

## *Maasai* people and elephants: values and perceptions

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Effective wildlife conservation requires understanding and integration of cultural values and practices among communities within wildlife range areas. In Africa, elephants still roam outside protected areas and frequently interact with local people. *Maasai*-land in East Africa has a considerable elephant population, estimated to number 20,000 individuals, yet there is little understanding of the cultural values and perception of elephants among the *Maasai* people. Information on the values and perceptions of elephants among the *Maasai* in northern Tanzania were investigated through informal and semi-structured interviews. There was widespread use of elephant parts (mainly tusks and dung) for traditional medicine, socio-cultural and nutritional purposes. Despite the current global concern about the future of African elephant, the *Maasai* people believed that elephant survival was not under serious threat and that populations are increasing. Elephant Conservation programs should consider level of awareness, the values and perceptions of the local people.

**Keywords:** Elephants, *Maasai*, Tanzania, Traditional knowledge, Utilization

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Human-animal interactions form a central part of many society's existence<sup>1-2</sup>. The growing interest in the intrinsic and consumptive values humans attach to wildlife<sup>3</sup>, has led to the growing field of ethnozoology<sup>1</sup>. Human health and biodiversity have historically been connected, with medicinal use of animal parts and protein consumption being the main uses<sup>2,4-6</sup>. Whole animals, animal parts, and animal-based products have been used across the world for various purposes<sup>7,8</sup>. For example, in North Eastern Brazil, 44 animal species (37 vertebrates and 7 invertebrates), were reported to treat 30 different ailments in livestock and pets<sup>9</sup>. Wildlife products have featured in diets of many people globally. For example, bushmeat forms a major source of protein in many tropical areas<sup>10-13</sup>. Besides use in human and livestock health and nutrition, animals or animal parts are important for spiritual rituals of many societies. For instance, among the Plain Indians, the sun dance included symbolic representations of various animal species, each being a sign of renewal with the universe<sup>14</sup>. The tribes of Crow and Shoshone view the

eagle as custodian of all the creatures of the air - a guardian protecting the people from evil. In Nepal, the Jirels believe that python secretion (semen) kept in the store of the house will drive off evil spirits<sup>15</sup>. Equally important are the religious values of wildlife. For example among the believers of the Afro-Brazilian religion Candomblé, 129 species of animals (or animal derived products) had religious value<sup>16</sup>.

These associated values have resulted in the reverence of animals across cultures. Among the *Maasai* of East Africa, a relationship with nature is cultivated in the society's traditional values and beliefs. There is emphasis on safeguarding the environment<sup>17</sup>. For instance, the *Maasai* set aside land specifically for social-cultural events, and for dry and wet season livestock grazing. These land use practices have resulted in a wealth of biodiversity in most areas inhabited by *Maasai* people<sup>18</sup>. The traditional pastoralism livelihood strategy of the *Maasai*, is less in conflict with elephants as compared to e.g. agricultural land use forms<sup>19</sup>. As a result, approximately 60% of the elephant population in Africa is outside of protected areas<sup>20</sup>, with considerable elephant range within *Maasai*-land in

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Kenya and Tanzania. These areas include, areas adjacent to famous protected areas: Maasai Mara National Reserve, Amboseli National Park (NP), Chyulu NP, Tsavo east NP (in Kenya), Mkomazi NP, Mount Kilimanjaro NP, Lake Manyara NP, Tarangire NP, Serengeti NP, Ngorongoro Conservation Area (in Tanzania). Combined, these areas (inside and outside protected areas) support approximately 20,000 elephants, representing about 15% of the entire elephant population in Kenya and Tanzania. Elephants in these areas are increasingly facing threats such as poaching, habitat loss and rising human-elephant conflict<sup>19-21</sup>. While tangible monetary benefits for wildlife conservation are assumed to yield successful conservation results<sup>17</sup>, socio-cultural cultural values may be relevant to elephant conservation efforts<sup>22</sup>. Recent literature suggests that Maasai and elephants have an intricate relationship<sup>23</sup>; for example field experiments showed that elephants can recognize Maasai sounds and language<sup>24</sup>. The *Maasai* view elephants to be in some ways similar to humans<sup>25</sup>.

