Sustainability Science and Resources, Vol. 6:5, 2024, pp. 105 - 120

Conservation Challenges of Burkitu Community Forest in Gasera District, Bale Zone, Southeast Ethiopia

Ahmed Abdela

Goba Biodiversity Institute, Ethiopia

Received: 23 October 2024 Accepted: 02 December 2024 Published: 06 December 2024

Abstract

The study focused on the difficulties facing the Burkitu community forest in Southeast Ethiopia's Gasera District Bale Zone in terms of conservation. The Burkitu Community Forest got its name because the land is owned by a legally recognized group of individuals known as Burkitu. The woodland is 18.62 hectares in size and borders Ganda-Wotechimo and Gasera 01 on both sides. Questionnaires, interviews, and focus group discussions were used to gather data. SPSS statistical software was used to evaluate the observed and collected data and produced frequency and percentage charts. This research finds that Burkitu Community Forest faces numerous conservation issues, such as poor governance, deforestation, unclear boundaries, low local community awareness, and strained relationships between community forest members and local officials. The result of this study concludes that financial assistance, raising local community awareness, drawing clear boundaries, maintaining unity between community forest members and the leader, and limiting the leader's lack of commitment are all crucial control measures to protect Burkitu community forest.

Keywords: community forest, Burkitu, obstacles to conservation

Introduction

Forests are important natural resources and play a significant role in supporting the environmental balance and ecological condition of any area, reflected in the health of the vegetation and in the habitat composition and richness of species in that area. The forest helps in atmospheric regulation, water quality regulation, lifecycle maintenance, habitat protection, airflow regulation, dilution, and sequestration. It also supports religious and spiritual wellbeing, recreation, community activities,

and information and knowledge. Forest are also crucial to rural and urban populations as a source of fuelwood, construction materials, biodiversity conservation, fodder, and medicinal plants.

It is without doubt that forests and ecosystems provide humankind with a variety of services. Millions of people worldwide depend on the forest for their livelihoods in one way or another: through food consumption and sale, employment from forestry enterprises, services from forest ecosystems, and forest biodiversity.

Moreover, 3% of the earth's forest was lost between 1990 and 2005, and the rate of degradation is becoming a significant concern for the global population. The battle against deforestation is getting tougher, as degradation rates from 2000 to 2005 were about 7.3 million hectares per year, equivalent to the size of Sierra Leone. The destruction of forests has serious global environmental and economic consequences. Tropical forests play a crucial role in limiting the greenhouse effect, trapping heat emissions globally, and conserving biodiversity.

The main causes of deforestation in tropical Africa are the expansion of subsistence agriculture, extraction of fuelwood, commercial crop cultivation, and poverty. Tropical Africa depends on fuelwood for about 90% of its total energy supply. Forests play a significant role in the livelihoods of rural and urban dwellers in most parts of Africa and contribute to the economic development of many countries, particularly in Western, Eastern, and Central Africa, where there is considerable forest cover.

Human interference is the major cause behind forest degradation, which takes many forms, such as the expansion of agricultural land, distributing forest land for grazing, firewood collection, and poverty. Forest management in Ethiopia has negatively affected the forest resource by restricting local communities' access and user rights over the past 50 years. However, the remnants of natural high forests remain in the southern and southwestern parts of the country.

Ethiopia is one of the sub-Saharan African countries severely affected by forest destruction and land degradation. Forest degradation results in soil erosion, reduced agricultural production, and increased time spent on forest purchases and land degradation.

Statement of the problem

A conserved area called Burkitu Community Forest is located in Gassera's northern region. Its borders are shared with Gassera to the north and east, Wote to the west, and Chifaro to the south. It is owned by a legally recognized group of individuals called Burkitu Community Forest, which

is where it derives its name. Despite being a reserved area, it faces significant difficulties, including tree destruction for construction, grazing, firewood, and charcoal due to poverty.

