International Journal of Scientific Engineering and Science
Volume 4, Issue 11, pp. 32-41, 2020. ISSN (Online): 2456-7361

Factors Influencing of Pastoralist Perceptions towards Wildlife Conservation in Borana National Park, Southern, Ethiopia

Jarso Qanchoro[1], Roba Jiso[2], Kanchora Guyo[3], Hadis Tadele[4]
[1]Madda Walabu University, Department of Ecotourism and Biodiversity Conservation, Bale-Robe, Ethiopia, P.O.Box 247 jarsoqanchoro@gmail.com
[2]Arba Minch University, College of Agricultural Science, Arba Minch, Ethiopia, P.O.Box 21 rjelema@gmail.com
[3]Yabello Agriculture and Natural Resource Management Office Yabello, Ethiopia, P.O.Box 46 abbabontu2010@gmail.com
[4]Madda Walabu University, College of Agriculture and Natural Resource Management, Bale-Robe, Ethiopia, P.O.Box 247 hadis.tadele1@gmail.com

***Abstract*—** *This study was designed to assess the factors that affect local people's attitudes and perceptions towards the Borana National Park, southern Ethiopia where the livelihoods of local people around the Park depended on livestock rearing and that might have high impacts on Park resources. A total of 346 households were randomly interviewed from July - August 2019 for data collection. The data were analyzed using the Statistical package for social science (SPSS) in which descriptive statistics and Chi-square tests were used to determine factors for the perception and attitude of the local communities. The perception and attitude of the local communities towards the conservation of Borana National Park showed a significant difference among the education level ($\chi2=11.846a$, $df=3$, $P<0.05$), age of respondents ($\chi2=18.817a$, $df=2$, $P<0.05$), and occupation ($\chi2=12.077a$, $df=2$, $P<0.05$). The result indicated that attending a higher level of education, young age respondents, and employed in an organization had a better understanding of the importance of Wildlife and the Park. Therefore, it can be concluded that the academic level, age of respondents, and occupations were the major determinant factors that influence the perception and attitude of the local communities. It is therefore recommended; employment opportunity, community involvement in decision-making, and share of the tourism revenue and infrastructure development as alternative measures in improving local attitude towards the Park.*

***Keywords*—** *Attitude, Borana National Park, Conservation, Local Community, Perception*.

I. INTRODUCTION

Biodiversity preservation and the necessity to guarantee sustainable utilization of natural resources have prompted the foundation of various universal agreements and shows (Butchart *et al*., 2010 and Rands *et al.*, 2010). As of now in our continent, around 100,000 secured regions are representing 12% of the world's landmass, as a key procedure to save biodiversity (World Protection Checking Center, 2004). But this action has been the source of conflict between conservation and other human activities (Redpath *et al*., 2013). Bagchi and Mishra (2006) revealed that the borders between ''human" and ''wild" spaces have become blurred in adjacent people. As per de Boer and Baquete (1998), the Loss of conventional extraction access or damage by Wildlife to crops and livestock most of the emphases in understanding people's perceptions have been on the conflicts that exist between people and Protected (Maikhuri *et al*., 2000). Predators killed the animals living near farmland and fields (Nyhus and Tilson, 2004). Hussain (2003) argued that local communities that nearby could be seriously influenced by Predators killed the domesticated animals.

National Parks are normal territories of land, which are selected to secure the biological respect of at least one or more ecosystems for current and future generations (Stolton et al., 2015). It is believed that the purposes of the designation of those areas are; to provide a foundation for spiritual, scientific, educational, recreational, and tourism opportunities, all of which have to be environmentally and culturally well-matched (Scherl et al., 2005). Indeed, neighborhood networks ought to know about the natural, social, and monetary significance of Parks when foundation (Kebede *et al*., 2014). However, Nyahongo (2010) states that an essential for the powerful administration of Park ought to be comprehensive of neighborhood networks. Furthermore, effective management of Park also calls for an understanding of people's attitudes and the factors behind these attitudes (Allendorf et al., 2006; Sarker and Røskaft, 2011).

The primary relationship of interest between people and Park is a key area for management (Allendorf et al., 2012 and Kamal, 2014). Therefore, local perceptions and attitudes towards Protected Areas remain an integral part and determine the success of the park (Kamal, 2014). On the other hand, Local perceptions are an important indicator of underlying issues that have been ignored in most established wildlife conservation areas (Madden, 2004). As indicated by IUCN (1994) and Dorji (2009), the main National Park on the planet, the Yellow Stone National Park set up in 1872, and the recreation center was confronted dismissal of the privileges of indigenous individuals, expulsion from their countries, and constrained long haul social clash. This was a kind of preservation model until the IUCN received the ensured territory classes and acknowledge their privileges in the administration procedure (Dorji, 2009). It has been noted by Oli et al,(1994), the extent to which people tolerate Wildlife damage may be influenced by various socio-economic factors, including relative wealth, levels of education, the extent to

International Journal of Scientific Engineering and Science
Volume 4, Issue 11, pp. 32-41, 2020. ISSN (Online): 2456-7361

which people derive monetary or other benefits from Wildlife, and the magnitude of wildlife-associated costs.

In Ethiopia, the expansion of agricultural practices, settlement, and increasing pressure of human and livestock populations are major threats in several Protected Areas (Tadesse and Kotler, 2013). The root cause of biodiversity conservation gaps is associated with a lack of adequate capacity, commitment, organizational set-up, and lack of monitoring of the implementation strategy on the status & trends of threats in Ethiopia (EBI, 2015).

Furthermore, no organized information is available on the current threatening factors against biodiversity in Protected Areas of the country in general and Borana National Park in particular. Lack of such information is critically affecting the prioritization of conservation strategies and mitigation procedures to address Wildlife threats for better conservation of wild animals in Protected Areas. Currently, these Protected Areas and their Wildlife resources are facing several threatening factors. Invasive species, overgrazing, illegal hunting, and land degradation are common problems in National Parks. The continuous declines of both faunal and floral of these areas are facing a great challenge in protecting (EWCA, 2014).

Based on the information obtained from the Borana National Park office and the written documents concerning the Park, increasing human population and demand for natural resources are challenging the sustainability of the Park. More population of the local communities is living in rural areas depending on the biodiversity of the Park for their survival. Understanding the factors influencing the perception of local people is vital in improving Park-people relationships. The objectives of this study were to assess the factors affecting the local community perception, determine the impacts and recommend alternative solutions on how the local community can live in harmony with Park resources in cases of Borana National Park.

II. Materials And Methods

Description of the study area

Borana National Park is located at a latitude and longitude of 4°55 and 38°25'E respectively, in the Borana Zone of the Oromia Region with the headquarter at Yabelo town. The area of the National Park is 2,500 square kilometers with an elevation ranging from 1000 to 1500 m a.s.l (Reta and Solomon, 2013). It is situated in the southern part of Ethiopia at a distance of 567 km far from Addis Ababa to Yabelo town at the headquarter of the Park (Figure 1).

