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The perceptions of the local people on the trends of the illegal practices inside and outside Dati Wolel National Park, Ethiopia

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Abstract

The human-wildlife interactions are critical for biodiversity conservation mainly in protected areas. Here, we examined the local community's perceptions of illegal activities occurring within and around Dati Wolel National Park, located in Western Ethiopia. By understanding the perspectives of the local community, we aim to gain insights into the extent, impacts, and drivers of these illicit practices by conducting combinations of surveys, interviews, and focus group discussions. Furthermore, we analyzed the land use changes between the years 2006 and 2020. We tested how the perceptions of local people towards the trends of illegal practices such as hunting, logging, fire occurrences, and illegal settlements are associated with the boundary locations (inside vs. outside) of the park using Pearson's Chi-square within the R program. The results revealed significant associations between the local people's perceptions and the location of inside and outside boundaries of the park ($p<0.003$). Accordingly, 86.5 % of the respondents living outside the park and 39.2 % living inside the park reported an increasing trend in illegal hunting. The result of the change detection also showed an increasing trend in agricultural expansion. Overall, the perceptions of the local people are dependent and mediated by the competition for resources, and thus mechanisms need to be sought to minimize the illegal practices in the park. The findings of this study have important implications for developing context-specific approaches to combat illegal activities and promote sustainable coexistence between the local community and the protected area.

Keywords: Crop raiding, Dati Wolel, Ethiopia, Oromia, Wildlife

Introduction

A wildlife park is an expanse meticulously defined by its boundaries, specifically, intended for the preservation and protection of biodiversity as well as the interconnected ecosystem services it encompasses (Dudley, 2008). Specifically, protected areas are managed for the protection of wildlife species and ecosystems, landscapes, scenic and historic features, tourism and recreation, protection of watersheds and wood products, fisheries, education, and research (Sanderson, 2005). During the past few decades, the number of designated protected areas has been increasing in developed countries (Kingdon et al., 2008), but a priority is skewed toward generating income from tourism. According to the World Database of protected areas, there are more than 106,000 legally designated protected areas, covering 19.6 million km^2 and this is equivalent to 3.8% of Earth's surface area (McDonald et al., 2008). Moreover, the protected areas are the cornerstones of national and international conservation strategies where scientific efforts are made to protect wild species and maintain ecosystem health to ensure the long-term survival of endangered species (Dearden et al., 2005). Therefore, it is of utmost importance to uphold the biodiversity thriving within the bounds of the wildlife park, acting as a vital buffer against detrimental processes, as emphasized by (Angulo et al., 2016).

Despite the threats posed by habitat destruction and over-harvesting to faunal and floral biodiversity, significant studies have been made in the past fifty years regarding the designation and management of protected areas (Amare, 2015; Mekonnen, 2015). With the aid of the National Conservation Strategy and other policy frameworks, the Ethiopian government has established a network of protected areas covering various habitats and ecosystems including forests, wetlands, and grasslands alongside the implementation of management efforts such as anti-poaching patrols, habitat restoration, and community outreach programs. These efforts are positive steps towards ensuring the long-term health and sustainability of Ethiopia's ecosystems even though sustainable utilization has not yet been ensured. At present, the biodiversity of fauna in protected areas is threatened due to the over-extraction of timber and charcoal, wildlife poaching, and encroachment (Zerga, 2015).

Ensuring biodiversity conservation and sustainable resource utilization relies on the effective management of interactions between local communities and protected wildlife areas, both within and around them. Despite this fact, especially the expansion of agriculture and subsequent change of land cover (i.e. natural habitat conversions) has resulted in the disruption of the ecological

processes and fragmentation of the habitats. Habitat fragmentation, in turn, hinders the species movement and the conservation of viable populations (Hansen & Defries, 2007). The ever-increasing population, conflicts along Ethiopia's borders with neighboring countries, and recurrent drought impose pressure on wildlife parks and the associated biodiversity. In addition, drought and conflicts over water resources can further exacerbate the challenges of wildlife protection. In general, understanding the effects of these multidimensional challenges and addressing them accordingly requires concerted efforts from relevant stakeholders (Getahun, 2017).

Several previous studies suggest that the engagement of all stakeholders is critical in leveraging the governance of protected areas and thereby averting biodiversity loss in protected areas (Chape et al., 2005; Lopoukhine et al., 2012; Amare, 2015) rather than just blaming the local people as a major threat to conservation (Hirji & Davis, 2009).To ensure the conservation of biodiversity and sustainable utilization of resources in protected areas, it is essential to manage the interactions between local communities living interior and harmoniously surrounding these areas and wildlife. This is particularly important given the local communities heavily rely on ecosystem services provided by protected areas, such as food production, wood, and grazing. However, in several cases, the local people are not involved in conservation planning or decision-making, and this may lead the local communities to negatively perceive the protected areas or parks and this could be the case at Dati Wolel National Park.

