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ATTITUDE AND PERCEPTIONS OF LOCAL COMMUNITIES TOWARDS THE CONSERVATION VALUE OF GIBE SHELEKO NATIONAL PARK, SOUTHWESTERN ETHIOPIA

The study assessed the attitude and perceptions of the local communities towards Gibe Sheleko National Park. The data was collected from three districts of Gurage Zone. Ten sample kebeles of the selected districts were selected by purposive sampling method based on the level interaction, distance from the park, and dependency on the park. The sample size of the respondents was 5% of the total households from each selected kebeles. Household survey, key informant interview, field observation, and focus group discussion were employed to collect the data. Data was analyzed by SPSS version 23 software. Descriptive statistics and Chi-square test were used to analysis major determinant factors for perception and attitude of the local communities. The perception and attitude of the local communities towards the conservation values of Gibe Sheleko National Park showed a significant difference in education level, sex of respondents, distance from the park, and land owning inside or adjoin the park. Therefore, it can be concluded that sex, distance of settlement from the park, academic level and land owning inside or adjoining the park were the major determinant factors that influence perception and attitude of the local communities. Attending high level of education, far proximity from the park and male communities better understood the importance of wildlife and park. Therefore, to encourage partnership with adjacent community and implement conservation measure and awareness creation for local communities by considering these factors that affect on the attitude and perception of local communities towards Gibe Sheleko National Park.

Key words: Attitude, awareness, conservation value, Gibe Sheleko National Park, local community, perception.

Introduction and review of literature. The establishment of protected areas has been a major focus in the conservation policy, which was started before a century ago. The first National Park (NP) in the world, The Yellow Stone NP, was established in 1872. This led to the denial of the rights of indigenous people, eviction from their homelands and provoked long-term social conflicts [16; 8]. This was a type of conservation model until the IUCN adopted the protected area categories which involve local communities and accept their rights in the management process [8].

The world protected areas covers a total 12.6% of area of the earth's land surface [7]. Ethiopia shares 52 protected areas covering 15% of the total area of the country. These includes 20 NP, 3 sanctuaries, 2 wildlife reserves, 17 controlled hunting areas, 7 open hunting areas and 3 community conservation areas [10]. Although, these protected areas conserve many spectacular habitats and species, they

are under a severe threat of degradation by the anthropogenic factor.

In the last 300 years, more than half of the earth's land surface has been transformed by human activity, driving widespread habitat losses and ecosystem alteration [22; 19 and 20]. The magnitude and impact of human land use on earth's environment will increase, with the increasing population and associated demand for food and energy.

Local Communities should be involved as equal partners in the development and implementation of conservation strategies that affect their lands, territories, waters, coastal seas, and other resources, and in particular in the establishment and management of protected areas [5]. The inclusion of local communities in protected area management is likely to be a key determinant of the level of compliance with protected area conservation strategies. Their involvement in protected area decision-making processes promotes sense of ownership, where locals cooperatively protect reserves from outsiders and also regulate their own use of natural resources [3].

The success of the protected area management is entirely dependent on the acceptance and cooperation of local communities in conservation activities. People with poverty and absolute restriction of resource access will never have positive attitude towards protected areas [8]. Positive attitude among local communities is essential for successful wildlife conservation measure [13].

In the recent past, 97% of the original highland vegetation has already been lost due to encroaching agriculture, grazing and settlement by agro-pastoral communities in Ethiopia and impoverished resource-dependent local populations are still increasing, both within and adjacent to NP and other areas with high biodiversity value [11]. This is also true in Gibe Sheleko National Park (GSNP). Illegal settlement through agricultural practice in & around the park results in destruction of wildlife and its habitats [2].

Local knowledge, attitude and perceptions of local communities are influenced by factors like awareness of protected areas existence, the education level, services and local people benefits from conservation related projects [25; 12]. The understanding of these factors is important to improve the relationship between local communities and protected areas and it will enhance peoples' awareness about wildlife conservation in and around protected area.

