



Traditio et Innovatio



amankwah.a@edu.wascal.org

Forest conservation practices: Insights of local communities near wildlife-protected areas in Ghana

Afua Amponsah Amankwah¹, Edouard Konan Kouassi², Stefan Porembski³, Jonathan Arthur Quaye-Ballard⁴, Michel Weblegnon Zrehon¹, Pierre Anthony Mendy¹, Blessing Chinomso Okorie¹, Kossi-Messan Jacques Agboka¹, Kwasi Aning Dwumah⁵, Nana Yeboaa Opuni-Frimpong⁶, Stephen Adu-Bredu⁷

¹ University of Felix Houphouët-Boigny, WASCAL Graduate Research Programme on Climate Change and Biodiversity, Abidjan, Côte d'Ivoire
² University of Felix Houphouët-Boigny, WASCAL, African Center of Excellence in Climate Change, Biodiversity & Sustainable Agriculture (CEA-CCBAD)
³ University of Rostock, Institute of Biosciences, Department of Botany and Botanical Garden, Germany
⁴ Kwame Nkrumah University of Science and Technology (KNUST), Department of Geomatic Engineering, Kumasi, Ghana
⁵ Kwame Nkrumah University of Science and Technology, Fisheries and Watershed Management, Ghana
⁶ University of Energy and Natural Resources, Forest Science, Ghana
⁷ Council for Scientific and Industrial Research (CSIR), Forestry Research Institute of Ghana (FORIG)

Introduction

- Communities surrounding protected areas (PAs) possess valuable knowledge and perspectives on forest conservation developed through long-term interactions with forest ecosystems (Sobeng et al., 2023).
- These perspectives shape community participation in conservation through locally practiced forest management approaches, including agroforestry and selective logging (Sarfo-Adu et al., 2022).
- Integrating local knowledge into community-based conservation can strengthen sustainable forest management.
- Nonetheless, local communities are often excluded from formal decision-making, limiting the contribution of their knowledge to conservation efforts.

Objective:

This study assessed forest conservation practices from the perspective of communities living near two wildlife-protected areas in Ghana.

Specifically, it aimed to:

- Identify forest conservation practices that local communities believe can help preserve the protected area forests.
- Assess the influence of socio-demographic characteristics on community perspectives regarding forest conservation practices.



Fig. 1: Interviewing local inhabitants on forest conservation practices.