Community forests are under intense pressure, and the study aimed to explore the challenges facing Burkitu Community Forest. The research aims to identify the difficulties facing the forest, which is under a lot of pressure.

The significance of the study

Rural households depend either directly or indirectly on forest resources, and the effects of deforestation and land degradation negatively affect their quality of life. The study's findings are expected to highlight issues related to deforestation and efforts made by rural households in the region to preserve forests. It will also play a significant role in evaluating the issue at hand and provide valuable insights for all parties involved in reducing the negative effects of deforestation. Future researchers interested in related topics may find this study a useful starting point.

Objectives of the study

The general objective of the study is to investigate the conservation challenges of Burkitu's community forest in Gasera District, Bale Zone, and Southeast Ethiopia.

Specific objectives

The Specific Objects of the Study were:

- To identify major conservation challenges in Burkitu's community forest.
- To determine the perception of the local community towards the protection of the Burkitu community forest.

Research Questions:

- What are the major challenges of conservation in the Burkitu community forest?
- What is the perception of the local communities towards forests?

Methods

Description of the study area - geographic location and topography

Gasera Community forests are located along the southeast parts of Ethiopia. Two villages, Wote Cimo and Gasera 01, in the district own the community forest. They named the forest Burkitu of Gasera. It is located in the Bale zone of Gasera district, about 60 km east of Robe town and 490

km southeast of Addis Ababa. The study area lies between the coordinates 70 and 21'56. 7" E and 400 11'04.2" N. The elevation of the study area is 2339m above sea level. Gasera community forest is characterized by heterogeneous hilly terrain. A substantial part of the study area is valley floor, drained bottomland with different hills. The study area lies on the top edge of the Wabe River gorge. The high land is characterized by a little flatness, and the low land is characterized by a gentle slope. Totally, the community forest areas account for more than 18.62 hectares.

Climate

The Gasera community forest experiences distinct dry and wet seasons, with a long-wet season from December to July and a relatively short dry season from August to October. During the wet season, most of the time, the area is blanketed by thick white fog and clouds, usually accompanied by rain. (Ethiopian Meteorological Agency (EMA). Robe Field Station, 2016). The region experiences a seasonal bimodal distribution of rainfall. Rainfall distribution for the region varies between the average monthly minimum in October, September, and August and the maximum rainfall in April, January, and December, while the rest of the month's moderate rainfall ranges from 135.4 to 288. (Fig. 1)

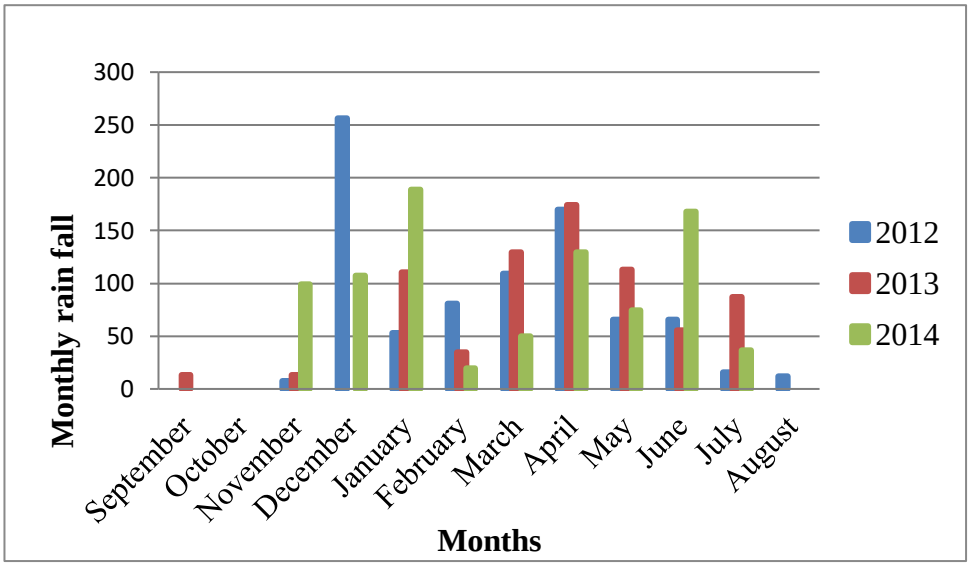

Figure 1. Gasera District average monthly rain fall from 2012 to 2014

Source: Ethiopian Meteorological Agency (2016)