The Park was designated as a National Park in June 2013 embracing 3 blocks: Dida-Hara, Danbala-Dhibayu, and Sarite. The Park was established for the conservation of endemic large mammals, birds, and other wild animal species. Therefore, it can serve as an important area for the conservation of the country's Wildlife and can serve as a tourist attraction in the future.

The rainfall type is bimodal, where the longest rainy season is from mid-March to June and the shortest showery rain season is from mid-September to November with a mean annual rainfall of 500 mm with considerable inter-annual variability (Angassa and Gufu, 2007). The climate type of the study area is mostly arid and semi-arid. The average annual temperature of the area varies from 36 °C to 39 °C (Salamon and Coppock, 2004). The most common habitat type inside the National Park is savannah woodland dominated by various species of (Borghesio & Giannetti, 2005). There are more than 40 species of mammals found in the area. Among these, the most common ones are; Burchell's zebra (Equus burchelli), Grant's gazelle (Nanger granti), and Gerenuk (Litocranius walleri) that are found in the Park in large numbers and it is one of the best places in Ethiopia to see different endemic wildlife find in the Park (BNP Office, 2019). For example, more than 300 species of birds recorded in the Park including the three endemics to Ethiopia.

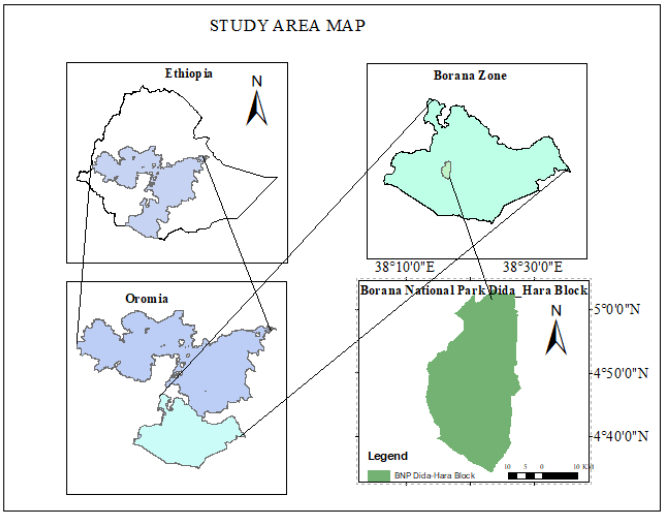

Figure 1. Study area

Methods

Sampling Techniques

The study block and Kebeles were purposively selected; because of dependency on the National Park and high level of interaction with the Park. From total three blocks of Borana National Park (Dida-Hara, Danbala-Dhibayu, and Sarite block), one block was purposively selected, namely Dida-Hara by considering the level of interaction, distance, and dependency of local communities on the Park resources. Moreover, the large area of the Park is found in this block, and large local community settlements around the border of this block that dominated by different species of Wildlife. After this, sample households were selected by listing households' names found in three selected kebeles through simple random sampling (i.e. lottery method). A total of 346 households were selected randomly for household interviews in three kebeles namely; Dida-Hara, Danbala-Sadeni, and Abunu which are very close or inside the Park were selected using purposive sampling (Table 1). Household surveys, key informant interviews, field observation, and focus group discussions were employed to collect the data from sampled respondents.

To determine the sample size, there were several formulas developed. But the simplified formula to calculate the sample size is provided by Israel (1992) which is given by:

International Journal of Scientific Engineering and Science
Volume 4, Issue 11, pp. 32-41, 2020. ISSN (Online): 2456-7361

$$n = \frac{N}{1 + N(e)^2}$$

Where; n is the sample size,
N is the population size and
e is the level of precision.

Based on the above equation the 2,562 sample size of the three study kebeles calculated below.
N = 2,562 e = 0.05 therefore by substitute number into the formula n = 346.
= 346

When distributed this ±5% level of precision for the three study kebeles' proportionally there are 161 sampled households from Dida-Hara kebele, 98 households from Danbala-Sadeni kebele, and the remaining 87 households from Abunu kebele. A total of 346 sample households were interviewed for household questionnaires (Table 1).

Table 1. Total number of households by Kebele and their respective sample size

Name of kebeles	Total number of households	Sampled households
Dida-hara Kebele	1,195	161
Danbala-sadeni Kebele	724	98
Abunu Kebele	643	87
Total	2,562	346

Methods of Data Collection

A combination of methods was used to collect relevant information from respondents. To ensure the reliability and validity of the data collected, cross-check/ triangulation of different methods was employed during the collection of primary data. These methods include Household Questionnaires, Key Informant Interviews, Focus Group Discussion, Field Observation, and Informal Interviews. The primary data which were obtained from the fieldwork was used in supplementing the data obtained from secondary sources to fill the information gap from primary sources. These methods were generating appropriate information for this particular study.

Data Analysis

Data and information collected through different tools were summarized and analyzed under employing different methods. Questionnaires administered to 346 household heads or their representative, data analysis was facilitated using the Statistical Package for Social Scientists (SPSS). For descriptive data that were gathered from close-ended and attitude questionnaires were analyzed by descriptive statistics such as mean, frequencies, and percentages in explained and described the issues under research. For these descriptive data tables, charts and pie-chart were used in their presentation. However, the information and data that generated from open-ended questionnaires, key informant interview, focus group discussions and field observation was being summarized and described through opinion interpretations after sorted out, grouped and organized.

III. RESULTS

Socio-Economic Profiles of Respondents

Educational status of respondents

As described in (Figure 2) the level of education is different, the majority of the respondents in the study area were illiterate (75.43%) and the rest 8.96% were1-8 grade, 3.47% were 9-12 and 12.14% were college and university complete or graduates (Figure 2).

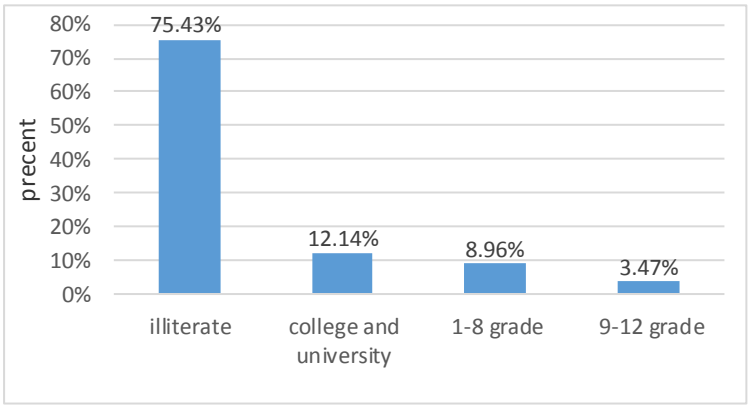

Figure 2. Distribution of informants in terms of their educational status.