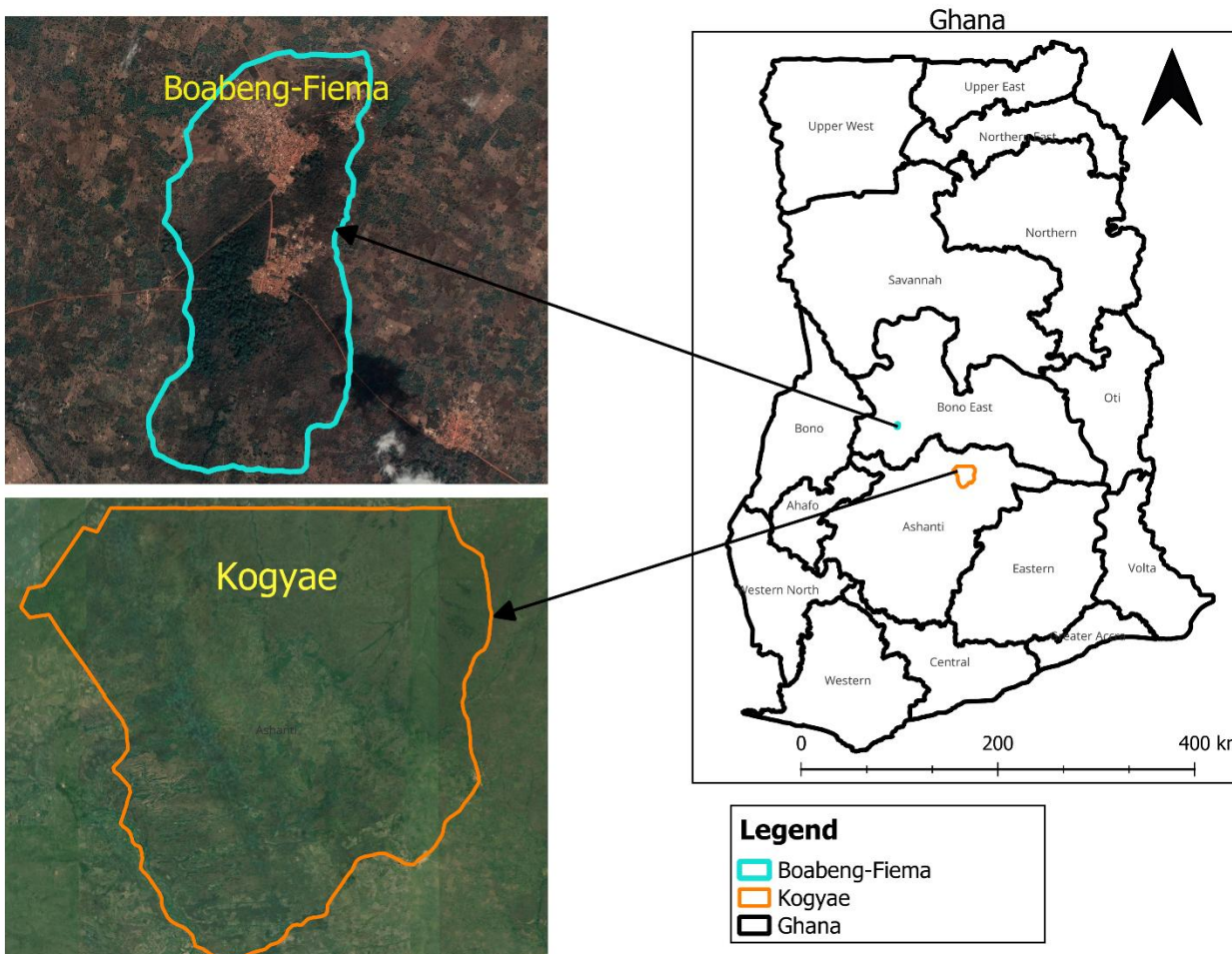


Fig. 2: Study area.

Conclusion

- ❖ Increased staffing, wildfire prevention, law enforcement and restoration through planting indigenous tree species are important for conserving the forests of BFMS and KSNR.
- ❖ Conservation strategies that actively engage all community members can promote local stewardship and conservation outcomes.
- ❖ Integrating local knowledge with improved governance and monitoring systems will support the long-term ecological integrity of BFMS and KSNR.

Outlook

- Promote community participation in conservation, decision-making and implementation.
- Evaluate the long-term effectiveness of participatory conservation and environmental education programmes.
- Develop and assess integrated conservation policies that combine scientific evidence with local perspectives.

Results and Discussion



Fig. 3: Socio-demographic characteristics of respondents from Boabeng-Fiema Monkey Sanctuary (BFMS) and Kogyae Strict Nature Reserve (KSNR).

Table 1: Perspectives of local communities around the Boabeng-Fiema Monkey Sanctuary (BFMS) and Kogyae Strict Nature Reserve (KSNR) on forest conservation practices.		
Conservation practices	BFMS (%)	KSNR (%)
Implementation of wildfire preventive measures	38.6	6.5
Staffing up the forest protection unit	1.8	37.2
Educating the populace about the importance of the forest	7.1	11.8
Enforcement of forest legislation	19	16.3
Prohibiting illegal felling of trees	7.1	
Regulating hunting activities		3.8
Enforcement of penalties for forest law violators	3.5	2.7
Engagement of the community in forest conservation programmes	4.4	13.3
Replanting indigenous tree species	9.3	
Intensifying management		4.6
Introduction of alternative sources of livelihood	2.2	
Others	7	3.8