The temperature data for 2014 and 2015 indicates the maximum annual temperature of the area lies within 21.1°C–23.79°C, and the minimum temperature of the area lies within 8.9°C–9.9°C.

The lowest temperature was recorded in July, and the highest temperature was recorded in March, as shown in Figure 2.

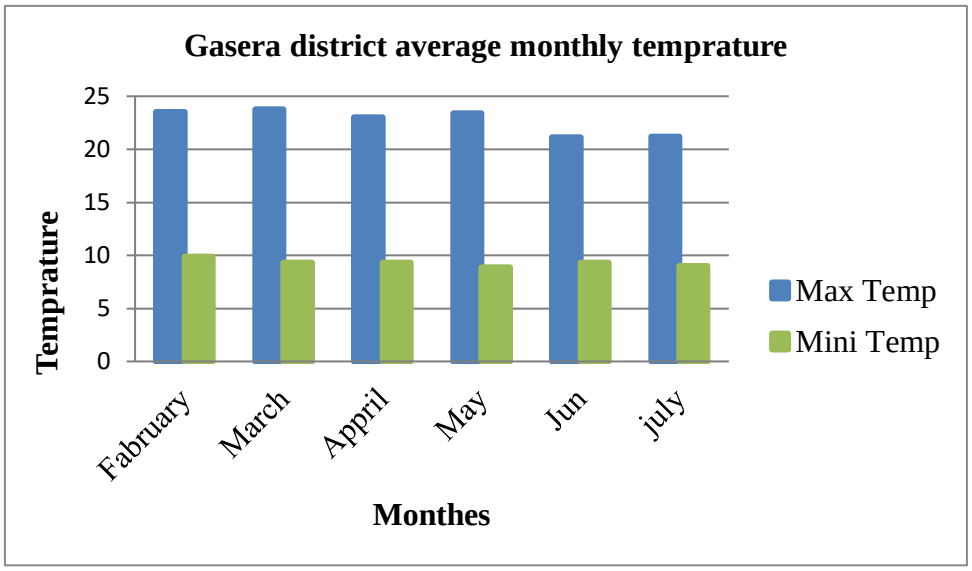

Figure 2. The maximum and minimum temperature of Gasera district in 2014 and 2015

Sources Ethiopian Meteorological Agency (2016)

Flora and fauna

The common plant species are *Olio euro pea* subsps. cuspidata, *Mates obscure*, *Rhustenuinervis*, *Balanitesa egyptica*, and *Rubusa petalus* and wild animals such as Spotted Hyena (*Crocuta crocuta*), Grivet Monkey (*Chlorocebus aethiops*), Warthog (*Phacochoerus aethiopus*), and Antelope (*Ammospermophilus nelson*) are found in the study area.

Topography

The topography of the Gasera community forest is characterized by heterogeneous hilly terrain. A large portion of the study area is a valley, floor, and drained bottomland with different hills. The study area lies on the top edge of the Wabe River gorge. The high land is characterized by a little flatness, and the low land is characterized by a gentle slope.

Hydrology

The study area has many small springs (Doftor, Hora, and Korto) located at the bottom edge of the forest. They form tributaries that join the Wabe River, bordering Gasera District and Arsi Zone.

The bottom edge of the area supplies many springs of water that serve as irrigation for the bottom villages.