Gender of respondents

As indicated in (Figure 3) the study involved a random selection of both the females and males in the study area, but the proportion of the females as compared to males was low. Among 346 respondents as were tried to interviewed, 225 were male and 121 were female. This comprised 65% and 35% of the male and female gender categories of the sampled respondents respectively (Figure 3).

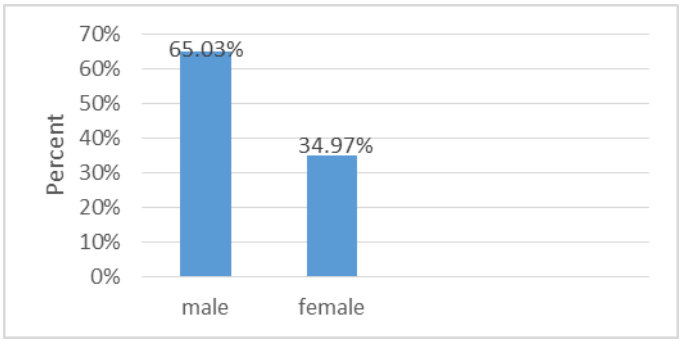

Figure 3. Distribution of respondents in terms of their gender structures.

The age structure of the respondents

The average active productive age is considered 20-50 years. However, as the interviewed hold in the study area, the age distribution of the respondents stretched between 20 and 80 years. As illustrated in figure 5 below 20-39 age was 162 (46.82%) of the respondents, 40-59 age was 129 (37.28%) of the respondents, and age above 60 was 55(15.90%) of the respondents (Figure 4).

International Journal of Scientific Engineering and Science
Volume 4, Issue 11, pp. 32-41, 2020. ISSN (Online): 2456-7361

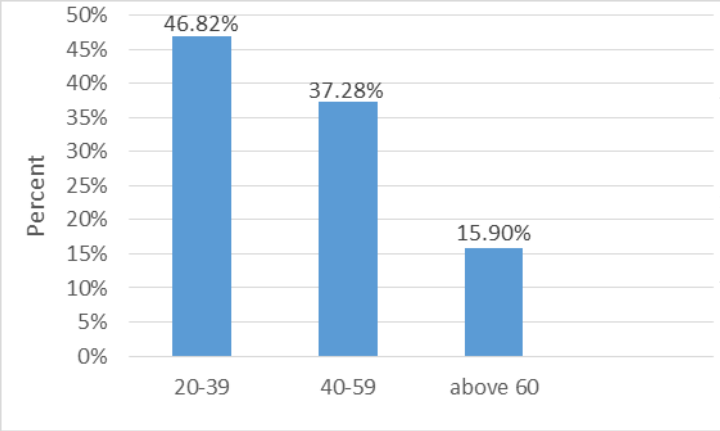

Figure 4. Distribution of respondents in terms of their age structures.

Attitudes and Perceptions of Local Communities towards the Park and its Wildlife

The result shows that almost all (86.41%) of the respondents who attend from a lower grade to University had a positive attitude towards the Park, whereas 42.91% of respondents from not educated people felling a negative attitude ($\chi 2=11.846a$, df =3, $P<0.05$). This indicated that education level has a determinant factor in influencing the attitude of local communities towards the conservation of Wildlife and the Park. Those respondents who attended a high education level or those who have a good educational background have a positive attitude towards the Protected Area and able to support conservation activities. The findings revealed that the attitudes of the local people towards Borana National Park were independent of gender ($\chi 2=0.182a$, df =1, $P>0.05$). Therefore, gender had no significant influences on the attitude and perception of respondents towards the Park and its Wildlife resources (Table 2).

Table 2. Attitude of respondents towards the Borana National Park

Category	Variable	number of respondents		Percentage	(%)
	Positive (%)	Negative (%)			
Gender	Male	225	65	76.44%	23.56%
Female	121	35	74. 38	25.62%	
Age 20-39	162	46.82	80.25	19.75	
40-59	129	37.28	79.84	20.16	
60 above	55	15.90	52.73	47.27	
Education level		Illiterate	261	75.43	57.09	42.91
1-8 grade	31	8.96	80.65	19.35	
9-12 grade	12	3.47	83.33	16.67	
12 above	42	12.14	95.24	4.76	

There was a significant difference among the age groups of the respondents and their attitudes ($\chi 2=18.817a$, df=2, $P<0.05$). Young respondents were more positive towards National Park conservation areas than the elderly because younger respondents were more educated than elders whereas older respondents felt that the Park would pressure their livelihoods by reducing opportunities livestock grazing expansion as well as access to pasture land and extraction of forest products.

On the other hand, as illustrated in (Table 3) the majority of respondents, 78.32% feel good about the existence of the Borana National Park and its large number of Wildlife. It is because they have awareness about conservation importance and ecological balance by the traditional Gada system and sometimes from the Borana National Park experts. Additional, as part of ecosystem service respondents, reported several benefits from the Park like raw materials (construction wood, fuelwood, and household furniture making a wood, thatching grass and animal fodder (from grazing land) and medicinal resources. Few respondents don't feel good (21.68%) on the existence of the Park because of livestock depredation and extensive crop damage by Wildlife like common jackals, baboons, spotted hyena, and leopard (Table 3).

Table 2. Feeling of pastoralist local communities on the existence of the Borana National Park and its Wildlife

Category	Numbers of the respondents	Percent of the respondents
Good	271	78.32%
Bad	75	21.68%
Total	346	100%

Impacts of the local community's attitudes and perceptions towards National Park

As indicated (Table 4) that local communities are dependent on several natural resources in the Park for their livelihoods. The majority of the respondents recognized getting benefits from the Park, 97.11% of the respondents using the Park for firewood, 94.51% of the respondents using the Park for livestock grazing, 90.46% extractions of construction materials, 63.87% extraction of non-wood forest products, 63.29% fodder collection, 21.96% infrastructure development, and 1.45% employments opportunist (Table 4).

FGD and KII have revealed that activities such as livestock grazing, fuelwood gathering, extractions of construction materials, and extraction of non-wood forest products practice and fodder collection performed by the local people. Most of the local people around Borana National Park were dependent livestock rearing for their livelihoods. Livestock usually intensely compete with wild animals for the same habitat resources, including forage and water, and this might have a strong impact on Wildlife. This could have increased impacts on the Park area resources. Overall, many participants knew that they had many impacts on biodiversity. Therefore, fuelwood collection, overgrazing, non-wood forest product collection, disturbing, and scarcity of resources are the most impacts mentioned by respondents.

Results from the assessment of management effectiveness of Borana National Park indicated that the park faced a lot of pressures and threats emanating from surrounding communities. Pressure in this context refers to overgrazing, high human population density, charcoal production, settlement establishment, and different extraction of the resources that have already had a detrimental impact on the integrity of the Park.