The Maasai landscape has undergone socio-economic changes with potentially negative consequences for elephant conservation in Kenya<sup>26-29</sup>. Elephant poaching for their tusks<sup>30-31</sup>, and habitat loss due to increasing demand for agricultural land<sup>19</sup> continues to be a major challenge for elephant conservation. Considering that no current conservation approach fully addresses these emerging challenges to elephant conservation, there is a need to consider the potential role of values and perceptions in conserving wildlife<sup>32</sup>. The intrinsic values of wildlife such as physical characteristics (e.g. body size) can strongly influence conservation decisions<sup>33</sup>. Understanding the dimension of these values and perceptions can present new socio-economic perspectives in elephant conservation. In this paper, we assess the values and perceptions on elephants among the Maasai people in Northern Tanzania and discuss how this knowledge can be integrated in elephant conservation.

## Methods

### Study area

The study area lies between Lake Manyara NP (648 km<sup>2</sup>) and Tarangire NP (2500 km<sup>2</sup>) and is a typical semi-arid savannah ecosystem. Manyara Ranch (182 km<sup>2</sup>) is situated between the two parks and is managed for livestock production and wildlife conservation (Fig. 1). The area is a critical wildlife dispersal area, and a centre of interactions between

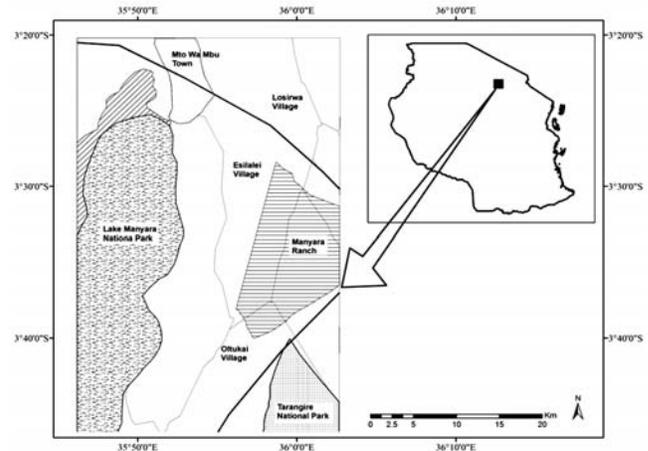


Fig. 1—Location of Losirwa, Esilalei and Oltukai villages between Lake Manyara and Tarangire National Places

humans and elephants, and other wildlife. Outside the protected areas, the main land-uses include agriculture, pastoralism, and human settlement<sup>34</sup>. The Maasai people are the main inhabitants of the region and use the area for grazing their livestock.

### Data collection

This study focused on the utilization and interactions between elephants and the Maasai people in northern Tanzania. Purposive sampling approach<sup>35</sup>, was used where one hundred questionnaires were administered to household members in three Maasai villages (Losirwa, Esilalei and Oltukai) between Lake Manyara and Tarangire NP's. One interview was conducted per Maasai household (*boma*). We aimed at interviewing an equal number of males and females among the homesteads and having a proportionate number of interviews in each village. The interviews focused on the ethnozoology and daily interactions of elephants and the Maasai. In addition, focus group discussions with community elders, spiritual leaders (*Oloibon*), *Morans*, general public (adults with no distinct social status) and the teenagers (uncircumcised) were undertaken. These groups are assumed to have specific knowledge on the community's use of natural resources. Chi-square goodness of fit test and chi-square cross-tabulation were used to analyze the data.

## Results

### Use of elephant parts and products

The overwhelming majority (95.74%) of the respondents stated that they used elephant parts or products for medicinal, ceremonial, ritual, food, or commercial purposes. The cultural and medicinal uses

were either for humans or livestock. Elephant dung, liver, fat, bones, ear, amniotic fluid, milk and skin were said to be used for medicinal purposes while the tusks, placenta, and skin were used for social and cultural purposes. The fat, meat, liver, tongue, and bones were reported to be used for food purposes. The tusks were reported to be collected and sold in the black market (Table 1).

### Maasai people perceptions and interactions with elephants

The elephant is known as *Arkanjowe* in Maasai, which means “one who is big or strong”, and is highly featured in Maasai oral literature. A Maasai story of the elephant’s origin goes like this.

“Once upon a time there was a girl to be married. She was warned by her parents not to turn back as she walked to her husband’s house. On the day of her wedding she set out to travel to her husband’s house and on the way, she looked behind her and all of her decorative jewelry disappeared. She continued walking and again looked behind her and she turned into an elephant, with her veil as the trunk”.

