



Elephants over the Cliff: Explaining Wildlife Killings in Tanzania



Sayuni B. Mariki^a, Hanne Svarstad^{b,c,*}, Tor A. Benjaminsen^a

^a Department of International Environment and Development Studies (Noragric), Norwegian University of Life Sciences (NMBU), Norway

^b Section for Development Studies, Department of International Studies and Interpretation, Oslo and Akershus University College of Applied Sciences (HiOA), Norway

^c Norwegian Institute for Nature Research (NINA), Norway

ARTICLE INFO

Article history:

Received 4 March 2013

Received in revised form 24 October 2014

Accepted 25 October 2014

Keywords:

Elephant
Conservation
Web of relations
Political ecology
Resistance
Tanzania
Africa

ABSTRACT

Many incidents of elephant killings have recently taken place in Tanzania as well as in other African countries. Such events are usually presented as results of the rising global demand for ivory. As we show in this case study, however, not all violence against elephants is driven by the ivory trade. This article presents an event that occurred in West Kilimanjaro in 2009 when numerous villagers chased a herd of elephants over a cliff, killing six of them. Using a 'web of relations' approach, we seek to uncover the underlying as well as the immediate factors that led to this incident. A severe drought sparked off the event as elephants increasingly raided crops and destroyed water pipes. There are growing elephant and human populations in the area, which must be understood in the context of land use changes. Large areas have in various ways been turned into different types of protected areas during the last few decades as results of efforts by conservation NGOs and governmental agencies. In between these areas, people try to sustain a living on the remaining land, while encountering increased problems with wildlife. Conservation in the study area takes place without local communities having any real influence on decision-making. This leads to a feeling of being marginalized and disempowered, which again causes resistance to conservation, as in this case.

© 2014 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Introduction

After two decades of increasing elephant populations in Tanzania, a decline has recently been recorded in some areas (Niskanen, 2010; TAWIRI, 2010; Douglas-Hamilton and Poole, 2010). This decline is due to a resurgence of elephant killings mainly associated with the growing illegal trade in ivory to supply the demand for artefacts and alternative medicines in China and other East Asian countries (Milliken and Sangalakula, 2009; Martin and Vigne, 2011; CAI, 2012).

Some of the violence against elephants is, however, not driven by the ivory trade. In this article, we use a 'web of relations' approach to analyse an incident that took place an evening in May 2009 on the western side of Mount Kilimanjaro in Tanzania. In this particular incident, a large crowd of villagers surrounded a herd of elephants and chased them, with the aid of torches, motorcycles, fire, and noise, towards a cliff, killing six of them. This event

happened near the centre of Engare Nairobi village (Fig. 1). During fieldwork in 2009–2011, we also learned about several other incidents in which elephants had been speared or found dead without indications of ivory poaching.

While we recognize that poaching for ivory constitutes a significant driver for the on-going elephant killings in Africa, we ask whether there are more of these cases that might be mistaken as ivory poaching, and which in reality are caused by a resistance to conservation practice. One key distinction between elephant killings for ivory or for resistance would, in addition to what people state in interviews, be whether the tusks are removed immediately or not. In poaching, the tusks will be quickly removed after the killing in order not to attract attention. In Engare Nairobi, numerous villagers were being photographed with the carcasses the day after the killings (we are in possession of some of these photographs), while the tusks were not removed. In addition, what separates poaching from resistance might also be what Scott (1992) calls 'hidden transcripts', which refer to the narratives that subaltern groups use to interpret their own experience of domination or oppression. Furthermore, frustration among people about the ways conservation takes place may also constitute an important cause behind poaching, since poachers often seem to be able to carry out their activities with the collusion of local people.

* Corresponding author at: Section for Development Studies, Department of International Studies and Interpretation, Oslo and Akershus University College of Applied Sciences (HiOA), Norway. Tel.: +47 93466998.

E-mail addresses: sayuni.mariki@nmbu.no (S.B. Mariki), hanne.svarstad@hioa.no (H. Svarstad), t.a.benjaminsen@nmbu.no (T.A. Benjaminsen).

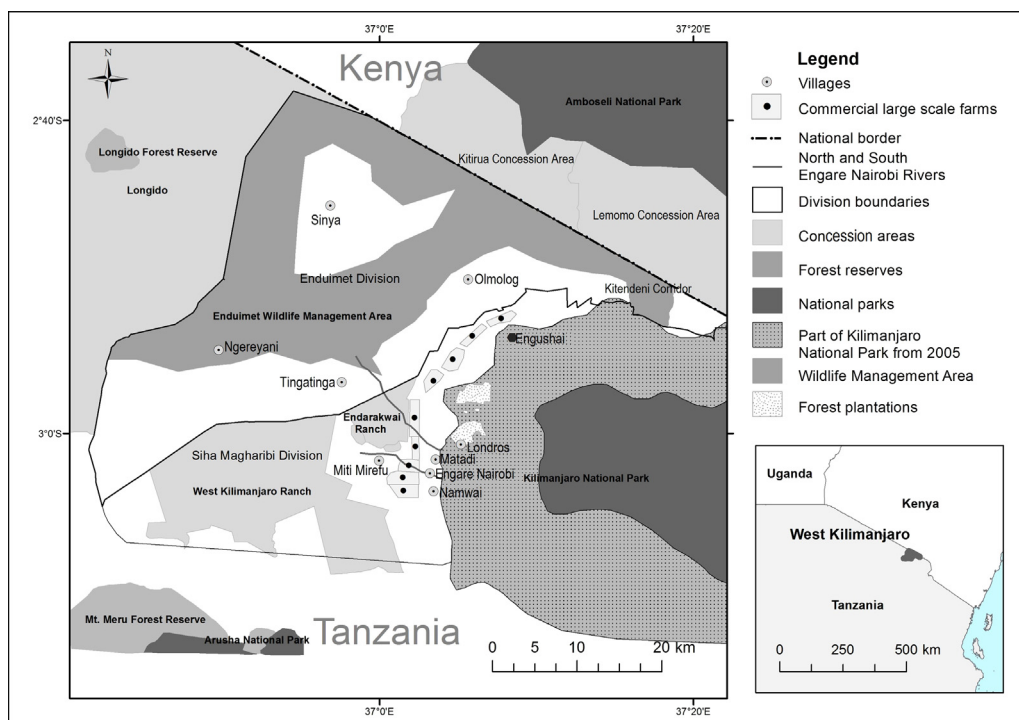


Fig. 1. Map locating Engare Nairobi and neighbouring villages, the two divisions of Siha Magharibi and Enduimet, and conservation areas and ranches.

Case studies of human–elephant conflicts in Africa often conclude that increases in human and/or elephant populations are the main causes of these conflicts as elephants and people overlap in their use of habitats and come into conflicts (e.g. Thouless, 1994; Hoare, 1999; Hoare and du Toit, 1999; Naughton-Treves et al., 1999; Walpole et al., 2003; Weladji and Tchamba, 2003; Osborn and Hill, 2005; Sitati et al., 2005; Graham, 2006; Walpole and Linkie, 2007; Sitati and Tchamba, 2008; Warner, 2008; Karimi, 2009; Kikoti et al., 2010; Mackenzie and Ahabyona, 2012). Some studies also point to land-use changes as a driver of such conflicts (e.g. Campbell et al., 2002; Noe, 2003; Benjaminsen and Svarstad, 2010). These land-use changes result both from population dynamics and from the impact of policies and governance. Other studies also focus on drought leading to increased resource scarcity as a factor sparking off conflicts (e.g. Dapash, 2002; Zubair et al., 2005; Graham, 2006; Lee and Graham, 2006; Warner, 2008; Lamarque et al., 2009).

Elephants require large tracts of land and consume large volumes of forage (Kangwana, 1996; Kikoti, 2009). They may spend 70–90% of their time foraging and can eat 100–300 kg of vegetation in a single day (Osborn, 2004). Thus, in their search for pastures and water, they engage in extensive seasonal migrations often including moving through farmland (Kangwana, 1996; Kikoti, 2009). Human–elephant conflicts can be defined as interactions between humans and elephants where direct and indirect negative consequences, whether perceived or real, exist for one or both parties (Decker et al., 2002; Zhang and Wang, 2003).

This article contributes to the understanding of these conflicts with a detailed investigation of a case of elephant killings providing an insight into the interaction of a broad set of explanatory factors. First, increases in both human and elephant populations in West Kilimanjaro are essential components in the land-use dynamics resulting in the conflicts. Second, large areas have, in various ways, been protected during the last few decades as a result of the agency of actors external to the local communities. These actors include the Wildlife Division and the Tanzania National Parks (TANAPA) under the Ministry of Natural Resources and Tourism,

wildlife-based tourism investors, and international conservation organisations. Small-scale farmers and pastoralists try to sustain a living on the land remaining in between the protected areas, while encountering growing problems with wildlife. This has left people with an increased feeling of being marginalized and disempowered and with limited possibilities to influence the situation through democratic means. Thus, we argue that this case may be interpreted as an act of resistance by people who feel disempowered and who have limited access to representational channels to voice their concerns. This situation is not unique in Eastern and Southern Africa where powerful actors have worked for the establishment of protected areas and generally facilitated conditions to increase wildlife. Thus, we suggest that an unknown number of the other elephant killings in Africa that are referred to as ivory poaching may also result from a resistance to conservation. In addition, it is also likely that resistance to conservation play a role recruiting local community members into networks of ivory poaching.

In the following, we first review literature on resistance to conservation before we present the study area and the ‘web of relations’ approach used as part of our methodology. Thereafter, we analyze each of the possible factors, and establish the ways in which multiple involved factors combine to explain why the elephant killings took place in this case. Finally, we discuss the role played by elephant killings in addressing human–elephant conflicts in the study area.

Resistance to conservation

There is a rich scholarly literature on different forms of resistance to what is perceived as illegitimate or non-democratic governance (e.g. Scott, 1985; Fegan, 1986; Ortner, 1995; O’Brien, 1996; Gupta, 2001; Watts, 2001). People who are dispossessed and marginalized by conservation projects also tend to resist governance in various ways (Holmes, 2007). Cavanagh and Benjaminsen (2015) identify four different forms of such resistance; nonviolent, militant, discursive, and formal-legal. Illegal wildlife killings

represent the militant form when they result from resistance, which also this case study is an example of. Other examples of such resistance to conservation have been given by for instance Neumann (1992, 1998), Western (1994), Weladji and Tchamba (2003) and Norgrove and Hulme (2006).

