THE EFFECTS OF TRANS-BOUNDARY PASTORALISTS ON MATHENIKO WILDLIFE RESERVE IN KARAMOJA, UGANDA

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Abstract

The study assesses the effects of trans-boundary pastoralists’ activities across Kenya-Uganda international border on Matheniko Wildlife Reserve in Karamoja, Uganda. Focused group discussions were held with Turkana and Karamajong pastoralists, interviews with technical and political leaders in Moroto District were conducted. In addition, field observations were made. It was established that whereas, pastoralists are well known to be well equipped with rich traditional systems and practices for optimising the use of dry rangelands and maintaining the integrity of ecosystems, location, distribution and availability of water sources tend to influence and limit the movement of livestock, leading to overgrazing and degradation of ecosystems within and outside wildlife protected areas. The magnitude of the damage on wildlife protected area was also accentuated by competitive land uses, occurrence and frequency of harsh and prolonged drought season and resource based conflicts between native and Kenyan pastoralists who happen to be more or less “environmental” refugees.

Keywords: Human-wildlife conflicts, land degradation, pastoralists, rangelands, trans-boundary
1.0 INTRODUCTION

For centuries, pastoral communities have competently proved their capacity to live and survive in dry, remote and difficult areas where rain fed crop production is in most cases either not viable or highly limited due to low and unpredictable rainfall (AU, 2010; Shem et al., 2010; Boto & Edeme, 2012; HPG, 2009). These fragile areas cover vast rangelands that sometimes stride across international boundaries, as it is the case with Turkana- Karamoja rangeland. As one of the coping mechanisms, these trans-boundary pastoralists have overtime developed indigenous and informal techniques of livestock and rangeland management which are based on the mobility and seasonal migrations as a means to access the best pasture and maximise livestock productivity (Smith, 2012; Sulieman, 2013). In the past, their regular interaction with wildlife was characterised by minimum human- wildlife conflicts, incursion of predators on livestock notwithstanding (Secretariat of the Convention on Biological Diversity, 2010). Most of the pastoralists were not interested in bush meat as it was a taboo for most of them to hunt and consume game meat.

However, in the recent past, the former pastoralists’ rangelands have been invaded and converted by developers and crop farmers, forcing the pastoralist communities to drive their livestock to protected areas and marginal land. Their mobility upon which the traditional cattle keeping practices are hinged has been severely affected (Pavanello, 2009). Moreover, restriction of mobility of pastoralists negatively affects their livelihoods and biodiversity in dry lands as some species are overexploited, while others underexploited (Schelling et al., 2008). The effects of climate change such as prolonged droughts and frequent acute water scarcity have exacerbated the suffering and vulnerability of pastoralists (Audus, 2013).

In Uganda the rangelands occupy 43% of the country’s total land area, stretching from Uganda – Tanzania international border through the central region to Karamoja Sub-region. This stretch is normally described and referred to as “cattle corridor” which hosts about 90% of the national cattle population, kept by mainly pastoralist and agro-pastoralist communities. The cattle corridor is characterised by frequent dry seasons, scarcity of pasture and permanent water sources as well as low and unreliable rainfall. Due to high human population and increased demand for land for food production, crop growing communities have converted some of the sections of the cattle corridor into crop production, fragmenting the pastoral rangeland.

In Karamoja Sub-region, the cattle corridor extends into Turkana rangeland, western Kenya. Turkana and Karomoja rangeland is geographically and demographically related. The area is highly food insecure, experience recurrent prolonged drought, (as such, it is arid) and scarce water sources as well as pasture resources. Rearing of cattle is the major economic activity of the residents. The alternative economic activities and sources of livelihood to both Karamajong and Turkana communities are limited. Nonetheless, the environmental conditions in Karamoja are slightly better and less hostile to pastoralists than on Kenya side. The area of Turkana experiences more frequent and severe drought than Karamoja region. Subsequently, the Turkana pastoralists regularly drive their livestock across international border into Karamoja in search of pasture and water. This movement of pastoralists is done
within a local arrangement through negotiations between the local government authorities and kraal leaders of both countries. Whereas, in the past, the Turkana pastoralist had access to vast areas in Karamoja to graze their livestock, in the recent past, the government of Uganda has encouraged the residents in the region to actively participate in crop production as a strategy for food security and self-reliance (OPM, 2009; Mubiru, 2010). As a result, most of the rangeland has been fragmented by the pockets of crop gardens leading to increased conflicts between crop farmers and pastoralists. The unplanned crop growing in the pastoralist rangeland in Karamoja has not only affected the seasonal Turkana cattle keepers but also the resident pastoralists who find it difficult to freely move livestock to different areas to take advantage of availability of pasture. Therefore, in order to avoid conflicts with local communities, the Turkana pastoralist find wildlife protected areas as the only alternative source of pasture and water for their livestock. In this case, Turkana pastoralists drive their livestock into Matheniko Wildlife Reserve in search of water and pasture. The reserve is part and partial of Great Matheniko – Bukora Wildlife Reserve which is the only protected area in Uganda where the Bright Gazelle, the lesser and Greater Kudu are hosted, and present the vital opportunity for Karamoja to overcome tourism competition from other types of wildlife (Manyindo et al., 2014). Nonetheless, the pressure on Matheniko Wildlife Reserve has also been accentuated and aggravated by other competing land use practices especially mining and scarcity of reliable water sources outside the reserve.