Dati Wolel National Park is among the newly established parks of Ethiopia (Gonfa et al., 2015) and it is rich in flora and fauna diversity (Gonfa et al., 2015). The local communities dwelling inside the park boundary undertake traditional activities including uncontrolled hunting, habitat destruction for extensive agricultural expansion, and livestock rearing to improve their livelihoods (Gonfa et al., 2015). Therefore, it is imperative to investigate how the local communities perceive the factors that affect Dati Wolel Park for such evidence could be inputs for developing conservation strategies for the park. Here, we hypothesize that the perceptions of the local people regarding the factors that negatively affect the park are dependent on the locations of outside and inside boundaries of Dati Wolel National Park.

Material and methods

Study area

The study was conducted in Dati Wolel National Park which is located in KellemWollega Zone, western Oromia Regional State of Ethiopia (Fig. 1). The park was established in 2006 and initially designated as a controlled hunting area, covering an area of 1035 Km^2 and geographically lies

between the coordinates of 6° 53'30"–7° 15'30″ N latitudes and 35° 30' 30"–35° 41' 30" E longitudes (EWCA, 2012) within the altitudinal range of 1300–1800m a.s.l.(DoANRO, 2020). The average annual temperature of the area is 20^{o}C and the mean annual rainfall ranges between 1200–1350mm where the long rainy season is from May to November (ORG, 2003). The major vegetation type of the study area belongs to Combretum-Terminalia woodland characterized by *Boswellia papyrifera* and *Anogeissus leiocarpa is the* dominant tree species. The major soil types are Nitosoil and Camb soil.

The local communities living outside the boundary of the park practice a mixed small-scale farming system (i.e., crop growing and rearing of livestock) and the major crops grown are coffee, sorghum, maize, millet, barley, wheat, and teff (DoANRO, 2020). Moreover, the local communities also exercise traditional beekeeping for honey production for household consumption and income generation. Culturally, the local people hunt buffaloes and lions as a symbol of a hero among the community and such gestures help to marry girls of respected and rich families. In the park, in total, 21003 people live and they mainly rely on agriculture for their livelihoods (GKANRO, 2019).

Dati Wolel National Park is managed under the Oromia region forest proclamation (No. 72/2003). This proclamation dictates the development and protection of forests and wildlife and the illegal hunting and forest destruction leads to imprisonment between 5–15 years and sentenced to pay ETB 50,000-150,000 (USD 7500). In the Oromia Region, the Forest Proclamation (122/2009) has indicated the legal framework for governing the management of forests and wildlife resources. The Oromia Forest and Wildlife Enterprise was established based on this proclamation with the primary mission of ensuring sustainable forest development in the region. In addition, this enterprise is also responsible for managing the protected areas found in the region. However, this proclamation and its corresponding regulation do not provide explicit guidelines for enforcing laws related to illegal tree cutting or the protection of diverse wildlife species. This gap is attributed to the ineffectiveness of the conservation efforts and thus necessitates further examination and potential amendments to ensure the sustainable protection of Oromia's forests and wildlife.

