

Factors Affecting Stakeholders' Participation in Collaborative Forest Management: The Case of Krokosua Hills Forest Reserve in Ghana

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Abstract

Sustainable management of forest depends on effective participation of primary stakeholders - the local people. This paper focuses on the assessment of factors that affect participation of local people in four key aspects of forest management - planning, implementation, monitoring and benefit-sharing - in Ghana using a case study of Krokosua Hills Forest Reserve (KHFR). Data collected from 407 households living around the forest reserve were analyzed to determine the factors affecting participation in reserve management. Socio-demographic actors were found to have mixed effects on reserve management, with reserve planning associated with gender and educational status of the respondents while benefit-sharing was associated with respondents' educational status and the awareness of collaborative forest management policy. These results imply that for sustainable management of KHFR and similar forest areas in Ghana through collaborative arrangements, policy-makers and forest managers should consider socio-demographic attributes of primary stakeholders.

Keywords

Benefit-sharing–Forest management–Implementation–Local people–Monitoring–Planning

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1. Introduction

Participation of stakeholders, particularly local communities, in forest management is widely viewed as a means to achieve sustainable forest management and to promote discursive democracy in many countries [1, 2, 3, 4]. Stakeholders are expected to effectively participate in all aspects of forest management [5, 6, 7]. Recent report however, indicate, in practice, participation remains

skewed towards 'powerful members' of the community. The less 'powerful' are marginalized due to factors including socio-economic inequity, power struggles at local levels, weak institution and institutional relations, and conflicting interests among government, private entities and communities [4, 6, 8, 9].

In Ghana, the 2012 Forest and Wildlife Policy and the 1992 national constitution guarantee the right of all citizens, including local communities to participate in forest management [10]. The 2012 Forest and Wildlife Policy, for instance, seeks to consolidate good forest governance and enhance active participation of local communities and land owners in forest management. It further recognizes that local people are today much better organized and well informed to be mainstreamed into the forestry decision-making in forest management [10]. The ratification of other international agreements and instrument such as the Voluntary Partnership Agreement (VPA), the National Forest Program Facility (NFPPF), the Non-Legally Binding Instrument on All Types of Forests (NLBI); and the REDD+, which aim to enhance local people's participation in and provide avenue for equitable sharing of benefits from forest management [11, 12, 13, 14] have also influence the desire to include local people in the Ghanaian forestry policies

In the context of REDD+, there is a clear reference to stakeholder engagement and the inclusion of specific

stakeholders in decisions pertaining to all the four elements required for REDD+ implementation, and to access results-based payments [15]. For instance, UNFCCC Decision 1/CP.16, para 72 (Cancun) requests developing country parties to ensure that “when developing and implementing their national strategies or action plans, to address, inter alia, the drivers of deforestation and forest degradation, land tenure issues, forest governance issues, gender considerations and the safeguards identified in paragraph 2 of Appendix I to this decision, ensuring the full and effective participation of relevant stakeholders, inter alia indigenous peoples and local communities” [15]. This is expected to promote the relevance and improve the validity of REDD+ readiness and implementation; as well as avoid conflicts and increase the chance of acceptance for REDD+ strategy and implementation. Elsewhere studies suggest that factors such as education level [6, 8, 16]; forest dependency level [8, 17]; age [18, 19, 20] gender [6, 8, 9, 21]; ethnicity [9], policy awareness and proximity to forest [18] affect participation of local communities in developing countries. This information is important to ensure the effective participation of local people in the context of existing power relations among different stakeholders, particularly, in light of the complains made by community members on limited involvement in decision-making, inadequate compensation, and limited access to forest resources and benefit-sharing [1, 2, 3, 4, 22].

With this background, this study examined local people's participation in forest management in Ghana, specifically the case at Krokosua Hills Forest Reserve. Participation was defined as “a process through which stakeholder influence and share control over development initiatives, decision and resources which affect them” [23]. Following Uphoff, et al. [24] four aspects of participation were examined:

- planning – the involvement of local people in forest management planning,
- implementation – involvement in forest administration of and coordination and contribution to forest management activities,
- monitoring - involvement of policing and reporting illegal activities in the forests, and
- benefits-sharing – involvement in distribution and sharing of economic or material benefits from the forests (e.g. royalties, design of appropriate form of SRA with timber concessionaries)

We also examined the effect of demographic factors, proximity to forest and respondents policy awareness level on participation.

