Muthami, D. 2011. The contribution of livestock to the Kenyan economy. FAO IGAD Livestock Policy Initiative Working Paper No. 3. Rome: FAO.
- Behnke, R.H., Scoones, I., & Kerven, C. 1993. *Range ecology at disequilibrium: new models of natural variability and pastoral adaptation in African savannahs*. London: Overseas Development Institute/International Institute for Environment and Development.
- Bell, R.H.V. 1969. The use of the herbaceous layer by grazing ungulates in the Serengeti National Park, Tanzania. Ph.D. thesis, University of Manchester.
- Bell, R.H.V. 1987. Conservation with a human face: conflict and reconciliation in African land use planning. In: Andersen, D., & Grove, R. (Eds.), *Conservation in Africa: people, policies and practice*, pp. 79–101. Cambridge, UK: Cambridge University Press.
- Berkes, F. 1989. *Common property resources: ecology and community based sustainable development*. London: Belhaven Press.
- Berkes, F. 2004. Rethinking community-based conservation. *Conservation Biology*, 18(3), 621-630.
- Berkes, F. 2007. Community-based conservation in a globalized world. *PNAS*, 104, 15188–15193.
- Berkes, F. 2009. Community conserved areas: policy issues in historic and contemporary context. *Conservation Letters*, 2, 19-24.
- Bernsten, J.L. 1976. The Maasai and their neighbors: variables of interaction. *African Economic History*, 2, 1-11.



- Bertzky, B., Corrigan, C., Kemsey, J., Kenney, S., Ravilious, C., Besançon, C., & Burgess, N. 2012. *Protected planet report 2012: tracking progress towards global targets for protected areas*. Gland, Switzerland: IUCN and Cambridge, UK: UNEP-WCMC.
- Bhola, N., Ogutu, J.O., Said, M.Y., Piepho, H.-P., & Olff, H. 2012. The distribution of large herbivore hotspots in relation to environmental and anthropogenic correlates in the Mara region of Kenya. *Journal of Animal Ecology*, 81(6), 1268-1287
- Blaikie, P. 2006. Is small really beautiful? Community-based natural resource management in Malawi and Botswana. *World Development*, 34(11), 1942-1957.
- Blom, B., Sunderland, T., & Murdiyarso, D. 2010. Getting REDD to work locally: lessons learned from integrated conservation and development projects. *Environmental Science and Policy*, 13(2), 164–172.
- Borras, S., Hall, R., Scoones, I., White, B., & Wolford, W. 2011. Towards a better understanding of global land grabbing: an editorial introduction. *Journal of Peasant Studies*, 38(2), 209–16.
- Bosire, C., Kariuki, J., & Osano, P. 2012. Enabling livestock based economies in Kenya to adapt to climate change: a review of PES from wildlife tourism as a climate change adaptation option. Workshop Report, Nairobi, Kenya: ILRI.
- Bourn, D., & Blench, R. 1999. *Can wildlife and livestock co-exist? An interdisciplinary approach*. London: Overseas Development Institute.
- Brandon, K. 1998. Perils to parks: the social context of threats. In: Brandon, K., Redford, K.H., & Sanderson, S.E. (Eds.), *Parks in peril: people, politics and protected areas*, pp. 315–339. Washington, DC: The Nature Conservancy.
- Brandon, K., Redford, K.H., & Sanderson, S.E. 1998. *Parks in peril: people, politics and protected areas*. Washington, DC: Island Press.
- Brechin, S.R., Wilshusen, P.R., Fortwangler, C.L., & West, P.C. 2002. Beyond the square wheel: toward a more comprehensive understanding of biodiversity conservation as social and political process. *Society and Natural Resources*, 15, 41-64.
- Brechin, S.R., Wilshusen, P.R., Fortwangler, C.L., & West, P.C. 2003. *Contested nature. Promoting international biodiversity with social justice in the twenty-first century*. New York, USA: State University of New York Press.
- Brenner, N., & Theodore, N. 2002. Cities and the geographies of “actually existing neoliberalism”. *Antipode*, 34(3), 356–386.
- Brockington, D. 2002. *Fortress conservation: the preservation of the Mkomazi Game Reserve, Tanzania*. Oxford, UK: James Currey.
- Brockington, D. 2004. Community conservation, inequality and injustice: myths of power in protected area management. *Conservation and Society*, 2, 411-432.
- Brockington, D., & Duffy, R. 2010. Conservation and capitalism: an introduction. *Antipode*, 42(3), 469–484.

- Brockington, D., Duffy, R., & Igoe, J. 2008. *Nature unbound: conservation, capitalism and the future of protected areas*. London: Earthscan.
- Brockington, D., & Igoe, J. 2006. Eviction for conservation: a global overview. *Conservation and Society*, 4(3), 424.
- Brockington, D., Igoe, J., & Schmidt-Soltau, K. 2006. Conservation, human rights, and poverty reduction. *Conservation Biology*, 20(1), 250-252.
- Brockington, D., & Sullivan, S. 2010. Qualitative research. In: Scheyvens, R., & Storey, D. (Eds.), *Development fieldwork: a practical guide*, pp. 57-74. London: Sage Publications.
- Bromley, D.W. 1989. Property relations and economic development: the other land reform. *World Development*, 17(6), 867-877.
- Bromley, D.W. 1992. The commons, common property and environmental policy. *Environmental and Resource Economics*, 2, 1-17.
- Brooks, J., Waylen, K.A., & Mulder, M.B. 2013. Assessing community-based conservation projects: a systematic review and multilevel analysis of attitudinal, behavioral, ecological, and economic outcomes. *Environmental Evidence*, 2, 1-34.
- Brosius, J.P., & Russell, D. 2003. Conservation from above: an anthropological perspective on transboundary protected areas and ecoregional planning. *Journal of sustainable forestry*, 17(1), 39-66.
- Brosius, J.P., Tsing, A., & Zerner, C. 1998. Representing communities: histories and politics of community-based resource management. *Society and Natural Resources*, 11, 157-168.
- Broten, M.D., & Said, M.Y. 1995. Population trends of ungulates in and around Kenya's Masai Mara Reserve. In: Sinclair, A.R.E., & Arcese, P. (Eds.), *Serengeti II: dynamics, management and conservation of an ecosystem*, pp. 169-193. University of Chicago Press, Chicago, IL.
- Brown, K. 1998. The political ecology of biodiversity, conservation and development in Nepal's Terai: Confused meanings, means and ends. *Ecological Economics*, 24(1), 73-87.
- Brown, K. 2002. Innovations for conservation and development. *The Geographical Journal*, 168(1), 6-17.
- Browne-Nunez, C., & Jonker, S.A. 2008. Attitudes towards wildlife and conservation across Africa: a review of survey research. *Human Dimensions of Wildlife*, 13, 47-70.
- Bruner, A.G., Gullison, R.E., Rice, R.E., & da Fonseca, G.A.B. 2001. Effectiveness of parks in protecting tropical biodiversity. *Science*, 291, 125-128.
- Bryant, R.L. 1992. Political ecology: an emerging research agenda in third-world studies. *Political Geography*, 11, 12-36.
- Bryman, A. 2008. *Social research methods*. Third edition. Oxford: Oxford University Press

- Bulte, E.H., Boone, R.B., Stringer, R., & Thornton, P.K. 2008. Elephants or onions? Paying for nature in Amboseli, Kenya. *Environment and Development Economics*, 13, 395-414.
- BurnSilver, S. 2007. Pathways of continuity and change: diversification, intensification and mobility in Maasailand. Unpublished PhD Thesis, Colorado State University.
- BurnSilver, S., & Mwangi, E. 2007. Beyond group ranch subdivision: collective action for livestock mobility, ecological viability and livelihoods. CAPRI Working Paper 66, Washington, DC: International Food Policy Research Institute (IFPRI).
- Burton, D. 2000. Design issues in survey research. In: Burton, D. (Ed.), *Research training for social scientists*, pp. 292-306. London: Sage publications.
- Büscher, B. 2008. Conservation, neoliberalism and social science: a critical reflection on the SCB 2007 Annual Meeting, South Africa. *Conservation Biology*, 22(2), 229-231.
- Büscher, B. 2010. Anti-politics as political strategy: neoliberalism and transfrontier conservation in Southern Africa. *Development and Change*, 41(1), 29–51.
- Büscher, B., & Dressler, W. 2007. Linking neoprotectionism and environmental governance: on the rapidly increasing tensions between actors in the environment-development nexus. *Conservation and Society*, 5(4), 586–611.
- Büscher, B., & Dressler, W. 2012. Commodity conservation. The restructuring of community conservation in South Africa and the Philippines. *Geoforum*, 43, 367-376.
- Büscher, B., Sullivan, S., Neves, K., Igoe, J., & Brockington, D. 2012. Towards a synthesized critique of neoliberal biodiversity conservation. *Capitalism Nature Socialism*, 23(2), 4-30.
- Büscher, B., & Whande, W. 2007. Whims of the winds of time? Emerging trends in biodiversity conservation and protected area management. *Conservation and Society*, 5(1), 22-43.
- Butt, B. 2007. Grazing on the edge: cattle mobility, ecology and Maasai herding in Southern Kenya. PhD Dissertation, Michigan State University.
- Butt, B. 2011a. Commoditizing the safari and making space for conflict: place, identity and parks in East Africa. *Political Geography*, 31(2), 104-113.
- Butt, B. 2011b. Coping with uncertainty and variability: the influence of protected areas on pastoral herding strategies in East Africa. *Human Ecology*, 39, 289–307.
- Caplow, S., Jagger, P., Lawlor, K., & Sills, E. 2011. Evaluating land use and livelihood impacts of early forest carbon projects: lessons for learning about REDD+. *Environmental Science & Policy*, 14, 152–67.
- Carter, E., Adams, W.M., & Hutton, J. 2008. Private protected areas: management regimes, tenure arrangements and protected area categorization in East Africa. *Oryx*, 42(2), 177-186.
- Castree, N. 2008a. Neo-liberalising nature I: the logics of de- and re-regulation. *Environment and Planning A*, 40(1), 131–152.

- Castree, N. 2008b. Neo-liberalising nature II: processes, outcomes and effects. *Environment and Planning A*, 40(1), 153–173.
- Cernea, M.M. 1997. The risks and reconstruction model for resettling displaced populations. *World Development*, 25(10), 1569-1589.
- Cernea, M.M. 2006. Population displacement inside protected areas: a redefinition of concepts in conservation politics. *Policy Matters*, 14, 8-26.
- Cernea, M.M., & Schmidt-Soltau, K. 2006. Poverty risks and national parks: policy issues in conservation and development. *World Development*, 34(10), 1808-1830.
- Chapin, M. 2004. A challenge to conservationists. *World Watch*, 17(6), 17-31.
- Child, B. 2004. *Parks in transition: Biodiversity, rural development, and the bottom line*. London: Earthscan.
- Clements, T., John, A., Nielsen, K., An, D., Tan, S., & Milner-Gulland, E.J., 2010. Payments for biodiversity conservation in the context of weak institutions: comparison of three programs from Cambodia. *Ecological Economics*, 69, 1283–1291.
- Clements, T., Rainey, H., An, D., Rours, V., Tan, S., Thong, S., Sutherland, W.J., & Milner-Gulland, E.J. 2013. An evaluation of the effectiveness of a direct payment for biodiversity conservation: the bird nest protection program in the Northern Plains of Cambodia. *Biological Conservation*, 157, 50-59.
- Coad, L., Campbell, A., Miles, L., & Humphries, K. 2008. The costs and benefits of protected areas for local livelihoods: a review of the current literature. Cambridge, UK: UNEP World Conservation Monitoring Centre.
- Coast, E. 2000. Maasai Demography. Unpublished PhD Thesis, University of London.
- Coast, E. 2002. Maasai socio-economic conditions: cross-border comparison. *Human Ecology*, 30(1), 79-105.
- Colchester, M. 2002. *Salvaging nature: indigenous peoples, protected areas and biodiversity conservation*. Montevideo, Uruguay: World Rainforest Movement.
- Collomb, J.G.E., Mupeta, P., Barnes, G., & Child, B. 2010. Integrating governance and socioeconomic indicators to assess the performance of community-based natural resources management in Caprivi (Namibia). *Environmental Conservation*, 37(3), 303-309.
- Corbera, E., Kosoy, N., & Martínez Tuna, M. 2007. Equity implications of marketing ecosystem services in protected areas and rural communities: case studies from Meso-America. *Global Environmental Change*, 17(3/4), 365–380.
- Corson, C. 2010. Shifting environmental governance in a neoliberal world: USAID for conservation. *Antipode*, 42(3), 576-602.
- Cossins, N.J. 1985. The productivity and potential of pastoral systems. *ILCA bulletin*, 21, 10-15.