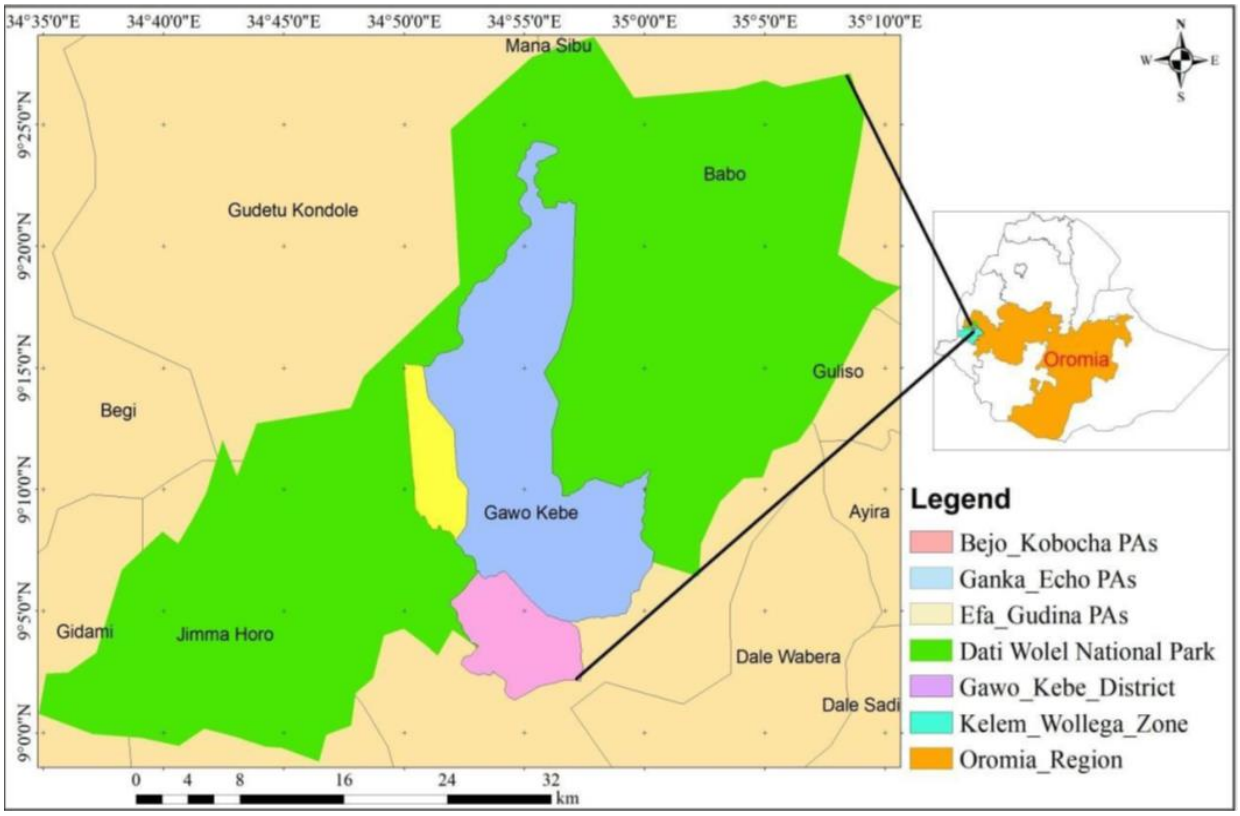

Figure 1. Location map of the study area in relation to the map of Kellem Wollega zone and Ethiopia

Sampling system

The study employed a multistage sampling system in that from seven districts bordering the Dati Wolel National Park, one district (Gawo Qebe) was purposively selected based on its proximity to the park, following the preliminary information gathered during the reconnaissance survey. Similarly, from this district, three peasant associations (i.e. smaller administrative units, called *Ganda* in Afan Oromo), namely: Ganka Echo and Ifa Gudina from inside the park and Bejo Kobecha from outside but close to the park, were selected and similarly households were selected from each peasant associations for data collection by using simple random sampling system. These peasant associations were selected based on the prior information obtained from the district agricultural office and park management that the interaction of the people with the park is higher when compared with the other local communities in other peasant associations of the district (GKANRO, 2019).

Data collection

The sample size of the households was first determined using the formula of Cochran (1977) from the total number of households of the three peasant associations (1747): $n0 = \frac{Z^2 * Pq}{d^2}$ and $n1 =$

$\frac{n0}{\left(1+\frac{n0}{N}\right)}$, where: n_0= desired sample size when the population is greater than 10000, n_1 = finite population correction factors less than10000, Z = standard normal deviation (1.96 for 95% confidence level), P = 0.1 (proportion of the population to be included in the sample (i.e., 10%), q =is 1-P, N = is the total number of population and d =is the degree of accuracy desired (0.05). In total, 126 sample households were selected by using simple random sampling from the administrative registration list of households. Here, the total numbers of households were numbered and the sample households were picked randomly with a simple lottery system (i.e., maintaining equal chance) until the sample size was reached for each peasant association (Table 1).

Table 1. The number of households used for data collection in relation to the peasant associations

Location	PAs	Total HHs (N)	Sample HHs (N)	Percent (%)
Outside park	Bejo Kobacha	720	52	41
Inside park	Ganka Echo	499	36	29
	Efa Gudina	528	38	30
Total		1747	126	100

We undertook interviews and discussions with the households after we got their willingness and consent. Finally, we executed a questionnaire survey at the household level using a semi-questionnaire. Moreover, we walked in the landscape and randomly asked farmers to identify the key informants in each peasant association. Key informants are the persons who have been living in the area for a long time and know well about the area. Accordingly, we selected nine key informants (three in each peasant association) to further get information that could supplement the data obtained from household interviews. These key informants include elders, scouts, and peasant association leaders. Moreover, we randomly selected 8-12 households (i.e., composed of male and female-headed households) from each location (one group from inside and one group from outside the park) to undertake two focus group discussions for triangulation of the information by using the prior prepared checklist. The data was primarily collected from both sides of the park by using a semi-structured questionnaire on the illegal hunting practices (such as poaching for bush meat), encroachment, and illegal logging (including timber harvesting, on-site processing, and conversion of forest land for agriculture), illegal settlements, overgrazing, expansion of invasive plant species, and the occurrence of man-made fires within and at the outside boundaries of the park. Along with

these, we have also asked how they perceive these practices and the trends at both inside and outside locations of the boundaries of the park.