Some of these forms of resistance may sometimes represent what Scott (1985) calls 'everyday resistance' where relatively powerless peasants seek to avoid oppressive regulations by using techniques such as 'foot dragging, dissimulation, desertion, false compliance, pilfering, feigned ignorance, slander, arson, sabotage, and so on' (Scott, 1985, xvi). These 'weapons of the weak' (Scott, 1985) normally need little planning or coordination. People make use of implicit understandings and informal social networks and avoid any direct confrontation with elites or government authorities. Scott (1986) also notes that everyday forms of resistance are almost invisible, but such resistance has still been far more prevalent in history than overt rebellions.

Thus, local people use various overt and covert 'resistance methods to challenge the hegemony of conservation imposed by protected areas authorities' (Norgrove and Hulme, 2006, p. 1100). In addition to poaching and the killing of wildlife, these methods may include destroying government property, illegal extraction of resources, spreading false information (Shafer, 1999), destroying resources (Harkness, 2000), threatened or actual violence against conservation staff (Neumann, 1998; Benjaminsen, 2000; Brockington, 2004; Norgrove and Hulme, 2006; Robbins et al., 2006), illegally using protected area land (Li, 2007; Cavanagh and Benjaminsen, 2015), destroying protected area infrastructure (Meyerson, 1998) and collaboration with poachers (Western, 1994). As we will demonstrate, the case discussed here may be seen as both an example of overt and covert resistance. The violence against the elephants was direct and explicit with people posing for their photos to be taken on top of the carcasses. At the same time, since this was a serious criminal offence, it was later during fieldwork difficult to get people to admit to their direct involvement in the event.

Acts of resistance to conservation are usually carried out by marginalized people who suffer the costs of conservation and who do not have the ability to circumvent the system through bribing officials or accessing political power (Holmes, 2007). In China, a case was described in which farmers destroyed their collective forest by cutting down trees that they had previously managed after the government incorporated the forest into a state nature reserve (Harkness, 2000). Likewise, Li (2007) describes how displaced villagers in Indonesia resisted conservation by illegally settling down and cultivating land for their subsistence in a protected area. A similar case is reported by Western (1994) in Amboseli in Kenya, where the exclusion of Maasai from the national park in the late 1970s led them to protest in the form of continued grazing, increased collaboration with poachers, and the killing of wildlife. In a similar vein, Neumann (1992) tells about a case in Eastern Serengeti in Tanzania where Maasai violently protested against the proposed park boundaries (through arson, the spearing of rhinos and threats to government officials). In Guatemala, Meyerson (1998) also describes an incident where local people took thirteen scientists hostage and set a biological research station on the San Pedro River on fire after restrictions of squatters' settlements in the Laguna del Tigre National Park were imposed.

Resistance to conservation in its various forms may also be seen as a response to what Nixon (2011) calls 'slow violence', which stands in contrast to spectacular and instantaneous violence. Slow violence is gradual and incremental and leads to a 'delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all' (Nixon, 2011: 2). Dispossession caused by the establishment of areas for

environmental protection is one of the examples of slow violence mentioned by Nixon.

Study area

Engare Nairobi is situated in the Siha Magharibi Division of the Siha District in the Kilimanjaro Region, adjacent to the Enduimet Division of the Longido District in the Arusha Region (see Fig. 1). These two divisions form part of the West Kilimanjaro basin. The population consists of pastoral and agro-pastoral Maasai and small-scale farmers who are of Wachagga, Wameru, Waarusha, Wasafa, and other ethnicities. In the 1950s, British settlers established plantations in the area.

The village of Engare Nairobi was only officially registered in 2007. By 2009, it had a population of approximately 9000. Between Kilimanjaro National Park and Engare Nairobi and other villages, there is a forest plantation run by the Tanzania Forest Services Agency. A large part of the population in Engare Nairobi consists of people who were evicted from this forest plantation in 2007. Due to the rapid growth of Engare Nairobi, village leaders told us that they have requested the government to increase the village area by adding land from a nearby plantation owned by the National Agricultural and Food Corporation, but no action has been taken so far.

The study area lies between 1230 m and 1600 m above sea level. Most of the land consists of semi-arid savannah interspersed with woodlands. There is a diversity of land uses, ranging from dry-land pastures on the plains in the rain shadow of the mountain, to small and large-scale agriculture on the lower mountain slopes. Kilimanjaro National Park is located high up on the slope. Rainfall is unpredictable, especially on the dry plains, with an annual average around 340 mm (Moss, 2001). In the agricultural areas on the lower parts of the mountain slope, the average rainfall is 890 mm (Rey and Das, 1996).

Research approach and methods

In order to better understand resistance to conservation and its causes within a broader context, we decided to take a 'chains of explanation' approach as a methodological starting point. Blaikie and Brookfield (1987) proposed this as a methodology for examining causes of environmental change:

'(This approach) starts with the land managers and their direct relations with the land (crop rotation, fuel wood use, stocking densities, capital investment and so on). The next link concerns their relations with each other, other land users, and groups in the wider society who affect them in any way, which in turn determines land management. The state and the world economy constitute the last links in the chain.' (Blaikie and Brookfield, 1987, p. 27)

As a further elaboration of this approach, Robbins (2004), in his textbook on political ecology, has suggested to move from 'chains' to 'networks', arguing that the chains of explanation approach may be conceived as a rigid 'hierarchy of power' that tends to neglect the interactions between actors at various scales (pp. 210 and 212). In a similar vein Rocheleau (2008: 724) proposes 'webs of relation' by arguing that

'(t)he centre of gravity is moving from linear or simple vertical hierarchies (chains of explanation) to complex assemblages, webs of relation and "rooted networks", with hierarchies embedded and entangled in horizontal as well as vertical linkages.'

Thus, political ecologists have tried to move away from focusing on chains to a focus on networks and webs that provide a better framework for explaining more complex interrelationships than one-way influences from higher to lower geographical levels.

These ‘chains’ and ‘webs’ of analysis within political ecology have similarities with and seem to be inspired by the ‘progressive contextualization’ approach in cultural ecology proposed by Vayda (1983). This approach holds that human–environment interactions may be explained by ‘placing them within progressively wider and or denser contexts’ (Vayda, 1983: 265), and one can start

‘with the actions or interactions of individual living things and can proceed to put these into contexts that make actions or interactions intelligible by showing their place within complexes of causes and effects’ (Vayda, 1983: 270).

Progressive contextualization has been further developed into ‘event ecology’ (Vayda and Walters, 1999). This is a causal historical approach that explains environmental events or changes. Vayda and Walters (1999: 169) argue that event ecology has to be carried out by following two basic steps:

‘... begin research with focus on the environmental event that one wants to explain and then work backward in time and outward in space so as to construct chains of causes and effects leading to those events and changes’.

Vayda and Walters (1999) criticize political ecology for assuming that political factors always explain environmental change and, hence, for being blind to how other (non-political) factors affect environments. Political ecologists, on the other hand, argue that progressive contextualization is inclined to result in ‘apolitical’ explanations that do not deal adequately with power and politics (Robbins, 2004; Penna-Firme, 2013).

The task we set out for ourselves was to explain why villagers killed the elephants. Thus, what were the factors that led villagers to take such radical action? In order to answer this question, we decided to start out by including a broad set of possible causes comprising both natural and social factors, while still keeping power as a central concern and object of analysis. Hence, this is also a contribution to demonstrate the application of a ‘web of relations’ approach to explain environmental events. After the presentation of the methods used, we describe the various elements in what we found to constitute the web of relations in this case (see Fig. 2).

Fieldwork was conducted during September to December 2009, in March 2010, and in August and December 2011. The interviews were carried out in different periods in order to explore new aspects that came up during data analysis and to learn about the impact of elephant killings. Snowball sampling was used to choose interviewees. The first individuals however, were purposively selected and asked for further referrals in order to identify other people who were considered as relevant for the study. The criterion we used was whether people had information about the incident of elephant killings and human–elephant/wildlife conflicts in general. Data were collected on factors that led to the elephant killings, general issues surrounding human–elephant/wildlife conflicts, and the impacts of the elephant killings incident, protected areas, wildlife and human populations and actors behind conservation in West Kilimanjaro. We started the interviews by informing the participants about the research and acquiring their prior informed consent. We used an interview guide with the issues we wanted to focus upon. In the first interviews, we sensed that people did not feel free to express themselves, because they were not sure about our intentions. Thus, we explicitly guaranteed anonymity for all interviewees and encouraged them to express themselves freely. In addition, the first author stayed in the study area for a certain period during fieldwork in order to win local people’s

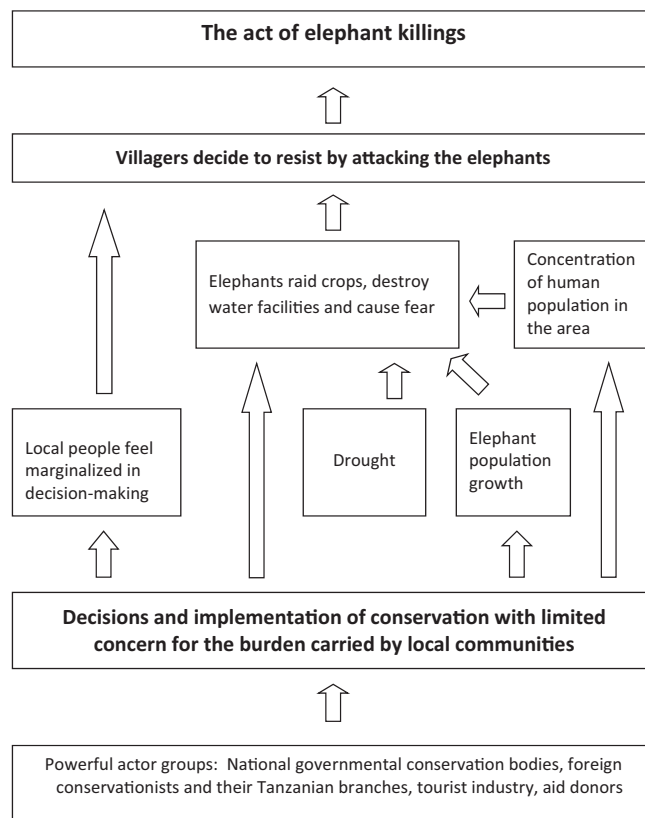


Fig. 2. A web of relations.

trust and learn about the causes of elephant killings and problems related to wildlife conservation in the area. Nevertheless, most interviewees were hesitant to admit participation in the elephant killings, although in some parts of the interviews they could talk about their resentment towards elephants as well as providing detailed descriptions of what had happened during this particular event.