Therefore, investigation of the thoughts and outlook of the local communities is critical to delineate the boundary of the protected area, to set a buffer zone, to prepare a management plan and to put down possible conservation strategies of the protected area. Furthermore, no scientific studies have been conducted in the study area to assess the attitude and perception of local communities in the study area. Hence, this study is very critical to fill this gap.

The purpose of the article. The overall objective of the study was to comprehend the attitude and perceptions of the local community's towards GSNP and their knowledge about its conservation value of wildlife. Specific Objectives: to assess attitudes of the local communities towards the conservation importance of GSNP; to explore the perceptions of the local communities about GSNP and wildlife.

Materials and methods

Description of the study area

GSNP is located in Gurage Zone, southern Ethiopia. It is 170 and 18km far from southwestern of Addis Ababa and Wolkite, respectively. It is geographically located from $05^{\circ}25'N$ to $06^{\circ}15'N$ and $35^{\circ}24'E$ (Fig. 1). Altitude of the area ranges from 1050 to 1835 m above sea level. The Park is bounded by three districts namely Cheha, Abeshigie and Enemorenaener [2].

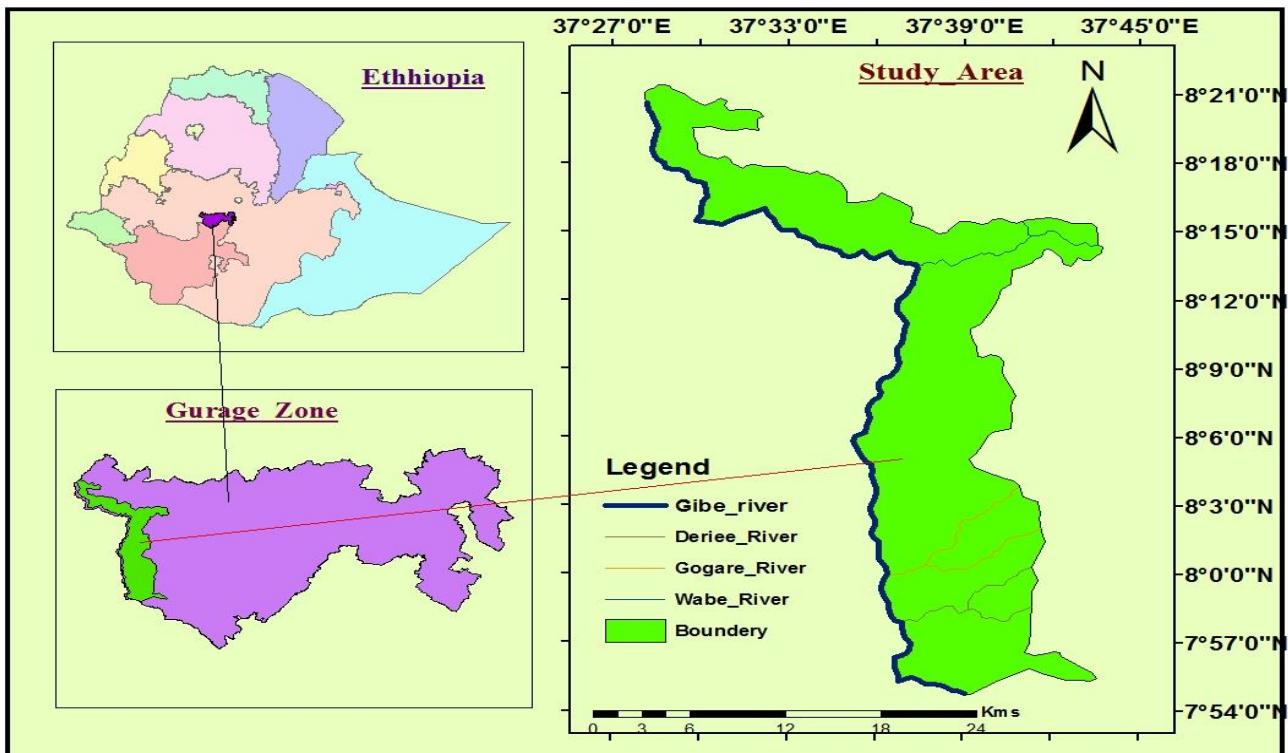


Fig. 1. Location map of the study area

Source: From GPS survey data 2016.