The common connotation on pastoralists is that they are important custodian of natural resources found in arid and semi-arid areas because they protect and safeguard the resources (HPG, 2009; AU, 2010; Smith, 2012; Boto and Edeme, 2012). With this perception in mind, it was of interest to find out if the presence of pastoralists and their livestock inside a wildlife reserve posed any significant threat to the integrity of the protected area. The earlier research on pastoralists has focused on the relevancy of government policies on the livelihoods of pastoralists (Shem, 2010; Smith, 2012), social services (Schelling et al., 2008), food security (Mohamed and Ahmed, 1991), trans-boundary livestock trade (Berhanua, 2015), as well as pastoralists’ vulnerability (Banjade and Paudel, 2008; Pavanello, 2009; HPG, 2009; Jibat et al., 2013; IDDRSI, 2015). Forggin (2012) attempts to study the interaction of pastoralists with wildlife in western China with much emphasis on their traditional land use practices and cultural conservation ethics that facilitates the protection of natural resources. He notes that with modernity, the habitat has been severely modified and degraded, wild animals hunted and suggests that the panacea for this challenge is collaborative management approach to conservation. Therefore, it is against the foregoing that this study was carried out. More specifically, the study points out the key threats of illegal killing of predators like cheetah, leopard and other cats, illegal collection of ostrich eggs and sometimes killing of ostriches to collect feathers for cultural ceremonies and degradation of the wildlife reserve. Furthermore, the fragmentation of the rangeland by the pockets of crop gardens has also had a far reaching impact not only to the conservation of wildlife but has intensified land use conflicts between crop farmers and pastoralists.
2.0 MATERIALS AND METHODS

The study was carried out in Matheniko Wildlife Reserve 2°55N 34°30E. One of the purposive sampling techniques, known as expert sampling was applied in order to reach government officials, political leaders, representatives of international agencies and pastoralists who had quality information.

Figure 1: Map of Bokora – Matheniko Wildlife Reserve showing the common pastoralists’ entry and exit routes

A three level approach consultative meetings and in-depth semi-structure face to face interviews were used to collect the views of the targeted categories of respondents. The first level covered the technical officers and political leaders of Moroto District (n = 10), the second was for pastoralists (n = 25) and the third one consisted of Matheniko Wildlife Reserve management and staff (n= 12). The Daily Monitor Newspaper correspondent who
had widely written about Turkana’s use of Uganda territory to rear their livestock was also interviewed. Representatives of FAO based in Moroto Municipality were consulted to provide the insight on trans-boundary livestock management initiatives. In addition, group discussions were held with pastoralists who were watering their cattle at Longorikipi dam, dominated by Karamajongs of Jie and Bokora ethnicity (n = 16), Kobebe dam that was used by mainly Turkana (n =12) and Lokapet dam (n = 8), used by matheniko Karamojongs. The group discussions were kept focused by the use of a semi-structured group discussion guide. The guide was first pretested in the neighbouring wildlife reserve of Bokora using a group of pastoralists to assess its effectiveness in collecting the desired information and determine amount of time needed to obtain the desired data. During the interview and group discussion session, particular attention was made to carefully observe and study the body language of interviewees.

Field observations were made within a distance of 500 metres from both sides of tracks and trails, covering a stretch of 60 km. Incidents of land degradation, bush burning and deforestation were noted. Where field observations were of unique, special and of particular interest, photography was applied to supplement information collected from interviews, group discussion and literature review. The movement pattern of key wild animal species such as bright gazelle, buffalo, kob and warthogs was recorded for period of three years (April 2012 to April 2015). Finally, the quarterly and annual reports of the reserve were reviewed to establish the level of illegal activities in areas occupied by pastoralists.