- Cotula, L., Vermeulen, S., Leonard, R., & Keeley, J. 2009. Land grab or development opportunity? Agricultural investment and international Land deals in Africa. London/Rome: IIED/FAO/IFAD.
- Courtney, C. 2009. An investigation into the extent to which activities in the Olare Orok Conservancy, Narok District, Kenya, conform to "ecotourism". Masters Thesis, University of Edinburgh, UK.
- Cousins, J.A., Sadler, J.P., & Evans, J. 2008. Exploring the role of private wildlife ranching as a conservation tool in South Africa: stakeholder perspectives. *Ecology and society*, 13(2).
- Cranford, M., & Mourato, S. 2011. Community conservation and a two-stage approach to payments for ecosystem services. *Ecological Economics*, 71, 89-98.
- Cultural Survival 2010. 'Samburu evicted for 'conservation' in Kenya'. *Cultural Survival*. December 15<sup>th</sup>, 2010. Accessed 20<sup>th</sup> September 2013:  
<http://www.culturalsurvival.org/news/kenya/samburu-evicted-conservation-kenya>
- Curran, B., Sunderland, T., Maisels, F., Oates, J., Asaha, S., Balinga, M., Defo, L., Dunn, A., Telfer, P., Usongo, L., von Loebenstein, K., & Roth, P. 2009. Are Central Africa's protected areas displacing hundreds of thousands of rural poor? *Conservation and Society*, 7, 30-45.
- Dahl, G., & Hjort, A. 1976. *Having herds: pastoral herd growth and household economy*. Department of Social Anthropology, University of Stockholm.
- De Boer, W.F., & Baquete, D.S. 1998. Natural resource use, crop damage and attitudes of rural people in the vicinity of the Maptuto Elephant Reserve, Mozambique. *Environmental Conservation*, 25, 208-218.
- De Leeuw, J., Prins, H.H.T., Nguguna, E.C., Said, M.Y., & De By, R. 1998. Interpretation of DRSRS animal counts (1977-1997) in the rangeland districts of Kenya, Nairobi, Kenya. Ministry of Planning and National Development.
- DeLuca, L. 2004. Tourism, conservation, and development among the Maasai of Ngorongoro District, Tanzania: implications for political ecology and sustainable livelihoods. Unpublished PhD Thesis, University of Colorado.
- Denzin, N.K., & Lincoln, Y.S. 2002. *The qualitative inquiry reader*. Thousand Oaks, CA: Sage.
- de Soto, H. 2000. *The mystery of capital: why capitalism triumphs in the west and fails everywhere else*. New York: Basic Books.
- Dickman, A.J., Macdonald, E.A., & Macdonald, D.W. 2011. A review of financial instruments to pay for predator conservation and encourage human-carnivore coexistence. *PNAS*, 108, 13937-13944.
- Dressler, W., Büscher, B., Schoon, M., Brockington, D., Hayes, T., Kull, C.A., McCarthy, J., & Shrestha, K. 2010. From hope to crisis and back again? A critical history of the global CBNRM narrative. *Environmental Conservation*, 37(1), 5-15.
- Drury, R., Homewood, K., & Randall, S. 2010. Less is more: the potential of qualitative approaches in conservation research. *Animal Conservation*, 14, 18-24.

- Dudley, N., Parrish, J.D., Redford, K.H., & Stolton, S. 2010. The revised IUCN protected area management categories: the debate and ways forward. *Oryx*, 44(4), 485-490.
- Duffy, R. 2006. The potential and pitfalls of global environmental governance: the politics of transfrontier conservation areas in Southern Africa. *Political Geography*, 25(1), 89-112.
- Duffy, R. 2008. Neoliberalising nature: global networks and ecotourism development in Madagascar. *Journal of Sustainable Tourism*, 16, 327-44.
- Duffy, R. 2010. *Nature crime: how we're getting conservation wrong*. New Haven: Yale University Press.
- Duffy, R. 2013. The international political economy of tourism and the neoliberalisation of nature: challenges posed by selling close interactions with animals. *Review of International Political Economy*, 20(3), 605-626.
- Duffy, R., & Moore, L. 2010. Neoliberalising nature: elephant back tourism in Thailand and Botswana. *Antipode*, 43, 742-66.
- du Toit, J., Kock, J., & Deutsch, J. 2010. *Wild rangelands: conserving wildlife while maintaining livestock in semi-arid ecosystems*. Oxford: Wiley-Blackwell.
- Earnshaw, A., & Emerton, L. 2000. The economics of wildlife tourism: theory and reality for landholders in Africa. In: Prins, H.H., Grootenhuis, J.G., & Dolan, T.T. (Eds.), *Wildlife conservation by sustainable use*, pp. 315-334. Dordrecht: Kluwer Academic Publishers.
- eCognition 2010. eCognition Developer (8.64.0) User guide.
- Ehrenfeld, D. 2008. Neoliberalization of conservation. *Conservation Biology*, 22(5), 1091-1092.
- Ellis, J.E., & Swift, D.M. 1988. Stability of African pastoral ecosystems: alternate paradigms and implications for development. *Journal of Range Management*, 41, 450-459.
- Emerton, L. 2001. The nature of benefits and the benefits of nature: why wildlife conservation has not economically benefited communities in Africa. In: Hulme, D., & Murphree, M. (Eds.), *African wildlife and livelihoods: the promise and performance of community conservation*, pp. 208-226. Oxford: James Currey.
- Engel, S., Pagiola, S., & Wunder, S. 2008. Designing payments for environmental services in theory and practice: an overview of the issues. *Ecological Economics*, 65, 663-674.
- Ewers, R., & Rodrigues, A. 2008. Estimates of reserve effectiveness are confounded by leakage. *Trends in Ecology & Evolution*, 23, 113-116.
- Fairhead, J., Leach, M., & Scoones, I. 2012. Green grabbing: a new appropriation of nature? *Journal of Peasant Studies*, 39, 237-261.
- Faye, B., Chaibou, M., & Vias, G. 2012. Integrated impact of climate change and socioeconomic development on the evolution of camel farming systems. *British Journal of Environment and Climate Change*, 2, 227-244.

- Feeny, D., Berkes, F., McCay, B.J., & Acheson, J.M. 1990. The tragedy of the commons: twenty-two years later. *Human Ecology*, 18(1), 1-19.
- FEMACT 2009. 'Gross violations of human and citizenship rights in Tanzania'. *Pambazuka News*, Issue 446, September 2<sup>nd</sup>, 2009. The Feminist Activist Coalition. Accessed 20<sup>th</sup> September 2013: <http://www.pambazuka.org/en/category/advocacy/58422>
- Ferguson, J. 2010. The uses of neoliberalism. *Antipode*, 41 (S1), 166-184.
- Fernandez-Gimenez, M.E. 2000. The role of Mongolian nomadic pastoralists' ecological knowledge in rangeland management. *Ecological Applications*, 10, 1318–1326.
- Ferraro, P.J. 2001. Global Habitat Protection: limitations of development interventions and a role for conservation performance payments. *Conservation Biology*, 15(4), 990-1000.
- Ferraro, P.J. 2002. The local costs of establishing protected areas in low-income nations: Ranomafana National Park. *Ecological Economics*, 43, 261-275.
- Ferraro, P.J. 2009. Counterfactual thinking and impact evaluation in environmental policy. *New Directions for Evaluation*, 122, 75–84.
- Ferraro, P.J. 2011. The future of payments for environmental services. *Conservation Biology*, 25(6), 1134–1138.
- Ferraro, P.J., & Hanauer, M.M. 2014. Quantifying causal mechanisms to determine how protected areas affect poverty through changes in ecosystem services and infrastructure. *PNAS*, 111(11), 433-4337.
- Ferraro, P.J., & Kiss, A. 2002. Direct payments to conserve biodiversity. *Science*, 298, 1718–1719.
- Ferraro, P.J., & Pattanayak, S.K. 2006. Money for nothing? A call for empirical evaluation of biodiversity conservation investments. *PLoS Biology*, 4(4), 482-488.
- Ferraro, P.J., & Simpson, R. 2002. The cost-effectiveness of conservation payments. *Land Economics*, 78, 339–353.
- Forstner, K. 2004. Community ventures and access to markets: the role of intermediaries in marketing rural tourism products. *Development Policy Review*, 22(5), 497-514.
- Fortwangler, C.L. 2007. Friends with money: private support for a national park in the U.S. Virgin Islands. *Conservation & Society*, 5(4), 504–533.
- Frost, P.G.H., & Bond, I. 2008. The CAMPFIRE programme in Zimbabwe: payments for wildlife services. *Ecological Economics*, 65, 776-787.
- Fryxell, J.M. 1995. Aggregation and migration by grazing ungulates in relation to resources and predators. In: Sinclair, A.R.E., & Arcese, P. (Eds.), *Serengeti II: dynamics, management, and conservation of an ecosystem*, pp. 257-273. Chicago: University of Chicago Press.

- Galaty, J.G. 1980. The Maasai group ranch: politics and development in an African pastoral society In: Sailzman P. (Ed.), *When nomads settle: processes of sedentarisation as adaptation and response*, pp. 157-172. New York: Praeger.
- Galaty, J.G. 1982. Being "Maasai"; being "people-of-cattle": ethnic shifters in East Africa. *American ethnologist*, 9(1), 1-20.
- Galaty, J.G. 1992. This land is yours: social and economic factors in the privatisation, sub-division and sale of Maasai ranches. *Nomadic Peoples*, 30, 26-40.
- Galaty, J.G. 1993. Maasai expansion and the new East African pastoralism. In: Spear, T., & Waller, R. (Eds.), *Being Maasai: ethnicity and identity in East Africa*. Oxford: James Currey.
- Galaty, J.G. 1994. Ha(l)ving land in common: the subdivision of Maasai group ranches in Kenya. *Nomadic Peoples*, 34/35, 109-122.
- Galaty, J.G. 1999. Grounding pastoralists: law, politics and dispossession in East Africa. *Nomadic Peoples*, 3(2), 56-73.
- Galaty, J.G. 2011. The modern motility of pastoral land rights: tenure transitions and land-grabbing in East Africa. Paper presented at the International Conference on Global Land Grabbing, 6-8 April 2011. Land Deal Politics Initiative at IDS, Sussex, England: University of Sussex.
- Galaty, J.G., & Bonte, P. 1991. *Herders, warriors and traders: pastoralism in Africa*. Boulder, CO: Westview Press.
- Galaty, J.G., & Ole Munei, K. 1999. Maasai, land, law and dispossession. *Cultural survival quarterly*, 22(4), 68-71.
- Galvin, K.A., Reid, R.S., Behnke, R., & Hobbs, N.T. 2008. *Fragmentation in semi-arid and arid landscapes: consequences for human and natural systems*. Dordrecht: Springer.
- Gardner, B. 2012. Tourism and the politics of the global land grab in Tanzania: markets, appropriation and recognition. *Journal of Peasant Studies*, 39(2), 377-402.
- Garnett, S.T., Sayer, J., & Du Toit, J. 2007. Improving the effectiveness of interventions to balance conservation and development: a conceptual framework. *Ecology and Society*, 12(1), 2.
- Georgiadis, N.J., Ihwagi, F., Olwero, J.G., & Romañach, S.S. 2007. Savanna herbivore dynamics in a livestock-dominated landscape II: ecological, conservation, and management implications of predator restoration. *Biological Conservation*, 137(3), 473-483.
- Ghimire, K., & Pimbert, M. 1997. *Social Change and Conservation*. Earthscan, London, UK.
- Giada, S., De Groeve, T., Ehrlich, D., & Soille, P. 2003. Information extraction from very high resolution satellite imagery over Lukole refugee camp, Tanzania. *International Journal of Remote Sensing*, 24(22), 4251-4266.
- Gibson, C.C., & Marks, S.A. 1995. Transforming rural hunters into conservationists: an assessment of community-based wildlife management programs in Africa. *World Development*, 23, 941-957.