2. Methods

2.1 Study Site

This study was conducted in five forest-dependent communities around Krokosua Hills Forest Reserve (KHFR) in the Western Region of Ghana (Figure 1). The reserve, which lies between 6° 15' and 6° 40' North latitudes and 2° 40' and 3° 00' West longitudes, covers an area of 481.61 Km² divided into two major blocks: production block (70%) for timber production and a globally significant biodiversity area (GSBA) (30%) for conservation. The adjoining off-reserve areas are mainly farmlands with a few scattered trees.

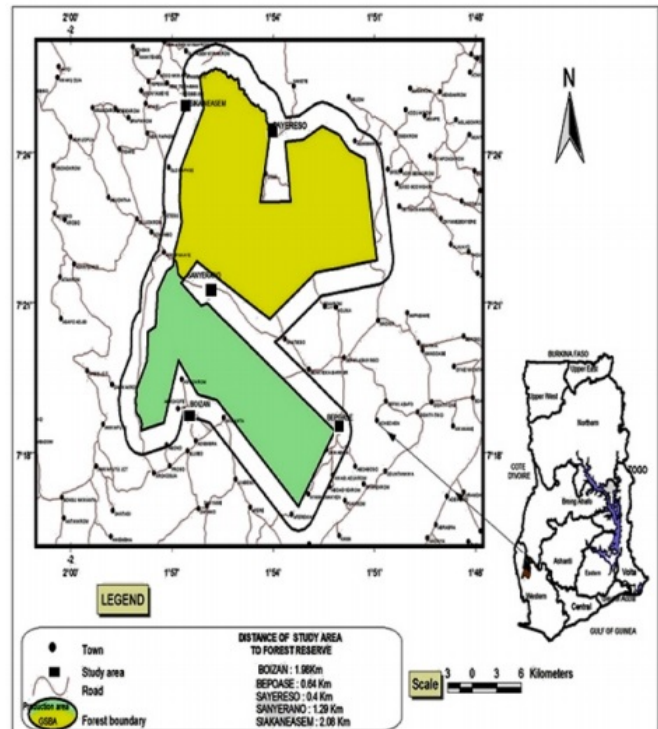


Figure 1. Map of Ghana and Krokosua Hills Forest Reserve and its surrounding communities

From 1948 to the early 1990s, the reserve was primarily managed under a protectionist (command-and-control) approach for timber production. However, this changed in 1994 when thirty forest reserves were recommended to be designated as GSBAs for their high floral genetic diversity. Local people resisted this as they feared for their livelihoods [25]. The reserve is now managed under the collaborative forest management scheme. It was initiated in 1998 and was fully operational by 2007 with a focus on integrated forest management, local capacity building and institutional strengthening, and livelihood support to local communities. Forest Services Division of the Ghana Forestry Commission manages the area in collaboration with local communities, the District Assembly of the Local Government and other stakeholders. Participation is normally voluntary, and community members

are mostly selected by elected representative, community leaders or forestry agents involved in forestry activities or projects. Some activities such as benefit-sharing are, however, reserved for stool landowners, while others such as Social Responsibility Agreements involve the majority of the community members in its deliberations [25]. Over a decade of collaborative forest management, Krokosua Hills Forest Reserve has been subjected to human disturbances that threaten its sustainability due to deforestation and associated degradation [25]. The integrity of the forest boundaries in terms of size has been shrinking gradually due to farming and illegal logging. This has resulted in fragmentation and loss of the forest. These unsustainable practices undermine the scope of collaborative forest management [25]. The reserve is a relevant case study of collaborative forest management in Ghana as it provides an example of how the Forest and Wildlife Policy has put into practice focusing on five fringe-communities (Boinzan, Sayereso, Sayereno, Sikanzeasen, and Bepose) randomly selected from about 37 known communities living around the reserve. These communities are part of the Juaboso District in the Western Region, Ghana [25], which has a population of 65,166 with age greater than 15 years; 51% males and 49% females. The major occupation in the district is agriculture with most inhabitants are involve in cocoa farming [26] and heavily dependent on forest resources for their livelihood. On average, these communities are located at 1.3 km from the reserve boundary.