According to field observations and respondents information of this study, the major conservation impacts of the Wildlife around the study area were habitat disturbances by settlement, competition with livestock and resource, and human and Wildlife conflict due to livestock attack problems

Table 3. Perceived benefit by pastoralist communities from Borana National Park

Types of benefits from the park	Response of respondents	
	Frequency	percent
Firewood collection	336	97.11%
grazing land	327	94.51%
Extractions of Construction Materials	313	90.46%
Extractions of forest products	221	63.87%
Extraction of The Fodder	219	63.29%
Infrastructure Development	76	21.96%
Employment opportunity	5	1.45%

Factors that determine pastoralist's attitudes and perceptions towards Park and Wildlife

The chi-square test revealed a significant association was between attitudes towards Borana National Park and education, age as well as occupation status of respondents where (Education $\chi2=11.846a$, df =3, $P<0.05$; Age $\chi2=18.817a$, df =2, $P<0.05$; Occupation $\chi2=12.077a$, df =2, $P<0.05$). Therefore, education, age, and occupation were factors determining attitudes and perceptions towards the conservation of the Park. Respondents who were educated had a more positive attitude towards conservation than those with less or no education. Younger people have tended to show positive attitudes toward conservation than the elderly. Occupations of the respondents also had some effect on their attitudes. Respondents who are employed in different organizations have more positive attitudes toward conservation than livestock keepers.

The respondents have revealed that most of the local communities around and in Borana National Park were dependent on subsistence livestock keeping for their livelihoods. The increase in livestock numbers in the Park also resulted in increases in livestock depredation by large carnivores and created conflict between local people with Wildlife and the park management. Livestock losses due to Wildlife have resulted in the development of negative attitudes by local communities towards National Park and its wildlife resources. However, households who had suffered conflict with the park showed a negative attitude to the park and its wildlife resources.

As indicated (Figure 5) it was evident that goats and sheep were the domestic animals mostly preyed on by carnivores, where Goats and Sheep (82.15%). Second to Goats and Sheep, Cattle 11.73%, Donkey 4.8%, and Camel 1.32 % predated by Wildlife from the Park (Figure 5).

Tourism Benefit for Local Communities

As indicated (Figure 6) most of the respondents (96.82%) said that they get no benefit from tourism-related revenue from the manager of the Borana National Park authorities. Around the Park, the majority of the people had non-use benefits in cash (tourism, employment, etc.), but all benefited from the use of natural resources inside the Park (Figure 6).

However, most informants want more benefits from the Park, like better employment opportunities, more benefit from eco-tourism, and the development of drinking water and irrigation projects in addition to dry season pasture requirements. Discussions with the Park staff and also FGD and KII revealed that the surrounding communities were not such benefited from the Park. However, few associations are getting some benefits from a tourist as a local guide and selling traditional handicrafts.

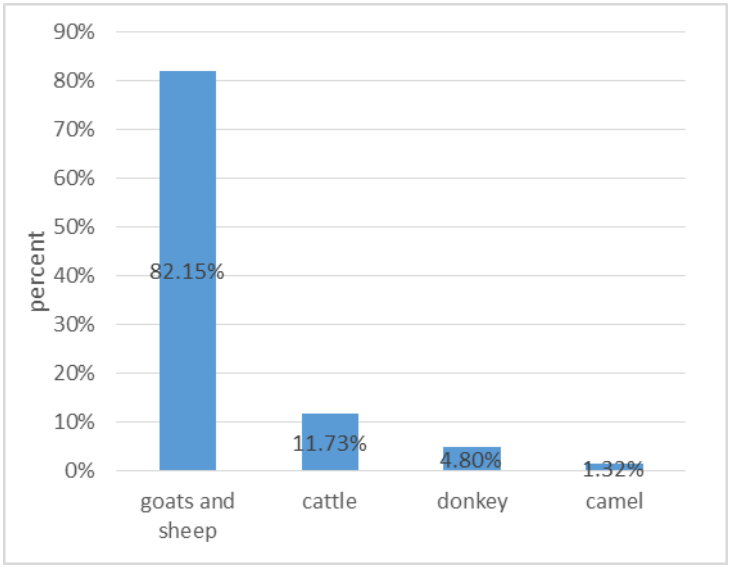

Figure 5. the percent of domestic Animals preyed on by carnivores.

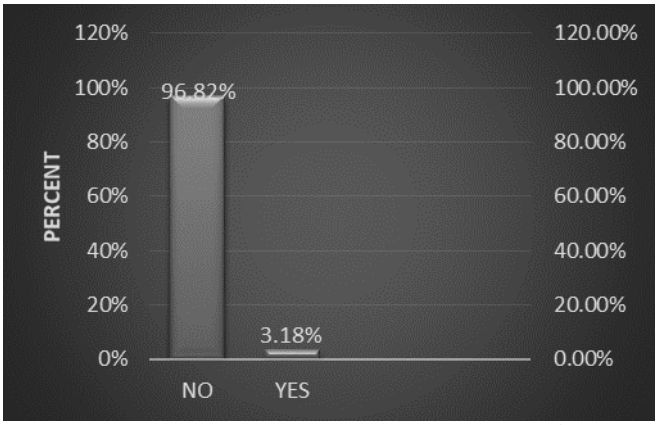

Figure 6. Respondents view on the tourism revenue benefits.

Respondents view on the assist in the conservation of the Borana National Park

As indicated (Figure 7) the majority of respondents (64.45%) believed that they want to assist the conservation of the Park. From those respondents who believed want to assist conservation areas, 50.22% believed that in the Borana the Gada system people live within Wildlife because it has high values in the Gada system. Also, 34.98% believed that concerned, as their owned resources because of the ecological benefit of the Park and 14.80% believed that benefits national development for government and consider for sustainable use resources. Moreover, FGD and KII viewed Wildlife as part of their lives and are ready to participate in the conservation activities of the Park.

Some respondents (35.55%) were not interested in helping or supporting the conservation of Borana National Park. Among them, 46.34% don't support conservation of the Park due to conflict causing property damage by Wildlife, 33.33% because of not being involved in Park management and

International Journal of Scientific Engineering and Science
Volume 4, Issue 11, pp. 32-41, 2020. ISSN (Online): 2456-7361

decision making, and the rest 20.33% due to lack of awareness on the importance of the Park (Figure 7).

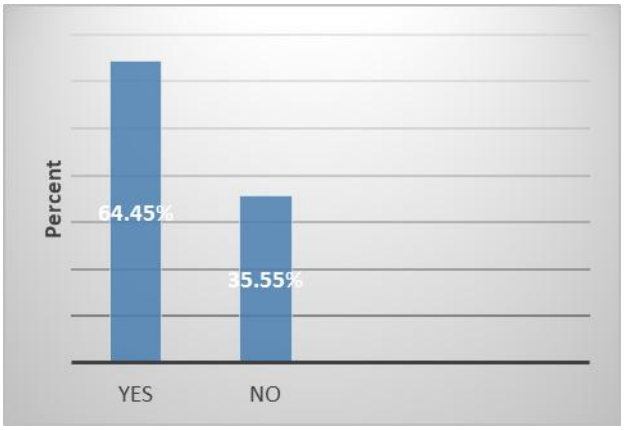

Figure 7. Respondents view on the assist in the conservation of the Borana National Park.