3.0 RESULTS

The pastoralists were grazing cattle, goats, sheep, camels and donkeys in the wildlife reserve (Table 1). Most of the camels and donkeys in Moroto District (about 63%) were owned by the Turkan Pastoralists while those of Amudat were of Pokokot, another trans-boundary ethnic group of pastoralists who utilise Uganda rangeland south of Matheniko Wildlife Reserve, outside the protected area.

<table>
<thead>
<tr>
<th>District</th>
<th>Cattle</th>
<th>Goats</th>
<th>Sheep</th>
<th>Camels</th>
<th>Donkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amadat</td>
<td>128,691</td>
<td>159,250</td>
<td>51,567</td>
<td>6,969</td>
<td>16,104</td>
</tr>
<tr>
<td>Moroto</td>
<td>63,600</td>
<td>172,000</td>
<td>200,250</td>
<td>385</td>
<td>1,870</td>
</tr>
<tr>
<td>Nakapiripit</td>
<td>120,000</td>
<td>163,700</td>
<td>90,120</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Napak</td>
<td>55,145</td>
<td>200,122</td>
<td>310,000</td>
<td>23</td>
<td>104</td>
</tr>
</tbody>
</table>

Source: FAO- Moroto District Production Department
www.asianacademicresearch.org
3.1 The inflow and outflow of Turkana pastoralists

Most of the pastoralists interviewed (88%/ n= 25) indicated that they usually come to Uganda in search of water and pasture for their livestock in the month of October and leave in April, a period which matched with normal dry season on Uganda side which, under normal circumstances occurs between October and March. While in Uganda, the Kenyan pastoralists were not free to mix their livestock with those of Ugandans. They occupied Matheniko Wildlife Reserve and part of the rangeland which previously had been used by indigenous cattle keepers. Such areas were considered by Karamajongs as less productive but to the eyes of Turkan pastoralists, they offered far better pasture than their homeland. At the onset of dry season (October and November), the indigenous pastoralists would drive their cattle westward to new areas of Bokora Wildlife Reserve, Napark and Abim Districts, in search of fresh pasture and water. The extent of the rangeland utilisation by the Turkana pastoralists was dependent on the magnitude and duration of the dry season as well as the outcome of negotiations between the leaders of local authorities from both countries and respective kraal leaders. Before Kenyan pastoralists were allowed to enter Uganda, the two neighbouring local authorities would first negotiate terms and conditions of hosting them in Karamoja. One of the major conditions imposed on Turkana pastoralists was that they would not participate in cattle rustling or cause insecurity. For all three years the study was going on, Moroto District Local Government in collaboration with security agencies allowed Kenyan pastoralists to keep their cattle in Matheniko Wildlife Reserve three times.

3.2 Migration of wild animals

During the rainy season, areas west of Matheniko Wildlife Reserve including Bokora Wildlife Reserve were found flooded and boggy forcing most of the wild animals to be internally displaced to a well drained Matheniko Wildlife Reserve. In the dry season, the animal movement pattern would change. The water sources in Matheniko Wildlife Reserve would dry up and pasture become scarce forcing the wild animals to move westward towards the wetlands of Bukora Wildlife Reserve. The coming in of large herds of Turkana cattle was exacerbating wild animal migration pattern to the extent that animals like kobs that would ordinarily be still in Matheniko Wildlife Reserve by the month of November were hardly sighted in the area by the beginning of October.

3.3 Poaching of wild animals
The review of law enforcement reports of Bokora - Matheniko Wildlife Reserves (MBWR) indicated that the level of illegal activities intensified in dry seasons. For instance, 82 out of 103 of arrows (80%) were recovered by law enforcement team during the period of the study, were confiscated in the dry season. In the same season 11 out of 15 suspects (73.3%) were arrested, 24 out of 31 metallic traps (77.4%) recovered and 45 out of 80 bows (56.3%) confiscated (Fig. 2).