2.2 The Survey

To collect data a sampling frame of 1,366 households belonging to five communities (Boinzan, Sayereso, Sayereno, Sikanzeasen and Bepose) living around KHFR (Figure 1) was created using data from the Ghana Statistical Services 2012. A random sample of 407 households was then selected from these communities for the questionnaire survey, and the household heads (293 men and 114 women) were interviewed face to face from March to May 2010. The questionnaire had two parts: respondents' socio-economic and demographic characteristics - such as age, gender, education attainment and resident status natives or non-natives, and respondent's involvement in various forest management activities. Additionally, the respondents were divided by two other factors: policy awareness and proximity to KHFR. The policy awareness refers to whether the respondent is aware of the collaborative forest management scheme adopted at KHFR. The second part of the survey was specific to respondents' level of participation in four forest management activities - planning, implementation, monitoring, and benefits-sharing. The study employed a qualitative approach to capture and interpret narratives of various stakeholders to better understand localized power relations in forest management activities through semi-structured interview. Semi-structured interviews were conducted with stake-

holder group members: 10 local farmers, 15 Community Forest Committees (CFC) and Community Biodiversity Advisory Groups (CBAG), 10 policy-makers from the regional administration, 5 Forest Services Division officials, 2 representatives of timber contractors, and 5 District Assemblies. Identification of individual respondents for qualitative assessment through a semi-structured interview was based on a purposive method to gain an in-depth understanding of localized power relations and obstacles that impeded their participation. Individuals were asked to comment on their ability to participate and involvement in four aspects of forest management. The respondents were explicitly asked about the involvement and influence of their household members, especially women, in forest management.

Table 1. Variable description and percentage response (N = 407)

Variable and category	Description	Percentage (%)
<i>Gender</i>	Gender of respondents male or female	
Male		72
<i>Age category</i>	Age of respondent in years	
20-34		7.1
35-54		54.3
> 55		38.6
<i>Education</i>	Whether respondents have formal education or not	
No formal education		72
<i>Occupation</i>	Type of occupation	
Farming only		86.5
Farming with small trade		7.1
Formal employment		3.9
Others		2.5
<i>Resident status</i>	Whether respondents consider themselves natives or migrants to the community interviewed in	
Natives		75.9
<i>Policy awareness</i>	Self-reported awareness of any forestry laws/ policies backing participation of local communities in forest resources management	
Unaware		75.2
<i>Forest dependent</i>	Depend on the reserve for livelihood	
Yes		91.9
<i>Willing to contribute to forest management</i>	Self-reported willingness to contribute time/money to support forest management	
Yes		96.6

2.3 Data Analysis

The survey responses were coded and analyzed using the Statistical Package for Social Sciences (SPSS) version 21. In particular, cross tabulation and Chi-square tests were performed to analyze the influence of demographic factors (including gender, age, education and policy awareness) on respondents' participation in different aspects of forest management. Qualitative data were analyzed using a content analysis approach to identify underlying patterns, themes, biases, and meanings following Leedy and Ormrod (2005). Field notes taken during observation, interviews and personal conversations were triangulated with qualitative results.

3. Results and Discussion

The involvement of local people in the management of KHFR is imperative to achieve its management goals under the collaborative forest management scheme. The

survey results are presented in the form of descriptive statistics (observed frequencies) and some inferential tests (Chi-square tests) for stakeholder related factors and stakeholders' participation in four aspects (planning, implementation monitoring, and benefit-sharing) of forest management at KHFR. In addition, findings specific to local people's intra-power relations, such as gender role, on their involvement in forest management are discussed.

3.1 Socio-demographic characteristics of respondents

The households surveyed were male-dominated; most (293 out of 407, 72%) of the heads interviewed were males (Table 1). Three-quarters (309, 76%) were indigenes of the communities surveyed. Although more than half (221, 54%) were middle-aged (35-54 years), but just over a quarter had formal education (Table 1). Farming was the predominant occupation in the communities with almost all (352, 87%) respondents engaged in cash/food crop cultivation (Table 1). While, most derived benefits from the reserve (374, 92%) and were willing to contribute time and/or money (393, 97%) to the management of the reserve, just a quarter (101, 25%) was aware of any forestry laws and policies backing the participation of stakeholders in forest management (Table 1).