GSNP is designed as a regional park since 2009/2010 due to its high endemism and biodiversity conservation importance and home for numerous migratory and endemic bird species. It covers 360 km^2 , and characterized by heterogeneous landscape, flora, fauna and habitat types and it dissected by deep gorges of the Gilgel Gibe and Wabe rivers.

The annual rainfall is high and reliable, averagically 1100mm/year with low inter-annual variation and the temperature ranges from $7.5-25^{\circ}\text{C}$. The rainfall in the area is bimodal (i.e. having two rainy seasons). The dry season include December, January, February and March and rainy seasons includes June, July and August [2].

Data collection method

Sampling design and sampling techniques

For this specific study, our target groups were the three districts of Gurage zone (Cheha, Abeshigie and Enemorenaener districts). Purposive sampling technique was employed to select the sample kebeles from the selected districts based on the recommendation of the park officials by considering the level interaction, distance and dependency on the national park. Kebele means the smallest governmental

administrative unit of the district in the study area. Four kebeles, out of the selected districts (Tawula, Gibe, Borer, and Serite) from Abeshige, 2 kebele (Luke and Gerenbo) from Cheha and 4 kebele (Jatu, Guntana, Gonchobete, and Shimuro) from Enmorenaener district were selected to collect data of the research. Simple random sampling technique was also used to select the respondent households. The sample size of the respondents was 5% of the total households from each selected kebele. Based on this, 152 sample households were selected for household's survey from the total lists of households in ten kebeles (Table 1).

Table 1

Sample households from selected kebele

Sample kebeles	Total household [6]	Sample household
Tawula	280	14
Gibe	221	11
Borer	300	15
Serite	583	29
Luke	298	15
Gerenbo	240	12
Jatu	345	17
Guntana	305	15
Gonchobete	242	12
Shimuro	248	12
Total	3048	152

Source: [6] and Calculated result on base of study sample.

Data collection techniques

Data collection was conducted starting from November 2015 to May 2016. Data were collected using household survey, key informant interview, field observation, and focused group discussion (FGD). These are the most important data collection method to measure attitude or outlook and perception of local communities for many scientific studies.

I. Household survey

The sample respondents from the selected households were selected by using simple random sampling, which was conducted by giving codes to the whole households and using lottery method that gives equal chance for all households to be selected. After completion of selecting sample respondents the questionnaire was distributed.

Different age groups, educational background, distance from the park, and source of income were included in the questionnaire. Questionnaires were translated to Amharic language. Before performing the interview, half day training was given for data collectors on how they can collect valuable data for the research. A clear explanation about the objective of the study was given for the interviewee in order to minimize underestimation and overestimation of the research as well as to build trust among the respondents.

II. Focus group discussion

The FGD was used as a complementary for household survey (i.e.

questionnaires). The information was collected on how local communities perceive wildlife, existence of national park, how they access and use the national park (grass, water and forest), the co-existence of wildlife and communities and as a whole how both local communities and wildlife benefit from the national park [23].

One FGD was conducted in each selected sample kebele. The group size in each focus group discussion was varied from 10 to 15 people including moderator [26]. One FGD was conducted on each selected kebele. In each FGD two community leaders, four elders of villages, two experts from the park, one from culture and tourism office of each district, and one from government administrators were selected and discussed on changes, problems, historical perspective and the effects of the park establishment on their well-being. FGD participants were selected based on their age, knowledge about the area and duration of residency in the study area [13]. Community leaders and local translators participated for better achievement of discussion. Information collected from group discussion summarized using a text analysis method.