Land use and human settlement

The main ethnic groups that are found around community forests are mainly Oromo and Amhara. Both ethnic groups inhibit in association the southern parts of the area in WoteCimo, Gasera town, and BaloAmiyna Keble. However, the majority of groups are Oromo ethnic groups' except BanebaGuranda, which is dominated by Amhara ethnic groups. The northern parts of the area are Oromo and Amhara, ethnic groups leading their lives by irrigation. The population of Gasera is distinct, as the Central Statistical Agency of Ethiopia (CSA) in 2003 indicates a household of 11,393 households, 75,163 of which are male (45,280) and female (41,276). The total is 86,556. Mixed agricultural practices are the sole livelihood of the majority of the inhabitants of the area. Most people practice a traditional agricultural system that combines primary and annual cultivation with livestock rearing. Shifting cultivation is common in the southern parts of the study area. Permanent crops harvested in the area include cereals, fruit, onions, and vegetables. Barley and wheat are the major stable crops on the highland side, while banana, mango, and sugar cane are mainly used for household subsistence on the lowland side.

Data collection methods

Semi-structured interview

Data was collected by means of a semi-structured questionnaire modified from Newmark et al. (1994). Representative villages per protected area were selected based on the information gathered using the pilot survey, the distance from the park, and problems related to conservation around the boundary of the protected area. The questionnaire was administered to households and farmers and was designed to understand the conservation gaps in the forest in each protected area within their area of farming and/or residence in a random manner based on a first-come, first-served basis, alternating male and female respondent’s as much as possible and different age groups.

Interviews

Are one of the methods of gathering information about the challenges of the Burkitu community forest, as the community forest shares its boundaries with two kebeles. Based on this, ten people

were selected randomly from the general kebele, another ten were selected from Wotechimo, and the interview was made accordingly.

Focus group discussion

Another method used to gather information about conservation challenges in community forests was focus group discussion. Accordingly, five people were selected from two kebele, and a total of ten people participated in the discussion to get the information.

Personal observation

Personal observation was the last technique employed to gather concrete data. The forest's condition, whether it is protected or not, it's main conservation issues, and the causes of those challenges whether natural or man-made were all noted by the researcher throughout this time.

Perception of local people towards the community forest

A questioner surveys

Was established to gather data regarding the opinions of the local population. As a result, 138 persons were specifically chosen from the two Kebles in this; 69 of the responses came from Gasera 01, and 69 from Wotechimo.

Interviewing

is one way to obtain information regarding the difficulties facing Burkitu Community Forest, which is bordered by two kebeles. Based on this, ten individuals from the general kebele and an additional ten from Wotechimo were chosen at random, and the interviews were conducted as a result.

Focus group discussion

Focus group discussions were another technique used to obtain information on conservation issues in community forests. In order to gather the information, five individuals were chosen from each of the two kebele, and ten individuals in total took part in the conversation.

Personal observation

Personal observation was the last technique employed to gather concrete data. The forest's condition, whether it is protected or not, its main conservation issues, and the causes of those challenges whether natural or man-made were all noted by the researcher throughout this time.

Selection of the sample and sampling design

The study location was chosen on purpose because it has a high concentration of human-wildlife conflict and an availability of forest resources. Situated at the summit of the west cliff, the Burkitu Community Forest shares a boundary with Gasera town and the Wotechimo kebele long accessible cliff. There are 1500 people living in the vicinity of this 18.62-hectare area.

Following this, the total sample size was determined using probability proportional to sample size-sapling technique. According to cohran 1997, formula of the sampling size is:

$$\text{Eq. (1).}\quad no = \frac{Z^2 * (p)(q)}{d^2} \qquad n_1 = \frac{no}{1 + no/N}$$

Where:

no= desired sample size Cochrans (1977) when population greater than 1000

n_1=finite population correction factors [14], less than 1000

Z= standard normal deviation (1.96 for 95% confidence level)

P= 0.1 (proportion of population to be included in sample i.e. 10%)

q= is 1-p i.e. (0.9)

N=is total number of populations

d=is degree of accuracy desired (0.05), accordingly

$(1.96)^2$x0.1x0.9/ $(0.05)^2$

=138.3/1+138/1500

=1500+138/1500

=1.092, 138/1.092=138 sample size

138 people were taken from the total population purposefully and proportionated in the study of the challenges.