Respondents views about the future of Borana national Park

Discussion with FGD revealed that providing benefits to local people alternative solutions to improve the local community's perceptions of the adverse impacts of the Park are the keys to addressing conflicts in many situations. Providing access to resources in National Park, offering employment, a portion of fees, or other direct benefits from the National Park; improving the socio-economic conditions of local communities; and providing compensation to local people for losses they have incurred because of the proximity of the protected area. When a conflict arises because of damage done to livestock by Wildlife ranging from a National Park, the solution may lie in providing compensation for the damage livestock. Out of the 346 respondents interviewed during the survey, (77.46%) believed that Borana National Park has a future while 78 (22.54%) believe that Borana National Park has no future (Figure 8).

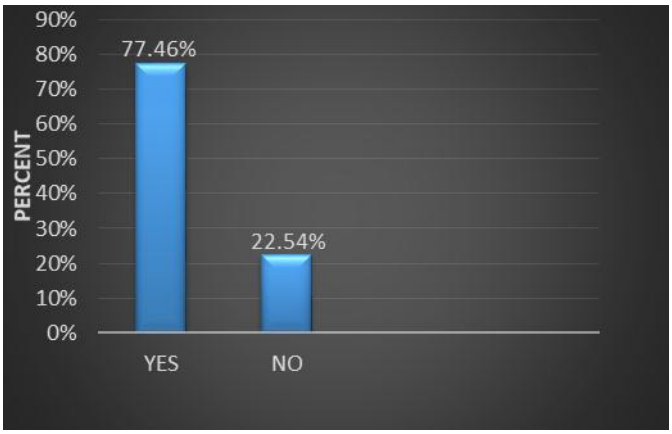

Figure 8. the perceptions of respondents on the future of Borana national park

The local community perceptions why the Park has a future

As shown (Figure 9) out of the 78 (22.54%) of the respondents who believe that Borana National Park has no future 51.28% believed that due to adverse climatic changes in the region that do not support Wildlife. 17.95% believed that the Park would affect by the inadequacy of resources and competing within pastoralist local communities to run it (Figure 9)

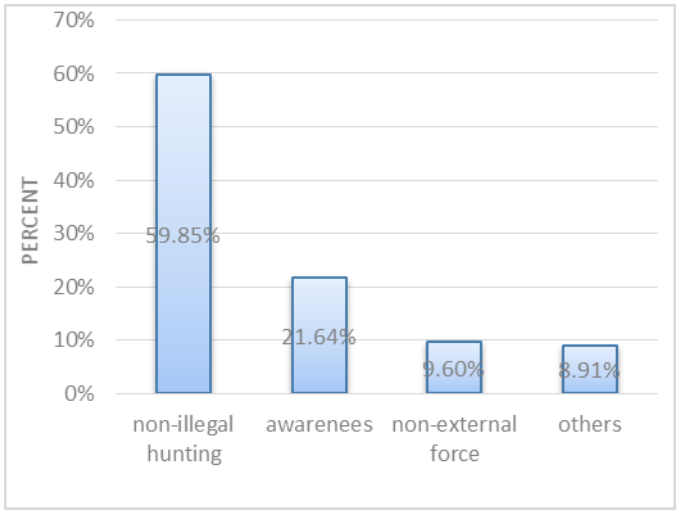

Figure 9. Respondents believed that reasons why the Park has a future.

IV. Discussion

The majority of respondents had positive perceptions towards Borana National Park and appreciation was higher among respondents who perceive the Park's ecological benefit. However, small numbers of respondents do not appreciate the Park due to their frustration with management practices and depredations of the livestock by Wildlife. This is true that, when locals who are dependent on livestock raring lose a single animal, they may develop a negative attitude to the Park.

This result is similar to finding that was conducted local perceptions of Waza National Park; northern Cameroon (Bauer, 2003) argued that most of the respondents were feeling positive toward National Park due to benefit from the Park. Similarly, Gibe Sheleko National Park which stated that most of the respondents were feeling positive toward importance conservation due to perceiving benefit from the Park (Alemneh Amare, 2015); and in Chebera Churchura National Park (Aberham Megaze, Mundanthra Balakrishnan and Gurja Belay, 2017). Cobbinah (2015) notes that, in the absence of socio-economic benefits, local communities may still express positive attitudes or may support conservation because of environmental services. Benefits most valued included access to resources like pasture, water, firewood, thatching grasses, construction materials, and a mineral salt, similar to those benefits found in studies in Natal, South Africa, and Tanzania (Infield 1988; Newmark et al, 1993 and Gillingham and Lee, 1999).

However, different from the result was obtained by Azmeraw (2015) in Senkele Swayne's Hart Beest Sanctuary and by Tewodros Kumssa and Afework Bekele (2014) in Abijata Shala Lake National Park stated that the majority of respondents opposed the existence of the protected areas due to restriction of their park resource use. Showed that the protected area would threaten their economy by reducing access to expand farming and to have pasture land, settlement,

fuelwood collection, and extraction of minor forest products this might be due to shortage and availability of the resource.

The attitude of local communities towards Borana National Park was significantly different among education levels ($\chi 2$=11.846a, df =3, P<0.05). Respondents who were educated had a more positive attitude towards National Park than those with less or no education. The level of education is a major factor in obtaining better employment opportunities and subsequently alternative livelihoods. Local people with higher educational levels participated in livestock keeping as well as other activities like tour guiding and working in local government organizations. Such activities tended to reduce their dependence on resources from the National Park, thereby increase their interest in the existence of the Park for future generations as well as improve their perception of the Park.

This result is similar to the work of Mohammed Seid and Behailu Taye (2018) that was conducted in Gambella National Park and Tewodros Kumssa and Afework Bekele (2014) conducted in Abijata-Shalla Lakes National Park, which stated that educated people with access to information and awareness mostly supported the Park. Similarly by Infield (1988) reported residents around a local conservation area in Natal, South Africa, appreciated the potential the area had as an education. Similar studies by Shibia (2010) indicated that educated people might have more knowledge on conservation-related issues, which could have resulted from a high level of interaction at learning or educational institutions and exposures with media. Some authors, such as Hedge and Enters (2000), pointed that education opens up diverse and better employment opportunities and hence highly educated people tend to move away from activities related to the extraction of natural resources.

Additionally, similarly observed a situation in a study of people's attitude towards Wildlife in Kosi Tappu Wildlife Reserve in Nepal (Heinen, 1993). The study revealed that those respondents with higher literacy rates had a positive attitude about Wildlife in the reserve. This finding also in line with Osunsina (2010) which stated that the more enlightened the people, the higher the tendency to support the Park and be involved in the conservation of natural resources. This finding is also in agreement with the observation made by Akama, Lant, and Burnett (1995); Infield (1998), and Fiallo and Jacobson (1995). In addition, Ezebilo (2012) argues that educated people may have a greater understanding of the future benefits of nature and hence be more likely to have positive perceptions about the conservation of the park.