![Form of illegal item or tool confiscated by the law enforcement team](image)

**Figure 2**: The level of illegal activities in wet and dry seasons (source of data: Matheniko- Bukora Wildlife Reserves’ quarterly reports)

### 3.4 Degradation of the protected areas

The areas around water sources, cattle tracks and trails, watering points as well as holding grounds were extremely degraded to the extent that the ground was absolutely bare with soil highly exposed to all forms of soil erosion (Figure 3). During the time of watering animals both incoming and outgoing herds of cattle were observed under a cover of mass dust. The level of degradation also depended on the distance from the water sources (watering points), intensity and frequency of cattle use. Areas very close to the water sources where herds of cattle would gather on daily basis for watering were more degraded than areas further away, where the concentration of livestock per unit area was low.
In terms of the degree of degradation, about 47.8% of the protected area was degraded with 1.1% extremely depleted, that is, the land was largely bare (Figure 3), 4% was bare land with scattered thickets and shrubs (Figure 4) and 42.2% had the pasture grazed to the soil level (Figure 5). The part of the wildlife reserve that still had some pasture (Figure 5) was about 917 q.km/52.2% (Table 2).

Figure 3: One of the sections of Matheniko Wildlife Reserve that is extremely degraded by Turkana pastoralists.

Figure 4: High degradation where pasture has been exhausted and only thorny thickets and shrubs remained.
Figure 5: Moderate degradation where pasture is grazed to the ground level

Figure 6: In the background is one the sections of Matheniko Wildlife Reserve that was less degraded.
Table 2: Extent of wildlife protected area degradation

<table>
<thead>
<tr>
<th>Level of degradation</th>
<th>Estimate area affected (Sq. Km)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme degradation (the land is largely bare)</td>
<td>20</td>
<td>1.1</td>
</tr>
<tr>
<td>High degradation (land is bare but with thickets and shrubs)</td>
<td>70</td>
<td>4.0</td>
</tr>
<tr>
<td>Moderate Degradation (pasture is grazed to the ground level)</td>
<td>750</td>
<td>42.7</td>
</tr>
<tr>
<td>Less degradation</td>
<td>917</td>
<td>52.2</td>
</tr>
<tr>
<td>Total</td>
<td>1757</td>
<td>100</td>
</tr>
</tbody>
</table>

3.5 Siltation of water sources

The two major water dams in the area were getting silted. The Kobebe dam which was serving the majority of Turkana pastoralists was less silted than Lokapet dam which serve mainly the indigenous pastoralists. The driving factors for the siltation of water sources were land degradation and the method of watering livestock. The direct watering of cattle in the dam by allowing animals to step and defecate in water was facilitating the siltation of water reservoir. In the process of stepping in the water dam, livestock would damage the banks of the dams and drive the formerly excavated soil back into the dam. However, water dams that were designed in a manner that cattle watering points were established downstream, a distance from the main reservoirs were less affected by siltation than those that allowed cattle to directly water in the dam.

3.6 Human – wildlife conflicts

The presence of pastoralists and livestock within a wildlife protected area had intensified human wildlife conflicts, more especially those involving large predators. Within a period of three years, two cheetahs, six leopards and one jackal were killed by pastoralists. Three cases of illegal killing of the predators were brought before the Magistrate Court of Nakapiripit District. In February 2016 four people were arrested in Nakapiripit with three skins of leopard, one skin of pangolin and another one for jackal which they claimed to have killed in areas close to Mathenko Wildlife Reserve. They were handed over to Uganda Police for prosecution.
3.7 Unplanned bush burning

Bush burning was more frequently observed in areas outside wildlife protected areas especially on the southern part of Bokora Wildlife Reserve. In total, 23 cases were observed in the section of the rangeland utilised by indigenous cattle keepers (92%) compared to two incidents that occurred on the side of Turkan pastoralists (8%). The burning of bush land outside wildlife protected were observed in 18 sights (72%) and 7 sights inside the wildlife reserve (28%).

3.8 Degradation of historical and cultural sites

Nakadanya Cultural Shrine which is an important sacred site for Ateker cluster and Nakapelithe rock paintings were being degraded by the seasonal presence of pastoralists and large herds of cattle. It was observed that people were tempering with historical paintings and other artefact of archaeological and cultural values within the protected areas.