Data Analysis

Data Analysis Result Data were analyzed by means of descriptive statistics such as Excel percentages and frequencies.

Results and Discussions

Conservation challenges of the Burkitu community forest

Concerning the conservation challenges of Burkitu community forests, as shown in Figure 3, the most important threatening factor to the Burkitu community forest was a lack of financial support,

followed by a lack of good governance, a lack of awareness of the use and protection of the forest, poverty, weak interaction between community forest members and district leaders and the lack of good governance and a lack of awareness of the use and protection of forests and puberty.

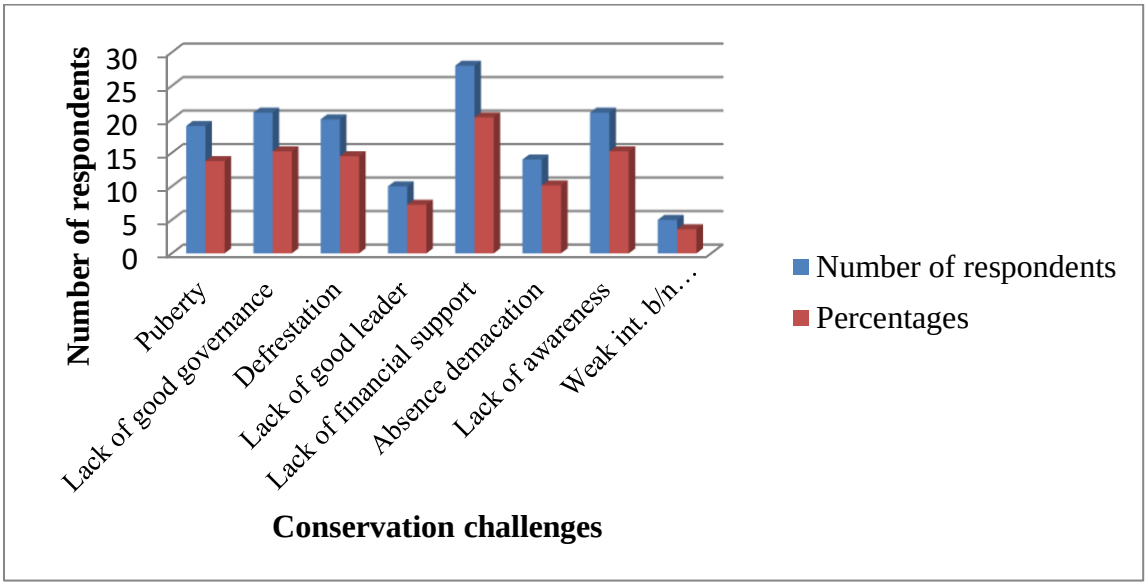

Figure 3. Conservation challenges of Burkitu community forests

Causes of the conservation challenges

The main causes of the conservation challenges are given in Figure 5. Accordingly, 24 (17.94%) absence of financial support, 22 (17.94%) puberty, 22 (17.94%) lack of good governance, 11 (7.97%) climatic factor, 10 (7.25%) lack of awareness, 9 (6.52%) absence of clear demarcation, and 4 (2.89%) lack of budget were the main causes of the conservation challenge of Burkitu community forest, according to the respondents' responses.