Data analysis

To test for the variations in the perceptions of the households regarding the trends of illegal practices such as illegal hunting, agricultural expansion and illegal logging, overgrazing, invasive plant species expansion, and man-made fire incidences between the locations of outside and inside boundaries of the park we used Pearson's Chi-square test within R statistical program (version: 4.2.2, R Core Team, 2022).To examine the land cover change and the rate of its changes, the post-classification comparison change detection method was employed. This kind of change detection method identifies where and how much change has been occurring.

The land use changes were analyzed using a post-classification comparison method on land satellite images (a resolution of 30x30 meters) of 2006 and 2020. The maximum likelihood supervised classification algorism was employed using the sample training prepared from Google Earth for 2020 and 2006 respectively in the classification within ArcGIS software (version: 10.3.). Based on the analysis, four primary land use types, namely forest, cropland, settlements, and water bodies, were identified within the study area of Dati Wolel. This means that the spatio-temporal quantitative data was generated for two periods (2006 and 2020). The accuracy of land cover identification was determined to be 80%.

To compute the annual rates of changes for the land use types, we employed a formula adapted by Lemessa (2020):

$$L_r = \frac{1}{T}\left(\ln\left(\frac{l_{ti} + 2\sum_{i=1}^{m}(l_{ti+1})_m + (l_{ti+1})_j}{2n(l_{ti})}\right)\right) \times 100,$$ Where, l_{ti} =the initial amount of land use change, $(l_{ti+1})_m$ = the midpoints of the number of land use changes (m=number of midpoints), $(l_{ti+1})_j$ =the recent amount of land use change, $n =$ the number of time points from the period for which the change detection is computed, and T = the Total time of the change detection.

Results

Socio-economic background of the respondents

A household-level questionnaire survey was executed for a total of 126 sample households comprising 118 male-headed and 8 female-headed households. Age-wise, 10.3 %of the households were within the range of 15-30 years, 65.9% between 31–45 years, 19.8% between 46–60 years, and 4% were above 60 years. In terms of marital status, 93.6% were married, 4.8% were widows

and 1.6% were divorced. Regarding the household size, 38.1%of the respondents had 6-8 members, 30.9% (3–5), 18.2% (0–2) and 12.8 (>8 members). The educational background of the households also varies where 38.6% are illiterate (i.e. cannot read and write), and 61.4% can read and write. The land holding size of the households ranges between 1–4.5 ha and 37% possess <1.5 ha, 52% between 1.5–3 ha and 11% between 3–4.5 ha.

Perceptions of the local people on the trends of illegal practices

The results of the Chi-square test showed that the perceptions of the local people significantly vary between the locations inside and outside the boundaries of the park regarding the illegal hunting of wild animals ($\chi2 = 28.3$, df = 2, $P < 0.001$), encroachment and logging ($\chi2 = 11.6$, df = 2, $P < 0.003$), illegal settlement ($\chi2 = 26.3$, df = 2, $P < 0.001$), overgrazing by livestock ($\chi2 = 12.3$, df = 2, $P < 0.002$), invasive plant species expansion ($\chi2 = 26.3$, df = 2, $P < 0.001$), and incidences of man-made fires ($\chi2 = 19.1$, df = 2, $P < 0.001$). In this regard, 86.5 % of the respondents living outside and 39.2 % inside the park explained that illegal hunting is increasing from time to time in the park mainly for household consumption and commercial purposes; while, in contrast, 48.6% from inside and 11.5% from outside the park said that this trend is decreasing (Fig. 2A). Large mammals such as buffalo (*Syncerus caffer*), bush pig (*Potamochoerus larvatus*) and warthog (*Phacochoerus africanus*) are mainly hunted for household meat consumption, while serval cat (*Leptailurus serval*), civet (*Viverra civetta*), and rabbit (*Lepus* spp) are hunted for commercial purposes, and Buffalo and lions (*Panthera leo*) are not only hunted for cultural prestige but also revered as symbols of heroism within the community. The act of hunting these majestic creatures is considered an opportunity for individuals to attain a respected status within the community and even secure marriages with members of higher-class families. Such cultural significance further elevates the esteemed position these animals hold in the community.