- Gichohi, H.W. 2003. Direct payments as a mechanism for conserving important wildlife corridor links between Nairobi National Park and its wider ecosystem: the Wildlife Conservation Lease Program, V<sup>th</sup> World Parks Congress: Sustainable Finance Stream, Durban South Africa.
- Gillingham, S., & Lee, P.C. 1999. The impact of wildlife related benefits on the conservation attitudes of local people around the Selous Game Reserve, Tanzania. *Environmental Conservation*, 26(3), 218–228.
- Goldman, M. 2011. Strangers in their own land: Maasai and wildlife conservation in Northern Tanzania. *Conservation and Society*, 9, 65–79.
- Goldman, R.L., Tallis, H., Kareiva, P., & Daily, G.C. 2008. Field evidence that ecosystem service projects support biodiversity and diversify options. *PNAS*, 105(27), 9445–9448.
- Goodwin, H. 1996. In pursuit of ecotourism. *Biodiversity and Conservation*, 5, 277-291.
- Government of Kenya 2008. Kenya Vision 2030: first medium term plan 2008-2012. Nairobi: Government Printers.
- Grandia, L. 2007. Between bolivar and bureaucracy: the Mesoamerican biological corridor. *Conservation and Society*, 5(4), 478-503.
- Grandin, B.E. 1986. Land tenure, subdivision and residential change on a Maasai group ranch. *Bulletin of the Institute for Development Anthropology* 4(2). Development Anthropology Network.
- Grandin, B.E. 1988. Wealth and pastoral dairy production: a case study of Maasailand. *Human Ecology*, 1(16), 1–21.
- Great Plains 2013. Olare Motorogi Conservancy. Accessed 20<sup>th</sup> September 2013: [http://www.greatplainsconservation.com/pdf/The\\_conservancy\\_movement.pdf](http://www.greatplainsconservation.com/pdf/The_conservancy_movement.pdf)
- Grieg-Gran, M., Porras, I.T., & Wunder, J. 2005. How can market mechanisms for forest environmental services help the poor? Preliminary lessons from Latin America. *World Development*, 33(9), 1511–1527.
- Hardin, G. 1968. The tragedy of the commons. *Science*, 162, 1243–1248.
- Herskovits, M.J. 1926. The cattle complex in East Africa. *American Anthropologist*, 28(1), 230-272.
- Hesse, C., & MacGregor, J. 2006. Pastoralism: drylands' invisible asset? IIED Drylands Issue Paper No. 142. London, UK: IIED.
- Heynen, N., McCarthy, J., Prudham, W.S., & Robbins, P. 2007. *Neoliberal environments: false promises and unnatural consequences*. London: Routledge.
- Hodgkinson, C. 2009. Tourists, gorillas and guns: integrating conservation and development in the Central African Republic. Unpublished PhD Thesis, University College London.
- Hodgson, D. 1999. Pastoralism, patriarchy and history: changing gender relations among Maasai in Tanganyika, 1890–1940. *Journal of African History*, 40, 41–65.

- Hollis, A.C. 1905. *The Masai: their language and folklore*. The Clarendon Press.
- Holmes, G. 2012. Biodiversity for billionaires: capitalism, conservation and the role of philanthropy in saving/selling nature. *Development and Change*, 43, 185-203.
- Homewood, K. 1995. Development, demarcation and ecological outcomes in Maasailand. *Africa*, 65(3), 331-350.
- Homewood, K., Coast, E., & Thompson, M. 2004. In-migration and exclusion in East African rangelands: access, tenure and conflict. *Africa*, 74(4), 567–610.
- Homewood, K., Kristjanson, P., & Trench, P.C. 2009. *Staying Maasai? Livelihoods, conservation and development in East African rangelands*. New York: Springer.
- Homewood K., Lambin, E.F., Coast, E., Kariuki, A., Kikula, I., Kivelia, J., Said, M.Y., Serneels, S., & Thompson, M. 2001. Long-term changes in Serengeti-Mara wildebeest and land cover: pastoralism, population or policies? *PNAS*, 98(22), 12544–12549.
- Homewood, K., & Rodgers, W.A. 1987. Pastoralism, conservation and the overgrazing controversy. In: Anderson, D., & Grove, R. (Eds), *Conservation in Africa: past images and present realities*. Cambridge: Cambridge University Press.
- Homewood, K., & Rodgers, W.A. 1991. *Maasailand ecology: pastoralist development and wildlife conservation in Ngorongoro Conservation Area, Tanzania*. Cambridge: Cambridge University Press.
- Homewood, K., Trench, P.C., & Brockington, D. 2012. Pastoralist livelihoods and wildlife revenues in East Africa: a case for coexistence? *Pastoralism*, 2, 19.
- Honey, M. 1999. Treading lightly? Ecotourism's impact on the environment. *Environment*, 41(5), 4–9, 28–33.
- Honey, M. 2009. Community conservation and early ecotourism: experiments in Kenya. *Environment: Science and Policy for Sustainable Development*, 51(1), 46-57.
- Horan, R.D., Shogren, F.F., & Gramig, B.M. 2008. Wildlife conservation payments to address habitat fragmentation and disease risks. *Environment and Development Economics*, 13, 415-439.
- Hughes, L. 2006. *Moving the Maasai: a colonial misadventure*. Palgrave Macmillan, Basingstoke, UK.
- Hughes, L. 2007. Rough time in paradise: claims, blames and memory making around some protected areas in Kenya. *Conservation and Society*, 5, 307-330.
- Hughes, R., & Flintan, F. 2001. Integrating conservation and development experience: a review and bibliography of the ICDP literature. Biodiversity and Livelihoods Issues. London: IIED.
- Hulme, D., & Infield, M. 2001. Community conservation, reciprocity and park-people relationships. Lake Mburo National Park, Uganda. In: Hulme, D., & Murphree, M. (Eds.), *African wildlife and livelihoods: the promise and performance of community conservation*, pp. 106–130. Portsmouth, New Hampshire: Heinemann.

- Hulme, D., & Murphree, M. 1999. Communities, wildlife and the 'new conservation' in Africa. *Journal of International Development*, 11, 277-286.
- Hulme, D., & Murphree, M. 2001. *African wildlife and livelihoods: the promise and performance of community conservation*. Oxford: James Currey and New Hampshire: Heinemann.
- Humphries, K.E. 2013. A political ecology of community-based forest and wildlife management in Tanzania: politics, power and governance. PhD Thesis, University of Cambridge.
- Hutton, J., Adams, W.M., & Murombedzi, J.C. 2005. Back to the barriers? Changing narratives in biodiversity conservation. *Forum for Development Studies*, 32(2), 341–370.
- Iacus, S.M., King, G., & Porro, G. 2009. CEM: coarsened exact matching software. *Journal of Statistical Software*, 30, 1-27.
- Igoe, J. 2007. Human rights, conservation, and the privatization of sovereignty in Africa – a discussion of recent changes in Tanzania. *Policy Matters*, 15, 241-254.
- Igoe, J., & Brockington, D. 2007. Neoliberal conservation: a brief introduction. *Conservation and Society*, 5(4), 432-449.
- Igoe, J., & Croucher, B. 2007. Conservation, commerce, and communities: the story of community-based wildlife management in Tanzania. *Conservation & Society*, 5(4), 534–561.
- Igoe, J., Neves, K., & Brockington, D. 2010. A spectacular eco-tour around the historic bloc: theorising the convergence of biodiversity conservation and capitalist expansion. *Antipode*, 42(3), 486-512.
- ILCA 1981. Introduction to the East African range livestock systems study. ILCA Working Document No. 23. Nairobi: ILCA.
- ILRI 2011. ILRI Conservancy Database 2011, Nairobi: International Livestock Research Institute.
- Inamdar, A., de Jode, H., Lindsay, K., & Cobb, S. 1999. Capitalising on nature: protected area management. *Science*, 283, 1856-1857.
- Jack, B.K., Kousky, C., & Sims, K.R.E. 2008. Designing payments for ecosystem services: lessons from previous experience with incentive-based mechanisms. *PNAS*, 105(28), 9465–9470.
- Jacobs, A.H. 1975. Maasai pastoralism in historical perspective. In: Monad, T. (Ed.), *Pastoralism in East Africa*. London: Oxford University Press.
- Jagger, P., Sills, E.O., Lawlor, K., & Sunderlin, W.D. 2010. A guide to learning about livelihood impacts of REDD+. Occasional Paper No. 56. Bogor, Indonesia: Center for International Forestry Research.
- Jones, C. 2012. Ecophilanthropy, neoliberal conservation, and the transformation of Chilean Patagonia's Chacabuco Valley. *Oceania*, 82, 250-263.
- Kaiser, H. 1974. An index of factorial simplicity. *Psychometrika*, 39, 31-36.

- Kantai, P. 2003. A deal in the Mara. *Ecoforum*, 26(1), 41-46, reprinted with readers' replies in *Kwani?* Volume. 2, pp. 242-269. Nairobi: Kwani Trust.
- Kemei, K., & Limo, L. 2010. 'No more new buildings in congested Maasai Mara', *The Standard*, Nairobi, March 28<sup>th</sup>, 2010.
- Kemper, T., Jenerowicz, M., Pesaresi, M., & Soille, P. 2011. Enumeration of dwellings in Darfur camps From GeoEye-1 satellite images using mathematical morphology. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 4(1), 8-15.
- Kepher-Gona, J. 2006. The great Mara debate: surviving challenges of conservation and development. Proceedings of a Workshop held on September 21, 2006, Holiday Inn. Nairobi, Ecotourism Kenya.
- Kimani, K., & Pickard, J. 1998. Recent trends and implications of group ranch sub-division and fragmentation in Kajiado District. *Geographical Journal*, 164(2), 202-213.
- Kiss, A. 2004. Is community-based ecotourism a good use of biodiversity conservation funds? *TRENDS in Ecology and Evolution*, 19, 232-237.
- KNBS 2010. 2009 Population and housing census results. Kenya National Bureau of Statistics. Accessed 1<sup>st</sup> March 2014:  
<http://www.knbs.or.ke/Census%20Results/Presentation%20by%20Minister%20for%20Planning%20revised.pdf>
- KNBS 2013. Economic survey 2013 highlights. Kenya National Bureau of Statistics/Ministry of Devolution and Planning. Accessed 1<sup>st</sup> March 2014:  
[http://www.knbs.or.ke/index.php?option=com\\_phocadownload&view=category&id=16&Itemid=508](http://www.knbs.or.ke/index.php?option=com_phocadownload&view=category&id=16&Itemid=508)
- Kosoy, N., & Corbera, E. 2010. Payments for ecosystem services as commodity fetishism. *Ecological Economics*, 69(6), 1228–1236.
- Kosoy, N., Corbera, E., & Brown, K. 2008. Participation in payments for ecosystem services: case studies from the Lacandon rainforest, Mexico. *Geoforum*, 39(6), 2073-2083.
- Kosoy, N., Martinez-Tuna, M., Muradian, R., & Martinez-Alier, J. 2007. Payments for environmental services in watersheds: insights from a comparative study of three cases in Central America. *Ecological Economics*, 61, 446–455.
- Kramer, R., Van Schaik, C., & Johnson, J. 1997. *Last stand: protected areas and the defence of tropical biodiversity*. Oxford: Oxford University Press.
- Kristjanson, P., Mango, N., Krishna, A., Radeny, M., & Johnson, N. 2010. Understanding poverty dynamics in Kenya. *Journal of international development*, 22(7), 978-996.
- Kronenberg, J., & Hubacek, K. 2013. Could payments for ecosystem services create an "ecosystem service curse"? *Ecology & Society*, 18(1), 10.
- Lamprey, H.F. 1983. Pastoralism yesterday and today: the overgrazing controversy. In: Bourliere, F. (Ed.), *Tropical savannas. Ecosystems of the world*, vol. 13, pp. 643-666. Amsterdam: Elsevier.

- Lamprey, R.H. 1984. Maasai impact on Kenya savanna vegetation: a remote sensing approach. PhD Thesis, University of Aston-in-Birmingham, UK.
- Lamprey, R.H., & Reid, R.S. 2004. Expansion of human settlement in Kenya's Maasai Mara: what future for pastoralism and wildlife? *Journal of Biogeography*, 31, 997-1032.
- Lamprey, R.H., & Waller, R. 1990. The Loita-Mara Region in historical times: patterns of subsistence, settlement and ecological change. In: Robertshaw, P. (Ed.), *Early pastoralists of South-Western Kenya*, pp. 16–36. Nairobi, Kenya: British Institute in Eastern Africa.
- Landell-Mills, N., & Porras, I.T. 2002. Silver bullet or fool's gold? A global review of markets for forest environmental services and their impact on the poor. London, UK: International Institute for Environment and Development.
- Langholz, J.A. 1999. Exploring the effects of alternative income opportunities on rainforest use: insights from Guatemala's Maya Biosphere Reserve. *Society and Natural Resources*, 12, 139–149.
- Langholz, J.A., & Lassoie, J.P. 2001. Perils and promise of privately owned protected areas. *BioScience*, 51, 1079–1085.
- Langholz, J.A., Lassoie, J.P., Lee, D., & Chapman, D. 2000. Economic considerations of privately owned parks. *Ecological Economics*, 33, 173-183.
- Langholz, J.A., & Krug, W. 2004. New forms of biodiversity governance: non-state actors and the private protected area plan. *Journal of International Wildlife Law & Policy*, 7, 1–21.
- Leach, M., & Mearns, R. 1996. *The lie of the land: challenging received wisdom on the African environment*. Oxford: James Currey.
- Leach, M., Mearns, R., & Scoones, I. 1999. Environmental entitlements: dynamics and institutions in community-based natural resource management. *World Development*, 27(2), 225-247.
- Leisher, C., Sanjayan, M., Blockhus, J., Kontoleon, A., & Larsen, S.N. 2010. Does conserving biodiversity work to reduce poverty? A state of knowledge review. Schooner Foundation, HRH Foundation, TNC, London: IIED.
- Lele, S., Wilshusen, P., Brockington, D., Seidler, R., & Bawa, K. 2010. Beyond exclusion: alternative approaches to biodiversity conservation in the developing tropics. *Curr. Opin. Environ. Sustain*, 2, 1-7.
- Letai, J., & Lind, J. 2012. Squeezed from all sides: changing resource tenure and pastoralist innovation on the Laikipia Plateau, Kenya. In: Catley, A., Lind, J., & Scoones, I. (Eds.), *Pastoralism and development in Africa: dynamic change at the margins*. London and New York: Routledge.
- Levine, A., & Wandesforde-Smith, G. 2004. Wildlife, markets, states, and communities in Africa: looking beyond the invisible hand. *Journal of Wildlife Law and Policy*, 7, 135–142.
- Little, P.D., Smith, K., Cellarius, B.A., Coppock, D.L., & Barrett, C.D. 2001. Avoiding disaster: diversification and risk management among East African herders. *Development and Change*, 32, 401-433.