III. Key informant interview

This form of interviews was less strictly formulated questionnaires that can provide the participants with a more relaxed atmosphere to express their thought. In selecting key informants, the first step was to identify the relevant groups from which they can be drawn. The second step in this process was to select a few informants from each group. The common practice is to consult several well oriented persons in order to prepare a list of the possible informants. The list was large enough to include substitutes in case some informants are not available. During the interviews, key informants tend to suggest names of other persons who, in their opinion, are excellent key informants.

IV. Field observation

For the sake of getting adequate and relevant information about the perception and attitude of local communities, observation on what people were doing on their daily activities for their livelihoods, an overview of their living environment, and interaction local communities with the park were conducted. Moreover, observations of what people have and don't have, and who does exploration of what local people do, when and for how much, were assessed for identification of major reasons for conflict.

Data analysis

All the collected data were analyzed using Statistical Package for Social Science (SPSS) software version 23. Data was coded and interpreted to make it simple for SPSS analysis. Descriptive statistics were used to describe respondents' socio-economic information, major determinant factors for perception and attitude of the local communities in the study area. Inferential statistics particularly chi-square of test were used in defining relationships between variables considered to draw relevant conclusions about the population and describe the relationship of different variable with the attitude and perceptions of the local communities about conservation value of GSNP.

Results and discussion.

Socio-economic characteristics

One hundred thirteen (74.3%) out of the 152 respondents were males while the rest 39 (25.7%) were female households. The age range of the respondents ranged from 20 to 80 years. About 48.0% of the respondents were in a range from 20 to 39 years old, and 44.1% of them were from 40 to 59 years. The rest 7.9% were 60 and above years old. The average family size of respondents was 5.48 and they had 1.49 hectares' average land holding size (Table 2).

Table 2
Socioeconomic characteristic of the respondents

Age Class	Sex		Total	Average Family Size	Total Land holding Size (ha)	Average Land holding Size (ha)	Livestock Size	Average Livestock Size
	Male	Female						
20-39	56	17	73	4.59	91.77	1.2572	388	5.32
	36.8 %	11.2 %	48.0 %					
40-59	47	20	67	6.18	109.00	1.6269	415	6.19
	30.9 %	13.2 %	44.1 %					
>=60	10	2	12	7	25.25	2.1042	66	5.50
	6.6 %	1.3 %	7.9 %					
Total	113	39	152	5.48	226.03	1.4870	869	5.72
	74.3 %	25.7 %	100 %					

Source: Survey data 2016

Regarding to time of settlement of the respondents, of total respondents 44.93%, 40.74% and 50% were settled 21–40 years ago, 36.23%, 44.44% and 37.5% were settled before 40 years ago, 15.94%, 14.81% and 12.5% were settled 10–20 years ago in Abeshge, Cheha and Enmor district, respectively. While 2.89% of were settled in recently (<10 years) in Abeshge district (Fig. 2).