About 94.6% (70) of the respondents from inside and 73.1% (38) from outside boundaries perceived that encroachment(agricultural expansion)and illegal logging practices are increasing for timber, charcoal, construction woods, and crop production; in contrast, 4.1% (3) of the respondents from inside and 17.3% (9) from outside park mentioned that it is decreasing (Fig. 2B). In this regard, respondents explained that the major tree species which are selectively exploited for house construction are *Albizia gummifera, Prunus africana* and *Croton macrostachyus, Podocarpus falcatus* and *Pouteria adolfi-friedericii.* As explained by 91.9% (68) of respondents from inside and 65 % (34) from the outside park, the fire occurrence is increasing from time to

time for illegal hunting, honey gathering, and opening of new land for crop growing (Fig. 2C). This man-made fire commonly occurs during the dry season of February to March months. The increasing trend of illegal hunting was also supported by 90 % of the respondents from focus group discussions. Only 39.2% of the respondents from inside and 94.2% from outside the boundary of the park explained that illegal settlement has been increasing (Fig. 2D). Furthermore, 55.9% of respondents residing inside the park and 44.1% living outside reported an increasing trend of overgrazing-mainly private grazing practices. This increasing trend of grazing has caused the degradation of ecosystems in the park.

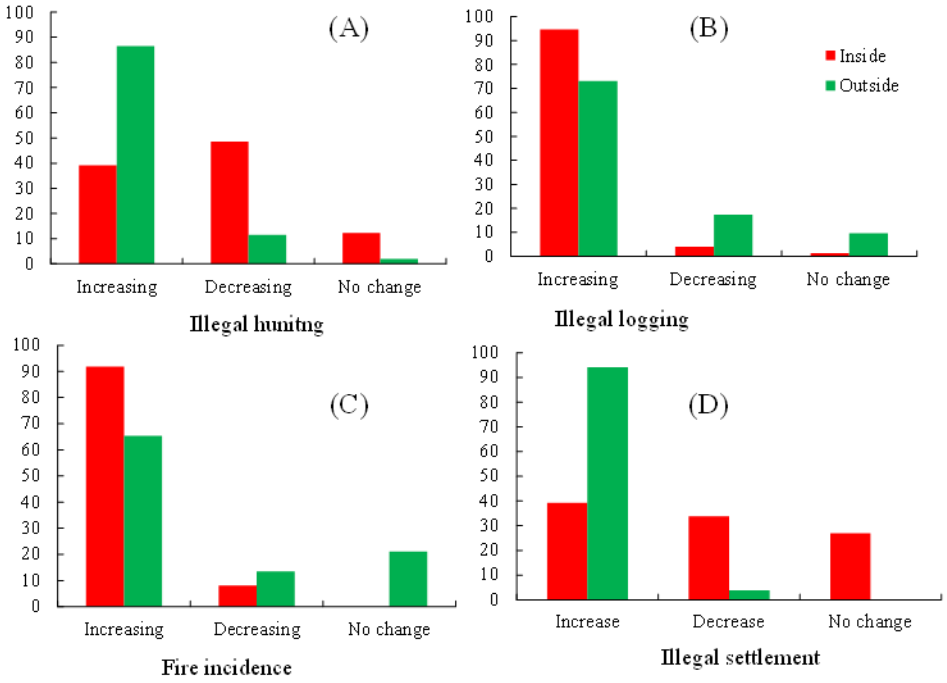

Figure 2. The bar graphs show the trends of illegal practices according to the perceptions of the respondents in relation to the inside and outside boundaries of the park

The perceptions of the local communities towards the trend of invasive plant species significantly vary between the locations inside and outside the park boundary ($\chi 2 = 46.19$, df = 5, $P < 0.001$). In this regard, 82.4% (61) of respondents living inside and 76.9% (40) living outside of the park stated that invasive species are increasing from time to time (Fig. 3). According to the respondents and from our observations, especially invasive alien species such as Parthenium *(Parthenium hysterophorus*) and Lantana (*Lantana camara*) species have been colonizing different areas that wildlife use for habitats and food sources (i.e., grazing).