In total, we conducted qualitative in-depth interviews with 58 villagers individually. Most interviews were conducted in Swahili by the first author and lasted for one to 2 h. The sample size was reached when new data were no longer adding new insights to the research questions. Most interviews were recorded and transcribed. In addition to in-depth interviews with local people, government officials, NGO representatives and tourist companies, we also held four focus group discussions with villagers. Furthermore, we carried out interviews with key informants who were chosen based on their ability to contribute with information and reflections on the research topic. The aim was to seek knowledgeable individuals who could provide insightful information on human–wildlife conflicts in the study area. We also made use of participant observation by living with villagers for some weeks to witness the roles that elephants play in people’s everyday lives. Finally, we collected and reviewed relevant documents and other studies.

The data collection and analysis were conducted as parallel processes throughout the research. During data collection, immediately thereafter, and while listening again to the recorded interviews, we noted down further ideas and potential elements of an analysis. In transcribing the interviews, all pauses, repetitions and verbal utterances were written down as detailed as possible to avoid losing valuable information. We also worked through the field notes and transcripts several times and elaborated codes and an index, and we identified aspects on which we needed more

knowledge, and at re-visits to the field, we concentrated on learning more about these aspects.

Potential causes of the elephant killings

Why did the villagers participate in the elephant killings? To answer this question, it is crucial to understand the villagers' own interpretation of the situation. This issue will be addressed later. First, we find it necessary to present all the elements that we think contributed to this event.

Local burden of conservation

During fieldwork, we learned that elephants repeatedly raid crops in the area. All people interviewed reported that crop raiding was a major problem. Statistics that we collected from local government indicate that in 2009 a total of 901 acres were raided in three villages (Engare Nairobi, Namwai and Matadi villages) in Siha Magharibi Division, and 2222 acres in seven villages in Enduimet Division. In some periods, many farmers spent much time guarding their fields. The damage was, however, significant.

Elephants also cause problems at water points, and they sometimes destroy water pipes. Furthermore, many people fear attacks of elephants on people and livestock. As demonstrated in Fig. 2, we found that the cost of conservation born by local farmers constitutes an important part of the background for the actions that villagers took who chased the elephants towards and over the cliff.

The burden on local people's livelihoods found in this area is in consistence with some other studies in this as well as other areas with elephant populations in Africa (e.g. Hoare, 1999; Naughton-Treves et al., 1999; Tchamba, 1996; Parker and Osborn, 2001; Dublin and Hoare, 2004; Osborn and Hill, 2005). Kikoti (2009) describes how elephants would stay in the riparian forests along the Engare Nairobi North River (also called the Simba River) during daytime and raid local field crops at night. Furthermore, Trench et al. (2009) state that some villagers, especially in the nearby Tingatinga village, have given up farming because of elephant-related problems.

Studies from other areas throughout Africa show that elephants can be responsible for large-scale crop raiding and property damage (e.g. Tchamba, 1996; Weladji and Tchamba, 2003). Muruthi (2005) calculated that elephants in the Zambezi area of Zimbabwe are responsible for up to three-quarters of all crop damage caused by wildlife, while Smith and Kasiki (2000) documented that farmers around Tsavo National Park in Kenya, have stopped farming crops preferred by elephants, such as bananas and sugar cane. Gupta's (2013) study in Botswana shows that crop raiding by elephants has caused some farmers to stop farming their large arable land and instead grow vegetables and fruit in tiny backyard gardens. Osborn and Hill (2005) state that in areas in Africa affected by crop damage by elephants, and where people depend on farming, people's livelihoods are threatened and the standard of living is very low.

Drought

A severe drought in northern Tanzania and Kenya was a significant cause of the increased problems that villagers experienced with elephants in the West Kilimanjaro basin in 2009. When protected areas are hit by drought, wildlife, including elephants, tends to migrate to areas with human settlements and plantations in search of water and green vegetation. Water sources, cattle troughs and water taps, as well as crop fields constitute the main incentives for elephants and other wildlife to move into farms (Thouless, 1994; Smith and Kasiki, 2000).

A man in Engare Nairobi described the local situation in 2009 in this way:

'Many people had plots along Engare Nairobi South River ... Watering the plots was very costly and hard, because there was little flow of water in the river and everyone was fighting for water. ... Small plots along the river were more precious than many acres somewhere else. People had hoped to harvest some crops, but elephants used to come and destroy 2–3 acres per day.' (Interview no. 40, Nov. 2009)

During fieldwork, we learned that people tried to keep the elephants away by guarding the fields throughout the night and trying to scare them away with fire, noise and torches. We also observed people trying to prevent elephant raids by fencing, building hedges, and burning chili peppers. These methods are also used in other countries with similar elephant problems (Zhang and Wang, 2003; Weladji and Tchamba, 2003; Sitati and Walpole, 2006; Wang et al., 2006; Mackenzie and Ahabyona, 2012). Fencing is reported in some studies (e.g. Weladji and Tchamba, 2003) with limited effect in keeping elephants and other wildlife away. Other studies (Tchamba, 1996; Smith and Kasiki, 2000) show that such mitigation efforts may provide a short-term solution in deterring elephants from farms, but the animals may become habituated to these measures in the long run.

During the drought in 2009, elephants searching for water destroyed various water facilities. We were told that such destruction also happened during the dry seasons in years of normal weather. This damage is expensive and can deprive people of water for days, as it takes significant time to repair pipelines. One morning, we met people from Ngereyani village with donkeys carrying large plastic containers to search for water. In the evening, we learned that they had been approached by elephants that chased the donkeys away. Both people and livestock in West Kilimanjaro have, in fact, been killed and injured by elephants. For instance, Tingatinga villagers claim that more than 75% of wildlife-related human deaths are caused by elephants.

During fieldwork, villagers complained that they incurred substantial costs as result of damage caused by elephants, for which they received no compensation from the government. The Wildlife Act of 2009 states that 'consolation' payment is to be given in cases of injury, death and destruction of crops caused by wild animals (United Republic of Tanzania, 2009: 52). The regional government document such costs, but during fieldwork we did not hear of any such compensation being paid.

The drought was caused by poor rains throughout 2008 and a lack of long rains in April and May 2009 (Russell, 2009; Western, 2009). According to Moss (2009), Maasai elders in Kenya claimed the drought to be the most severe since 1961. Maasai elders that we interviewed also told us that it was the worst drought for many decades. Many rivers, dams, and swamps dried out and the few remaining water sources became sites of human–wildlife conflicts. News headlines stated that 'Drought puts wildlife in danger in Tanzania' (Ihucha, 2009) and that 'Devastating Drought Worsens Human–Wildlife Conflict' (Maina, 2009). Due to the drought, elephants migrated towards human settlements and farms in search of green grass and water. The presence of water sources such as the Engare Nairobi River, along with cattle troughs, water taps and fields were the main reasons for elephants and other wildlife to move into farms. This contributed to a situation where elephants raided crops and destroyed human water facilities to a greater extent than usual.

Through fieldwork in 2009, we experienced the intensity of the drought, which caused various hardships for people, including the damage caused by elephants. We observed that much wildlife as well as livestock died and food aid became crucial for people. Rain-fall data (Fig. 3) also show that the 2009 drought was severe.

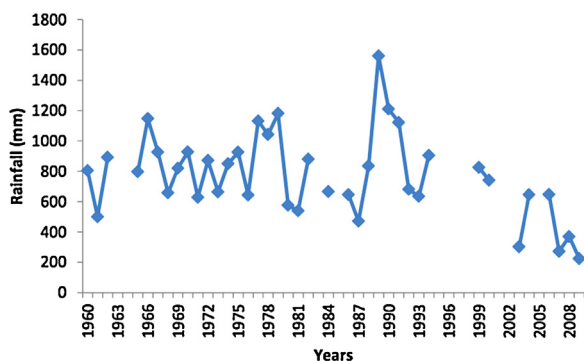


Fig. 3. Rainfall Fluctuations in West Kilimanjaro. Note: Years lacking rainfall data for more than five months are not included.

Source: Tanzania Meteorological Agency (2009).

Human population growth

Human–wildlife conflicts are often said to be caused by a growth in human numbers, leading to competition with wildlife for food, water and space (Mwamfupe, 1998; Hoare and du Toit, 1999; Siex and Struhsaker, 1999; Hoare, 1999; Naughton-Treves et al., 1999; Smith and Kasiki, 2000; Osborn and Hill, 2005; Sitati et al., 2005; Karimi, 2009; Butt and Turner, 2012; Reid, 2012). In cases where elephants cause problems for communities, human population growth is repeatedly cited as an explanatory factor.

For instance Karimi (2009) state that: as the ‘human population of Africa has grown, the wild areas needed to sustain elephant populations have dwindled, putting the species, and therefore the ecosystem impacted by them at risk’ (p.16). Furthermore, in Kenya, Elephant Care International argues that:

‘The root cause of human–elephant conflict is the exploding human population growth and resultant pressure on elephant habitat. Habitat loss and degradation inevitably lead to conflict. As Kenya’s human population soars, elephant populations will continue to be under greater pressure.’ (Elephant Care International, undated)

In a similar vein, WWF holds that:

‘As habitats contract and human populations expand, people and elephants are increasingly coming into contact with each other. Where farms border elephant habitat or cross elephant migration corridors, damage to crops and villages can become commonplace, providing a source of conflict which the elephants invariably lose.’ (World Wildlife Fund, undated)

Looking at the population figures for the two divisions studied in West Kilimanjaro, we find that the human population in the area seems to have increased substantially since 2002. In 2002, the Siha Magharibi and Enduimet divisions had 19,807 and 17,020 residents, respectively (National Bureau of Statistics, 2002). In 2009, population figures in these two divisions had increased to 25,623 and 45,763. In addition to natural population increase, the establishment of several new villages in 2007 (such as Miti Mirefu, Engare Nairobi, Matadi and Namwai) may have attracted other people to migrate into the area. At the same time, there might also have been considerable out-migrations of people who have moved to other urban areas or they have moved to cities in line with the general tendencies of urbanization.