But different from previously studied by, De Boer and Baquate (1998) in their study found that education level had no significant effect on attitudes. It can be inferred that a society with a high percentage of educated people may have a high level of awareness than those with a low level of education to influence positive attitudes. Baral and Heinen (2007) were found no correlation between educational status and people's perceptions and attitudes towards Protected Areas. Formal education did not play a significant role in predicting attitudes toward Wildlife conservation, a finding that is with Gadd (2005) and Groom and Harris (2008).

A significant association between age and attitudes towards conservation areas was identified (Age $\chi 2$=18.817a, df =2, P<0.05). Younger people have tended to show positive attitudes toward conservation than the elderly, probably because younger respondents were more educated than older. Older respondents felt that the Park would threaten their livelihoods by reducing opportunities for farm expansion as well as access to pasture land and the extraction of forest products. These findings are similar to the observed relationship between age and respondents' attitudes as by Kimeli (1996); Newmark *et al*, 1993; Fiallo and Jacobson, 1995 and Shibia, 2010.

A significant association between Occupations and attitudes towards conservation areas was identified ($\chi 2$=12.077a, df =2, P<0.05) of the respondents also had some effect on their attitudes. According to respondents employed in the organization, they had more positive attitudes towards conservation areas than livestock keepers. Those employed were not dependent only on the extraction of resources for their livelihood. In addition, they had an awareness of conservation from different media than livestock keepers. A higher level of awareness regarding conservation issues and protected area management practices with the involvement of the local community in decision-making processes might also be an important determinant factor in creating a positive attitude of the local people towards the present study area.

Similar studies found Lindberg and Hawkins (1993) argue that expected to bring employment opportunities to remote regions for the resident to support conservation in Protected Areas. The findings showed that the economic activities of respondents affect attitudes and perceptions of local communities towards wildlife conservation. With livestock keepers, being affected most hence possess negative attitudes relative to those respondents engaged in other occupations. Wildlife damage livestock threatens lives to the park while those respondents engaged in occupation favor conservation compared to those who depended solely on livestock keeping for their livelihood option. Similarly, Akama, Lant, and Burnett (1995) found negative attitudes with livestock keeper than those involved in other economic activities and those who perceive no value for themselves from Park in a view of the losses they incur due to Wildlife damages. This study also concurs with the results of Infield (1998); Newmark et al (1993).

Fuelwood collection, overgrazing by livestock, extraction of fodder, non-wood forest products collection, disturbing, and scarcity of resources impacts on the Park and Wildlife mentioned by FGD and KII. Overall, many respondents knew that they had many impacts on the Park. Many of the local people described fuelwood collection as one of the critical factors for biodiversity loss. Similar results by Newton et al (2009) and Jalilova and Vacik (2012) found that fuelwood collection is another important impact by humans. This study agreed with Senavirathna, Wityi, and Fujino (2014) local people collect fuelwood and non-timber forest products from the forest for their survival, which is one serious human impact on the national Park. Some respondents revealed that increasing the human population would have a higher impact

on the biodiversity of the Park. According to Htun, Mizoue, and Yoshida (2012) and Garekae, Thakadu, and Lepetu (2016), human population growth and resource use will threaten Protected Areas.

The data obtained from respondents indicate that there is a great increase in livestock population and human pressure in and around park areas. This makes the park resources more degraded through commonly, practiced a large number of livestock overgrazing considered primary factors that affect the park resources. Grazing by livestock has been an important issue for the management of the National Parks and Protected Areas. A similar result by Wangchuk (2002) has revealed that grazing has a negative impact on the ecological stability of the grazing area.

Borana National Park harbors many large mammals, birds, and other wild animal species. Therefore, it can serve as an important area for the conservation of the country's Wildlife and can serve as a tourist attraction in the future. There is a need to improve understanding of the ecological, social, and cultural dimensions of conflict situations in the area, to alternative solutions anthropogenic impacts in Borana National Park.

The findings further suggest the need to initiate long-term monitoring to analyze trends in the incidences of human impacts on wildlife resources. Respondents revealed that other alternative solutions participatory approach to the management of Wildlife within Borana National Park. Conflicts that have been occurring between the community and Wildlife in the Borana National Park shall be minimized and peaceful coexistence between humans and conservation of Wildlife enhanced if the pastoral communities are actively involved in conflict resolution and Park management processes. Similarly, within Bajracharya, Furley, and Newton (2006) and Esilaba, Maara, and Tangus (2007) stated that there is a need for pastoralists to participate in conflict resolution and decision-making processes on sustainable use and conservation of Wildlife.

A combined strategy aimed at improving local participation in Wildlife conservation initiatives, initiation of public education and awareness and provision of alternative sources of income for the local people will reduce the threat, and contribute to improving the conservation of Wildlife in Borana National Park. Similar results were found in Chebera Churchura National Park (Aberham Megaze, Mundanthra Balakrishnan, and Gurja Belay, 2017).

ACKNOWLEDGMENTS

We thank almighty God for the gift of life and uphold us in many troubles. Thanks to all the workers of Borana National Park staff particularly, Dido Dulacha and Obda Bule at Borana National Park through my data collection expended their time. We appreciate all the hospitality, deference, and generosity of local communities at the fieldwork work.

Competing Interests

All authors declare that they have no conflict of interest relating to any part of this work.