Table 2: Effect of socio-demographic characteristics on community forest conservation perspectives in BFMS and KSNR.			
Socio-demographic Characteristics	BFMS p-value	KSNR p-value	Interpretation
Education	0.31–0.78	0.09–0.68	Not significant
Age	0.41–0.99	0.26–0.50	Not significant
Sex	0.76	0.22	Not significant
Residential Status	0.36	0.49	Not significant

- Farming was the predominant occupation, accounting for 61% of respondents in BFMS and 79% in KSNR.
- Most respondents in BFMS were indigenes (92%), whereas KSNR was predominantly composed of settlers (56%).
- The dominance of farming supports previous studies identifying the forest–savannah transition zone as a major agricultural landscape in Sub-Saharan Africa (Amankwah et al., 2021).
- The high proportion of settlers in KSNR migrated mainly in search of arable land for farming. This pattern has implications for land tenure, community dynamics and sustainable use of forest resources (Oduro-Ofori et al., 2015).

- Local communities identified wildfire prevention (BFMS) and increased forest protection personnel (KSNR) as the most important conservation priorities.
- Staffing shortages in KSNR, coupled with deteriorating staff quarters and the lack of replacement after retirements, continue to weaken forest management capacity (Ayivor & Ntiamao-Baidu, 2015).
- Slash-and-burn agriculture was prevalent in both sites, exacerbated by population growth, shorter fallow periods and climate stress. These practices increase the risk of bushfires and accelerate forest degradation (Amankwah et al., 2024).

- The Multinomial Logistic Regression (MLR) analysis revealed that socio-demographic factors – education, age, sex and residential status – did not significantly affect respondents' perspectives on forest conservation in BFMS or KSNR.
- The absence of a significant effect suggests a shared baseline conservation awareness among these communities, likely shaped by traditional ecological knowledge passed down through generations (Sinthumule & Mashau, 2020).
- Direct reliance on forest resources and participation in conservation efforts foster a communal stewardship mindset, potentially outweighing individual socio-demographic influences (Cebrián-Piqueras et al., 2020).

Material and Methods

The study targeted adult residents (≥18 years) of communities surrounding Boabeng-Fiema Monkey Sanctuary (BFMS) and Kogyae Strict Nature Reserve (KSNR). Based on a reconnaissance survey and consultations with community leaders, the accessible adult population was estimated at approximately 1,600. Using Slovin's formula at a 5% margin of error, a minimum sample size of 320 respondents was determined. However, due to incomplete responses, 300 completed questionnaires were analysed, comprising respondents from Boabeng (n=78), Fiema (n=72), Congo Nkwanta (n=40), Domeabra (n=49), Njaya (n=41) and Sankasase (n=20). Primary data were collected using semi-structured questionnaires administered through face-to-face interviews and field observations. The questionnaires comprised open- and closed-ended questions addressing respondents' socio-demographic characteristics and perceptions of forest conservation practices. Interviews were conducted in Twi to accommodate participants' linguistic backgrounds. A systematic random sampling approach was employed, with every third household selected along predetermined routes within the communities. Participation was voluntary and respondents were informed about the study objectives, confidentiality and their right to withdraw. Data were cleaned, coded and analysed using SPSS. Respondents' perceptions of forest conservation practices were obtained through the open-ended question: "What practices do you think can help preserve the forest in your area?" Responses were thematically coded into categories including wildfire prevention, staffing of forest protection units, community engagement, reforestation, alternative livelihoods and enforcement of forest laws. Each conservation theme was coded as a categorical outcome and analysed separately. Multinomial Logistic Regression (MLR) was used to assess the influence of age, sex, education and residential status on the likelihood of respondents mentioning specific conservation practices. Statistical significance was assessed at 95% confidence level ($p < 0.05$).

Supported by