Furthermore, we also learned during fieldwork that an estimated 30,000 people who had lived in the forest were in 2006 and 2007 evicted from Engushai and Londros (see Fig. 1) (Ndagulla, 2009; Park Protection Warden interview, 2009). As their living in the forest was seen as illegal, they were not included in the

population figures before they were evicted from the forest after the extension of Kilimanjaro National Park in 2005. Most of these people were moved to live in the nearby villages and only then became part of official population numbers. Hence, population figures remain uncertain, but some villages, such as Engare Nairobi, have grown substantially during the last decade, not the least due to evictions caused by the extension of Kilimanjaro National Park.

The elephant population

Many of the interviewees in West Kilimanjaro said that the elephant population had considerably increased during the last few years. People in Engare Nairobi told us that they had never encountered elephants before 2009. One villager said: ‘I have stayed here for more than 19 years, but I had never seen any elephants here before this year. When we saw the elephant dung, it was something that surprised us.’ (Interview no. 24, Nov. 2009).

Overall figures on the elephant population in Tanzania show that since the ivory ban in 1989, elephant numbers have increased from 55,000 to 136,753 in 2006; with Tanzania’s population representing 80% of all East African elephants (Blanc et al., 2007; TAWIRI, 2007). However, from 2006 to 2009 there was a decline to 109,000 in the country’s elephant population (United Republic of Tanzania, 2010; TAWIRI, 2010). The reasons are believed to be increased ivory poaching – especially in the Selous-Mikumi ecosystem (CITES, 2010; United Republic of Tanzania, 2010) – due to rising demand for ivory in some Asian countries (BBC, 2012; CAI, 2012); the migration of elephants from Selous into the Niassa Game Reserve in Mozambique, and data processing errors in the 2006 survey (CITES, 2010).

While the elephant population in Selous-Mikumi has decreased in the last few years, the population in West Kilimanjaro seems to have grown from an estimate of 150–400 in 2003 (Blanc et al., 2007) to 600 in 2010 (Kikoti et al., 2010). This increase may partly be a result of conservation measures in West Kilimanjaro supported by the African Wildlife Foundation and the Honey Guide Foundation. An overall growth in numbers of elephants in West Kilimanjaro is consistent with figures from the neighbouring Amboseli National Park of an increase from 967 in 2007 to 1266 in 2010 (KWS/TAWIRI, 2010). The population of elephants in Kenya also increased from 22,036 in 2002 to 23,353 in 2006; while on the whole African continent, elephant numbers have increased from 402,067 in 2002 to 472,269 in 2007 according to Blanc et al. (2007). Furthermore, data from Blanc et al. (2003) and Blanc et al. (2007) indicate an increase of elephants in the Kilimanjaro National Park from 220 in 1990 to 793 in 2007.

As already mentioned, the destruction by elephants of crops and water facilities is a result of human beings and elephants sharing the same space. The population of elephants in West Kilimanjaro seems to have increased substantially in recent years and, in periods of severe drought elephants tend to cause damage to crops and water pipelines.

Land restricted for conservation and wildlife tourism

The land use pattern in and around West Kilimanjaro constitutes a crucial element in the web of relations regarding the elephant killings. As Fig. 1 shows, large parts of West Kilimanjaro today belong to both old and more recently established conservation areas. At the same time, people are left to make their living in areas that are relatively limited and located in between these conservation areas. The elephant population can thrive and grow within the conservation areas in good years, while in times of drought they ‘spill over’ into farmland. Fig. 1 includes land in West Kilimanjaro that is used for large-scale commercial farming, which also restricts the area available for small-scale farming and grazing.

We present below each of the areas reserved for conservation and tourism, starting with the establishment of national parks.

As shown in Fig. 1, there are three national parks in and close to West Kilimanjaro. Ngurdoto Crater National Park was established in 1960, and it became a predecessor to the present Arusha National Park. After several expansions, Arusha National Park encompasses 552 km² from 2006.

The Kilimanjaro National Park was inaugurated in 1973, with an area of 753 km², and it was expanded to 1831 km² in 2005 by the inclusion of the Kilimanjaro Forest Reserve (TANAPA, 2005). All national parks in Tanzania are administered by the Tanzania National Parks (TANAPA), which is a parastatal organization under the Ministry of Natural Resources and Tourism. Natural resource use by local communities is not allowed in any of the national parks. The mountain top of Kilimanjaro is a famous target for hikers, and this tourism activity generates relatively large revenues. Due to the 2005 expansion, Engare Nairobi is located next to the park, but the hiking tourism activity does not significantly benefit people in West Kilimanjaro.

Across the border in Kenya, the Amboseli National Park was established in 1974, covering an area of 392 km². The Kitirua Concession Area lies between the Tanzanian border and the western part of Amboseli, covering 121.4 km² and established in 2009 with the help of the Kenya Wildlife Trust. According to Kenya Wildlife Trust (2010), it was established in order to secure a habitat for wildlife and enable Maasai communities to benefit from wildlife tourism. There is a proposal to establish the Lemomo Concession Area east of Kitirua, with a specific focus on the conservation of wildlife (Kikoti, 2009).

The Longido Game Controlled Area covers 1700 km² and is managed by the Wildlife Division of the Ministry of Natural Resources and Tourism. It was created in 1946 by the colonial government as an area for sport hunting (United Republic of Tanzania, 1998). The Wildlife Act of 2009 requires people to acquire permits from the Director of Wildlife for their livestock to graze in game controlled areas. The Longido Game Controlled Area covers the entire Longido District and is located almost entirely on village land.

Wildlife management areas (WMAs) are portions of village land set aside for conservation, one of the intentions is to generate revenues from tourism. The Enduimet WMA was gazetted in 2007 and covers 742 km². So far, few tourism companies have engaged in the area, and local revenues are small (Mariki et al., in press). This WMA was planned as a means to decrease meat poaching (Poole and Reuling, 1997) and it was seen to be strategically located on the wildlife migratory route between Kenya and Tanzania (Minwary, 2009).

In the 1950s, British settlers established a number of estates in West Kilimanjaro that were set aside for large-scale farming and livestock production. Timber plantations were also established by the Forestry Division by clearing approximately 3775 ha in the Kilimanjaro natural forest (Lamprey et al., 1991). After the Arusha Declaration in 1967 that demanded placing 'the means of production... under the control and ownership of the peasants and workers themselves through their government and cooperatives' (Nyerere, 1967: 2b), the agricultural and livestock estates were nationalized and run by parastatals such as the National Food Cooperation and Tanzania Breweries Limited, that produced wheat and other crops, and raised cattle.

During the 1990s, a wave of privatization impacted on the country, including West Kilimanjaro. A number of large properties have been acquired by investors who have turned them into private conservation and tourism estates. A private investor in wildlife tourism has leased three estates since 1994 (Endarakwai from 1994, Rafiki from 2000, and Noala from 2007), combining them into one property called the Endarakwai Ranch. There is a tourist lodge on the property and the rest of the 44 km² area is used for wildlife safaris.

The West Kilimanjaro Ranch covers an area of 303 km². It was operated by the National Ranching Company (NARCO) for livestock production until 2007, when AWF entered into a Memorandum of Understanding with the company to establish integrated livestock-wildlife development on the ranch (AWF, 2009). The AWF was, however, unable to lease the ranch in 2011, because of a disagreement with the government. The ranch is currently on the list of NARCO ranches to be privatized.

Furthermore, a wildlife corridor has been established in the area and AWF (through its Kilimanjaro Elephant Research and Conservation Project) has proposed four more corridors (Kikoti, 2009). The wildlife corridor Kitendeni was established in 2001 (and registered in 2002) to connect elephant migrations between the Kilimanjaro and Amboseli National Parks and the proposed Lemomo Concession Area on the Kenyan side of the border (Kikoti, 2009; Kikoti et al., 2010). Actors who supported the establishment of the corridor include TANAPA, the Wildlife Division, Monduli District Council, and AWF (Kikoti et al., 2010). The proposal of new wildlife corridors was argued on the basis of elephant migratory routes and dispersal areas revealed in studies where elephants were collared and tracked (Kikoti, 2009). Some of the areas identified as elephant routes overlap with local settlements. There have been widespread rumours in Engare Nairobi that the government intends to dislocate people to establish a wildlife corridor. In focus group interviews, people voiced fears of being evicted referring to a study carried out by AWF through the Kilimanjaro Elephant Research and Conservation Project to assess the costs of relocating villagers.

Conditions presented thus far constitute drivers in the web of relations that influenced the factors that eventually caused the act of elephant killings. First, the establishment of conservation areas makes West Kilimanjaro an area that elephants are attracted to from nearby protected areas such as Arusha and Amboseli National Parks. Thus, it is likely that the increasing number of elephants in the area in recent years is partly due to these conservation measures. As we have seen above, the presence of more elephants implies that there is likely to be more crop raiding and other problems for people, particularly in periods of severe drought, such as that of 2009. Secondly, when conservation areas are established, the available land and natural resources for small-scale farmers and pastoralists becomes increasingly restricted.

Finally, villagers observe and interpret the changes in their area. During interviews, focus groups and participant observation, we learned that many people are frustrated and angry about the situation. The following is a typical remark: 'We are angry that investors and conservationists are expanding wildlife protected areas in order to enable wildlife to flourish and attract tourists, while we are squeezed. They want wildlife to dominate at the expense of people.' (Interview no. 8, Nov. 2009)

Likewise, another villager established a direct link between conservation and the elephant killings: 'Some of the people who participated in elephant killings had plots along the river, while others did not, but due to the hostility towards conservation, they also followed the elephants and chased them towards the cliff' (Focus Group Interview, Dec. 2009).