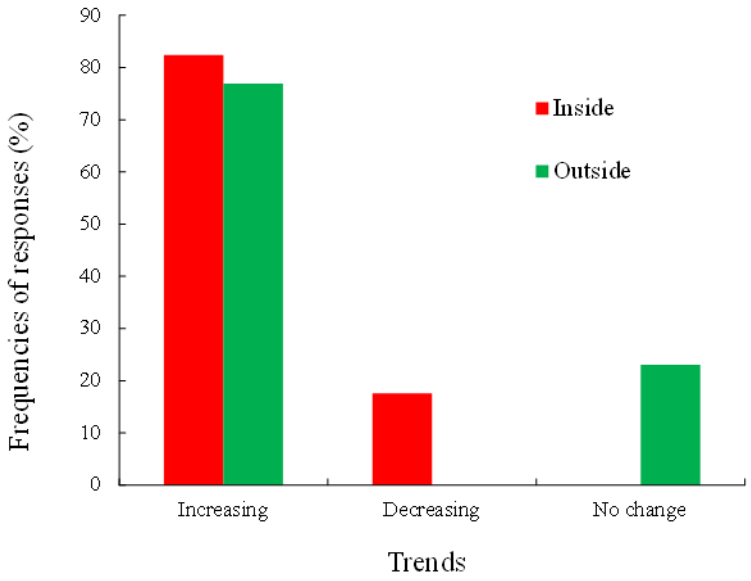

Figure 3. The bar graph shows the trends of invasive species according to the perceptions of the respondents in relation to the inside and outside boundaries of the park

Land use change detection

The changes in four land use types, such as cropland, forest, settlement, and water body were detected over the last fifteen years (Fig. 4). The areas of forest cover and wetland have shrunk experiencing changes with annual rates of -5.41 and -2.95% respectively; in contrast, cropland and settlement have increased with annual rates of 6.78 and 1.84% (Table 2, Fig. 5).

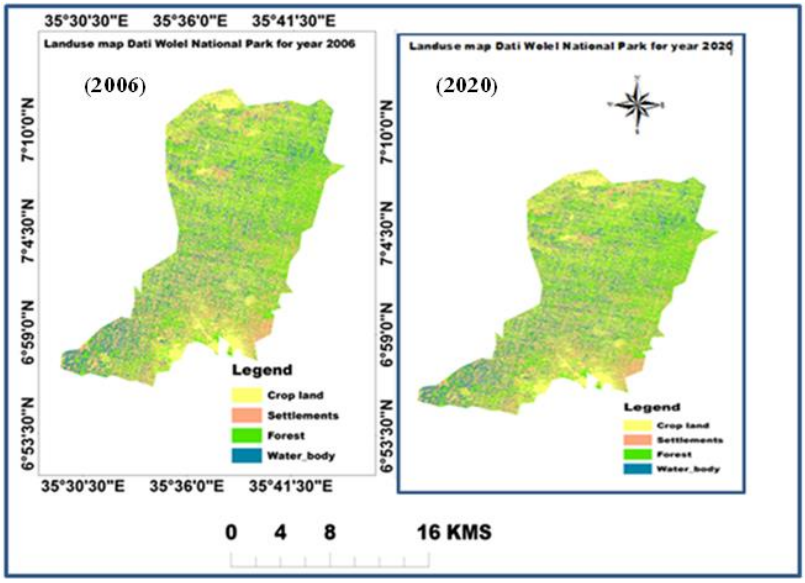

Figure 4. The land use change of the national park during the past fourteen years (2006 to 2020). The change detection was based on the satellite image analysis (resolution: 30x30m) and an accuracy of 80%.

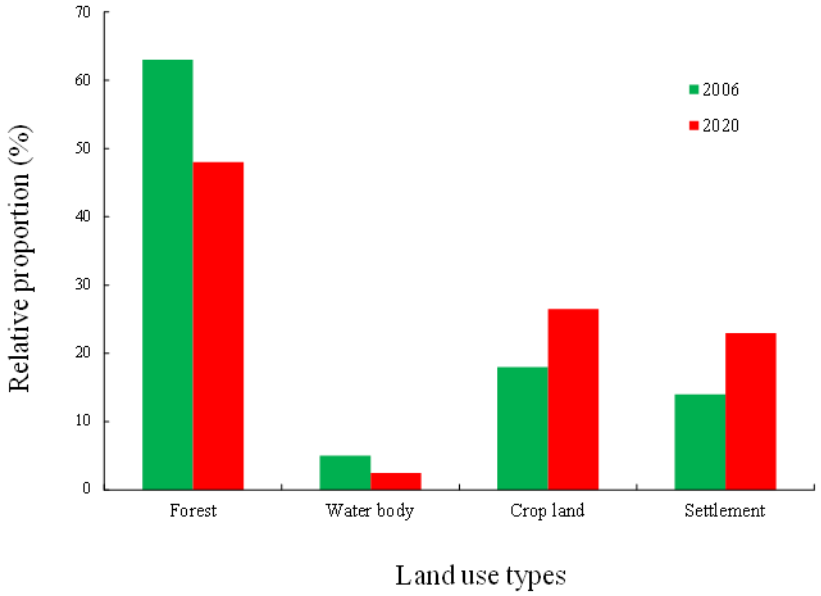

Figure 5. The bar graph shows the pattern of the relative proportion (%) of land use change between 2006 and 2020 years.