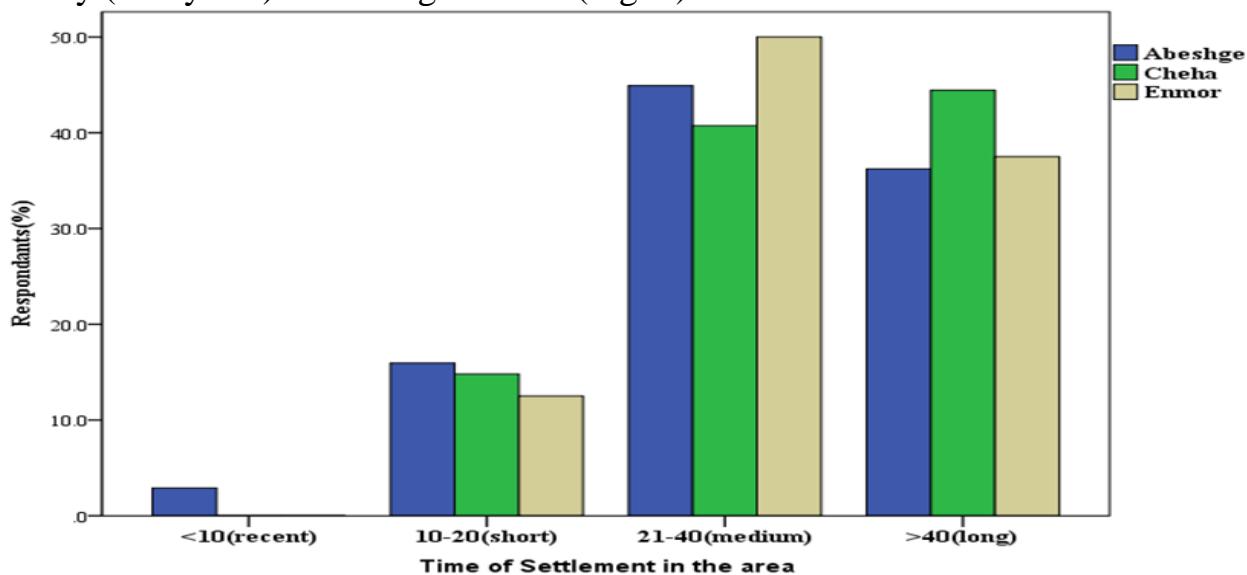


Fig. 2. Duration of respondents 'settlement in the place of residence'

Source: Survey data 2016.

49.34% of the respondents near to NP, 6.58% inside GSNP, 40.79% far from

national park, and 3.29% very far from national park were settled (Fig. 3).

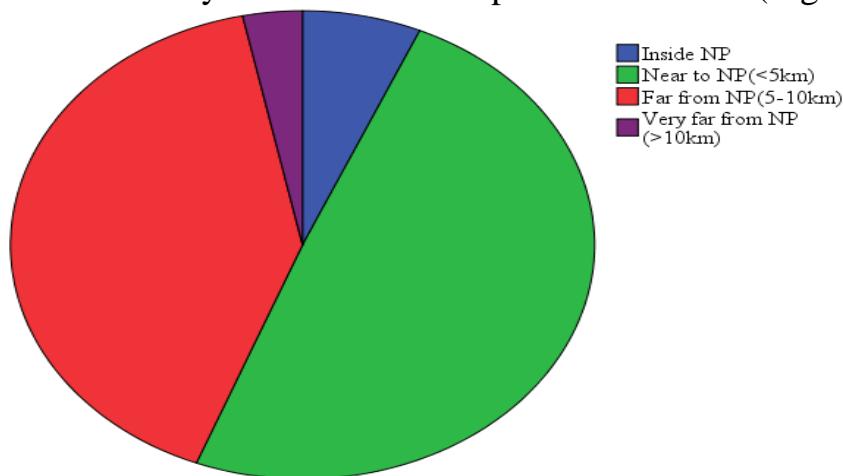


Fig. 3. Distance of respondents' settlement from GSNP

Source: Survey data 2016.

74.34% of the respondents depending on both farming/agricultural crop cultivation and livestock rearing, 19.03% only farming, and 3.95% both farming and government employee (Fig. 4).