- Lumiti, C. 2009. 'Kenya: Tourism figures drop by 19%' *East Africa Business Week*, May 23<sup>rd</sup>, 2009. Accessed 20<sup>th</sup> September 2013: <http://allafrica.com/stories/200905251045.html>
- Lund, J.F., Balooni, K., & Casse, T. 2009. Change we can believe in? Reviewing studies on the conservation impact of popular participation in forest management. *Conservation and Society*, 7(2), 71-82.
- Lund, J.F., Balooni, K., & Puri, L. 2010. Perception-based methods to evaluate conservation impact in forests managed through popular participation. *Ecology and Society*, 15(3), 5.
- MA 2005. *Ecosystems and human well-being: synthesis*. Millennium Ecosystem Assessment. Washington, DC, USA: World Resources Institute (WRI).
- Maddock, L. 1979. The "migration" and grazing succession. In: Sinclair, A.R.E., & Norton-Griffiths, M. (Eds.), *Serengeti: dynamics of an ecosystem*, pp. 104-129. Chicago: University of Chicago Press.
- Manyara, G., & Jones, E. 2007. Community-based tourism enterprises development in Kenya: an exploration of their potential as avenues of poverty reduction. *Journal of Sustainable Tourism*, 15(6), 628-644.
- Mara EcoStorm Report 2013. Creating space and scaling up opportunities in the Maasai Mara. Report of EcoStorm Workshop. 22<sup>nd</sup>-23<sup>rd</sup> November 2013.
- Marshall, G. 1998. *A dictionary of sociology*. New York: Oxford University Press.
- Marshall, K. 2014. Optimizing the use of breed types in developing country livestock production systems: a neglected research area. *Journal of Animal Breeding and Genetics*, 1-12.
- Mavhunga, C. 2007. Even the rider and a horse are a partnership: a response to Vermeulen and Sheil. *Oryx*, 41(4), 441-442.
- Mburu, J., & Birner, R. 2007. Emergence, adoption and implementation of collaborative wildlife management or wildlife partnerships in Kenya: a look at conditions for success. *Society and Natural Resources*, 20, 379-395.
- McAfee, K. 1999. Selling nature to save it? Biodiversity and green developmentalism. *Society and Space*, 17(2), 203-219.
- McCabe, J., & Perkin, S. 1992. Can conservation and development be coupled among pastoral people: an examination of the Maasai of Ngorongoro Crater, Tanzania. *Human Organisation*, 51, 353-366.
- McCarthy, J. 2005. Devolution in the woods: community forestry as hybrid neoliberalism. *Environment and Planning A*, 37, 995-1014.
- McCarthy, J. 2006. Neoliberalism and the politics of alternatives community forestry in British Columbia and the United States. *Annals of the Association of American Geographers*, 96(1), 84-104.
- McCarthy, J., & Prudham, S. 2004. Neoliberal nature and the nature of neoliberalism. *Geoforum*, 35, 275-283.

- McCay, B.J., & Acheson, J.M. 1987. *The question of the commons: the culture and ecology of communal resources*. Arizona: University of Arizona press.
- McShane, T.O. 2003. Protected areas and poverty – the linkages and how to address them. *Policy Matters*, 12, 52–53.
- McShane, T.O., Hirsch, P.D., Trung, T.C., Songorwa, A.N., Kinzig, A., Monteferri, B., Mutekanga, D., Thang, H.V., Dammert, J.L., Pulgar-Vidal, M., Welch-Devine, M., Peter Brosius, J., Coppolillo, P., & O' Connor, S. 2011. Hard choices: making trade-offs between biodiversity conservation and human well-being. *Biological Conservation*, 144(3), 966-972.
- McShane, T.O., & Newby, S.A. 2004. Expecting the unattainable: the assumptions behind ICDPs. In: McShane, T.O., & Wells, M.P. (Eds.), *Getting biodiversity projects to work: towards more effective conservation and development*, pp. 49–74. New York: Columbia University Press.
- MEMR 2012. Mapping wildlife dispersal areas and migratory routes/corridors (Part I): Southern Kenya Rangelands (Draft Version March 2012). Ministry of Environment and Mineral Resources. Nairobi, Kenya.
- Milder, J.C., Scherr, S.J., & Bracer, C. 2010. Trends and future potential of payment for ecosystem services to alleviate rural poverty in developing countries. *Ecology and Society*, 15(2), 4.
- Milne, S., & Niesten, E. 2009. Direct payments for biodiversity conservation in developing countries: practical insights for design and implementation. *Oryx*, 43, 530-541.
- Miteva, D.A., Pattanayak, S.K., & Ferraro, P.J. 2012. Evaluation of biodiversity policy instruments: what works and what doesn't? *Oxford Review of Economic Policy*, 28(1), 69-92.
- MNC 2011. Mara North Conservancy: promoting partnership in conservation. Conservancy brochure. Accessed 1<sup>st</sup> March 2014:  
<http://www.maranorth.com/pdf/Mara%20North%20Conservancy%20Brochure.pdf>
- MoT 2010. Tourism performance overview 2010. Ministry of Tourism. Accessed 9<sup>th</sup> September 2013: [http://www.tourism.go.ke/ministry.nsf/pages/facts\\_figures](http://www.tourism.go.ke/ministry.nsf/pages/facts_figures)
- MRGI 2009. State of the world's minorities and indigenous peoples 2009 - Tanzania, 16<sup>th</sup> July 2009. Minority Rights Group International. Accessed 15<sup>th</sup> September 2013:  
<http://www.unhcr.org/refworld/docid/4a66d9a332.html>
- MTMR 2012. Mara Triangle monthly report, January 2012. Accessed 1<sup>st</sup> March 2014:  
<http://maratriangle.org/connect/monthly-report-january-2012/>
- Muchiru, A.N., Western, D., & Reid, R.S. 2008. The role of abandoned pastoral settlements in the dynamics of African large herbivore communities. *Journal of Arid Environments*, 72, 940-952.
- Muchiru, A.N., Western, D., & Reid, R.S. 2009. The impact of abandoned pastoral settlements on plant and nutrient succession in an African savanna ecosystem. *Journal of Arid Environments*, 73(3), 322-331.

- Muradian, R., Arsel, M., Pellegrini, L., Adaman, F., Aguilar, B., Agarwal, B., Corbera, E., & Urama, K. 2013. Payments for ecosystem services and the fatal attraction of win-win solutions. *Conservation Letters*, 6(4), 274-279.
- Muradian, R., Corbera, E., Pascual, U., Kosoy, N., & May, P. 2010. Reconciling theory and practice: an alternative conceptual framework for understanding payments for environmental services. *Ecological Economics*, 69(6), 1202–1208.
- Murombedzi, J.C. 1999. Devolution and stewardship in Zimbabwe's CAMPFIRE programme. *Journal of International Development*, 11, 287–293.
- Musyimi, Z., De Leeuw, J., Bedelian, C., van der Werff, H., Udelhoven, T., Said, M., & Kifugo, S. In prep. Mapping Maasai settlements from space.
- Mwangi, E. 2007a. The puzzle of group ranch subdivision in Kenya's Maasailand. *Development and Change*, 38(5), 889–910.
- Mwangi, E. 2007b. Subdividing the commons: distributional conflict in the transition from collective to individual property rights in Kenya's Maasailand. *World Development*, 35(5), 815–34.
- Naboisho 2011. Naboisho EcoStorm 2011 Workshop Report. 'Creating Sustainable Conservancies', Statements and Recommendations, 22<sup>nd</sup> – 24<sup>th</sup> June 2011.
- Naboisho 2013. Naboisho Conservancy manager's monthly reports in March, April, May, June, July 2013. Accessed 1<sup>st</sup> Feb 2014: [http://seiyald.com/Downloads/m\\_reports.html](http://seiyald.com/Downloads/m_reports.html)
- Nagendra, H. 2008. Do parks work? Impact of protected areas on land cover clearing. *Ambio*, 37(5), 330-337.
- Naidoo, R., Weaver, L.C., De Longcamp, M., & Du Plessis, P. 2011. Namibia's community-based natural resource management programme: an unrecognized payments for ecosystem services scheme. *Environmental Conservation*, 38, 445-453.
- NCC & TMCC 2011. Maasai Mara National Reserve Management Plan 2011-2021. Final Draft, March 2011. Narok County Council & Trans-Mara County Council with support from The African Wildlife Foundation, The Conservation Development Centre and The Mara Conservancy.
- Nelson, F. 2004. The evolution and impacts of community-based ecotourism in Northern Tanzania. Drylands Issue Paper no. 131. London, UK: IIED.
- Nelson, F., Foley, C., Foley, L.S., Leposo, A., Loure, E., Peterson, D., Peterson, M., Peterson, T., Sachedina, H., & Williams, A. 2010. Payments for ecosystem services as a framework for community-based conservation in Northern Tanzania. *Conservation Biology*, 24, 78–85.
- Neumann, R.P. 1998. *Imposing wilderness: struggles over livelihood and nature preservation in Africa*. Berkeley: University of California Press.
- Neumann, R.P. 2004. Nature-state-territory: towards a critical theorization of conservation enclosures. In: Peet, R., & Watts, M. (Eds.), *Liberation ecologies: environment, development, social movements*, pp. 195-217. London: Routledge.



- Niamir-Fuller, M. 1999. *Managing mobility in African rangelands: the legitimization of transhumance*. Rome: FAO.
- Niamir-Fuller, M., & Turner, M.D. 1999. A review of recent literature on pastoralism and transhumance in Africa. In: Niamir-Fuller, M. (Ed.), *Managing mobility in African rangelands: the legitimization of transhumance*, pp.18-46. London: Intermediate Technology Publications.
- Nichonghaile, C., & Smith, D. 2011. 'Kenya's Samburu people 'violently evicted' after US charities buy land'. *The Guardian*, 14<sup>th</sup> December 2011. Accessed 1<sup>st</sup> March 2014: <http://www.theguardian.com/world/2011/dec/14/kenya-samburu-people-evicted-land>
- Njuki, J., Poole, N., Johnson, J., Baltenweck, I., Pali, P., Lokman, Z., & Mburu, S. 2011. Gender, livestock and livelihood indicators. International Livestock Research Institute.
- Njuki, J., & Sanginga, P.C. 2013. *Women, livestock ownership and markets: bridging the gender gap in Eastern and Southern Africa*. London: Routledge.
- Nkedianye, D., De Leeuw, J., Ogutu, J.O., Said, M.Y., Saidimu, T.L., Kifugo, S.C., Kaelo, D.S., & Reid, R.S. 2011. Mobility and livestock mortality in communally used pastoral areas: the impact of the 2005-2006 drought on livestock mortality in Maasailand. *Pastoralism*, 1, 17.
- Nkedianye, D., Radeny, M., Kristjanson, P., & Herrero, M. 2009. Assessing returns to land and changing livelihood strategies in Kitengela. In: Homewood, K., Kristjanson, P., & Trench, P.C. (Eds.), *Staying Maasai? Livelihoods, conservation and development in East African rangelands*. New York: Springer.
- Norton-Griffiths, M. 1978. Counting animals. Handbook No. 1, 2nd edition. Nairobi: Africa Wildlife Leadership Foundation.
- Norton-Griffiths, M. 2007. How many wildebeest do you need? *World Economics*, 8, 41–64.
- Norton-Griffiths, M., & Butt, B. 2006. The economics of land use change Loitokitok Division, Kajiado District, Kenya. Lucid Working Paper 34. Nairobi: International Livestock Research Institute.
- Norton-Griffiths, M., & Said, M.Y. 2010. The future for wildlife on Kenya's rangelands: an economic perspective. In: Du Toit, J.T., Kock, R., & Deutsch, J.C. (Eds.), *Wild rangelands: conserving wildlife while maintaining livestock in semi-arid ecosystems*. Blackwell Publishing.
- Norton-Griffiths, M., Said, M.Y., Seernels, S., Kaelo, D.S., Coughenour, M., Lamprey, R.H., Thompson, D.M., & Reid, R.S. 2008. Human impacts on ecosystem dynamics. In: Sinclair, A.R.E., Packer, C., Mduma, S.A.R., & Fryxell, J.M. (Eds.), *Serengeti III*. Chicago: Chicago University Press.
- Norton-Griffiths, M., & Southey, C. 1995. The opportunity costs of biodiversity conservation in Kenya. *Ecological Economics*, 12, 125-139.
- Ogutu, J.O., Owen-Smith, N., Piepho, H.-P., & Said, M.Y. 2011. Continuing wildlife population declines and range contraction in the Mara region of Kenya during 1977–2009. *Journal of Zoology*, 285, 99–109.