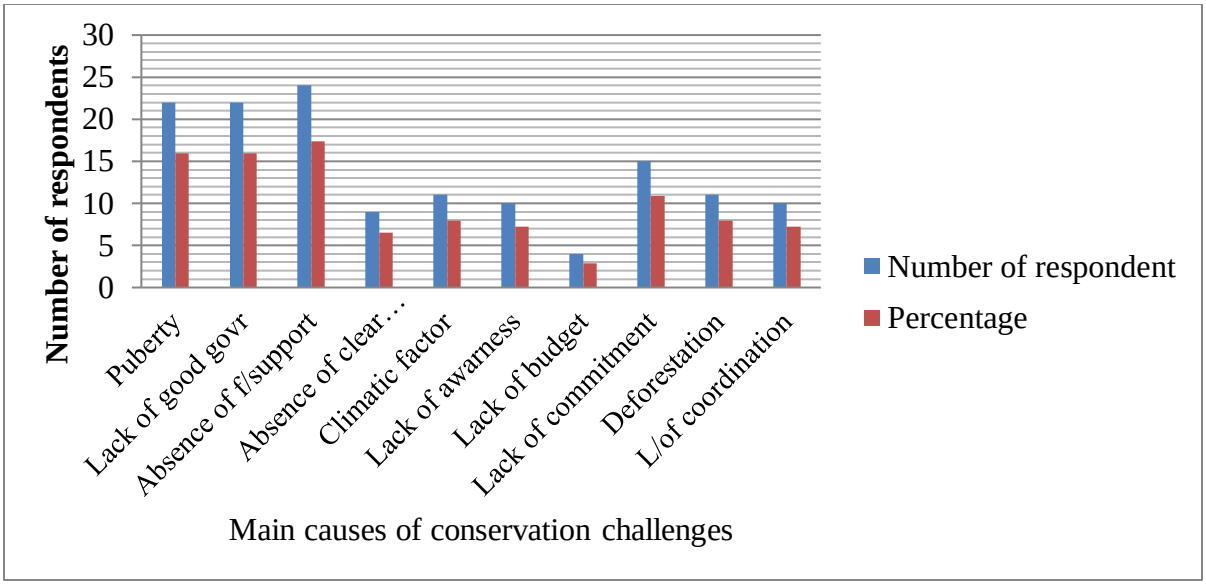

Figure 4. Main causes of conservation challenges

Control measure to safeguard Burkitu community forest

The majority of the respondents agreed that enhancing awareness of the local community could bring about change in control measures to safeguard the community forest, followed by financial support and finding alternative sources of income in order to minimize poverty. Additionally, strengthening the ties between community forest and district administrator and clear demarcation of the boundary of the forest were also important mechanisms to safeguard Burkitu community forest, as shown in Table 1 below. Most of the respondents agreed that raising awareness of the local community could bring about changes in control measures to safeguard community forests, followed by financial support and finding alternative sources of income to minimize poverty. In addition, most respondents also agreed on the links between community forests and district administrators and that clear demarcation of forest boundaries should be strengthened.

Table 1. Control measure to safeguard Burkitu community forest

Control measure to safeguard the community forest	Number of respondents	Percentage (%)
Financial support	36	26.1
Increasing awareness of local community on how to conserve the community forest	39	28.3
Make clear demarcation of the area	14	10.14
District leader should stand to conserve the forest	4	2.9
Strengthen unity between community forest and distinct administrator	15	10.87
Empowering good leader	6	4.35
Avoiding poverty	17	12.32
Avoiding the absence of commitment by the leader	7	5.1
Total	**138**	**100**

Perception of local community towards the community forest

Most respondents believed that the community forest supported the ecosystem in rehabilitation, followed by recreation as shown in table 2 below.

Table 2. Responses of the respondents on the benefits of Burkitu community forest

Benefits	Number of respondents	Percentage (%)
It gives aesthetic value	20	14.5
It prevents deforestation and erosion	26	18.84
Rehabilitate the area	47	34.06
It initiated the campaign of reforestation	8	5.8
Provide recreation area	37	26.8
Total	**138**	**100**

The result from focus group discussion showed that the presence of a large number of government workers in Burkitu community forest brought competition between farmers and other local communities to use the resources. Furthermore, the participants in the focus group discussion said

that the absence of clear demarcation between the community forest and private lands posed conflict between community forest conservation members and local farmers.