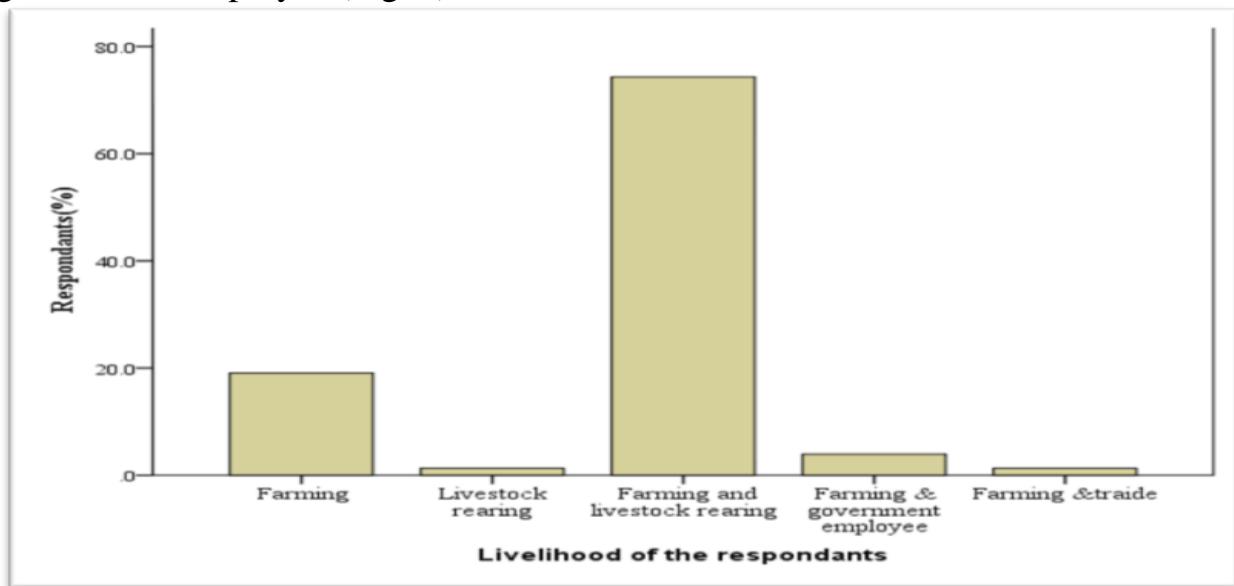


Fig. 4. Livelihood source of local communities

Source: Survey data 2016.

Attitudes of local communities toward the existence value of GSNP

Majority of respondents opposed the existence of the Abija Shala Lake NP [24] while in this study the reverse was true, and it is similar with [1] finding that was conducted in Chebera Churchura NP. Local communities' view about the existence value of GSNP were significantly different from those who have land inside or adjoining the park ($\chi^2=4.25$, $df=1$, $p=0.039$), and residence place of the respondents ($\chi^2=0.129$, $df=3$, $p=0.43$) (Table 3). Almost all of the respondents (92%) who do not have land inside or adjoining the national park feel good for the existence value of the park. The respondents who have land inside or adjoining the national park feel bad. The reason given for this were agricultural crop damage by wild animals like

warthog, bush pig, olive baboon, vervet monkey and other crop raiding animals. Respondents who live inside or near the park (<5km distance) suffered by above mentioned problems and other wild animals' problems like livestock depredation and disease transmission.

Table 3
Attitude of local communities about the existence value of the park

Variables		N	Existence value of GSNP (%)		χ^2	df	p-value
			Yes	No			
Residence place of respondents	Inside NP	10	80	20	0.129	3	0.043
	Near NP(<5km)	75	90.7	9.3			
	Far from NP(5-10km)	64	87.1	12.9			
	Very far from NP(>10km)	5	100	0			
Districts	Abeshge	69	87	13	0.152	3	0.038
	Cheha	27	97	3			
	Enmor	56	85.7	14.3			
Land owned inside/adjoining NP	Have	40	80	20	4.25	1	0.039
	Have not	112	92	8			

Source: Survey data 2016.

The attitude of local communities toward GSNP showed statistically significant difference across the studied kebele ($\chi^2=24.167$, df=9, p=0.004). The reason for this is that there is a variation of wildlife destruction on the properties of local communities among the studied kebele. This is in contrary with [4] finding. Almost all of respondents of Luke kebele had positive attitude for conservation of GSNP and wildlife, the reason of this was the provision of adequate awareness for local people in mosques and churches for conservation importance of the park (Fig. 5).