- Ogutu, J.O., Piepho, H.-P., Dublin, H.T., Bhola, N., & Reid, R.S. 2007. El Niño-Southern Oscillation, rainfall, temperature and Normalized Difference Vegetation Index fluctuations in the Mara-Serengeti ecosystem. *African Journal of Ecology*, 46, 132-143.
- Ogutu, J.O., Piepho, H.-P., Dublin, H.T., Bhola, N., & Reid, R.S. 2008. ENSO, rainfall, temperature and NDVI fluctuations in the Mara-Serengeti ecosystem. *African Journal of Ecology*, 46, 132-143.
- Ogutu, J.O., Piepho, H.-P., Dublin, H.T., Bhola, N., & Reid, R.S. 2009. Dynamics of Mara-Serengeti ungulates in relation to land use changes. *Journal of Zoology*, 278, 1–14.
- Oliveira, P.J.C., Asner, G.P., Knapp, D.E., Almeyda, A., Galván-Gildemeister, R., Keene, S., Raybin, R.F., & Smith, R.C. 2007. Land-use allocation protects the Peruvian Amazon. *Science*, 317, 1233–1236.
- Osano, P.M., Said, M.Y., De Leeuw, J., Ndiwa, N., Kaelo, D., Schomers, S., Birner, R., & Ogutu, J.O. 2013a. Why keep lions instead of livestock? Assessing wildlife tourism-based payment for ecosystem services involving herders in the Maasai Mara, Kenya. *Natural Resources Forum*, 37(4), 242-256.
- Osano, P.M., Said, M.Y., De Leeuw, J., Moiko, S.S., Kaelo, D., Schomers, S., Birner, R., & Ogutu, J.O. 2013b. Pastoralism and ecosystem-based adaptation in Kenyan Masailand. *International Journal of Climate Change Strategies and Management*, 5(2), 198-214.
- Ostrom, E. 1990. *Governing the commons: the evolution of institutions for collective action*. Cambridge: Cambridge University Press.
- Ottichilo, W.K., De Leeuw, J., & Prins, H.H.T. 2001. Population trends of resident wildebeest [*Connochaetes taurinus hecki* (Neumann)] and factors influencing them in the Masai Mara ecosystem. *Biological Conservation*, 97, 271–282.
- Ottichilo, W.K., De Leeuw, J., Skidmore, A.K., Prins, H.H.T., & Said, M.Y. 2000. Population trends of large non-migratory wild herbivores and livestock in the Masai Mara ecosystem, Kenya, between 1977 and 1997. *African Journal of Ecology*, 38, 202–216.
- Pagiola, S. 2008. Payments for environmental services in Costa Rica. *Ecological Economics*, 65(4), 712–724.
- Pagiola, S., Arcenas, A., & Platais, G. 2005. Can payments for environmental services help reduce poverty? An exploration of the issues and the evidence to date from Latin America. *World Development*, 33(2), 237-253.
- Pattanayak, S.K., Wunder, S., & Ferraro, P.J. 2010. Show me the money: do payments supply ecosystem services in developing countries? *Review of Environmental Economics and Policy*, 4(2), 254-274.
- Paulson, S., Gezon, L.L., & Watts, M. 2003. Locating the political in political ecology: An introduction. *Human Organization*, 62(3), 205–217.
- Pearce, F. 2005. Humans losing out to Africa's big game industry. *New scientist*, 2495,21.

- Pennycuik, L. 1975. Movements of the migratory wildebeest population in the Serengeti area between 1960 and 1963. *East African Wildlife Journal*, 13, 65-87.
- Poteete, A.R., & Ostrom, E. 2004. In pursuit of comparable concepts and data about collective action. *Agricultural Systems*, 82(3), 215-232.
- Potkanski, T. 1994. Property concepts, herding patterns and management of natural resources among the Ngorongoro and Salei Maasai of Tanzania. London: IIED.
- Pretty, J., & Smith, D. 2004. Social capital in biodiversity conservation and management. *Conservation Biology*, 18, 631–638.
- Pullin, A.S., & Knight, T.M. 2001. Effectiveness in conservation practice: pointers from medicine and public health. *Conservation Biology*, 15, 50–54.
- Pullin, A.S., & Knight, T.M. 2003. Support for decision making in conservation practice: an evidence-based approach. *Journal for Nature Conservation*, 11, 83–90.
- Pullin, A.S., Knight, T.M., Stone, D.A., & Charman, K. 2004. Do conservation managers use scientific evidence to support their decision-making? *Biological Conservation*, 119, 245-252.
- Ravallion, M. 2008. Evaluating anti-poverty programs. In: Schultz, T.P., & Strauss, J. (Eds.), *Handbook of development economics, volume 4*, pp. 3787-3846. Amsterdam: Elsevier.
- Redford, K.H., & Adams, W.M. 2009. Payment for ecosystem services and the challenge of saving nature. *Conservation Biology*, 23(4), 785–787.
- Reid, R.S. 2012. *Savannas of our birth*. Berkeley, CA: University of California Press.
- Reid, R.S., Rainy, M.E., Ogotu, J., Kruska, R.L., Kimani, K., Nyabenge, M., McCartney, M., Kshatriya, M., Worden, J.S., Ng'ang'a, L., Owuor, J., Kinoti, J., Njuguna, E., Wilson, C.J., & Lamprey, R.H. 2003. *People, wildlife and livestock in the Mara ecosystem: the Mara Count 2002*. Nairobi: International Livestock Research Institute.
- Republic of Kenya 2006. National Tourism Policy. Final Draft. Kenya: Ministry of Tourism and Wildlife Nairobi.
- Republic of Kenya 2007a. Sessional paper on National Livestock Policy, February 2007. Republic of Kenya: Ministry of Livestock and Fisheries Development.
- Republic of Kenya 2007b. Draft Wildlife Policy. Nairobi, Kenya: Ministry of Tourism and Wildlife.
- Republic of Kenya 2010. The Proposed Constitution of Kenya, 6<sup>th</sup> May 2010. Published by the Attorney-General in accordance with section 34 of the Constitution of Kenya Review Act, 2008 (No. 9 of 2008). Nairobi, Kenya: Republic of Kenya.
- Republic of Kenya 2012. The Draft Wildlife Conservation and Management Bill, April 2012.
- Reynolds, P.C., & Braithwaite, D. 2001. Towards a conceptual framework for wildlife tourism. *Tourism management*, 22(1), 31-42.

- Ribot, J.C. 2006. Choose democracy: environmentalists' socio-political responsibility. *Global Environmental Change*, 16, 115-119.
- Ribot, J.C., Agrawal, A., & Larson, A.M. 2006. Recentralizing while decentralizing: how national governments re-appropriate forest resources. *World Development*, 34(11), 1864-1886.
- Ribot, J.C., Lund, J.F., & Treue, T. 2010. Democratic decentralization in sub-Saharan Africa: its contribution to forest management, livelihoods, and enfranchisement. *Environmental Conservation*, 37(1), 35-44.
- Ringa, M. 2013. 'Herders to pay more fines for grazing in Mara reserve', *Business Daily Africa*, August 7<sup>th</sup>, 2013. Accessed 1<sup>st</sup> March 2014: <http://www.businessdailyafrica.com/Herders-to-pay-more-fines-for-grazing-in-Mara-reserve--/539546/1940406/-/xbpbj/-/index.html>
- Robinson, J.G. 2011. Ethical obligations, pragmatism, and sustainability in real world conservation. *Biological Conservation*, 144, 958–965.
- Robinson, J.G., & Redford, K.H. 2004. Jack of all trades, master of none: inherent contradictions among ICDP approaches. In: McShane, T.O., & Wells, M.P. (Eds.), *Getting biodiversity projects to work: towards more effective conservation and development*, pp. 10–34. New York: Columbia University Press.
- Roe, D. 2008. The origins and evolution of the conservation-poverty debate: a review of key literature, events and policy processes. *Oryx*, 42(04), 491-503.
- Roe, D., & Elliott, J. 2004. Poverty reduction and biodiversity conservation: rebuilding the bridges. *Oryx*, 38, 137–139.
- Roe, D., Leader-Williams, N., & Dalal-Clayton, B. 1997. Take only photographs, leave only footprints: the environmental impacts of wildlife tourism. IIED Wildlife and Development Series. London: IIED.
- Rosenbaum, P., & Rubin, D. 1983. The central role of the propensity score in observational studies for causal effects. *Biometrika*, 70, 41–55.
- Rutten, M. 1992. Selling wealth to buy poverty: the process of the individualization of landownership among the Maasai pastoralists of Kajiado District, Kenya, 1890–1900 (Vol. 10). Nijmegen Studies in Development and Cultural Change.
- Rutten, M. 2002. Parks beyond parks: genuine community-based wildlife eco-tourism or just another loss of land for Maasai pastoralists in Kenya? Issue paper no. 111. London: IIED.
- Sachedina, H. 2008. Wildlife is our oil: conservation, livelihoods and NGOs in the Tarangire ecosystem. Unpublished PhD thesis, University of Oxford.
- Salafsky, N. 2011. Integrating development with conservation: a means to a conservation end, or a mean end to conservation? *Biological Conservation*, 144, 973–978.
- Salafsky, N., Cauley, H., Balachander, G., Cordes, B., Parks, J., Margoluis, C., Bhatt, S., Encamacion, C., Russell, D., & Margoluis, R. 2001. A systematic test of an enterprise strategy for community-based biodiversity conservation. *Conservation Biology*, 15, 1585-1595.

- Salafsky, N., & Wollenberg, E. 2000. Linking livelihoods and conservation: a conceptual framework and scale for assessing the integration of human needs and biodiversity. *World Development*, 28, 1421–38.
- Sanderson, S.E. & Redford, K. 2003. Contested relationships between biodiversity conservation and poverty alleviation. *Oryx*, 37, 389–390.
- Schmidt-Soltau, K. 2009. Is the displacement of people from parks only 'purported', or is it real? *Conservation and Society*, 7(1), 46-55.
- Schmidt-Soltau, K., & Brockington, D. 2004. The social impact of protected areas. Accessed 1<sup>st</sup> October 2013: <http://www.social-impact-of-conservation.net/>
- Schmidt-Soltau, K., & Brockington, D. 2007. Protected areas and resettlement: what scope for voluntary relocation? *World Development*, 35, 2182-2202.
- Scoones, I. 1992. The economic value of livestock in the communal areas of southern Zimbabwe. *Agricultural Systems*, 39(4), 339-359.
- Scoones, I. 1994. *Living with uncertainty: new directions in pastoral development in Africa*. London: Intermediate Technology Publications.
- Seixas, C.S., & Berkes, F. 2010. Community-based enterprises: the significance of partnerships and institutional linkages. *International Journal of the Commons*, 4(1), 183-212.
- Seixas, C.S., & Davy, B. 2008. Self-organization in integrated conservation and development initiatives. *International Journal of the Commons*, 2(1), 98-123.
- Sellen, D. 2003. Nutritional consequences of wealth differentials in East African pastoralists: the case of the Datoga of Northern Tanzania. *Human Ecology*, 31(4), 529–570.
- Seno, S.K., & Shaw, W.W. 2002. Land tenure policies, Maasai traditions, and wildlife conservation in Kenya. *Society and Natural Resources*, 15, 79-88.
- Seo, S.N., Mendelsohn, R., Dinar, A., & Kurukulasuriya, P. 2009. Adapting to climate change mosaically: an analysis of African livestock management by agro-ecological zones. *The B.E. Journal of Economic Analysis & Policy*, 9(2), 1-37.
- Serneels, S., & Lambin, E.F. 2001. Impact of land-use changes on the wildebeest migration in the northern part of the Serengeti-Mara ecosystem. *Journal of Biogeography*, 28, 391–407.
- Serneels, S., Said, M.Y., & Lambin, E.F. 2001. Land-cover changes around a major East African wildlife reserve: the Mara ecosystem. *International Journal of Remote Sensing*, 22(17), 3397-3420.
- Silvestri, S., Osano, P., De Leeuw, J., Herrero, M., Ericksen, P., Kariuki, J., Njuki, J., Bedelian, C., & Notenbaert, A. 2012. Greening livestock: assessing the potential of payment for environmental services in livestock inclusive agricultural production systems in developing countries. Nairobi, Kenya: International Livestock Research Institute.
- Sinclair, A.R.E., & Fryxell, J.M., 1985. The Sahel of Africa: ecology of a disaster. *Canadian Journal of Zoology*, 63, 987–994.