Furthermore, many interviewees made connections between the elephant problems and the private leasing of land for conservation and safari tourism:

'I can say that the white people like [anon.] are the ones bringing this calamity. Wildlife used to stay in the parks like Ngorongoro and Serengeti. These people have invested nearby our village and attract wild animals that come to our settlements.' (Interview no. 6, Nov. 2009)

Moreover, villagers told us that they feared that land acquisitions for a wildlife corridor through Engare Nairobi would force them away from their present settlements and livelihoods. One

man expressed the following about the situation, which resulted in the elephant killings:

‘We were scared in 2009 of being dislocated from our village to pave the way for wildlife. We do not get any sleep as we think anytime something might happen. It is hard to do development activities. It is hard to get this fear out of our minds.’ (Interview no. 3, Dec. 2009)

Actors behind land appropriations for conservation

Who are the actors that influence conservation in and around West Kilimanjaro? First, the Tanzanian parliament (*Bunge*) makes official decisions on wildlife policies and acts that legalize the establishment of various protected areas. There have been parliamentary elections since independence in 1961. From 1992, Tanzania adopted a multiparty democracy and since 1995, members of *Bunge* have been elected within a multi-party system. Second, inputs to the policy-makers as well as implementation and management are carried out by the Wildlife Division and TANAPA. These are both under the Ministry of Natural Resources and Tourism. There have been several corruption scandals in the last few years in the natural resources and conservation sector, in which civil servants and top politicians have made decisions and allocated public resources to their private benefits (Sachedina, 2008; Jansen, 2009; Nelson, 2009, 2010; Cooksey, 2011; Mikali, 2011).

In recent years, the Wildlife Division has strengthened its own power in conservation and land management (Benjaminsen et al., 2013) and thereby weakened the power of village and district councils. The Wildlife Act of 2009 gave powers to the Director of Wildlife to issue grazing permits in game controlled areas, such as Longido. It states that ‘any person shall not, save with the written permission of the Director previously sought and obtained, graze any livestock in any game controlled area’ (United Republic of Tanzania, 2009: 26). Furthermore, the Wildlife Division has increased its powers to control Wildlife Management Areas, while at the same time it claims that these areas are managed by local communities. The 1998 Wildlife Policy allowed the creation of this new category of conservation area (WMAs), stating that local communities will have ‘full mandate of managing and benefiting from their conservation efforts’ (United Republic of Tanzania, 1998, 31). The WMAs have enabled the Wildlife Division to accrue funds from wildlife outside national parks and game reserves. The state’s reconsolidation of its power in wildlife management seems to work as a way for corrupt government officials and the state treasury to capture resources from village land (Benjaminsen and Svarstad, 2010; Benjaminsen and Bryceson, 2012; Benjaminsen et al., 2013).

Furthermore, there are initiatives from the Tanzanian government to create a conducive investment environment (United Republic of Tanzania, 1998). In the wildlife sector, the government encourages the ‘establishment of zoos, game sanctuaries, wildlife farms and ranches on private land and devolve(s) responsibility to manage wildlife in those to private sector and individuals’ (United Republic of Tanzania 2007: 40). As noted by Igoe and Brockington (2007: 432), this type of ‘neoliberalisation of nature’ re-regulates nature through commodification and commercialization by partitioning the ‘resources and landscapes in ways that control and often exclude local people’, while benefiting the national and transnational elites. The Ndarakwai Ranch is an example of this phenomenon. The establishment has contributed to land use changes away from agriculture and livestock to wildlife-based tourism.

However, conservation in Tanzania cannot be seen as a feature that is controlled only by actors in the government. There are also international actors that play essential roles in proposing, facilitating and funding conservation in this as well as in

other countries in the global South. AWF belongs to a group of non-governmental organizations from the global North that has a powerful role in enhancing protected areas in the South (Sachedina, 2008; Scholfield and Brockington, 2010). This large non-governmental organisation was established in the USA in 1961 to capacitate Africans to manage wildlife after the colonial wardens had departed (Adams, 2004). In West Kilimanjaro, AWF constitutes the leading conservation NGO. In Africa, AWF along with the World Wide Fund for Nature (WWF) and Conservation International, have identified different parts of the continent in which each works to establish a series of conservation areas. They call these areas ecoregions (WWF), hotspots (Conservation International), and heartlands (AWF). In 1998, AWF began its Heartland Program (Adams, 2004) and West Kilimanjaro is located within the Kilimanjaro Heartland Area (KWS/TAWIRI, 2010). AWF has been central in the process of establishing and facilitating the Enduimet Wildlife Management Area. The organization also made efforts to obtain the West Kilimanjaro Ranch for conservation purposes. Moreover, AWF has invested much effort in elephant research in the area to identify and legitimate conservation measures, such as new wildlife corridors. AWF is also facilitating the Lake Natron Wildlife Management Area in the Longido District.

Conservation organizations depend on their ability to raise funds, and the main sources are usually development aid donors, corporations and individual supporters. Since 1989, AWF in Tanzania has received most of its funds from USAID, but also some from other international donors and individuals (Sachedina, 2008). WWF has been focusing on infrastructure in the Enduimet Wildlife Management Area, also with financial assistance from USAID. The Honey Guide Foundation works with game scouts to protect wildlife in the Enduimet WMA, receiving financial support from partners such as the Big Life Foundation (Big Life Foundation, 2011), The Nature Conservancy (The Nature Conservancy, 2012) and tourist donations (Honey Guide Foundation, 2012).

Hence, these actors (parts of the Tanzanian Government, as well as international conservationists, their donors and some actors in safari tourism), despite having different objectives and strategies, have succeeded in influencing conservation practice in West Kilimanjaro. A less well-reported dimension is that villagers in West Kilimanjaro do not seem to have had much influence in these decisions. We found that many villagers expressed a feeling of powerlessness. They told us that they have tried to complain about the situation, but do not feel that they are heard. One man said: ‘The government clearly shows that it values wildlife more than people. Also investors value wildlife more than people.’ (Interview no. 27, Nov. 2009).

Another interviewee expressed the following:

‘In Tanzania, local people are not valued as much as foreign investors. Government officials sometimes tell us not to disturb investors, because they pay a lot of money to the government, while we pay nothing. So, if the investors complain to the government we will be dislocated.’ (Interview no.31, Nov. 2009)

Hence, there are powerful actors behind the appropriation of land for conservation both within the Tanzanian state as well as among international conservation organizations. Small-scale farmers and pastoralists, on the other hand, feel increasingly marginalized and disempowered by these actors. As generally pointed out by Scott (1985) and in relation to conservation by Brockington (2004), such marginalization and increasing distance to power may push local actors towards hidden acts of resistance. As also noted by Brockington (2004), conservation may be highly successful despite such local hidden opposition. West Kilimanjaro seems to be another example of this contradiction where stories of successful win–win conservation continue to be told by powerful national and international conservation actors, while local

resistance to this conservation, including the killing of elephants, is largely ignored.

Killing elephants as an act of resistance

In interviews, villagers emphasized their frustration due to the difficult situation with the elephants and concomitantly their lack of influence on the aforementioned land use changes. So, what brought the villagers to see the act of killing elephants as a way of dealing with the situation? In other words, what motivated the elephant killings? On the basis of interviews with villagers in the area, we here discuss three explanatory alternatives.

First, the death of the elephants could have been unintentional by those who participated in the chase. In some interviews, villagers tried to convince us that this was the case. One interviewee said: 'We did not kill the elephants. Farmers were chasing them out of their farms unfortunately they fell into the pit.' (Interview no.51, Nov.2009)

Killing elephants is a serious crime in Tanzania that can lead to long prison sentences. It is therefore likely that the incident may be presented as an accident in order to prevent criminal charges. After the elephants were chased over the cliff, some villagers, however, stabbed a calf to death, which was hardly an accident. Furthermore, a similar elephant killing took place nearby a year later when a herd of elephants raided farmland planted by small-holders. People then used spears and arrows to kill one of the elephants that had lagged behind the herd. Finally, those interviewees who implied that the elephants accidentally ran towards the cliff and fell over described the incident as 'a protest' in other parts of the interviews. Nevertheless, it is likely that the intention to kill the elephants was not present among all of those involved.

Secondly, the killings may be considered as an attempt to reduce the elephant population and thereby be interpreted as a type of informal (and illegal) form of wildlife management. This would be in line with findings from Kenya where Maasai poisoned all lions in Amboseli National Park in 1990, and speared 27 of 40 lions in Nairobi National Park in 2003 (Lamarque et al., 2009: 33). A similar incident in Kenya with elephants has also been reported (Moss, 2008).

However, we did not find support for such an explanation in our study. When interviewees were asked explicitly about elephant killings as a form of wildlife management, we were given answers such as:

'No, it would not be possible to reduce the number of elephants that way, given the high number of elephants in the area.' (Interview no. 53, Dec. 2011)

Thirdly, the act of elephant killing could be seen as an act of protest and a message to the government. One interviewee said for instance, 'It was a demonstration, so that the government is to remember the people' (Interview no.54, Dec. 2011). Another said:

'We became very furious and said let the government choose either people or elephants. Our village is not a wildlife corridor' (Interview no.13, Nov. 2009).

Likewise, the following view was expressed in a focus group meeting:

'We saw that the government, investors, and the African Wildlife Foundation did not listen to our worries and did not understand our pains. We therefore opted for this tactic [the killing of the elephants] to end the annoyance of wildlife. This was a way to send the message to the government that we are tired.' (Focus Group meeting, Dec. 2009)

When people talked about what specifically motivated such a demonstration, we received answers about various aspects, such as

the lack of effort by district authorities and others to install wardens to deter crop-raiding elephants, lack of benefits from conservation, lack of compensation for the damage and extra work burden caused by elephants, protests against the intentions of conservationists to impose a new elephant corridor and other conservation areas, and annoyance at the other appropriations and leases of land with restrictions on local use.