REFERENCES

[1] Aberham Megaze, Mundanthra Balakrishnan and Gurja Belay (2017). The attitudes and practices of local people towards Wildlife in Chebera Churchura National Park, Ethiopia. International Journal of Biodiversity and Conservation, 9:45–55.
[2] Akama, J.S., Lant, C.L. and Burnett, G.W. (1995). Conflicting attitudes toward state Wildlife conservation programs in Kenya. Society and Natural Resources, 8:133¬-144.
[3] Alemneh, Amare (2015). Conservation challenges of Gibe Sheleko National Park, Southwestern Ethiopia.
[4] Allendorf, T. D., Aung, M. and Songer, M. (2012). Using residents' perceptions to improve Park people relationships in Chatthin Wildlife Sanctuary, Myanmar. Journal of environmental management, 99: 36-43.
[5] Allendorf, T., Swe, K.K., Htut, Y., Aung, M., Hayek, L.A., Leimgruber, P. and Wemmer, C. (2006). Community attitudes toward three Protected areas in Upper Myanmar (Burma). Environmental Conservation, 33: 344–352.
[6] Ayana Angassa and Gufu Oba. (2007). Herder perceptions on impacts of range enclosures, crop farming, fire ban and bush encroachment on the rangelands of Borana, Southern Ethiopia. Human ecology, 36: 201-215.
[7] Azmeraw, A. (2015). Perception, attitude, and impacts of local communities on Senkele Swayne's hartebeest Sanctuary, Hawassa University, Ethiopia.
[8] Bagchi, S. and Mishra, C. (2006). Living with large carnivores: predation on livestock by the snow leopard (Unciauncia). Journal of Zoology, 268: 217–224.
[9] Bajracharya, S. B., Furley, P. A. and Newton, A. C. (2006). Impacts of community-based conservation on local communities in the Annapurna Conservation Area, Nepal. Biodiversity Conservation, 15: 2765-2786.
[10] Baral, N. and Heinen, J.T. (2007). Resources use, conservation attitudes, management intervention, and Park–people relations in the Western Terai landscape of Nepal. Environmental Conservation, 34: 64-72.
[11] Bauer, H. (2003). Local perceptions of Waza National Park, Northern Cameroon. Environmental Conservation, 30: 175-181.
[12] Borana National Park Office. (2019). Document on potential and current situation of the Park. Unpublished Document, Yabelo.
[13] Borghesio, L and Giannetti, F. (2005). Habitat degradation threatens the survival of the Ethiopian bush crow Zavattariornis stresemanni. Oryx, 39: 44–49.
[14] Butchart, S.H.M., Walpole, M., Collen, B., van Strien, A., Scharlemann, J.P.W., Almond, R.E.A., Baillie, J.E.M., Bomhard, B., Brown, C., Bruno, J., Carpenter, K.E., Carr, G.M., Chanson, J., Chenery, A.M., Csirke, J., Davidson, N.C., Dentener, F., Foster, M., Galli, A., Galloway, J.N., Genovesi, P., Gregory, R.D., Hockings, M., Kapos, V., Lamarque, J.F., Leverington, F., Loh, J., McGeoch, M.A., McRae, L., Minasyan, A., Hernandez Morcillo, M., Oldfield, T.E.E., Pauly, D., Quader, S., Revenga, C., Sauer, J.R., Skolnik, B., Spear, D., Stanwell-Smith, D., Stuart, S.N., Symes, A., Tierney, M., Tyrrell, T.D., Vie, J.C. and Watson, R. (2010). Global biodiversity: indicators of recent declines. Science, 328: 1164-1168.
[15] Cobbinah, P. B. (2015). Local attitudes towards natural resources management in rural Ghana. Management of Environmental Quality: An International Journal, 26: 423-436. http://dx.doi.org/10.1108/MEQ-04-2014-0061.
[16] De Boer, W. F. and Baquete D. S. (1998). Natural resource use, crop damage and attitudes of rural people in the vicinity of the Maputo Elephant Reserve, Mozambique. Environmental Conservation, 5: 208-218.
[17] Dorji, R. (2009). Interactions between Protected areas and local communities- a case study from Jigme Dorji National Park, Bhutan, University of Natural Resources and Applied Life Sciences, Vienna, Austria.
[18] EBI (Ethiopia biodiversity institutes). (2015). Ethiopia's national biodiversity strategy and action, 2015-2020.
[19] Esilaba, M. O, Maara, N. T. and Tangus, J. K. (2007). Impact of human-Wildlife conflict resolution on Wildlife conservation and socio-economic welfare of pastoral communities: a case study of Samburu pastoralists, Samburu District, Kenya. E. African Society and Science Reserve Review, 23: 41-54.
[20] Ethiopian Wildlife conservation authority. (2012). Protected Wildlife areas of Ethiopia with their size, available at http://www.ewca.gov.et/en/node/27.