- Sitati, N.W. 2003. Human–elephant conflicts in the Maasai Mara dispersal areas of Transmara district. PhD thesis, University of Kent.
- Smith 2012. 'Six wildlife lions speared to death after livestock killed in Nairobi area'. *The Guardian*, June 21<sup>st</sup>, 2012. Accessed 1<sup>st</sup> March 2014:  
<http://www.guardian.co.uk/world/2012/jun/21/six-lions-speared-death-nairobi-livestock>
- Sneath, D. 1998. State policy and pasture degradation in Inner Asia. *Science*, 281(5380), 1147-1148.
- Sommerville, M., Jones, J.P.G., Rahajaharison, M., & Milner-Gulland, E.J. 2010. The role of fairness and benefit distribution in community-based payment for environmental services interventions: a case study from Menabe, Madagascar. *Ecological Economics*, 69, 1262–1271.
- Songorwa, A.N. 1999. Community-based wildlife management (CWM) in Tanzania: are the communities interested? *World Development*, 27(12), 2061–2079.
- Southgate, C. 2006. Ecotourism in Kenya: the vulnerability of communities. *Journal of Ecotourism*, 5(1–2), 80–96.
- Spear, T., & Waller, R. 1993. *Being Maasai: ethnicity and identity in East Africa*. Athens: Ohio University Press.
- Spenceley, A. 2003. Tourism, local livelihoods and the private sector in South Africa: case studies on the growing role of the private sector in natural resources management. Sustainable Livelihoods in Southern Africa Research Paper 8. Brighton: Institute of Development Studies.
- Spencer, P. 1988. *The Maasai of Matapato: a study of rituals of rebellion*. Manchester University Press.
- Stelfox, J.G., Peden, D.G., Epp, H., Hudson, R.J., Mbugua, S.W., Agatsiva, J.L., & Amuyunzu, C.L. 1986. Herbivore dynamics in Southern Narok, Kenya. *Journal of Wildlife Management*, 50, 339–347.
- Stem, C., Lassoie, J., Lee, D., Deshler, D., & Schelhas, J. 2003. Community participation in ecotourism benefits: the link to conservation and perspectives. *Society and Natural Resources*, 16(5), 387–414.
- Stroh, M. 2000. Qualitative interviewing. In: Burton, D. (Ed.), *Research training for social scientists*. London: Sage publications.
- Stronza, A. 1999. Learning both ways: lessons from a corporate and community ecotourism collaboration. *Cultural Survival Quarterly*, 23(2), 36-39.
- Stronza, A. 2007. The economic promise of ecotourism for conservation. *Journal of Ecotourism*, 6(3), 210-230.
- Stronza, A., & Pegas, F. 2008. Ecotourism and conservation: two cases from Brazil and Peru. *Human Dimensions of Wildlife*, 13(4), 263-279.

- Sullivan, S. 1996. Towards a non-equilibrium ecology: perspectives from an arid land. *Journal of Biogeography*, 23(1), 1-5.
- Sullivan, S. 2006. The elephant in the room? Problematizing 'new' (neoliberal) biodiversity conservation. *Forum for Development Studies*, 33(1), 105-135.
- Sullivan, S. 2009a. An ecosystem at your service: environmental strategists are redefining nature as a capitalist commodity. *The Land*, Winter 2008/2009.
- Sullivan, S. 2009b. Green capitalism and the cultural poverty of constructing nature as service provider. *Radical Anthropology*, 3, 18-27.
- Sullivan, S., & Rohde, R. 2002. On non-equilibrium in arid and semi-arid grazing systems. *Journal of Biogeography*, 29, 1595–1618.
- Sutherland, W.J., Pullin, A.S., Dolman, P.M., & Knight, T.M. 2004. The need for evidence-based conservation. *Trends in Ecology & Evolution*, 19, 305-308.
- Talbot, L., & Olindo, P. 1990. Kenya: The Maasai Mara and Amboseli Reserves: living with wildlife. World Bank Technical Paper 130.
- Talle, A. 1988. Women at a loss: changes in Maasai pastoralism and their effects on gender relations. Stockholm Studies in Social Anthropology, No.19. University of Stockholm, Stockholm.
- Talle, A. 1990. Ways of milk and meat among the Maasai. In: Palsson, G. (Ed.), *From water to world making. African models and arid Lands*, pp. 73–93. Uppsala, Sweden: Scandinavian Institute of African Studies.
- Talle, A. 1999. Pastoralists at the border: Maasai poverty and the development discourse in Tanzania. In: Anderson, D., & Broch-Due, V. (Eds.), *The Poor are Not Us*, pp 106–124. Oxford: James Currey.
- Terborgh, J. 1999. *Requiem for nature*. Washington, DC: Island Press.
- Thoemmes, F.J. 2012. Propensity score matching in SPSS. Accessed 1<sup>st</sup> March 2014: <http://sourceforge.net/p/psmspss/home/Home/>
- Thompson, M. 2002. Livestock, cultivation, and tourism: livelihood choices and conservation in Maasai Mara Buffer Zones. Unpublished PhD Thesis, University College London.
- Thompson, M. 2005. Valuing land use options in the Maasai Mara. Draft Report of the 2004 Socio-Economic Survey: *Better Policy and Management Options, for Pastoral Lands*. Nairobi: International Livestock Research Institute.
- Thompson, M., & Homewood, K. 2002. Elites, entrepreneurs and exclusion in Maasailand. *Human Ecology*, 30(1), 107-138
- Thompson, M., Serneels, S., Kaelo, D., & Trench, P.C. 2009. Maasai Mara - Land privatization and wildlife decline: can conservation pay its way? In: Homewood, K., Kristjanson, P., & Trench, P.C. (Eds.), *Staying Maasai? Livelihood, conservation and development in East African rangelands*, pp. 77-114. New York: Springer.

- Thomson, J. 1885. *Through Masai Land*. London, UK: Marston, Sampson Low, Searle and Rivington.
- Thornton, P.K., BurnSilver, S.B., Boone, R.B., & Galvin, K.A. 2006. Modelling the impacts of group ranch subdivision on agro-pastoral households in Kajiado, Kenya. *Agricultural Systems*, 87, 331-356.
- Tickell, A., & Peck, J. 2003. Making global rules: globalization or neoliberalization? In: Peck, J., Wai-Chung Yeung, H. (Eds.), *Remaking the global economy: economic-geographical perspectives*, pp. 163-181. London: Sage.
- Turner, M.D. 2004. Political ecology and the moral dimensions of “resource conflicts”: the case of farmer–herder conflicts in the Sahel. *Political geography*, 23(7), 863-889.
- Turner, M.D., & Taylor, P.J. 2003. Critical reflections on the use of remote sensing and GIS technologies in human ecological research. *Human Ecology*, 31(2), 177-182.
- Turton, D. 1987. The Mursi and national park development in the lower Omo valley. In: Anderson, D., & Grove, R.H. (Eds.), *Conservation in Africa: peoples, policies and practice*. Cambridge: Cambridge University Press.
- UNWTO 2013. UNWTO Tourism Highlights, 2013 Edition, World Tourism Organisation. Accessed 25<sup>th</sup> February 2014: <http://www2.unwto.org>
- URT (United Republic of Tanzania) 1997. Agriculture and Livestock Policy, 1997. Accessed 1<sup>st</sup> October 2013: [www.tzonline.org/pdf/agricultureandlivestockpolicy.pdf](http://www.tzonline.org/pdf/agricultureandlivestockpolicy.pdf)
- Veljanovski, T., Kanjir, U., Pehani, P., Oštir, K., & Kovačič, P. 2012. Object-based image analysis of VHR satellite imagery for population estimation in informal settlement Kibera-Nairobi, Kenya. *Remote Sensing–Applications, InTech*, 407-436.
- Vermeulen, S., & Sheil, D. 2007. Partnerships for tropical conservation. *Oryx*, 41(4), 434-440.
- Vetter, S. 2005. Rangelands at equilibrium and non-equilibrium: recent developments in the debate. *Journal of Arid Environments*, 65, 321-341.
- Vidal, J. 2008. ‘The great green land grab’, *The Guardian*, February 13<sup>th</sup>, 2008. Accessed 9<sup>th</sup> September 2013: <http://www.guardian.co.uk/environment/2008/feb/13/conservation/print>
- Vira, B., & Adams, W.M. 2009. Ecosystem services and conservation strategy: beware the silver bullet. *Conservation Letters*, 2(4), 158-162.
- Waller, R. 1976. The Maasai and the British 1895-1905: the origins of an alliance. *Journal of African History*, 17(4), 529-53.
- Waller, R. 1979. The Lords of East Africa. The Maasai in the mid-nineteenth century 1840–85. PhD Thesis, Cambridge University.
- Waller, R. 1988. Emutai: crisis and response in Maasailand 1883-1902. In: Johnson, D.H., & Anderson, D.M. (Eds.), *The ecology of survival: case studies from Northeast African history*. London: Lester Crook Academic Publishing.



- Walpole, M.J., & Leader-Williams, N. 2001. Maasai Mara tourism reveals partnership benefits. *Nature*, 413, 771.
- Walpole, M.J., Karanja, G.G., Sitati, N.W., & Leader-Williams, N. 2003. *Wildlife and People: Conflict and Conservation in Masai Mara, Kenya*. Wildlife and Development Series No.14, International Institute for Environment and Development, London.
- Walsh, M. 2012. The not-so-great Ruaha and hidden histories of an environmental panic in Tanzania. *Journal of Eastern African Studies*, 6(2), 303-335.
- Waylen, K.A., Fischer, A., McGowan, P.J., Thirgood, S.J., & Milner-Gulland, E.J. 2010. Effect of local cultural context on the success of community-based conservation interventions. *Conservation Biology*, 24(4), 1119-1129.
- WDPA 2012. Growth in global number of protected areas (1911-2011). The World Database on Protected Areas, UNEP-WCMC, Cambridge, UK. Accessed 1<sup>st</sup> March 2014: <http://www.wdpa.org/Statistics.aspx>
- Weber, J.G., Sills, E.O., Bauch, S., & Pattanayak, S.K. 2011. Do ICDPs work? An empirical evaluation of forest-based microenterprises in the Brazilian Amazon. *Land Economics*, 87(4), 661-681.
- Wells, M.P. 1992. Biodiversity conservation, affluence and poverty: mismatched costs and benefits and efforts to remedy them. *Ambio*, 21, 237-243.
- Wells, M.P., & McShane, T.O. 2004. Integrating protected area management with local needs and aspirations. *Ambio*, 33(8), 513-519.
- West, P.C., & Brechin, S.R. 1991. *Resident peoples and national parks*. Tuscon, AZ, USA: University of Arizona Press.
- West, P., & Carrier, J.G. 2004. Ecotourism and authenticity. Getting away from it all? *Current Anthropology*, 45(4), 483-498.
- Western, D. 1982. The environment and ecology of pastoralists in arid savannas. *Development and Change*, 13, 183-211.
- Western, D., Russell, S., & Cuthill, I. 2009. The status of wildlife in protected areas compared to non-protected areas of Kenya. *PLoS ONE*, 4(7), e6140.
- Western, D., Russell, S., & Mutu, K., 2006. The status of wildlife in Kenya's protected and non-protected areas. Paper commissioned by Kenya's wildlife policy review team. Presented at the first stakeholders symposium of the wildlife policy and legislation review, 27-28<sup>th</sup> September 2006. African Conservation Centre, Nairobi.
- Western, D., & Wright, R.M. 1994. *Natural connections: perspectives in community-based conservation*. Island Press.
- Wikileaks 2007. 'Tibiko implicated in game reserve land grabbing scandal' and associated files on the Mara land grab. Accessed 1<sup>st</sup> March 2014: <https://wikileaks.org/wiki/Mara-land-grab.zip>

- Wilkie, D.S., Morelli, G.A., Demmer, J., Starkey, M., Telfer, P., & Steil, M. 2006. Parks and people: assessing the human welfare effects of establishing protected areas for biodiversity conservation. *Conservation Biology*, 20(1), 247-249.
- Wilshusen, P.R., Brechin, S.R., Fortwangler, C.L., & West, P.C. 2002. Reinventing a square wheel: critique of a resurgent "protection paradigm" in international biodiversity conservation'. *Society and Natural Resources*, 15, 17–40.
- Woodley, S., Bertzky, B., Crawhall, N., Dudley, N., Londoño, J.M., MacKinnon, K., Redford, K., & Sandwith, T. 2012. Meeting Aichi target 11: what does success look like for protected area systems? *Parks*, 18(1), 23-36.
- World Bank 2011. Kenya's tourism: polishing the jewel. The World Bank.
- Wunder, S. 2000. Ecotourism and economic incentives – an empirical approach. *Ecological Economics*, 32(3), 465-479.
- Wunder, S. 2005. Payments for environmental services: some nuts and bolts. Jakarta, Indonesia: Center for International Forestry Research (CIFOR).
- Wunder, S. 2007. The efficiency of payments for environmental services in tropical conservation. *Conservation Biology*, 21, 48–58.
- Wunder, S. 2008. Payments for environmental services and the poor: concepts and preliminary evidence. *Environment and Development Economics*, 13, 279-297.
- Wunder, S., & Albán, M. 2008. Decentralized payments for environmental services: the cases of Pimampiro and PROFAFOR in Ecuador. *Ecological Economics*, 65(4), 685-698.
- Wunder, S., Engel, S., & Pagiola, S. 2008. Taking stock: a comparative analysis of payments for environmental services programs in developed and developing countries. *Ecological Economics*, 65(4), 834–852.
- Zbinden, S., & Lee, D. 2005. Paying for environmental services: an analysis of participation in Costa Rica's PSA program. *World Development*, 33(2), 255–272.
- Zimmermann, A., Walpole, M.J., & Leader-Williams, N. 2005. Cattle ranchers' attitudes to conflicts with jaguar *Panthera onca* in the Pantanal of Brazil. *Oryx*, 39, 406-412.
- Zommers, A. 2010. Globalisation and the foreignisation of space: seven processes driving the current global land grab. *The Journal of Peasant Studies*, 37(2), 429–447.