Concerning benefits sharing between different villages, an interviewee from Engare Nairobi argued that 'we don't receive any benefit from wildlife, either from the national park or from the investor. The situation is much better for villages under Enduimet Wildlife Management Area because they get some benefits from wildlife, but we suffer so much, and we get nothing...' (Interview no. 48, Dec. 2009). Although Engare Nairobi village is under Kili-manjaro National Park's outreach programme, it has not benefitted from park revenues since 1994 when the programme was initiated (Mariki, 2013). The village suffers costs of conservation from different protected areas in the surroundings. Villages that are part of Enduimet Wildlife Management Area have obtained some benefits from wildlife through tourism revenues and employment in the WMA (Sulle et al., 2011). However, the benefits to the villages are limited (Mariki et al., in press).

Villagers also told us about how they had tried in vain to address the situation through other means. They contacted government officials as well as the media. The government was not, according to several interviewees, taking any action on the elephant situation before the elephant killings took place. One man said: 'When we were reporting crop raiding, injury, and property destruction, no government official showed up. But when the elephants were killed, various government bodies came very fast to Engare Nairobi.' (Interview no. 30, Nov 2009)

In 2006, three years before the event, some villagers had raised money to hire a TV journalist to report on their problems with elephants. One man in Engare Nairobi told us:

'We aimed to kill the elephants because they have disturbed us for a long time through crop raiding, lack of sleep and other costs. We have complained to the government many times with no avail. In 2006, we even contributed money and paid a journalist to come and report about it. Instead of informing about what was troubling us, he reported good things about the investor on how he helps the community through his tourism activities. We were so angry. Therefore, the killing of elephants was a way to tell the government that we are tormented!' (Interview no. 38, Nov. 2009)

Tsai (2012, p. 2) argue that such noncompliance behaviours may actually be intended to 'communicate factual information about local conditions and citizen needs to state authorities when they lack easy access to formal channels ... either because they are of politically marginalized populations or because they live in a non-democratic or transitional system'. Scott (1977) on the other hand stresses that peasants are more likely to rebel against policies that contravene the subsistence ethic of their 'moral economy'. Resistance might happen when people believe that responsible state authorities have failed to incorporate their inputs into decision-making (Tyler, 2006; Levi et al., 2009).

The elephant killings may also be seen as an application of the 'weapons of the weak' (Scott, 1985). The efforts to present the death of the elephants in interviews as an accident, is in line with this theory. The villagers' collective decision of not exposing the names of people responsible for elephant killings or claiming responsibility can also be in line with this theory. Scott (1989, p. 56) argues that 'when the act of everyday resistance is meant to be noticed – meant to send a signal – as in the case of arson or sabotage, then the resisters take special care to conceal themselves, often behind a facade of public conformity'. In the study

area, before the incident of elephant killings, the majority of local people used to utilize covert weapons where they engaged with hidden activities. They used poisonous arrows to kill elephants, while others used a 'silent killer method', as one woman explained:

'There are elephants killed one by one. In secret, people place long sharp pointed objects like nails or sharp iron bars or something similar on the elephant's habitual paths. When the elephants are pierced they get infections, and with time they die' (Interview no. 20, Nov. 2009).

Impact of the incident of elephant killings

To what extent have such elephant killings proved to be effective as a means of resistance? Some changes have taken place that may, partly or to a greater extent, be attributed to these killings. Both the Member of Parliament from the area and the District Commissioner arrived at Engare Nairobi soon after the event in order to discuss with the village and ward representatives what action should be taken. More conservation wardens have been seen in the area since the killings, which may have contributed to reducing the elephant problems by helping to chase elephants from farms. The plan by some conservationists to establish a wildlife corridor through Engare Nairobi has also been postponed. Furthermore, AWF has not been able to continue leasing the West Kilimanjaro Ranch as a wildlife sanctuary. Thus, as an act of resistance, the case of the elephant killings might be seen as having achieved some effect. However, during fieldwork two years after the event, villagers continue to face problems with elephants and complain about the lack of compensation for damages, as well as a lack of influence on decision-making.

Conclusions

We have in this article used a 'web of relations' approach to study a particular conservation conflict. This framework includes both social and natural factors and a particular focus on power relations and the influences from various actors and processes at different geographical levels.

The aim of the study was to explain why villagers killed six elephants in West Kilimanjaro during an evening in May 2009. We argue that this incident cannot be explained as a case of ivory poaching. Nor can it be seen as merely a result of drought or increased population pressure causing competition over scarce resources.

While there seems to be a mix of motives involved, we conclude that the immediate cause of this event was resistance by villagers who have experienced increasing crop loss caused by elephants, and who feel marginalized and disempowered by conservation practices. Hence, this case can be seen as an example of the weapons of the weak used as a response to the slow violence that villagers are subjected to by conservation governance. The implicit aim of such resistance is to send a message to the government, to influential international conservation organizations and investors in tourism in a situation in which villagers did not feel that they could reach through with other means. The event was sparked by a general frustration and feeling of powerlessness on the one side and an opportunity that emerged on the other (a small herd of elephants moved close to the village when many people happened to be gathered there). The combination of these two factors may explain why this attack on the elephants happened at this particular place and moment.

In addition, other factors that also played a role in the web of relations behind this event were a growing elephant population, the concentration of people in an area that more and more frequently is visited by elephants, and the fact that there was a severe

drought in the area at the time of the event. We argue, however, that the main root cause that produced this act of resistance is the way that conservation is decided and implemented by external actors and with limited concern for the burdens carried by local communities. Actors that, in various ways, have contributed to this situation are national governmental conservation agencies, some foreign conservation groups and their branches in Tanzania, some actors within the tourist industry and some international aid donors.

In order to avoid such events in the future, we recommend the implementation of land use plans that demarcate wildlife areas, settlements and other land uses. Furthermore, local communities should in practice, and not only in rhetoric, be involved and have substantial influence in decision-making on matters pertaining to land use and wildlife conservation, in their immediate environments. Finally, wildlife conservation also needs to take much more seriously the challenge of benefit sharing with local communities and compensation for wildlife damages.

Acknowledgements

This research was supported by two related research projects; the *EKOSIASA* project funded by The Norwegian Programme for Development, Research and Education (NUFU T2-2007/10228) and the *PAPIA* project (Protected Areas and Poverty in Africa) funded by the Research Council of Norway (NORGLOBAL 178645). We are grateful for comments on earlier versions from several colleagues and in particular George Holmes, Bill Derman and Espen Sjaastad. Besides, we appreciate constructive comments from four anonymous referees. Furthermore, we thank Svein Erik Storeid (NINA) who contributed to produce Fig. 1.

References

- Adams, W.M., 2004. *Against Extinction: The Story of Conservation*. Earthscan, London.
- AWF, 2009. *Business Plan for the Development of Integrated Livestock/Wildlife Management System at the West Kilimanjaro Ranch in Kilimanjaro/Arusha Regions, Tanzania*. AWF, Arusha.
- BBC, 2012. The Illegal Ivory Trade Threatening Africa's Elephants. <http://www.bbc.co.uk/news/world-17675816> (accessed on 29.06.12).
- Benjaminsen, T.A., 2000. Conservation in the Sahel: policies and people in Mali (1900–1998). In: Broch-Due, V., Schroeder, R. (Eds.), *Producing nature and poverty in Africa*. Nordic Africa Institute, Uppsala, pp. 94–108.
- Benjaminsen, T.A., Svarstad, H., 2010. The death of an elephant: conservation discourses versus practices in Africa. *Forum Dev. Stud.* 37 (3), 385–408.
- Benjaminsen, T.A., Bryceson, I., 2012. Conservation, green/blue grabbing and accumulation by dispossession in Tanzania. *J. Peasant Stud.* 39 (2), 335–355.
- Benjaminsen, T.A., Goldman, M.J., Minwary, M.Y., Maganga, F.P., 2013. *Wildlife management in Tanzania: state control, rent seeking and community resistance*. *Dev. Change* 44 (5), 1087–1109.
- Big Life Foundation, 2011. Anti-poaching appeal. http://www.biglifeafrica.org/anti_poaching_appeal (accessed on 02.07.12).
- Blaikie, P., Brookfield, H., 1987. *Land Degradation and Society*. Methuen and Co., New York.
- Blanc, J.J., Thouless, C.R., Hart, J.A., Dublin, H.T., Douglas-Hamilton, I., Craig, G.C., Barnes, R.F.W., 2003. *African Elephant Status Report, 2003: An Update from the African Elephant Database*. IUCN, Gland, Switzerland, pp. 112–117.
- Blanc, J.J., Barnes, R.F.W., Craig, G.C., Dublin, H.T., Thouless, C.R., Douglas-Hamilton, I., Hart, J.A., 2007. *African Elephant Status Report 2007: An Update from the African Elephant Database*. Species Survival Commission Occasional Paper Series, no. 33. IUCN, Gland, Switzerland.
- Brockington, D., 2004. Community conservation, inequality, and injustice: myths of power in protected area management. *Conserv. Soc.* 2 (2), 411–432.
- Butt, B., Turner, M.D., 2012. Clarifying competition: the case of wildlife and pastoral livestock in East Africa. *Pastoral: Res. Policy Pract.* 2 (9), 1–15.
- CAI (Consultancy Africa Intelligence), 2012. Ivory Wars: Has Chinese Demand Fuelled African Elephant Poaching? <http://www.polity.org.za/article/ivory-wars-has-chinese-demand-fuelled-african-elfephant-poaching-2012-09-03> (accessed 07.02.13).
- Campbell, D.J., Gichohi, H., Reid, R., Mwangi, A., Chege, L., Sawin, T., 2002. *Competition and Conflict Between People and Wildlife in S.E. Kajiado District, Kenya*. Working paper 18, 34 pp.
- Cavanagh, C.J., Benjaminsen, T.A., 2015. *Guerrilla agriculture? A biopolitical guide to illicit cultivation within an IUCN Category II protected area*. *J. Peasant Stud.*