Residents interviewed had mixed views towards elephants: 41% had a positive perception of elephants, while 59% had a negative perception ( $\chi^2 = 3.447$ ,  $p = 0.06$ ). Elephants were perceived positively because they were reported to be “polite unless provoked” and would bring benefits to the country

Table 1—Use of elephant parts and products by Maasai people of Tanzania

Uses	Parts	Preparations and treatment
Medicinal	Dung	Mixed with water, filtered and given to someone to drink to induce vomiting, so as to “reduce” disease Smoke inhaled to cure various illnesses. Smoke used to keep away insects such as mosquitoes (Culicidae) Boiled in water and given to and someone who is chronically sick to bathe in Fresh dung mixed with medicine from <i>Oloibon</i> , wrapped in leather, tied onto something to protect against disease
Medicinal	Liver	Roasted and dried, and then consumed to treat asthma
Medicinal	Fat	Filler for medicine, paste boiled into liquid oil and drunk to treat heart problems, chronic weakness, tuberculosis, asthma
Medicinal	Bones	Burned and ground into powder to cure swellings
Medicinal	Ear	<i>Oloibon</i> takes a small piece and burns it and one inhales the smoke; rubbed on skin to treat skin diseases
Medicinal	Amniotic fluid	Mixed with medicine/herbs from <i>Oloibon</i> , burned and the smoke inhaled to cure/prevent disease and give blessing
Medicinal	Skin	A small piece roasted and eaten to treat diabetes
Ritual	Tusk	A hole drilled in the tusk, fat put and then mixed with 9 types of herbs to make powder medicine – that is carried to protect the holder
Ritual	Placenta	A small piece is dried and worn to bring luck to the holder Tied around homestead ( <i>Boma</i> ), to attract blessings into the homestead
Ritual	Skin	A small piece worn on the body to give protection
Ceremonial	Tusk	Small piece worn as ornament
Food	Fat	Roasted or made into a soup
Food	Meat	Roasted or made into a soup
Food	Liver	Roasted or made into a soup
Food	Tongue	Roasted or made into a soup
Food	Bones	Made into soup
Livestock	Dung	Fresh dung: mixed with medicine from <i>Oloibon</i> , wrapped in leather and tied onto cow to protect them against disease and to make cows love their calf again
Livestock	Dung	Dried dung burnt in livestock pen for livestock to inhale smoke to cure and protect against diseases such as Foot and mouth disease
Livestock	Placenta	A small piece is worn on livestock bring luck
Livestock	Fat	Fed to calf to treat protozoa disease
Livestock	Tusk	Take a piece of tusk and tie around cattle head when the cattle is losing calves
Commercial	Tusk	Sold in black market

Table 2—Relationship between Maasai people perceptions of elephants and their social-economic variables

Variable	Cross-tabulation test result	Trend
Location	$\chi^2 = 2.92$ , df = 2 p = 0.232	There was no significant relationship between perception of elephants and location (Esilalei, Olosirwa or Oltukai villages).
*Gender	$\chi^2 = 7.250$ , df = 1 p = 0.007	More females (72.9%) than males expressed negative perceptions towards elephant presence on their land.
*Age-Set	$\chi^2 = 8.280$ df = 3 p = 0.041	The most <i>morans</i> (55.6%) positive views towards elephants compared to 12.5% of teenagers, 35% of junior elders, and 45.2% of elders.
*Social status	$\chi^2 = 8.943$ df = 3 p = 0.030	The most general public members (70.5%) expressed negative perceptions on elephants compared to 37.5% of village leaders, 50% of spiritual leaders/ medicine men/ and 36.8% of morans.
Education level	$\chi^2 = 0.210$ df = 2 p = 0.901	There was no significant relationship between perception of elephants and education level.
Healthcare	$\chi^2 = 0.518$ df = 2 p = 0.772	No significant relationship between perception of elephants and healthcare.
Livelihood	$\chi^2 = 0.254$ df = 1 p = 0.614	No significant relationship between perception of elephants and form of whether the respondent was purely a pastoralist or not.