Table 2. Level of participation in forest management aspects (one or more) at KHFR (N = 704)

Forest management aspect	No of respondents
Planning	86
Implementation	224
Monitoring	118
Benefit sharing	16
At least one aspect	293
Planning and implementation	60
Planning and monitoring	28
Planning and benefit sharing	5
Implementation and benefit sharing	11
Implementation and monitoring	75
Monitoring and benefit sharing	5
Planning, implementation and benefit sharing	5
Planning, implementation and monitoring	24
Planning, monitoring and benefit sharing	2
Implementation, monitoring and benefit sharing	4

More than two-thirds (293) of the respondent indicated that they have been involved in at least one of the four aspects of forest management (Table 2). They have participated in activities such as restoration of degraded areas, Community-Based Biodiversity Advisory Groups meeting, capacity building programs, boundary cleaning and planting, curbing illegal farming and logging, and implementing fire prevention measures. Although, none have participated in all four forest management aspects (planning, implementation, monitoring, and benefit-sharing), a few have been involved in more than one aspects; for instance 24, have participated in the planning, implementation, and monitoring of the forest while 60 have been involved in the planning and implementation of forest management decisions (Table 2). These findings imply

that in the context of existing collaborative scheme there could still be unsustainable practices including illegal logging and encroachments' in the reserve if many local people are willing to participate and only a few are involved in all four aspects. All illegal consumptive usage such as logging and encroachment could be reduced through the active and inclusive participation of local community in forest management [2, 10]. These findings are in line with the report suggesting that 'marginalization of forest communities is the central issue of forest management in Ghana and illegal logging is a symptom of this problem' IIED [27].

Respondents have been involved in implementation or monitoring than planning or benefit sharing (Table 2). More than half (224, 55%) have participated in implementing forestry activities. This includes tree planting, managing admitted farms in the reserve, boundary cleaning, reporting of illegal cases, and responding to emergency wildfire outbreak. While over half (127) were rarely involved and 89 occasionally involved, 8 were either often or always involved. Of those (118, 27%) who have participated in monitoring activities, only 5 (5%) were always involved while the majority were occasionally (60, 51%) or rarely (53, 44%) involved. In forest resources planning, less than a quarter of respondents (86, 21%) have been involved. Most were occasionally (45, 52%) or rarely (32 37%) involved with a few often (5, 6%) or always (4, 5%) involved. Respondents reported that providing suggestions or just attending meetings were two significant ways of their participation in forest management planning. Only 16 respondents had participated in benefit sharing, with 2 always, 10 occasionally and 4 being rarely involved.

3.2 Socio-demographic factors affecting local community members' participation in forest management

There was no significant difference ($X^2(1) = 1.0, p = 0.32$) between males and females with regards to their participation with almost equal percentages of both men (73%) and women (68%) surveyed having participated in one or more of the four activities. This trend was the same for the individual activities (Table 3). In other studies, however, gender has been reported to play a significant role to participate in forest management [8, 17, 21, 28]. In India, for example, a higher proportion of women were reported to participate in forest management planning than men [8] while in Zambia participation of women in a community-based program was reported to be lower than that of men [28]. Our result may reflect the recent effort of the Forest Service Division to incorporate both men and women in all forestry initiatives.

On the other hand, most of the women surveyed indicated that their representation was mainly membership role with passive roles in some forest management activities with their opinions not much reflected in the final decisions. Since we only measured their level of partici-

Table 3. Factors affecting primary stakeholders' participation in forest management at KHFR (planning, implementation, monitoring, and benefit-sharing) (n=407)