[21] Ethiopian Wildlife conservation authority. (2014). Awash National Park ecological and threat monitoring priorities and plans. Addis Ababa, Ethiopia, 4-5.
[22] Ezebilo, E. (2012). Community Forestry as Perceived by Local People around cross River National Park, Nigeria. Environmental management, 49: 207–218.
[23] Fiallo, E.A. and Jacobson, S.K. (1995). Local communities and Protected Areas: attitudes of rural residents towards conservation and Machalilla National Park, Ecuador. Environmental Conservation, 22: 241-9.
[24] Gadd, M. E. (2005). Conservation outside of Protected Areas: Attitudes of local people in Laikipia, Kenya. Environmental Conservation, 32: 50–63.
[25] Garekae, H., Thakadu, O. and Lepetu, J. (2016). Attitudes of local communities towards forest conservation in Botswana: a case study of Chobe Forest Reserve. International Forestry Review, 18: 180-191.
[26] Gillingham, S. and Lee, P. C. (1999). The impact of Wildlife-related benefits on the conservation attitudes of local people around the Selous Game Reserve, Tanzania. Environmental Conservation, 26: 218-228. DOI: 10.1017/S0376892999000302.
[27] Gomole and Yabalo District Pastoral Development Office. (2018). Document on Basic Data. Unpublished Document, Yabalo, and Surupha.
[28] Groom, R, and Harris, S. (2008). Conservation on community lands: The importance of equitable revenue sharing. Environmental Conservation, 35: 242–251.
[29] Hedge, R. and Enters, T. (2000). Forest products and household economy: A case study from Mudumalai Wildlife Sanctuary, Southern India. Environmental Conservation, 27: 250-259.
[30] Heinen, J. T. (1993). Park-people relations in KossiTappu Wildlife Reserve, Nepalia socio-economic analysis. Environmental Conservation, 20: 25–34. https://doi.org/10.1017/S037689290003719X.
[31] Htun, N. Z., Mizoue, N., and Yoshida, S. (2012). Determinants of local people's perceptions and attitudes toward a Protected Area and its management: A case study from Popa Mountain Park, Central Myanmar. Society and Natural Resources, 25: 743-758.
[32] Hussain, S. (2003). The status of the snow leopard in Pakistan and its conflict with local farmers. Oryx, 37: 26-33.
[33] Infield M. (1998). Attitudes of rural community towards conservation and a local conservation area in Natal, South Africa. Biological Conservation, 45: 21-46.
[34] Infield, M. (1988). Attitudes of a rural community towards conservation and a local conservation area in Natal, South Africa. Biological Conservation, 45: 21-46.
[35] Infield, M. and Namara, A. (2001). Community attitudes and behavior towards conservation: An assessment of a community conservation program around Lake Mburo National Park, Uganda. Oryx, 35: 48–60.
[36] Israel, G.D. (1992). Determining Sample Size; Fact Sheet PEOD-6: University of Florida.
[37] IUCN. (1994). Guidelines for Protected area management categories. IUCN, Gland, Switzerland and Cambridge, UK.
[38] Jalilova, G. and Vacik, H. (2012). Local people's perceptions of forest biodiversity in the walnut fruit forests of Kyrgyzstan. International Journal of Biodiversity Science, Ecosystem Services and Management, 8: 204-216.
[39] Kamal, K. K. (2014). Conflict, conservation and resource use in Protected Areas: Case Study from Annapurna Conservation Area and Parsa Wildlife Reserve, Nepal.
[40] Kebede, A. G., Bekele, M., and Woldeamanuel, T. (2014). Natural resource use conflict in Bale Mountains National Park, Southeast Ethiopia. International Journal of Biodiversity and Conservation, 6: 814-822.
[41] Kideghesho, J. R., Røskaft, E. and Kaltenborn, B. P. (2007). Factors influencing conservation attitudes of local people in Western Serengeti, Tanzania. Biodiversity and Conservation, 16: 2213-2230. DOI: 10.1007/s10531-006-9132-8.
[42] Kimeli W. (1996). Non-Use Values as a Key Factor in the Conservation of Biodiversity. Unpublished Project Report. Eldoret: Moi University.
[43] Lindberg, K. and Hawkins, D.E. (1993). Eco-tourism: A Guide for Planners and Managers. North Bennington: The Eco-tourism Society.
[44] Madden, F. (2004). Creating Coexistence between Humans and Wildlife: Global Perspectives on Local Efforts to Address Human-Wildlife Conflict. Human Dimensions of Wildlife, 9: 247-257.
[45] Maikhuri, R.K., Nautiyal, S., Rao, K.S., Chandrasekhar, K., Gavali, R. and Saxena, K.G. (2000). Analysis and resolution of protected area—people conflicts in Nanda Devi Biosphere Reserve, India. Environmental Conservation, 27: 43–53.
[46] Mohammed Seid and Behailu Taye (2018). Public attitude and prospective factors of Wildlife conservation the case of Gambella National Park, Southwest Ethiopia DOI: http://dx.doi.org/10.22192/ijarbs.2018.05.10.012.
[47] Newmark, W. D., Leonard, N. L., Sariko, H. I. and Gamassa, D. G. M. (1993). Conservation attitudes of local people living adjacent to Protected areas in Tanzania. Biological Conservation, 63: 177–183.
[48] Newton, A. C., Cayuela L., Delgado, C., Echeverría, J. J., Armesto, R. F., Del Castillo, D.,Golicher, D., Geneletti, M., González, E. Huth, A. and López B. F. (2009). Toward integrated analysis of human impacts on forest biodiversity: lessons from Latin America. Ecology and Society, 14.
[49] Nyahongo, J. W. (2010). The source-sink concept in the conservation of African ungulates: Importance and impact of bushmeat utilization from Serengeti, Tanzania, and other Protected areas in Africa. In: Gereta, E. J. and Røskaft, E. (eds.) Conservation of Natural Resources. Some African and Asian examples. Trondheim: Tapir Academic Press, 237-254.
[50] Nyhus, P.J. and Tilson, R. (2004). Wildlife knowledge among migrants in southern Sumatra, Indonesia: implications for conservation. Environmental Conservation, 30: 192–199.
[51] Oli M.K., Taylor, I. R. and Rogers, M. E. (1994). Snow leopard Panthera uncial predation of livestock: an assessment of local perceptions in the Annapurna conservation area, Nepal. Biological Conservation, 68: 63-68.
[52] Osunsina, I.O.O. (2010). Anthropomorphic Dimensions of Biodiversity Conservation In some Nigeria National Parks, Nigeria. (Unpublished Ph.D. Thesis, Department of Forestry and Wildlife Management, University of Agriculture, Abeokuta. Nigeria) 369.
[53] Rands, M.R.W., Adams, W.M., Bennum, L., Butchart, S.H.M., Clements, A., Coomes, D., Entwistle, A., Hodge, I., Kapos, V., Scharlemann, J.P.W., Sutherland, W.J. and Vira, B. (2010). Biodiversity conservation: challenges beyond 2010. Science, 329: 1298–¬1303.
[54] Redpath, S.M., Young, J., Evely, A., Adams, W.M., Sutherland, W.J., Whitehouse, A., Amar, A., Lambert, R.A., Linnell, J.D.C., Watt, A. and Gutierrez, R.J. (2013). Understanding and managing conservation conflict. Trends Ecological Evolution, 28: 100–109.
[55] Reta Regassa and Solomon Yirga (2013). Distribution, abundance and population status of Burchell's zebra (Equus quagga) in Yabello Wildlife
[56] Sanctuary, Southern Ethiopia. Journal of Ecology and the Natural Environment, 5: 40-49.
[57] Sarker, A. H. M. R. and Røskaft, E. (2011). Human attitudes towards the conservation of Protected Areas: a case study from four protected areas in Bangladesh. Oryx, 45: 391-400. DOI:10.1017/S0030605310001067.
[58] Scherl, L. M., Wilson, A., Wild, R., Blockhus, J., Franks, P., McNeely, J. A. and McShane, T. O. (2005). Can Protected areas contribute to poverty reduction? Opportunities
[59] Senavirathna, S. N., Wityi, H. and Fujino, T. (2014). Community knowledge and attitude towards regional developmental requirements in remote townships of Chin state, Myanmar. International Journal of Human Culture Studies, 2014: 25-38.
[60] Shibia, M. G. (2010). Determinants of Attitudes and Perceptions on Resource Use and Management of Marsabit National Reserve, Kenya. Journal of Human Ecology, 30: 55–62.
[61] Shrestha, R. K., and Alavalapati, J. R. R. (2006). Linking conservation and development: An analysis of local people's attitude towards KoshiTappu Wildlife Reserve, Nepal. Environmental Development and Sustain, 8: 69–84.
[62] Solomon, D. and Coppock, D. L. (2004). Pastoralism under Pressure: Tracking System Change in Southern Ethiopia Human Ecology.
[63] Stolton, S., Dudley, N., Avcioglu C. B., Hunter, D., Ivanic, K.Z., Kanga, E. and Waithaka, J. (2015). Values and benefits of Protected Areas. In Worboys, G. L., Lockwood, M., Kothari, A., Feary, S. and PulsfordI. (Eds.) ANU Press, Canberra, Australia. Protected area Governance and Management, 145-168.
[64] Tadesse, S. and Kotler, B.P. (2013). The impacts of humans and livestock encroachments on the habitats of mountain nyala (Tragela phusbuxtoni) in Munessa, Ethiopia. International Journal of Biodiversity and Conservation, 5: 572-583.

[65] Tewodros Kumssa and Afework Bekele (2014). Attitude and perceptions of local residents toward the protected area of Abijata-Shalla Lakes National Park (ASLNP), Ethiopia. Journal of Ecosystem and Geography, 4: 1-138. https://doi.org/10.4172/2157-7625.1000138.
[66] Vreugdenhil, D., Vreugdenhil, A.M., Tamirat, T.Anteneh, S.Zelealem, T. (2012). Gap Analysis of the Protected areas System of Ethiopia. World Institute for Conservation and Environment, USA.
[67] Wangchuk, S. (2002). Grazing management in National Parks and Protected Areas: science, socio-economic and legislation. Journal of Bhutan Studies, 7: 61-81.
[68] World Conservation Monitoring Centre. (2004). Protected areas and biodiversity: an overview of key issues. World Conservation Monitoring Centre, Cambridge.