Conversation Challenges to Burkitu Community Forest Conservation

According to the current study, poverty is the primary conservation concern facing Burkitu community forest, leading to overexploitation of the forest by the local population, who rely on the forest for their expenses. Locals thus engage in deforestation, which has a detrimental effect on the community forest. This study's conclusion concurs that deforestation and overgrazing also occurred in the study area. Because of habitat degradation and competition for feeding, these and other activities caused disruption and a decline in the diversity and richness of wildlife in the area. According to the current study, the Burkitu community forest's primary conservation issues were poverty, which made local

A further issue identified throughout the investigation was the lack of a distinct boundary between privately held land and community forest. As a result of the tension this causes among the locals, the community encroaches into the forest and uses it for cow grazing. According to Mekonen, Chinasho, Berhanu, and Tesfaye (2017) the main issues that wildlife areas are currently experiencing are the growing human settlement of nearby territories and the resource extraction within the regions in Africa.

Again, a major contributing factor to conservation issues was poor governance. Coordination of all stakeholders is crucial in preventing forest clearance, as it hinders conservation efforts. If stakeholders fail to contribute, good governance rates of challenge will continue. Lemenih and Kassa (2014) research’s claims that a lack of technical and managerial coordination, as well as the absence of performance measures to gauge effectiveness, characterize Ethiopia's diverse forestry and restoration initiatives. Once again, poor governance was the primary cause of conservation issues. The absence of stakeholders leads to issues in good governance, which is detrimental to conservation. Therefore, the leader must take the lead in organizing all stakeholders to stop the clearing of forests. Mansourian et al. (2014) claims that different forestry and restoration techniques in Ethiopia are not well coordinated, neither technically nor managerially, nor are performance metrics used to gauge their effectiveness.

Another reason for the difficulties was a lack of funding; without protection, this leaves the forest open to damage, therefore budgetary funding is crucial to maintaining the forest. Another factor contributing to conservation difficulties was the lack of a distinct border. Two essential elements for a fair and successful restoration of forest landscapes were covered by Vieira et al. (2014): (i) strengthening the framework for forest governance so that procedures are more efficient and important stakeholder groups can participate more in restoration efforts; and (ii) encouraging favorable incentives for restoration, such as payment for the provision of ecosystem services.

The unique leader's lack of dedication exacerbates the area's conservation issues. This is because all stakeholders have not created enough awareness, there is a lack of cooperation among community forest members and the leader, and there are other climate-related problems. The article by Vieira et al. (2014) explores the challenges to effective governance of this abundant tropical resource, including ambiguity in terminology and definitions, inconsistencies in local and federal legal frameworks, and a general belief among the public and decision-makers that secondary forest ecosystems are not very valuable.

Road construction across the community forest was observed, and the results of the observation reveal that the primary conservation challenges observed in the study area are habitat fragmentation, land degradation, overgrazing, firing cases, and overexploitation of forest resources, encroachment, and anthropogenic activities. The outcome is comparable to that of the Mekonen et al. (2017) study. Many wild animals and their natural habitats are threatened worldwide by deforestation, which leads to land degradation and alters the way of life of the animals in their preferred habitats. Significant biodiversity has been lost as a result of the massive deforestation, which has also caused the extinction of certain biota. Nowadays, a large portion of the Harenna Forest is utilized for building, grazing, cultivation, and fuel wood.

Conclusion

The local community responded that the control measures to protect Burkitu community forest include financial support, raising local community awareness, drawing clear boundaries, stabilizing unity between community forest members and the leader, and minimizing the leader's lack of commitment. Burkitu community forest faces numerous conservation challenges, including puberty, poor governance, deforestation, unclear demarcation, miscommunication, and weak connections between community forest members and local community leaders.