Factors	Planning		X ² (p-value)	Implementation		X ² (p-value)	Monitoring		X ² (p-value)	Benefit-sharing		X ² (p-value)
	Yes (%)	No (%)		Yes (%)	No (%)		Yes (%)	No (%)		Yes (%)	No (%)	
<i>Gender</i>												
Men	69 (23.5)	17 (14.9)	224 (76.5)	3.678	165 (56.3)	0.689	128 (43.7)	88 (30.0)	205 (70.0)	12 (4.1)	281 (95.9)	0.075
Women	17 (14.9)	35 (22.3)	97 (85.1)	-0.055	59 (51.8)	-0.406	55 (48.2)	30 (26.3)	84 (73.7)	4 (3.5)	110 (96.5)	-0.784
<i>Age (year)</i>												
20-34	12 (41.4)	39 (17.6)	17 (58.6)	8.871	12 (41.4)	2.354	17 (58.6)	12 (41.4)	17 (58.6)	4 (13.2)	25 (86.2)	8.041
35-54	39 (17.6)	35 (22.3)	182 (82.4)	(0.012***)	124 (56.1)	-0.308	97 (43.9)	81 (36.7)	140 (63.3)	7 (3.2)	214 (96.8)	(0.018***)
> 55	12 (41.4)	35 (22.3)	122 (77.7)		88 (56.1)		69 (43.9)	25 (15.9)	132 (84.1)	5 (3.2)	152 (96.8)	
<i>Education level</i>												
Formal education	46 (35.1)	40 (15.7)	247 (64.9)	18.511	161 (55.3)	0.003	132 (44.7)	79 (34.2)	214 (65.8)	12 (10.5)	289 (89.5)	18.328
No formal education	40 (15.7)	40 (15.7)	74 (84.3)	(0.001***)	63 (54.9)	-0.954	51 (45.1)	39 (27.0)	75 (73.0)	4 (1.4)	102 (98.6)	(0.001***)
<i>Resident status</i>												
Indigenous	65 (21.0)	21 (21.4)	244 (79.0)	0.007	168 (54.4)	0.231	141 (45.6)	91 (29.36)	218 (70.6)	13 (4.2)	296 (95.8)	0.259
Non-indigenous	21 (21.4)	26 (25.7)	77 (78.6)	-0.934	56 (57.1)	-0.631	42 (42.9)	27 (27.6)	71 (72.4)	3 (3.1)	95 (96.9)	-0.611
<i>Policy awareness</i>												
Aware	26 (25.7)	60 (19.6)	75 (74.3)	1.715	55 (54.5)	0.018	46 (45.5)	33 (32.7)	68 (63.3)	7 (6.9)	94 (93.1)	3.2
Unaware	60 (19.6)	77 (20.6)	246 (80.4)	-0.19	169 (55.2)	-0.892	137 (44.8)	85 (27.8)	221 (72.2)	9 (2.9)	297 (97.1)	-0.074
<i>Forest dependence</i>												
Yes	77 (20.6)	9 (27.3)	293 (79.4)	0.813	204 (54.5)	0.45	120 (45.5)	106 (28.3)	268 (71.7)	14 (3.7)	360 (96.3)	0.431
No	9 (27.3)	77 (20.6)	24 (72.7)	-0.367	20 (60.6)	-0.502	13 (39.4)	12 (36.4)	21 (63.6)	2 (6.1)	31 (93.9)	-0.511

participation it is difficult to generalize on the quality and the influence women have on the final and overall decisions especially considering the prevalent issues relating to power relations, and cultural norms guiding gender roles. Our current findings, however, reinforced the argument that building on women participation in forestry requires a sense of personal autonomy in households, which are mostly constrained by social barriers stemming from cultural constructs of gender role [29]. Generally, gender has not been given enough consideration by selectors as a key criterion while selecting participants by responsible parties in most forest management activities. More than two-third (69%) of the respondents between 20 to 34 years, 76% of those between 35 to 54 years and 67% of those 55 years and above have participated in at least one of the four forest management activities. Statistically, no significant difference was observed between different age groups and participation in at least one activity ($X^2(2) = 3.94, p = 0.14$), indicating that all age groups in the communities have some knowledge and experience in at least one aspect of reserve management. When the four aspects of KHFR management were analyzed separately, respondents' age was, however, associated with planning ($X^2 = 8.87, p < 0.05$), monitoring ($X^2(2) = 21.48, p < 0.05$) and benefit sharing ($X^2(2) = 8.44, p = 0.018$). Those between 20 to 34 years were involved more than others, with 41% having participated in both planning and monitoring and 13% in benefit sharing (Table ??). The younger members seem to be involved more in forest management; this could be related to the physical and energy demanding nature of forest management. This is in line with results from other studies that reported higher participation of younger people in forestry activities in different parts of the world [20, 30-33]. Our findings imply that opportunity to exercise power in collaborative forest management at the local level is based on guidelines and regulation rather than social norm to provide opportunities for younger people to participate. Social norms in the study area consider elders as social leaders who enjoy a great deal of authority to deal with different aspects of forest management. The association between education and respondents' involvement in at least one of the forest management activities varied significantly ($X^2(1) = 7.22, p < 0.05$). Those with formal education (82%) have participated in at least one of the four activities than those without formal education (63%). When the four aspects were analyzed separately, however, respondents' education level was associated more with participation in planning (35%) than in benefit-sharing (11%) (Table 3), with only 15% and 1% of those without formal education have participated in these two aspects, respectively. The results of the qualitative analysis further suggest that inability of local people to understand outcomes of collaborative forest meetings and benefit agreements due to illiteracy was perceived as a constraint to exercise power