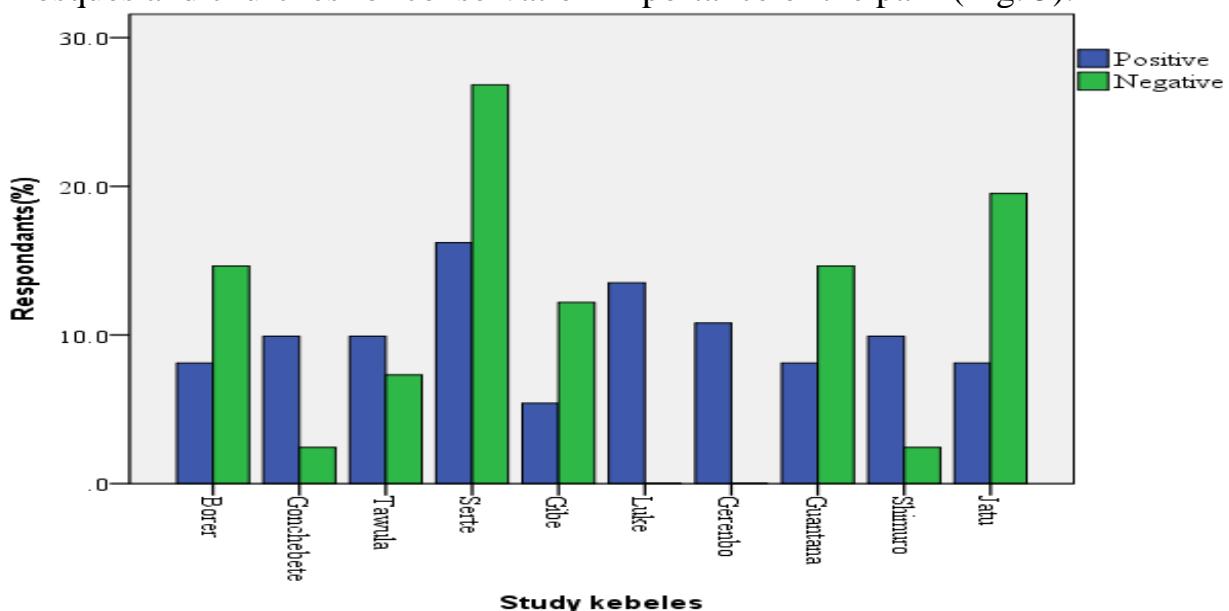


Fig. 5. Attitude toward GSNP of local communities across studied Kebeles

Source: Survey data 2016.

Most of the respondents 111 (73%) were feeling positively toward importance

of conservation of GSNP. The rest of them did not support conservation of the park. This result is similar with [1] finding, but different from [4] result, that studied in Senkele Swayne's Hart Beest Sanctuary, and [24] in Abija Shala Lake NP, stated that most of the respondents opposed the existence of the park. The attitude of local communities toward GSNP were significantly different among education level ($\chi^2=13.94$, df=4, P=0.008). Almost all proportion of the respondents who attend from grade 9 to University had positive attitude towards the park, whereas 43.6% of not educated people felling negative attitude. This indicated that education level has factor influence on the attitude of local communities towards the conservation of wildlife and the park. The people attended high education level have positive attitude towards protected area and able to support conservation activities. This result is similar with the work of [15; 14; 21; 17 and 1].

The attitude of local communities toward GSNP were significantly different across the study districts ($\chi^2=13.05$, df=2, p=0.001). Most of the respondents (97%) of Cheha district had positive attitude toward GSNP. 36.2% of respondents of Abeshge district and 28.6% of respondents of Enmore district had negative attitude. The reason is that Cheha district worked on awareness about conservation importance of the park for tourism development and ecological balance in Church and Mosque by local religious leaders and different responsible bodies.

The attitude of local communities was significant different among residence place of respondents ($\chi^2=0.144$, df=3, p=0.047), and between land owned inside or adjoining the park ($\chi^2=11.6$, df=1, p=0.001). About 19.6% of respondents, who have not land inside or adjoining the park, had negative attitude and nearly half of the respondents (47.5%) who have land inside or adjoining park were feeling negatively. Almost all of the respondents who settled very far (>10km) from the park were felling positively, 50% of the respondents who live inside the park and 28% of the respondents who live near the park (<5km) and 24.2 % of the respondents who live far from the park (5–10km) were felling negatively. This revealed that as distance of residence place from the park increased, feeling positively toward the existence value of the park. The respondents who settled inside or near to the park and land owned inside or adjoining the park comparatively high intensity of agricultural crop raiding, livestock loss and disease transmission. They have also more interaction with park and wildlife than the people settled far or very far from national park and no land owned inside or adjoining the park (Table 4).