\* denotes significant relationship

through tourism. Elephants were negatively perceived because they were harmful to people and their property. These perceptions were however influenced by a range of variables (Table 1). More females (72.9%) than males expressed negative perceptions towards elephants. Most of the *morans* (55.6%) expressed positive views, while most teenagers (87.5%) had negative views on elephants. In relation to social status within the Maasai, community elders (62.5%), spiritual leaders (50%) *Moran* (63.2%), and general public (29.5%) expressed positive perceptions of elephants, while the majority of the general public (70.5%) expressed negative perceptions. When asked how they would react if they found an elephant carcass in the bush, 40% of respondents would collect the tusks for commercial or ritual purposes. They would also collect bones, ears, fat, liver, placenta, skin, tongue, and tusks. Some respondents stated that they would create a shrine over the carcass by covering it with shrubs (Table 2). In no case did they indicate that they would hunt elephants to get these parts or products, they would get them from elephants that had died of other causes.

When asked what they would do if they met an elephant in the bush, the majority of respondents (95.24%) stated they would first check the wind direction by blowing dust. They would then retreat away from the elephant, taking care not to walk in the wind direction. If an elephant came near their home, 85% said they reacted passively by repelling it using fire flickers and making noise, 8% stated they would seek safety, ignore the elephant or leave the area. Six percent would actively attack the elephant with spears, chase the elephant with dogs (*Canis lupus*

*familiaris*) or throw objects like stones at them and 1% said that they would report it to wildlife authorities. If an elephant came near their livestock, 58% of respondents stated they would seek safety or ignore the elephant and only 5% would actively chase the elephants away from the livestock.

### Knowledge of elephant conservation

Sixty three per cent of the respondents said that they knew that elephants were being illegally hunted for their tusks in the area, 54% of the respondents said that they knew where the poachers came from. Most respondents (80%) said the poachers were from areas outside of their local ward, but within Tanzania; 12% said that poachers were coming from within the study area, and 8% believed that the poachers were coming from outside the country. Most respondents (89%) said that they would intervene to stop elephant poaching by arresting the poachers or reporting to nearby wildlife authority. Eighty eight percent believed that elephant populations were not in danger of disappearing locally and 79% believed that elephant populations were not in danger of disappearing globally.

### Discussion

The high socio-cultural value of animals among the Maasai is illustrated by the naming of the Maasai clans and moieties<sup>36</sup>. The clans include *Ilmakesen* (of baboon), *Ilaiser* (of rhinoceros), *Ilmolelian* (of elephants), *Itaarrosero* (of hyena), and *Ilikumai* (of raven). The Maasai interviewed were of two moieties, *odomong'i* (the house of the red oxen) and the *orok-kiteng'* (of black cattle). Pastoralists, livestock and wildlife

have had largely synergetic coexistence in Africa for the past 2,000 years<sup>37</sup>. Like in other cultures<sup>9</sup>, these relationships are reinforced through strong norms and institutions, and mainly passed on orally from generation to another. The age set system for example is highly ingrained in the Maasai culture, structuring the community's daily interactions with nature<sup>38</sup>. Starting from a young age, knowledge on wild animal and how to deal with them is instilled<sup>39</sup>. The negative perceptions of elephants expressed by teenagers may be due their inexperience in dealing with wildlife. The *morans* on the other hand are the tribe's "foot soldiers" and have had numerous interactions with elephants<sup>27</sup> and had more positive views. The *morans* are able to defend themselves which might have contributed to their overall more positive perception on elephants as they are not fearful of them. Women on the other hand, may feel defenseless when facing an elephant. In addition, crop damage by elephants is a direct threat to family livelihood which is indeed mostly seen as a responsibility of women<sup>19</sup>. This is likely have contributed to their more negative perception on elephants.

*Oloiboni (Oloiboni Kitok)* - the spiritual leader of all the Maasai<sup>40</sup> reportedly used elephant parts and products when performing various socio-cultural functions to enhance Maasai people well-being. The majority of respondents knew of Maasai oral stories and legends pertaining to elephants. This illustrates a high level of integration of elephants into traditional Maasai culture. Through oral histories, they retell creation stories, tales of animals, and stories of accomplishments or painful encounters with elephants. Using folk stories, proverbs, songs, poems, and dance, the elders pass the knowledge to younger generation, a key factor in maintaining connection to cultural practices and traditions<sup>41</sup>.