and influence decision-making. These results are consistent with previous studies that reported significant link between local people's education and participation in forest management [8, 34]. It is likely that educated members are perceived to be more capable to influence the process and negotiate in decision-making, partly because they generally hold key positions in forest user groups, which increases their chance of being involved in decision-making forums.

Although, forest ownership is closely linked to the indigenous system of land ownership in Ghana [35], participation in at least one aspect of forest management was not associated with whether a member is an indigenous person ($X^2(1) = 1.3, p = 2.51$) with almost equal percentage of indigenous (77%) and non-indigenous (71%) respondents have participated in one or more aspects of forest management. Our results further showed no significant association between respondents' resident status and any aspects of forest management (Table 3), which coincides with an earlier finding from Zambia where resident status had no effect on community participation in forest management [28]. However, it contradicts with the result from other studies [18] where a significant difference in participation in forestry activities was found among indigenous and non-indigenous people. It is likely that our results could have been influenced by the Forest and Wildlife Policy, which advocates promoting and sharing forest management activities with local communities for sustainable management of forests [10]. Also, the finding could be attributed to the fact that the Forest and Wildlife Policy and other related CFC guidelines, administered by the Forestry Commission, define and operationalize the methods of exercising power and serve to prescribe necessary checks and balances in selecting people to participate in forest management. Furthermore, non-indigenous people in the community could have more extensive social networks and consolidates power by collaborating with the forestry officials.

3.3 Forest dependence

Participation in at least one of the four aspects of forest management at KHFR was not necessarily associated with respondents' level of dependency on forest products ($X^2 = 0.82, p = 0.36$). Most of those who derive benefit from the reserve (71%) and those who do not (89%) have participated in at least one of the four aspects. This indicates that both users and non-users of forest have some understanding and experience, at least in one aspect forest management in the reserve. Similar patterns were observed when individual forest activities were considered (Table 3). The finding of a non-significant association between community members' participation and forest dependency is in contrast with some earlier findings [3, 8, 16]. The results, however, suggest that the degree of forest dependency has no direct bearing on the level of participation in forest management among local

people. Also, it could be a result of not considering forest dependency as a criterion by responsible authority while selecting the participants for reserve management

4. Conclusion

This study provides insight into factors affecting participation of local people in the management of KHFR under the new policy initiatives that foster collaborative forest management in Ghana. Most of the respondents surveyed (72%) had some experience in at least one aspect of forest management: planning, implementation, monitoring, and benefit-sharing. However, their participation is highest in the implementation of forest management activities (55%) but lowest in benefit-sharing (4%), indicating that there is a disparity in local people's participation in different aspects of KHFR management. This disparity is not necessarily an indication of ineffective participation but a natural reflection of different preferences, abilities and resource access among participants which needs to be minimized by addressing the issues of inclusiveness, empowerment and social integration at local level. In line with the new policy provision, participation needs to be as broad as possible considering the heterogeneous nature of forest dependent communities. Results indicate that the embeddedness of policy provisions and the guidelines of Collaborative Forest Management at KHFR is at an initial stage to foster local people's participation, and affected by education and institutional capacity of local people. It suggests that the improvement in the educational status of local people could increase their participation in promoting long-term conservation goals of the reserve. The association between local people and their response to certain aspects of KHFR management (e.g. policy awareness; forest dependency and involvement of indigenous and non-indigenous people) is weak, indicating that such findings could be used to identify community members to improve and enhance their participation in collaborative forest management. These results also offer opportunity to align new policy initiatives of the Ghanaian government, such as the Voluntary Partnership Agreement (VPA), the National Forest Programme Facility (NFPPF), the Non-Legally Binding Instrument on All Types of Forests (NLBI); and the REDD+ for their potential success through active engagement of local communities. If the strategies and the structures of the existing collaborative forest management approach are enhanced, local communities can positively contribute towards achieving the aims of such initiatives in Ghana as well as in similar contexts elsewhere.

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