Table 2. Land use change during the periods of 2006 and 2020

No	Land use types	The year 2006	The year 2020	Change in area (ha)*	The annual rate of change (%)
		Area (ha)	Area (ha)		
1	Forest	99460	77196	-22,264	-5.41
2	Waterbody	906	770	-136	-2.95
3	Settlements	1039	4439	3400	1.84
4	Cropland	2095	21095	19000	6.78

-*The negative sign indicates the decreasing change in areas of the respective land covers.

Discussion

The anthropogenic pressures are detrimental not only to the wild animals but also to the overall biodiversity and ecosystems in Dati Wolel Park for there have been intense human-wild animal interactions during the past decades. The variations in perceptions between the local people living inside and outside the park boundary may imply that the competition for resources is intense and this can lead to conflicts or negative outcomes. This trend signals the importance of taking into account the needs and interests of local communities to effectively manage national parks. In this case, our findings support our hypothesis that there is significant variation in perception regarding

the illegal practices between the local people located inside and outside the boundaries of the Dati Wolel National Park. These practices including illegal hunting, agricultural expansion and, settlement, expansion of invasive plant species, overexploitation of wood resources, and the incidence of man-made fires generally disrupt the coexistence and human-wildlife interaction (Dorresteijn et al., 2016). It is obvious that hunting and poaching often extend the footprint of human settlements into adjacent protected areas and such impact has been highly pronounced in Dati Wolel National Park. For example, poaching buffaloes and hippopotamus for meat and skin respectively have been significantly increasing in the area more than ever. The attributing factors towards these are that the local communities believe that buffalo meat has medicinal value for humans and livestock. Its meat is most often blended with animal feed as a supplement for cattle fattening. In addition, the increasing demand for buffalo meat and hippopotamus skin and meat among the local community poses a potential threat to the populations of these species within the park. Respondents residing inside the park boundary have highlighted that illegal hunting within the park is on the rise, which can further exacerbate this issue (Fig. 2A). This illegal hunting has been exercised in the park largely to meet the socio-economic demands of the households. This finding aligns with the previous study of Sintayehu and Kassaw (2019) who reported that hunting within protected areas is often driven by motives such as meat consumption, selling meat to distant consumers, acquiring skins or body parts, cultural practices (such as protecting livestock and crops from attacks), as well as the growing demand for agricultural land and ongoing development efforts. In this nexus, respondents have further elucidated that wild animals have habitat preferences, for example, buffalo prefer grassland and the hunter follows their footprint and browses grass; whereas, hippopotamus prefers wetland and hence, illegal hunting is practiced in this area and around millet crop field where hippopotamus often grazes.

It is obvious that, regardless of their locations, the local communities heavily rely on forest products such as timber, charcoal, and construction woods. Understanding their habitat preferences helps researchers and conservationists develop study designs and conservation strategies, identifying areas where illegal hunting or poaching may occur as in the case of the hippopotamus's habitat preference in wetland ecosystems. Similarly, exploring the status of the reliance of local communities on forest products in protected areas can be an indicator of the potential conflicts that may occur between humans and wildlife. In this aspect, the prevailing perception shows that the exploitation of these resources is severe inside the park when compared with that outside the

boundary of the park. In this regard, the majority of the respondents affirmed that cutting down trees for timber, fuel wood, charcoal, and construction materials is higher inside the park with an increasing trend when compared with outside the park (Fig. 2B). In this connection, our result corroborates the earlier studies from Awash National Park- from the eastern Rift Valley region of Ethiopia that stated that the logging activities for charcoal production occur more frequently within the park (Belay, 2014).