## Appendix One - Koyiaki Household Questionnaire

### 1. Survey Information

A. Date	
B. Town	
C. Sub-area	
D. GPS ID	
E. GPS X GPS Y	
F. Interviewer/s	
G. Start Time	
H. End Time	

### 2. Background information

A. Name of respondent (household head)			
B. Gender	M	F	
C. Marital status	Married	Single	Widowed   Divorced
D. Have you ever held a leadership position?	YES		NO
If YES, what?	1)	2)	
For what time period?	1)	2)	

### 3. Please define your olmarei

No.	Relationship to household head	Age	Sex	Level of education reached or current schooling*	Occupation**		Location: Household (1) Elsewhere (2) – (where?)
					1st	2 <sup>nd</sup>	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

\*Education- If currently schooling, circle the response level

\*\*Occupation- ask the respondent what occupation they spend the most time doing. The occupation doesn't have to be related to income



H. Do you have land elsewhere?  YES/ NO  
 IF YES,

**If respondent has no land at all, go to question L**

Location 1)	Size (acres)	How acquired?		Which year?	Title deed?	
					YES	NO
					Transfer?	
					YES	NO
		Allocated at subdivision			Cost?	
		Inherited*				
		Bought				
		Other (specify)_____				

Location 2)	Size (acres)	How acquired?		Which year?	Title deed?	
					YES	NO
					Transfer?	
					YES	NO
		Allocated at subdivision			Cost?	
		Inherited*				
		Bought				
		Other (specify)_____				

Location 3)	Size (acres)	How acquired?		Which year?	Title deed?	
					YES	NO
					Transfer?	
					YES	NO
		Allocated at subdivision			Cost?	
		Inherited*				
		Bought				
		Other (specify)_____				

Location 4)	Size (acres)	How acquired?		Which year?	Title deed?	
					YES	NO
					Transfer?	
					YES	NO
		Allocated at subdivision			Cost?	
		Inherited*				
		Bought				
		Other (specify)_____				

\*if inherited check and specify if land is now exclusively his/hers or if it is still with father, or if shared between brothers/wives – how many brothers/wives?

I. How would you rate this land in terms of the following factors?

Location 1 \_\_\_\_\_

Factor	Very poor	Poor	Ok	Good	Very good
Quality of grass					
Quantity of grass					
Access to water					
Proximity to salt lick					
Tourism potential					

Location 2 \_\_\_\_\_

Factor	Very poor	Poor	Ok	Good	Very good
Quality of grass					
Quantity of grass					
Access to water					
Proximity to salt lick					
Tourism potential					

Location 3

Factor	Very poor	Poor	Ok	Good	Very good
Quality of grass					
Quantity of grass					
Access to water					
Proximity to salt lick					
Tourism potential					

Location 4

Factor	Very poor	Poor	Ok	Good	Very good
Quality of grass					
Quantity of grass					
Access to water					
Proximity to salt lick					
Tourism potential					

J. Is any piece of your land fenced?  YES/ NO

If YES,

Location	Type of fence	What area is fenced? (Approx acres)	Reason for fencing

K. Do you plan to fence any of your land in the next 1 year?  YES/ NO

If YES, location \_\_\_\_\_ Area to be fenced \_\_\_\_\_ Reason for fencing \_\_\_\_\_

L. On any piece of land you live on, or own, has anyone moved there because of a conservancy?  YES/ NO

If YES, who? \_\_\_\_\_ (be specific on number of relatives/friends/clan etc)

From which conservancy? \_\_\_\_\_

To which place? \_\_\_\_\_

What year? \_\_\_\_\_

M. Have you sold any land in the last 5 years?  YES/ NO

If YES, where? \_\_\_\_\_ When? \_\_\_\_\_ Acres? \_\_\_\_\_ Cost? \_\_\_\_\_

N. Do you plan to BUY any land in the next 1 year?  YES/ NO

If YES, where? \_\_\_\_\_ When? \_\_\_\_\_ Acres? \_\_\_\_\_

O. Do you plan to SELL any land in the next 1 year?  YES/ NO

If YES, where? \_\_\_\_\_ When? \_\_\_\_\_ Acres? \_\_\_\_\_

P. Does anyone else in your *olmarei* own land?  YES/ NO

Who? \_\_\_\_\_

Where? \_\_\_\_\_

Acres? \_\_\_\_\_

How acquired? \_\_\_\_\_ What year? \_\_\_\_\_

**6. Household features/livestock ownership**

A. Do you or any members of your *olmarei* own any of the following?

Phone	
Radio	
TV	
Bicycle	
Motorbike	
Car	
Tractor	
Solar panel	

Indicate Y or N for each column

B. How many houses does the *olmarei* utilize and what is the roofing and wall material for each?

House no.	Wall	Roof

**Wall:** Mud=1; mabati=2; wire/stones/plaster=3; bricks=4; planks=5; other=6 (specify)

**Roof:** Mud=1; mabati=2; grass=3; other=4 (specify)

C. How many livestock does the *olmarei* currently own?

(Enter both total cattle number and then numbers for each category and cross-check)

Animals		Number
Cattle	Bulls	
	Steers	
	Lactating females	
	Non-lactating females	
	Heifer	
	Calves	
Sheep		
Goats		
Donkeys		

D. Type of fence for Cattle

**Code:** Maasai traditional=1; poles=2; mix traditional/poles=3; mix traditional/wire=4; other=5 (specify)

E. Type of fence for shoats

**NOTE:** From here onwards remember to specify the time period when asking these questions and be precise about the months. I.e. For one year: from July 2009-June 2010, and for 6 months: from Jan-June 2010.

**7. Livestock movements/grazing**

A. Where are your livestock currently?

Location	No of Cattle	No of Shoats
Home		
Other (specify where and with who?).....		

B. Where did you graze your animals in the recent drought? Cattle 1) \_\_\_\_\_ 2) \_\_\_\_\_  
 Shoats 1) \_\_\_\_\_ 2) \_\_\_\_\_

C. In the last one year have you herded your livestock together with other herds?  YES/ NO  
 If YES, whose herds? \_\_\_\_\_

D. In the last one year, have you grazed your livestock inside the reserve?  YES/ NO  
 If YES, how often?

Most days	
1-2 x per month	
In dry times only	
In wet season only	
Other (specify)_____	

Which months? \_\_\_\_\_  Day /  Night

E. Have you had any conflict with rangers of the reserve in the last one year?  YES/ NO  
 If YES, how many times? \_\_\_\_\_

Have you paid a fine?  YES/ NO How many times in the last year? \_\_\_\_\_  
 Total spent on fines by the *olmarei* in the last year? \_\_\_\_\_ KSH  
 (taking into account if the cost is split between other herds)

F. In the last one year, have you grazed your livestock inside any conservancy?  YES/ NO  
 If YES, which one/s?

How often?	OOC	Motorogi	Mara North	Naboisho
Most days				
1-2 x per month				
In dry times only				
In wet season only				
Other _____				

Which months?				
Day or Night?	<input type="checkbox"/> Day / <input type="checkbox"/> Night	<input type="checkbox"/> Day / <input type="checkbox"/> Night	<input type="checkbox"/> Day / <input type="checkbox"/> Night	<input type="checkbox"/> Day / <input type="checkbox"/> Night

G. Have you had any conflict with rangers of any conservancy in the last one year?  YES/ NO  
 If YES, which conservancy/s? \_\_\_\_\_ How many times? \_\_\_\_\_  
 Have you paid a fine?  YES/ NO How many times in the last year? \_\_\_\_\_  
 Total spent on fines by the *olmarei* in the last year? \_\_\_\_\_ KSH  
 (taking into account if the cost is split between other herds)

H. Did you graze your livestock inside any conservancy before it was set up?  YES/ NO  
 If YES, which conservancy/s? (circle the correct choice/s)

<input type="checkbox"/> OOC	<input type="checkbox"/> Motorogi	<input type="checkbox"/> Mara North	<input type="checkbox"/> Naboisho
------------------------------	-----------------------------------	-------------------------------------	-----------------------------------

I. Do you consider the conservancy/s to be a benefit for your livestock or a cost?  BENEFIT /  COST  
 Please explain your answer \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





**10. Livestock products**

A. Have you sold any livestock products in the last one year?

	YES/NO	Which months did you sell?	How many sold per day/week/month?	Sold where?	Price per quantity sold?
Milk					
Hides or Skins					
Other ( <i>specify</i> ) _____					

Bottle = \_\_\_\_\_ ML

B. Have you had to buy milk for your *olmarei* in the last one year?  YES/ NO

If YES, which months? \_\_\_\_\_

How much did you buy (per day)? \_\_\_\_\_ Litres/ML/KG

How much did you spend per quantity bought? \_\_\_\_\_ KSH

**11. Conservancy involvement**

A. Are you or a member of your *olmarei* currently a member of a conservancy?  YES/ NO

**If NO, go to question U**

If, YES:

B	Which <i>olmarei</i> member?	1)	2)	3)	
C	Which conservancy/s	1)	2)	3)	
D	What year did you/they join?				
E	How much land do you/they have in the conservancy? ( <i>acres</i> )				
F	Are you/they on the committee or management staff? If YES, what position?	YES	NO	YES	NO
G	How much did you/they receive from the conservancy per month in the last year?	Payment amount (KSH)	Payment amount (KSH)	Payment amount (KSH)	
	July 2010				
	June 2010				
	May 2010				
	April 2010				
	March 2010				
	Feb 2009				
	Jan 2009				
	Dec 2009				
	Nov 2009				
	Oct 2009				
	Sept 2009				
	Aug 2009				

H. What is the main reason you joined the conservancy/s?

For income	
For wildlife conservation	
Pressure from the community	
For dry season grazing	
Other ( <i>Specify</i> )	

I. Do you split your payment with anyone as payment for residence on someone else's land?  YES/ NO

If YES, who? \_\_\_\_\_ How is it split? \_\_\_\_\_

J. Do you consider the current payment amount to be sufficient?  YES/ NO  
 If NO, how much would you like it to be for a full 150 acre parcel? KSH \_\_\_\_\_

K. Are you happy with the current system of payment to the bank?  YES/ NO  
 If NO, what mode of payment would you prefer? \_\_\_\_\_  
 (**Code:** 1=cash, 2=cheque, 3=MPESA, 4=non-cash (e.g. food), 5=other)

L. Into whose bank account is the money deposited?

Household head account	
A joint account with wife/s	
A friend's account	
A relative's account. Who? _____	
Other ( <i>specify</i> ) _____	

M. How often do you travel to the bank to withdraw your conservancy payment?

Twice a month	
Once a month	
Every 2 months	
Every 3-6 months	
Other ( <i>specify</i> ) _____	

N. In the last 3 months what have you spent your lease payment on? Please rank 1, 2 and 3.

Expense	Rank
Education	
Basic needs (e.g. food, clothes)	
Livestock purchases	
Veterinary costs	
Grazing purchases	
Health expenses	
Grazing fines	
Hired herder	
Other( <i>specify</i> ) _____	

O. Apart from the payment do you receive any other benefits from the conservancy/s?  YES/ NO

1.
2.
3

P. Have you experienced any costs or problems due to the conservancy/s?  YES/ NO

1.
2.
3

Q. How often do you attend meetings about the conservancy/s?

Weekly	
Monthly	
Quarterly	
Yearly	
Other ( <i>specify</i> ) _____	

R. Do you feel you had adequate information about the conservancy before joining?  YES/ NO

If NO, what would you have liked to know before joining the conservancy?

1.
2.
3

S. Are you happy with the current duration of the lease contract?  YES/ NO

If NO, how long would you like it to be? \_\_\_\_\_ Years

T. Have you signed the 15 year contract?  YES /  NO /  UNSURE –depends on.....

**For NON-members**

U. Do you have land within a conservancy area but have not joined the conservancy?  YES/ NO

If YES, why have you not joined? \_\_\_\_\_  
\_\_\_\_\_

V. Were you involved in any conservancy or association before?  YES/ NO

Which conservancy/association?	For what time period?	Why did you stop?