There was an overwhelming acknowledgement of the importance of the use of parts of the elephants' body, with 96% of the Maasai stating that they used elephant parts or products for medicinal, ceremonial, ritual, food, or for commercial purposes. Despite changes in religious beliefs and expansion of modern medicine into rural areas, Maasai have maintained strong connections with nature across many aspects of their culture. In traditional societies with a strong cultural reference to wildlife, there is a relatively peaceful coexistence<sup>42</sup>. While Maasai may eat game meat if offered; hunting for meat remains culturally unacceptable<sup>43</sup>. To the contrary, many other tribes in African hunt wildlife species for meat<sup>10-11,13,44</sup>.

The majority of respondents would collect the tusks for commercial or ritual purposes, while others would collect other body parts or products for ritual or medicinal purposes. The Maasai are known to use other animals, for instance, among the basic items of inheritance, a prestigious cloth made from Colobus monkey (*Colobus sp.*) or hyrax (Hyracoidea) skin is worn occasionally (*enkila*)<sup>18</sup>. The use of animal products such as bones for ceremonial or magical practices has been observed in other cultures. In ancient China, bones of Asian elephants (*Elephas maximus*) were made into an oracle for the king to use when making important decisions affecting the community<sup>45</sup>. The Garasiya people of India use the Asian elephant tooth for treating pimples<sup>46</sup>. Among the Maasai, powder from elephant teeth is applied on the affected human body part such as swellings. Similarly, use of elephant teeth for treating rheumatism is practiced by the Yoruba people of Southwestern Nigeria<sup>4</sup>. The Naga people of India use powder from the elephant teeth to treat eczema, leucoderma and ringworm<sup>47</sup>. Similar to other cultures, elephant derivative was used purely or mixed with other plant or animal parts.

By covering elephant carcasses with twigs and saying a prayer, this is believed to bring blessing to the Maasai community. These views and practices probably originate from the view that elephants were once human. Confirming the wind direction when seeing elephants, suggests that the Maasai fear elephants but have a desire to avoid direct conflict with them<sup>48</sup>. When elephants came near Maasai homesteads, Maasai reportedly employed moderate techniques (using fire or noise) to chase them away. This suggests that the Maasai people have empathy for elephants and rarely intend to physically harm them. When elephants came near their livestock, the majority of respondents indicated they would seek safety or ignore them. This might be due to fact that they acknowledge the harmonious relationship between elephants and livestock. Overall, these perceptions showed that the Maasai-elephant interface is characterized by both negative and positive interactions<sup>9</sup>. The importance of elephants to Maasai culture is somehow related to the Buddhist perception, which based on Hindu philosophy. In both cultures, animals are believed to have the right to life just as humans, and harming them is prohibited<sup>49</sup>. The Maasai however, defend themselves and their property, at times resulting in lethal outcomes for elephants<sup>50-51</sup>.

Their willingness to intervene to stop poaching shows the potential role that the Maasai could play in anti-poaching efforts in the area. Maasai *morans* could be enjoined as village game scouts and equipped with mobile phones to inform wildlife authorities when poachers are sighted. The perception that elephant populations were increasing locally and globally show that the Maasai are possibly ill informed on the conservation status of elephants. The African elephant population has declined particularly outside protected areas<sup>20,30</sup>. The recent increase in elephant poaching incidences in the area<sup>29-31</sup>, is a serious concern for the elephant populations in the area. Lack of substantial direct benefits from wildlife and the potential harm associated with elephants may have contributed to the indifference or negative views towards elephant conservation expressed by a large portion of the Maasai interviewed. The cultural importance of elephants as a source of food, craft, spiritual and medicinal uses could be integrated in elephant management and conservation approaches. Our study opens avenues for exploring justifications for conserving elephants within Maasai land. We suggest creating awareness among the Maasai regarding the status of elephants and the ongoing threats they are facing. The Maasai youth could be enlisted in law-enforcement activities against elephant poaching. Such integrated conservation efforts with Maasai, who are culturally attached to elephant are promising tools to effectively manage and conserve elephant populations in increasingly human-dominated landscapes. Further, this study contributes to emerging field of Ethnozoology which is inadequately explored in Africa. Considering that values may vary regionally and within the same group of people, e.g food taboos may differ among males and females; by social status and region<sup>52</sup>, there is need for more extensive studies across all elephant range areas.

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