Perceptions of the local communities about GSNP and Wildlife

The perception of local communities about value of wildlife and conservation of GSNP showed significant difference across study district ($\chi^2=18.95$, df=4, p=0.001). Though more than 50% respondents in Abeshge district had moderate and high knowledge about protected area management and wildlife conservation, 39.2% of respondents had low knowledge or awareness about wildlife conservation and the park. Nearly half of the respondents (48.2%) in Enmor districts had low awareness about the importance of wildlife conservation and value of GSNP. 77.7% of respondents in Cheha district had good awareness about value of wildlife and the

park.

Table 4

Attitude of local communities about conservation importance of the park

Variables	N(152)	Attitude towards GSNP (%)		χ^2	df	p-value
		Positive	Negative			
Academic background	University/college	3	100	0		
	Grade 9–12	12	100	0		
	Grade 1–8	55	69.1	30.9	13.9	4 0.008
	Writing and reading	43	83.7	16.3		
	Not educated	39	56.4	43.6		
Residence place of respondents	Inside NP	10	50	50		
	Near NP(<5km)	75	72	28	0.14	3 0.047
	Far from NP(5–10km)	62	75.8	24.2		
	Very far from NP(>10km)	5	100	0		
Districts	Abeshge	69	63.8	36.2		
	Cheha	27	97	3	13.1	2 0.001
	Enmor	56	71.4	28.6		
Land owned inside/adjoining NP	Yes	40	52.5	47.5	11.6	1 0.001
	No	112	80.4	19.6		

Source: Survey data 2016.

This indicated that more training and awareness creation in Enmor and Abeshge districts is needed. This result unlike with [4] finding, perception of respondents about the purpose of the Senkele Swayne's Hart Beest Sanctuary has no relationship with study districts or kebeles.

Table 5

Perception of local communities about conservation values

Indicators	Variables	N	Perception of local communities for conservation value of GSNP (%)			χ^2	df	p-value
			High	Medium	Low			
Study districts	Abeshge	69	7.2	53.6	39.1			
	Cheha	27	40.7	37	22.3	18.948	4	0.001
	Enmor	56	17.9	33.9	48.2			
Sex	Male	113	17.7	52.2	30.1	17.757	2	0.000
	Female	39	15.4	17.9	66.7			
Academic background	University or college	3	33.3	33.3	33.3			
	Grade 9–12	12	41.7	58.3	0			
	Grade 1–8	55	18.2	41.8	40	18.041	8	0.021
	Writing and reading	43	16.3	51.2	32.6			
	Not educated	39	7.7	33.3	59			

Source: survey data 2016.

The perception about conservation importance of GSNP was significantly different between sex categories ($\chi^2=17.76$, df=2, p=0.000). 66.7% of female respondents had low knowledge about importance of wildlife conservation and the significance of GSNP while more than 70% of male respondents were viewed that the

establishment of GSNP is for biodiversity conservation and tourism attraction. Perception of local communities varied significantly among academic level ($\chi^2=18.04$, df=8, p=0.021). More than half of the respondents (59%) who were not educated and 32.6% of respondents who can write and read had low perception about wildlife conservation and the importance of park (Table 5). This is similar with [18] finding, the perception of local communities has relationship with educational level.

Conclusion. Identification of different factors that influence the attitudes and perceptions of local community about protected area and value of wildlife is vital for local people support in conservation activities. This current finding revealed that most of local communities agreed on existence or conservation value of GSNP and had positive attitude toward the conservation values of the park. This was a result of ecological and economic benefit gained from the park and awareness creation done by some stakeholders. To foster partnership with adjacent community and successfully implement conservation measure, it is important to educate and create awareness for local communities. It is also important to identify, test and validate wildlife deterrence, and alternative source of income to increase return for communities, and reduce crop damage.

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