W. Do you receive conservancy payment as rent from someone who is a member of a conservancy and is living on your land?  YES/ NO

If YES, who? \_\_\_\_\_

From which conservancy? \_\_\_\_\_

Since when? \_\_\_\_\_

How is the payment split? \_\_\_\_\_

X. Do you experience any benefits due to a conservancy?  YES/ NO

1. _____
2. _____
3. _____

Y. Do you experience any costs or problems due to a conservancy?  YES/ NO

1. _____
2. _____
3. _____

**For BOTH members and non-members**

Z. What do you think is good about the conservancy?

1. _____
2. _____
3. _____
4. _____

AA. What do you think is bad about the conservancy?

1. _____
2. _____
3. _____
4. _____

AB. Do you think conservancy members did better than non-members in the recent drought, or no difference?

Members did better		Reason
Non-members did better		
No difference		

**12. Cultivation**

A. In the last one year, have you or a member of your *olmarei* been involved in cultivation, here or elsewhere?

YES/ NO

**If NO, go to question H**

B. If YES, which *olmarei* member/s? \_\_\_\_\_

C. In what way?

Cultivating own plot	
Cultivating on community land	
Renting a plot from someone	
Renting a plot to someone	
Other ( <i>specify</i> ) _____	

D. How much did the *olmarei* cultivate, harvest, consume, and was any sold?

Location	Crop	No. of acres	Water type- rain fed or irrigated	Amount Harvested? Kg/bags	Amount consumed? Kg/bags	Amount sold? Kg/bags and selling price	Sold where?

E. Of the crops consumed, for how long did this feed the *olmarei*? \_\_\_\_\_

F. Are there crops now in the ground which have not yet been harvested?  YES/ NO

Location	Crop	No. of acres	Water type – rain fed/ irrigated

G. What year did the *olmarei* begin cultivation? \_\_\_\_\_

H. If NO:

1. Why does the <i>olmarei</i> not cultivate?	
2. Has the <i>olmarei</i> cultivated in previous years?	YES   NO
Where did you cultivate?	
When did you cultivate?	
Why did you stop?	
3. Do you have plans to cultivate in the future?	YES   NO
Where?	
When?	
What crops?	

### 13. Off-Farm Activities

Can you give us information about other sources of income of any member of the *olmarei* in the last one year (including those that may have stopped) and describe what they are/were doing:

Profession/activity* (specify below)	No. of persons	Relation-ship to <i>olmarei</i> head**	Frequency of contributions to the <i>olmarei</i> : (1= occasional; 2=weekly; 3=monthly; 4=daily)	Average amount coming into the household per contribution?	When did the activity begin?	If the activity has now stopped, when did it stop?	Why did it stop?	Notes
Tourism/conservation employee (what? where?)								
Teacher								
Campsite fees (where?)								
Craft sales (where?)								
Remittances (i.e. money coming to <i>olmarei</i> from person elsewhere)								
Livestock trader: (No. and type of animals per week on average):								
Business person or trader: (Specify e.g. what shop or trade?)								
Transport business (specify):								
Other activity (specify):								
Other activity (specify):								

\* Probe the respondent about different activities e.g. local brewing, ranger, casual labour, sale of sand/stones, research work, Maasai singing/dancing, others.....

\*\* 1=household head; 2=spouse; 3=son; 4=daughter; 5=mother; 6=other (specify)

#### 14. Household Expenditure

Can you estimate your *olmarei* expenses for the last 1 month on the following items?

<b>Expense</b>	<b>KSH</b>
School fees (per term)	
Livestock purchases	
Veterinary costs	
Water purchases	
Grazing purchases	
Crop farming expenses	
Health expenses	
Basic needs (food, clothes)	
Transport costs	
Hired herder	
Grazing fines	
Other ( <i>specify</i> )_____	

#### 15. Livelihood importance

What do you consider to be the most important livelihood activity for your overall *olmarei* welfare?

Please provide 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> rankings of the following livelihood activities.

<b>Activity</b>	<b>Rank</b>
Livestock keeping	
Cultivation	
Conservancy member	
Business	
Wage/job	
Campsite fee	
Craft sales	
Livestock trader	
Remittances	
Other ( <i>specify</i> )_____	

## Appendix Two

### Key informant interviews

Interview Code	Respondent	Date
KII 1	Independent safari guide	09/05/2008
KII 2	Tour operator	14/05/2008
KII 3	Researcher	21/05/2008
KII 4	Conservancy committee member	04/06/2008
KII 5	Conservancy manager	05/06/2008
KII 6	Conservancy Trust manager	06/06/2008
KII 7	Conservancy manager	07/06/2008
KII 8	Conservancy manager	08/06/2008
KII 9	Conservancy manager	09/06/2008
KII 10	Tour operator	02/2010
KII 11	Director - previous wildlife association	02/2010
KII 12	Conservancy manager	03/2010
KII 13	Director - previous wildlife association	03/2010
KII 14	Conservancy manager	08/04/2010
KII 15	Conservancy manager	09/04/2010
KII 16	Conservancy committee member	10/05/2010
KII 17	Conservancy committee member	12/05/2010
KII 18	Conservancy committee member	02/06/2010
KII 19	Conservancy Trust manager	07/2010
KII 20	Conservancy committee member	16/08/2010
KII 21	Conservancy committee member	17/08/2010
KII 22	Conservancy committee member	13/09/2010
KII 23	Conservancy Trust	09/2010
KII 24	Tour operator	07/10/2010
KII 25	NGO - Conservancy project officer	09/10/2010
KII 26	Conservancy manager	14/10/2010
KII 27	Conservancy committee chairman	14/11/2010
KII 28	Conservancy manager	17/11/2010
KII 29	Koyiaki Group Ranch Committee	17/11/2010
KII 30	NGO - Conservancy project officer	18/11/2010
KII 31	Independent safari guide	12/2010
KII 32	Conservancy manager	02/2012
KII 33	Conservancy manager	11/2012
KII 34	Conservancy manager	11/2012
KII 35	Conservancy manager	11/2012



### Community interviews

<b>Interview code</b>	<b>Respondent/s</b>	<b>Conservancy membership details</b>	<b>No of people</b>	<b>Date</b>
CI 1	Group of women	Husbands members	6	07/2008
CI 2	Senior elder	Member	1	07/2008
CI 3	Elder	Member	1	07/2008
CI 4	Junior elder	Non-member	1	23/01/2010
CI 5	Elder	Father is member	1	25/01/2010
CI 6	Junior elder	Father is member	1	25/01/2010
CI 7	Elder	Member	1	29/03/2010
CI 8	Elder	Member	1	31/03/2010
CI 9	Elder	Member	1	01/04/2010
CI 10	Group of men	Members and non-members	>13	03/04/2010
CI 11	Woman	Son is member	1	08/04/2010
CI 12	Group of women	Husbands members	3	09/04/2010
CI 13	Elder	Non-member	1	27/04/2010
CI 14	Senior elder	Member	1	29/04/2010
CI 15	Group of women	Husbands members	5	30/04/2010
CI 16	Woman	Non-member	1	01/05/2010
CI 17	Junior elder	Non-member	1	05/05/2010
CI 18	Senior elder	Member	1	06/05/2010
CI 19	Senior elder	Member	1	08/05/2010
CI 20	Elder	Member	1	26/05/2010
CI 21	Elder	Dropped member	1	01/06/2010
CI 22	Senior elder	Non-member	1	15/08/2010
CI 23	Junior elder	Father is member	1	16/08/2010
CI 24	Group of women	Husbands non-members	5	08/09/2010
CI 25	Group of women	Husbands members	4	10/09/2010
CI 26	Junior elder	Father is member	1	11/10/2010
CI 27	Junior elder	Non-member	1	05/11/2010
CI 28	Group of men	Non-members	2	06/11/2010
CI 29	Senior elder	Member	1	06/11/2010
CI 30	Senior elder	Member	1	16/11/2010

## **Appendix Three**

### **Mara interview guide: Conservancy members**

#### **Conservancy formation and information/power/participation :**

- Are you a member of a wildlife conservancy? If so, which one?
- When did you join?
- Why did you want to join the conservancy?
- How much land do you have in the conservancy or association?
- Why do you think the conservancy setup? What is its aim?
- Whose idea was it? Who were the major people in setting-up the conservancy?
- Can you explain the process by which the conservancy was set up?
- Did you attend any meetings as the conservancy was being formed? Who was the lead?
- Do you feel you had adequate information before joining the conservancy? What would you have liked to have known?
- Are you aware of the boundaries of the conservancy? Do you know why they were formed as they are?
- Were you involved in any other conservancy or association before? Why did you stop?
- What do you think is the main difference between those associations and now conservancies?

#### **Moving at start up:**

- Did you have to move boma due to the conservancy? Where did you go? Did you move to anyone else's boma or land? Where you given any help to move or compensation?
- Has someone else had to move to your boma/land? Who?
- Have you been told you will need to be moved? By who?

#### **Conservancy organisation and management structure/power/participation:**

- Who is responsible for the management of the conservancy?
- Who makes the decisions and rules about how the conservancy operates?
- Do members participate in decision-making of the conservancy? If so, how?
- Where can you get information about the conservancy?
- Does the conservancy management/committee ever come to your home? Who comes?
- Do you attend meetings? Can you give an example of the last meeting you attended? E.g. The number of attendees? Who was the lead? What was discussed?
- Who do you talk to if you have a problem or a complaint with the conservancy?
- How was the committee formed? Are you happy with how the committee works?

#### **Relationship with tour operators:**

- Do you know which lodges operate in the conservancy? Do you know the management or any staff?

**Conservancy grazing rules:**

- Do you graze your livestock in the conservancy?
- Are livestock allowed to graze in the conservancy? Do you think they should be allowed?
- What are the rules for grazing in the conservancy?
- Who agreed these rules?
- Do you think these rules are fair? Do people obey these rules?
- What is the fine if these rules are broken? Are there any other punishments?
- Have you been fined for grazing in the conservancy? If, so what happened?
- Do non-member livestock graze in the conservancy? Do you think this should be allowed?
- Has the conservancy changed where you graze your livestock? Have you had to find new places to graze?
- Do you think the conservancy is a benefit for grazing your livestock or a cost?
- What do you think is the best method to control illegal grazing by members or non-members?

**Monetary benefit**

- How much do you receive per month from the conservancy? Has this fluctuated in recent months?
- What is your opinion of the current payment amount that you receive? (i.e. is it fair? Too low?)
- Do you know why the price was set as it is?
- Do you think the payment system is well-organised?
- How would you prefer to be paid this money? E.g. In the bank? In cash? Non-cash payment?
- What do you spend the payment on? Do you consider it an important part of your overall income?
- Are there any other benefits you receive apart from the payment?
- Have you heard about any community development projects started by the conservancy?

**Costs**

- What are the problems or costs you have experienced by joining the conservancy?

**Wildlife**

- How has the conservancy changed wildlife in the area? Up/Down? Which animals?
- Have you received compensation for any livestock killed by wildlife? Do you know anyone who has?

**Vision**

- Are you happy with how the conservancy operates?
- If you could change anything about the conservancy, what would it be?
- What is your opinion regarding the duration of the lease contract? How long would you like it to be?
- Do you think the conservancy has brought social cohesion or conflict?

## **Mara interview guide: Non-conservancy members**

### **Conservancy/land involvement:**

- Do you have land within any conservancy? Why have you not joined the conservancy?
- Were you involved in any conservancy or association before? If so, why did you stop?

### **Conservancy formation and power/participation:**

- What do you know about the conservancy (*related to a particular one they live near*)?
- Who would you say were the major people in setting up the conservancy? What was their role?
- Did you attend any meetings as the conservancy was being formed? Who was the lead? Were there any community meetings going on?
- Are you aware of the boundaries of the conservancy? Do you know why they were formed as they are?

### **Moving at start up:**

- Have you had to move boma due to the conservancy? Where did you go? To whose boma/land?  
Were you given any help to move or compensation?
- Or did someone move to you boma/land?
- Have you been told you might need to move? By who? Why?

### **Conservancy grazing rules:**

- Are you affected by any conservancy in where you graze your animals?
- Do you graze inside any conservancy?
- Are there rules as to when you are allowed to graze in the conservancy? What rules? Have you been told to stop grazing in the conservancy?
- Do you think these rules are fair? Do people obey these rules?
- What is the fine if these rules are broken?
- Have you been fined for grazing in the conservancy? If so, what happened?
- Has the conservancy changed where you graze your livestock? Have you had to find new places to graze?
- Do you think the conservancy is a benefit for grazing your livestock or a cost?

### **Benefit/cost**

- As a non-member are there any benefits you get from the conservancy?
- Do you know about any community development projects by the conservancy?
- Are there any problems or costs you experience due to the conservancy?

### **Wildlife**

- Do you think the conservancy has affected wildlife in the area? Up/Down? Which animals?
- Have you received compensation for any livestock killed by wildlife? Do you know anyone who has?

**Overall-** Could anything be improved in the management of the conservancy in general?