The local population had a poor opinion of the community forest. Numerous issues face Burkitu Community Forest protection, such as puberty, poor governance, deforestation, unclear boundaries, low levels of community knowledge, and strained ties between local authorities and the populace. The primary obstacles to conservation were also these issues. Local community responses indicate that financial support, raising local awareness, drawing clear boundaries, preserving unity between community forest members and leaders, and reducing leaders' lack of commitment are the control measures needed to protect Burkitu community forest. The local population held a bad impression of community woods.

Recommendation

To minimize the existing conservation challenges of Burkitu community forest:

1. Stabilizing good governance, which strengthens the bond between all stakeholders and creates awareness of the local community, is very important.
2. Conservation activity is difficult without the involvement of local people. Empowering local people is very important.
3. Conservation without sharing the benefit is difficult, so sharing the benefit with the local people will encourage them to have a positive attitude toward the community forest.
4. Lack of budget negatively affects the conservation process, so the local government and the community should allocate the required budget to safeguard the community forest.
5. Mixing the community forestland with the local community creates conflict with the local community, so this requires creating a clear demarcation to keep the community forest.
6. Lastly, all concerned bodies, such as NGOs, universities, and governments, should participate in order to minimize the existing challenges.

Acknowledgments

We cordially thank the University of Madawalabu for its financial support for conducting this research and the reviewers for their comments, which improves the quality of the work to a great extent.

Ethical Permission

The authors confirm that the research is conducted in line with all University, legal, and ethical standards.

Authors' contributions

Two authors contributed to the study's conception and design. Material preparation, data collection, and analysis were performed by Ahmed Abdela and Elsa bet Takele. All authors read and approved the final manuscript.

Conflicts of Interest

he authors have no conflicts of interest to declare that they are relevant to the content of this article.

Funding

The University Madawalabu funded this research.

References

Bishaw, B. (2001). Deforestation and Land Degradation in the Ethiopian Highlands: A Strategy for Physical Recovery. *Northeast African Studies*, *8*(1), 7–25. http://www.jstor.org/stable/41931353

Cochran, W.G. (1977). Sampling Techniques. 3rd Edition, John Wiley & Sons, New York.

Mansourian, S., Aquino, L., Erdmann, T. K., & Pereira, F. (2014). A Comparison of Governance Challenges in Forest Restoration in Paraguay's Privately-Owned Forests and Madagascar's Co-managed State Forests. *Forests*, *5*(4), 763-783. https://doi.org/10.3390/f5040763

Mekonen, S., Chinasho, A., Berhanu, K., & Tesfaye, S. (2017). Threats and conservation challenges of wildlife in Harenna Forest, Harenna Buluk District, South East Ethiopia. International Journal of Biodiversity and Conservation, 9(7), 246-255. https://doi.org/10.5897/IJBC2017.1075

Newmark, W. D., Manyanza, D. N., Gamassa, D.-G. M., & Sariko, H. I. (1994). The Conflict between Wildlife and Local People Living Adjacent to Protected Areas in Tanzania: Human

Density as a Predictor / *El conflicto entre la fauna silvestre y la población que vive adyacente a áreas protegidas en Tanzania: Densidad Humana utilizada como pronosticador*. *Conservation Biology*, *8*(1), 249–254. https://doi.org/10.1046/j.1523-1739.1994.08010249.x

Vieira, I. C. G., Gardner, T., Ferreira, J., Lees, A. C., & Barlow, J. (2014). Challenges of Governing Second-Growth Forests: A Case Study from the Brazilian Amazonian State of Pará. *Forests*, *5*(7), 1737-1752. https://doi.org/10.3390/f5071737

Woodroffe, Rosie & Thirgood, Simon & Rabinowitz, Alan. (2005). People and Wildlife: Conflict or Coexistence? https://doi.org/10.1017/CBO9780511614774