Fig.6: Nakapelithe Rock Paintings which are at risk of degradation by the pastoralists
4.0 DISCUSSION

The criss-crossing of Kenya - Uganda border by Turkana pastoralists was greatly influenced by rainfall pattern both within Turkana region (Kenyan) and Karamoja on Uganda side. The Kenyan pastoralists in Uganda were more or less “environmental refugees”. The inflow of Turkana was directly and indirectly contributing to the competition for rangeland resources between the two neighbouring communities and wild animals. To avoid direct confrontation of the two pastoral communities, cattle rustling and the general insecurity, most of the indigenous pastoralists drive their livestock westward into Bukora Wildlife Reserve. Ultimately, the inflow of pastoralists with large herds of cattle into wildlife protected area has had an effect on movement pattern of large mammals like buffalo and bright gazelle. Under normal circumstance, the wild animals would migrate to Bokora from late October to early November but in the recent past years they would leave the reserve as soon as Turkana pastoralists arrive with their cattle. Besides, some of the Turkana pastoralists illegally bring dogs in the wildlife reserve to protect their livestock which end up scaring wild animals. What is worse is that although the seasonal utilisation of Uganda,s rangeland by Turkana pastoralists was more or less formal and guided by an agreement between leaders of the two communities and local government, cases of violation of set terms and conditions of resource access were common and widespread. For instance, whereas, the pastoralists were not supposed to kill or destroy wildlife, cases of illegal collection of ostrich eggs and feathers as well as killing of large carnivores such as leopard and cheetah were common. The committing of wildlife crimes such as illegal collection of ostrich feathers and killing of wild animals could be attributed to cultural and commercial reasons as well as the need or means to protect cattle against predators.

The degradation of the wildlife reserve was mainly human induced and attributed to the activities of Turkana pastoralists. Overgrazing, extraction of protected area resources such as materials for construction of temporary kraals and huts, unregulated bush burning as a traditional method of managing pasture and controlling pests like ticks and the movement of cattle were responsible for soil erosion and loss of land cover especially pasture. In addition, the concentration of livestock around limited water sources and watering trails due to the general water shortage accentuated land degradation.

However, prolonged drought, weak agricultural infrastructure such as water for production, inadequate collaboration and coordination amongst stakeholders are the key drivers of the
degradation of not only the protected areas but the whole rangeland of Karamoja. The two governments (Kenya and Uganda) should invest in the integrated landscape management of the pastoral rangeland, provide water for production and other projects that strengthen pastoralists’ resilience to harsh effects of climate change and build their capacity to diversify their sources of livelihoods without adversely affecting their cultural values and traditional life style.

The study reveals that one of the biggest loopholes in the collaborative arrangement between Kenya and Uganda local authorities is inadequate consultation with Matheniko Wildlife Reserve management. Wildlife managers were not actively involved in the negotiation and signing of the agreement. As such, the integration of pastoralist activities in wildlife management was still a big challenge. The participation of the protected area management in planning and management of livestock movement and human activities in the wildlife reserve is necessary for maintaining the integrity of the protected area. This is important because effective grazing management is considered to be a good strategy for improving biodiversity and a tool for preventing land degradation and desertification (Boto and Edeme, 2012).

Paradoxically, whereas, the existence and economic importance of trans-boundary movements and trade in livestock is well known in the whole of horn of Africa (Berhanu, 2005), not much has been done by concerned east African countries to effectively use either landscape or regional approaches to manage natural resources such as pastoralists’ rangelands that strides international borders. Trans-boundary collaborations are still weak and not well entrenched in the national and regional legal and policy framework. This has left trans-boundary pastoralists communities with no option but to depend on the local and sometimes informal arrangements as means of survival and coping with harsh climatic conditions. Yet, sustainable environmental and natural resource management which would be enhanced by trans-boundary collaboration and coordination is central to successful livestock based livelihoods (LEGS, 2009).

Finally, Nakadanya and other traditional shrines in Matheniko-Bokora Wildlife Reserve which are cherished by Ateker cluster within Kenya, Southern Sudan and Uganda provide a great and unique opportunity for the protected area to develop and market cultural and historical tourism products which have potential of being one of the sources of revenue for the government of Uganda. In turn, the local communities would benefit from employment opportunities and other auxiliary tourism services.
5.0 CONCLUSION

The harsh climatic condition in form of prolonged drought seasons has caused the scarcity of pasture, water and exacerbated hunger in eastern Africa region, forcing Turkana pastoralists to become environmental “refugees” by moving with their cattle across Kenya- Uganda border to Matheniko- Bokora Wildlife Reserve in search of pasture and water. However, this has had adverse effect on the integrity of the protected area through land degradation, disruption of wildlife movements and increased levels of illegal killing of wild animals especially carnivores. To reverse the situation, it will require strong trans-boundary collaboration, cooperation and approach geared towards the integrated management of rangeland resources, improvement of livelihoods and resilience of pastoralists to negative effects of climate change and investment in water for productions as well as sustainable management of wildlife resources. In doing so, the active participation of all stakeholders is of paramount importance.
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