- CITES, 2010. Conservation and Management Issues Facing African Elephants. A Report to the Third African Elephant Meeting, Convened by the CITES MIKE Programme Nairobi, Kenya.
- Cooksey, B., 2011. Public Goods, Rents and Business in Tanzania. Background Paper 1. Africa Power and Politics Programme, London.
- Dapash, M.O., 2002. Coexisting in Kenya: the human–elephant conflict. *Anim. Welf. Inst. Q.* 51 (1).
- Decker, D.J., Lauber, T.B., Siemer, W.F., 2002. Human–Wildlife Conflict Management: A Practitioner's Guide. North-eastern Wildlife Damage Management Research and Outreach Cooperative, Ithaca, NY, USA.
- Douglas-Hamilton, I., Poole, J., 2010. *Loxodonta africana*: Does the species, population, satisfy the biological criteria for Appendix I in Annex I of Resolution Conf. 9.24 (Rev. CoP 14)? <http://www.savetheelephants.org/publications.html> (accessed 19.11.12).
- Dublin, H.T., Hoare, R.E., 2004. Searching for solutions: the evolution of an integrated approach to understanding and mitigating human–elephant conflict in Africa. *Hum. Dimens. Wildl.* 9, 271–278.
- Elephant Care International (undated). Human–elephant Conflict. <http://www.elephantcare.org/humanele.htm> (accessed 14.11.10).
- Fegan, B., 1986. 'Tenants' non-violent resistance to landowner claims in a central Luzon village. *J. Peasant Stud.* 13 (2), 87–106.
- Graham, M., 2006. Coexistence in a Land Use Mosaic? Land Use, Risk and Elephant Ecology in Laikipia District, Kenya. University of Cambridge (Ph.D. thesis).
- Gupta, D., 2001. Everyday resistance or routine repression? Exaggeration as a statagem in agrarian conflict. *J. Peasant Stud.* 29 (1), 89–108.
- Gupta, A.C., 2013. Elephants, safety nets and agrarian culture: understanding human–wildlife conflict and rural livelihoods around Chobe National Park, Botswana. *J. Polit. Ecol.* 20, 238–254.
- Harkness, J., 2000. Recent trends in forestry and conservation of biodiversity in China. In: Edmonds, R.L. (Ed.), *Managing the Chinese Environment*. Oxford University Press, New York, pp. 187–210.
- Hoare, R.E., 1999. Determinants of human–elephants conflict in a land-use mosaic. *J. Appl. Ecol.* 36, 689–700.
- Hoare, R.E., du Toit, J.T., 1999. Coexistence between people and elephants in African savannahs. *Conserv. Biol.* 13, 639–663.
- Holmes, G., 2007. Protection, politics and protest: understanding resistance to conservation. *Conserv. Soc.* 5, 184–201.
- Honey Guide Foundation, 2012. Travellers' Philanthropy. <http://www.honeyguide.org/projects/travelers-philanthropy-projects/> (accessed on 02.07.12).
- Igoe, J., Brockington, D., 2007. Neoliberal conservation. A brief introduction. *Conserv. Soc.* 5 (4), 432–449.
- Ihucha, A., 2009. Tanzanian Wildlife: Droughts Put Wildlife in Danger in Tanzania. ETN, Arusha, Tanzania <http://www.eturbonews.com/10540/drought-puts-wildlife-danger-tanzania> (accessed on 16.03.10).
- Jansen, E.G., 2009. Does aid Work? Reflections on a Natural Resources Programme in Tanzania, U4 Issue 2009: 2. Christian Michelsen's Institute www.u4.no
- Kangwana, K., 1996. Studying Elephants. AWF Technical Handbook Series No. 7. African Wildlife Foundation, Nairobi, Kenya.
- Karimi, R.R., 2009. An Assessment of Perceived Crop Damage in a Tanzanian Village Impacted by Human–Elephant Conflict and an Investigation of Deterrent Properties of African Elephant (*Loxodonta africana*) Exudates Using Bioassays. Georgia Southern University (M.Sc. thesis).
- Kenya Wildlife Trust, 2010. KWT Annual Report 2009/2010. Nairobi, Kenya.
- Kikoti, A., 2009. Seasonal Home Range Sizes, Transboundary Movements and Conservation of Elephants in Northern Tanzania. University of Massachusetts, USA (Ph.D. thesis).
- Kikoti, A.P., Griffin, C.R., Pamphil, L., 2010. Elephant use and conflict leads to Tanzania first wildlife conservation corridor. *Pachyderm* 48, 57–66.
- KWS/TAWIRI, 2010. Aerial Total Count: Amboseli–West Kilimanjaro–Natron Cross Border Landscape. Wet Season, March 2010. Kenya Wildlife Service and Tanzania Wildlife Research Institute.
- Lamarque, F., Anderson, J., Fergusson, R., Lagrange, M., Osei-Owusu, Y., Bakker, L., 2009. Human–Wildlife Conflict in Africa: An Overview of Causes, Consequences and Management Strategies. FAO Forestry Paper no.157, Rome.
- Lamprey, R.H., Michelmore, F., Lamprey, H.F., 1991. Changes in the boundary of the montane rainforest on Mt. Kilimanjaro between 1958–1987. In: Newmark, W.D. (Ed.), *Conservation of Mount Kilimanjaro*. IUCN, Gland, Switzerland/Cambridge, UK.
- Lee, P.C., Graham, M.D., 2006. African elephants *Loxodonta africana* and human–elephant interactions: implications for conservation. *Int. Zoo Yearbook* 40 (1), 9–19.
- Levi, M., Sacks, A., Tyler, T.R., 2009. Conceptualizing legitimacy, measuring legitimating beliefs. *Am. Behav. Sci.* 53 (3), 376–399.
- Li, T.M., 2007. *The Will to Improve: Governmentality, Development, and the Practice of Politics*. Duke University Press, Durham.
- Mackenzie, C.A., Ahabyona, P., 2012. Elephants in the garden: financial and social costs of crop raiding. *Ecol. Econ.* 75, 72–82.
- Maina, S., 2009. Kenya: Devastating Drought Worsens Human–Wildlife Conflict. Kenya Global Voices <http://globalvoicesonline.org/2009/07/20/kenya-devastating-drought-worsens-human-wildlife-conflict/> (accessed on 13.03.10).
- Mariki, S.B., 2013. Conservation with a human face? Comparing local participation and benefit sharing from a national park and a state forest plantation in Tanzania. *Sage Open* 3 (4), 1–16.
- Mariki, S.B., Svarstad, H., Benjaminsen, T.A., 2015. Ecotourism in Enduimet: an examination of local benefits and transparency in a Wildlife Management Area in Tanzania. In: Rutten, M., Wijngaarden, V. (Eds.), *Eco-Tourism in Africa: Experiences from Kenyan and Tanzanian Maasailand*. Brill, African Dynamics Series., Leiden (in press).
- Martin, E., Vigne, L., 2011. The Ivory Dynasty. A Report on the Soaring Demand for Elephant and Mammoth Ivory in Southern China. Elephant family, The Aspinall Foundation, and Columbus Zoo and Aquarium, London, UK.
- Meyerson, F., 1998. Guatemala burning. *Amic. J.* 20, 28–32.
- Mikali, J., 2011. Wildlife Theft Scam Unfolds. <http://www.ippmedia.com/frontend/index.php?i=29567> (accessed 15.06.11).
- Milliken, T., Sangalalula, L., 2009. ETIS update number two: progress in the implementation of the Elephant Trade Information System. *Pachyderm* 46, 53–55.
- Minwary, M.Y., 2009. Politics of Participatory Wildlife Management in Enduimet Wildlife Management Area, Tanzania. Norwegian University of Life Sciences, Ås, Norway (M.Sc. thesis).
- Moss, C., 2009. Amboseli Elephants Dying in Worst Drought for 50 Years. <http://www.wildlifeextra.com/go/news/amboseli-elephants009.html#cr> (accessed 23.02.11).
- Moss, C., 2008. 14 Elephants Speared in Amboseli. Blogpost at Wildlife Direct, March 17. <http://richardleakey.wildlifedirect.org/2008/03/17/14-elephants-speared-in-amboseli/> (accessed on 06.12.12).
- Moss, C., 2001. The demography of an African Elephant *Loxodonta africana* population in Amboseli, Kenya. *J. Zool.* 255, 145–156.
- Muruthi, P., 2005. Human Wildlife Conflict: Lessons Learned From AWF's African Heartlands. AWF Working Papers. AWF, Nairobi, Kenya.
- Mwamfupe, D., 1998. Demographic impacts on protected areas in Tanzania and options for action. *Parks* 81, 3–14.
- National Bureau of Statistics, 2002. Integrated Statistical Database. 2002 Population and Housing Census. National Bureau of Statistics, Tanzania.
- Naughton-Treves, L., Rose, R., Treves, A., 1999. The social dimensions of human–elephant conflict in Africa: a literature review and two case studies from Uganda and Cameroon. IUCN, Gland.
- Ndagulla, C., 2009. Kijiji Kilichofutwa Chapatwa Ruzuku, Moshi, <http://www.freemedia.co.tz/daima> (accessed on 28.11.09).
- Nelson, F. (Ed.), 2010. Community Rights, Conservation and Contested Land. The Politics of Natural Resource Governance in Africa. Earthscan Ltd., London.
- Nelson, F., 2009. Reforming wildlife governance in East and Southern Africa: The role of corruption, U4 Brief 2009:12. Chr. Michelsen Institute, Bergen, Norway, pp. 4.
- Neumann, R.P., 1998. Imposing Wilderness: Struggles over Livelihood and Nature Preservation in Africa. University of California Press, Berkeley.
- Neumann, R.P., 1992. Political ecology of wildlife conservation in the Mt. Meru area of northern Tanzania. *Land Degrad. Rehabil.* 3, 99–113.
- Niskanen, L., 2010. Update on conservation and management issues facing African elephants. A report to the 3rd African Elephant Meeting, convened by the CITES MIKE Programme. IUCN/SSC African Elephant Specialist Group.
- Nixon, R., 2011. Slow Violence and the Environmentalism of the Poor. Harvard University Press, Cambridge, Mass.
- Noe, C., 2003. The Dynamics of Land Use Changes and Their Impacts on the Wildlife Corridor Between Mt. Kilimanjaro and Amboseli National Park. LUCID Working Paper Number: 31. Land Use Change Impacts & Dynamics (LUCID), Nairobi, pp. 1–39.
- Norgrove, L., Hulme, D., 2006. Parking resistance and resisting the park: 'weapons of the weak'. Confronting conservation at Mount Elgon, Uganda. *Dev. Change* 37 (5), 1093–1116.
- Nyerere, J.K., 1967. The Arusha Declaration. <http://www.marxists.org/subject/africa/nyerere/1967/arusha-declaration.htm> (accessed on 24.04.12).
- Ortner, S.B., 1995. Resistance and the problem of ethnographic refusal. *Comp. Stud. Soc. Hist.* 37 (1), 173–193.
- Osborn, F.V., 2004. Seasonal variation of feeding patterns and food selection by crop-raiding elephants in Zimbabwe. *Afr. J. Ecol.* 42, 322–327.
- Osborn, F.V., Hill, C.M., 2005. Techniques to reduce crop loss: human and technical dimensions in Africa. In: Woodroffe, R., Thirgood, S., Rabinowitz, A. (Eds.), *People and Wildlife: Conflict and Coexistence*. Cambridge University Press, pp. 72–85.
- O'Brien, K., 1996. Rightful resistance. *World Polit.* 49 (1), 31–55.
- Parker, G.E., Osborn, F.V., 2001. Dual-season crop damage by elephants in eastern Zambesi Valley, Zimbabwe. *Pachyderm* 30, 49–56.
- Penna-Firme, R., 2013. Political and event ecology: critiques and opportunities for collaboration. *J. Polit. Ecol.* 20, 199–216.
- Poole, J., Reuling, M., 1997. A Survey of Elephants and Other Wildlife of the West Kilimanjaro Basin. African Elephant Specialist Group, Tanzania, pp. 66 (unpublished report).
- Reid, R.S., 2012. *Savannahs of Our Birth: People, Wildlife, and Change in East Africa*. University of California Press, Berkeley, Los Angeles, London.
- Rey, B., Das, S.M., 1996. A system analysis of inter-annual changes in the pattern of sheep flock productivity in Tanzania Livestock Research Centres. *Agric. Syst.* 53, 175–190.
- Robbins, P., 2004. *Political Ecology: A Critical Introduction*. Wiley Blackwell, New York.
- Robbins, P., McSweeney, K., Waite, T., Rice, J., 2006. Even conservation rules are made to be broken: implications for biodiversity. *Environ. Manage.* 37 (2), 162–169.
- Rocheleau, D.E., 2008. Political ecology in the key of policy: from chains of explanation to webs of relation. *Geoforum* 39 (2), 716–727.
- Rusell, S., 2009. Comparing the Drought Situation Across Ecosystems. <http://southriftccr.blogspot.com/2010/01/comparing-drought-situation-across.html> (accessed on 23.02.11).
- Sachedina, H.T., 2008. *Wildlife is Our Oil: Conservation, Livelihoods and NGOs in the Tarangire Ecosystem, Tanzania*. Oxford University (Ph.D. thesis).