The studied park lacks a regulatory system and weak law enforcement to combat illegal logging of forests (Dudley, 2004). Because of the illegal timber trade, illegal hunting, and settlement, respondents mentioned that this time they rarely find big trees including *Cordia africana, Podocarpus falcatus,* and *Pouteria adolfi friedericii* to hang beehives on for honey production. This selective illegal logging also may disrupt the ecological function including habitat suitability and the continuing land use change has resulted in a reduction in the availability of food for arboreal wild animals over time. As land use changes, the natural habitats of these animals, which are also the food sources are, destroyed (Fig. 4). LULC methods aid in making decisions about natural resource allocation and conservation efforts while the accuracy of the data can sometimes be questionable due to difficulties in accurately classifying land cover types using satellite images as well as the satellite data used for such studies are often not continuous over time, which can lead to gaps in the data. In this relation, according to the respondents, *Albizia gummifera, Prunus africana,* and *Croton macrostachryus* are selectively exploited for charcoal production; whereas *Podocarpus falcatus, Pouteria adolfi-friedericii,* and *Prunus africana* are used for the construction of houses and such practices may lead to a change in species composition of the vegetation and if continued finally leads to forest degradation (Edwards, 2010). The frequency of occurrence of seasonal man-made fires is higher inside than at the outside boundaries of the park (Fig. 2C). The competition for resources between the local communities living inside and outside the park is due to differences in access to these resources. Related to this, the local people living inside the park may have better access to these resources (e.g., hunting, honey collection, and opening of new croplands) when compared with those residing outside the boundary of the park.

The occurrence of man-made fire has a huge impact on the vegetation cover and ecological health besides causing the migration and disappearance of wild animals and the overall loss of biodiversity in the park (Gonfa et al., 2015). This scenario goes with the finding of Siebenhuner (2007) who stated that the frequency of occurrence of man-made fire in protected areas is mostly

related to human activities such as land clearance for agricultural activities. Moreover, when fire frequently occurs, it hinders the free movement of wild animals, irritates them, and may lead to behavioral change as a result, wild animals may become aggressive to the communities and livestock in an unusual manner. These anthropogenic impacts, therefore, need seeking mechanisms that ensure human-wildlife coexistence in the park (Pimbert & Pretty, 1995; Kumar & Singh, 2019).

Due to the continuing illegal settlement, overexploitation of the resources and pressure on the wild animals in the park is also increasing by the community living outside the boundary and this has in turn exacerbated competition for the resources by the community dwelling inside the boundary of the park. This finding is in line with a previous study of Joppa (2012) from Malawi who reported that the expansion of settlement in protected areas opens up windows for further illegal activities and human settlement unless managed in time. Such a trend is manifested by the expansion of agriculture activities and this is detrimental to wildlife and the sustainability of the park as confirmed by Sintayehu & Kassaw (2019).

The competition for agricultural development and settlements has enormous impacts on biodiversity conservation in the park. The illegal settlement is detrimental to the park because the local communities have already started practicing tree planting from exotic tree species-paves the way for the expansion of invasive plant species, and wetland farming during the dry season for crop production. These invasive species may outcompete and colonize the indigenous plant species which are the food sources and habitats for wild animals. As a result, the entire park area is currently experiencing encroachment and significant changes in land use over the past fifteen years, particularly there is a significant shrinkage in forest cover and water bodies which are the basis for the survival of wild animals in the park (Fig. 4). Therefore, integrative socio-ecological frameworks and strategies need to be sought to minimize the competition for resources, harmonize human-wildlife co-existence and ensure the sustainable conservation of overall biodiversity in the park. Moreover, this study is a preliminary assessment conducted in the area and thus we suggest further research. Additionally, the residences are located very close to the park, so there is a higher chance of frequent visitation, which could lead to wear and tear of green spaces. Since the residents are environmentally conscious and respectful of park rules, less physical damage will occur, irrespective of how close the residences are. The new settlers' treat the park greatly affects its condition because there is a cultural difference between the local communities residing within and

outside the Park boundaries. The main economic activities of the communities are a mixed farming system where both communities are closely connected with the Park and most proportion of their activities represent a threat to park resources and the communities lack non-consumptive or non-destructive benefits from the park.

Conclusion

In conclusion, our study sheds light on the local perceptions of illegal activities occurring in and around Dati Wolel National Park in Western Ethiopia. The findings highlight the significance of understanding community perspectives in designing effective strategies for combating these illicit practices. By recognizing the drivers and impacts of illegal activities, such as poaching, logging, and encroachment, we can develop context-specific approaches to address the root causes and promote sustainable coexistence between the local community and the protected area. It is crucial to engage and involve local communities in conservation efforts, considering their knowledge, experiences, and concerns. Moreover, fostering strong partnerships between conservation organizations, government agencies, and community stakeholders can enhance law enforcement, raise awareness, and encourage responsible resource management. By incorporating local perceptions and experiences into conservation planning, we can work towards a more harmonious relationship between people and wildlife, ensuring the long-term protection and preservation of biodiversity in and around Dati Wolel National Park.

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