- Scholfield, K., Brockington, D., 2010. The conservationist mode of production and conservation NGOs in sub-Saharan Africa. *Antipode* 42 (3), 551–575.
- Scott, J.C., 1977. *The Moral Economy of the Peasant*. Yale University Press, New Haven.
- Scott, J.C., 1985. *Weapons of the Weak: Everyday Forms of Peasant Resistance*. Yale University Press, New Haven.
- Scott, J.C., 1986. Everyday forms of peasant resistance. In: Scott, J.C., Benedict, J., Tria Kerkvliet, B.J. (Eds.), *Everyday Forms of Peasant Resistance on South-East Asia*. Frank Cass, pp. 5–35.
- Scott, J.C., 1989. Everyday forms of resistance. *Cph. J. Asian Stud.* 4, 33–62.
- Scott, J.C., 1992. *Domination and the Arts of Resistance: Hidden Transcripts*. Yale University Press, New Haven, CT.
- Shafer, C.L., 1999. National park and reserve planning to protect biological diversity: some basic elements. *Landscape Urban Plan.* 44, 123–153.
- Siex, K.S., Struhsaker, T.T., 1999. Colobus monkeys and coconuts: a study of perceived human–wildlife conflicts. *J. Appl. Ecol.* 36 (6), 1009–1020.
- Sitati, N.W., Tchamba, M., 2008. *Mitigating Human Elephant Conflict in Central Africa: A Planning Mission Document to Develop a Human–Elephant Conflict Mitigation Strategy*. WWF – Central Africa Regional Office (unpublished report).
- Sitati, N.W., Walpole, M.J., 2006. Assessing farm-based measures for mitigating human–elephant conflict in Transmara District, Kenya. *Oryx* 40(3), 279–286.
- Sitati, N.W., Walpole, M.J., Smith, R.J., Leader-Williams, N., 2005. Factors affecting susceptibility of farms to crop raiding by African elephants: using a predictive model to mitigate conflict. *J. Appl. Ecol.* 42, 1175–1182.
- Smith, R.J., Kasiki, S.M., 2000. *A Spatial Analysis of Human–Elephant Conflict in the Tsavo Ecosystem, Kenya*. African Elephant Specialist Group Report. IUCN/SSC, Gland, Switzerland.
- Sulle, E., Lekaita, E., Nelson, F., 2011. *From Promise to Performance? Wildlife Management Areas in Northern Tanzania*. Tanzania Natural Resources Forum, Arusha.
- TANAPA, 2005. *Kilimanjaro National Park General Management Plan 2006–2015*. Tanzania National Park Authority, Arusha, Tanzania.
- Tanzania Meteorological Agency, 2009. *Rainfall Data for West Kilimanjaro, Tanzania*. TMA, Dar es Salaam.
- TAWIRI, 2010. *Tanzania Elephant Management Plan 2010–2015*. TAWIRI, Arusha, Tanzania.
- TAWIRI, 2007. *Elephant Population Estimates: Dry Season 2006*. Tanzania Wildlife Research Institute in collaboration with NCAA, TANAPA and Wildlife Division. TAWIRI, Arusha, Tanzania.
- Tchamba, M.N., 1996. History and present status of the human–elephant conflict in the Waza-Lagone region, Cameroon, West Africa. *Biol. Conserv.* 75, 35–41.
- The Nature Conservancy, 2012. *Africa: Our Partners*. <http://www.nature.org/ourinitiatives/regions/africa/partners/index.htm> (accessed on 02.07.12).
- Thouless, C.R., 1994. Conflict between humans and elephants on private land in northern Kenya. *Oryx* 28, 119–127.
- Trench, P.C., Kiruswa, S., Nelson, F., Homewood, K., 2009. Still 'people of cattle'? Livelihoods, diversification and community conservation in Longido district. In: Homewood, K., Kristjanson, P., Trench, P.C. (Eds.), *Staying Maasai? Livelihoods, Conservation and Development in East African Rangelands*. Springer, New York.
- Tsai, L.L., 2012. Feedback or resistance? Constructive policy noncompliance in Rural China. In: CP Workshop, May 21, 2012 https://politicalscience.stanford.edu/sites/default/files/workshop-materials/cp_tsai.pdf
- Tyler, T., 2006. Psychological perspectives on legitimacy and legitimation. *Ann. Rev. Psychol.* 57 (1), 375–400.
- United Republic of Tanzania, 2010. *African Elephant Population Statistics with Focus on the 2009 Census Results*. Document Submitted to Fifteenth Meeting of the Conference of the Parties Doha (Qatar).
- United Republic of Tanzania, 2009. *The Wildlife Conservation Act, 2009*. Ministry of Natural Resources and Tourism, Tanzania.
- United Republic of Tanzania, 1998. *The Wildlife Policy of Tanzania*. Ministry of Natural Resources and Tourism, Tanzania (Revised 2007).
- Vayda, A.P., 1983. Progressive contextualization: methods for research in human ecology. *Hum. Ecol.* 11 (3), 265–281.
- Vayda, A.P., Walters, B.B., 1999. Against political ecology. *Hum. Ecol.* 27, 167–179.
- Walpole, M., Linkie, M. (Eds.), 2007. *Mitigating Human–Elephant Conflict: Case Studies from Africa and Asia*. Fauna and Flora International (FFI), Cambridge, UK.
- Walpole, M., Karanja, G., Sitati, N., Leader-Williams, N., 2003. *Wildlife and People: Conflict and Conservation in Masai Mara, Kenya*. IIED Wildlife and Development Series no 14.
- Wang, S.W., Lassoie, J.P., Curtis, P.D., 2006. Farmer attitudes towards conservation in Jigme Singye Wangchuck National Park, Bhutan. *Environ. Conserv.* 33 (2), 148–156.
- Warner, M.Z., 2008. *Examining Human–Elephant Conflict in Southern Africa: Causes and Options for Coexistence*. University of Pennsylvania, (Masters thesis).
- Watts, M.J., 2001. Violent geographies: speaking the unspeakable and the politics of space. *City Soc.* XIII/1, 85–115.
- Weladji, R.B., Tchamba, M.N., 2003. Conflict between people and protected areas within the Beïoué Wildlife Conservation Area, North Cameroon. *Oryx* 37 (1), 72–79.
- Western, D., 2009. *The Drought of 2009*. <http://www.amboseliconservation.org/amboseli-drought-2009> (accessed on 23.02.11).
- Western, D., 1994. *Ecosystem conservation and rural development: the case of Amboseli*. In: Western, D., Wright, R.M., Strum, S. (Eds.), *Natural Connections: Perspectives in Community-based Conservation*. Island Press, Covelo.
- WWF, undated. *Threats to African elephants*. http://www.panda.org/what_we_do/ endangered_species/elephants/african_elephants/afelephants.threats/ (accessed on 27.04.12).
- Zhang, L., Wang, N., 2003. An initial study on habitat conservation of Asian elephant *Elephas maximus*, with a focus on human elephant conflict in Simao, China. *Biol. Conserv.* 112, 453–459.
- Zubair, L., Blumenthal, B., Ndiaye, O., Perera, R., Ward, N., Yahiya, Z., Chandimala, J., et al., 2005. Evaluation of climate and habitat interactions affecting the conservation and management of Asian Elephants in South-East Sri Lanka. International Research Institute for Climate and Society, Sri Lanka.