

## Environmentality and the making of compliant subjects: Insights from collaborative forest management innovations in Southwestern Ghana

Ransford Sackey<sup>a,b</sup>, Lawrence Kwabena Brobbey<sup>b</sup>, Eric Mensah Kumeh<sup>c,d,\*</sup>,  
Joana Akua Serwaa Ameyaw<sup>b</sup>

<sup>a</sup> KASA Initiative, Ghana

<sup>b</sup> Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

<sup>c</sup> Leverhulme Centre for Nature Recovery, University of Oxford, UK

<sup>d</sup> PACT | Partnership for Agriculture, Conservation and Transformation, Ghana

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### ABSTRACT

Shifting from a coercive to a collaborative approach that engenders equity in processes and outcomes from forest management remains an aspiration in forest governance in many countries. Whereas several studies have analyzed how national policy changes and international developments collectively influence this change, the nature of the subjects created by the transition remains an open question. Drawing on the literature on governmentality and environmentality, we develop a framework along a compliant-resistance axis to analyze the different subjects created by two collaborative forest management innovations in Ghana: the modified taungya system and community forest monitoring. Analyzing data from 37 key informant interviews and three focus groups in a priority biodiversity hotspot of the country, the Krokosua Hills Forest Reserve, we identified four main types of subjects emerging from both initiatives: participatory, transformative, opportunistic and passive. Opportunistic subjects embrace both initiatives as a legitimate cover to encroach upon and convert various forest reserve areas to farmlands. Transformative subjects, such as *environpreneurs*, leverage both initiatives to establish "green businesses" that support forest rehabilitation and provide non-forest products, reducing people's dependency on the protected area. However, the subjects we identified neither adequately question the power of the state or non-governmental organizations over forest management nor challenge the inequalities these actors create when they restrict forest-fringe communities' access to their local environment while simultaneously opening these spaces to timber contractors and foreign investors under various schemes. Understanding the conditions that enable forest-fringe communities to overcome this challenge is an area for further study. Such insights are essential for promoting equity in ways that repair relationships between power-differentiated actors and their local environment, ultimately enabling nature recovery.

### 1. Introduction

The collaborative turn of the 1980s ushered in a new era for forest management globally. Across sub-Saharan Africa, it promoted a shift from "fortress" or command-and-control forestry to more collaborative alternatives touted for greater inclusion of local actors in forest management and access to more equitable outcomes (Asumang-Yeboah et al., 2022; Essougong et al., 2019; Kothari et al., 2013; Mawa et al., 2022). Over the last few decades, several studies have sought to ascertain the factors that enable effective collaborative forestry with varying outcomes (Akamani, 2023; Akamani and Hall, 2015; Turyahabwe et al.,

2012). Some studies suggest that greater democratization of forestry institutions, clear definition of boundaries and the supply of incentives are critical enablers of effective collaborative forestry (Acheampong et al., 2016; Ros-Tonen et al., 2013; Syallow and Prasanna, 2022; Wiersma, 2020). At the same time, there are also many unaddressed questions. These include concerns about who is empowered to participate in decision-making and access to forest benefits over time. Discussions on these questions indicate there are considerable variations across contexts, with some studies arguing that local communities should be provided complete control over forest resources owing to their intimate interconnections and reliance on forest resources. While there

\* Corresponding author at: Leverhulme Centre for Nature Recovery, University of Oxford, UK.

E-mail address: [eric.kumeh@ouce.ox.ac.uk](mailto:eric.kumeh@ouce.ox.ac.uk) (E.M. Kumeh).

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are contradictory reports on how different actors and interventions are achieving this goal (Asumang-Yeboah et al., 2022; Ece et al., 2017; England, 1993; Mawutor and Hajjar, 2024; Zhu et al., 2014), insights into the subjectivities that are unfolding amidst the collaborative turn in forest governance and their implications for how forest communities are able to influence sustainable forest management decisions are open questions.

According to Berkes (2009), institutional reforms in the forestry sector can create various environmental subjects. Environmental subjects are “individuals who internalize environmental norms and actively participate in environmental governance” (Agrawal, 2005). These subjects are invoked, mobilized, and expressed through various narratives that may (dis)empower specific (groups of) people, defining their ability to influence who, when, and how forest resources are managed (Agrawal, 2005; Fletcher, 2017). The literature suggests that subjects may range from environmental citizens to green capitalists, emphasizing various ways of disciplining human capacity to conserve or exploit forest resources to their preferred ends or those of more powerful actors (Anand and Mulyani, 2020; Choi, 2020). Although unpacking the various subjectivities that emerge with the onset of collaborative forestry and the issues they accentuate or undermine is essential for navigating forest management options toward more equitable outcomes, it remains on the margin of current analyses.

A case in point is collaborative forest management in Ghana, which introduced different reforms in the 1990s to improve forest-fringe communities’ participation in forest management (Akamani, 2023). Specific interventions include the modified taungya system (MTS), community forest monitoring and various public-private partnership schemes targeting the participatory management of timber, food, and carbon resources in Ghana’s denuded forest landscapes. Under the MTS, introduced in 2002, forestry officials allocated degraded areas of protected areas to landless farmers in forest-fringe communities. The farmers integrate trees and food crops on the degraded forest lands, managing them as an agroforestry practice until the trees achieve canopy closure, at which point the farmers are evicted (Acheampong et al., 2016; Ros-Tonen et al., 2014). A key feature of the MTS is the benefit-sharing agreement. The state through the Forestry Commission is entitled to 40 % of the revenue from matured trees from the MTS. Farmers have a 100 % stake in the food crops they plant and are also entitled to 40 % of the revenue from the trees. Landowners and forest-fringe communities are entitled to 15 % and 5 % respectively in the proceed from the matured trees after harvesting, sales and payment of taxes to the state (Agyeman et al., 2003; Forestry Commission, 2025). Community forest monitoring involves forestry officials and civil society organizations who select, train, and equip community members to track and report forest infractions and gather near real-time data to support forest management (Asumang-Yeboah et al., 2022).

Most studies on collaborative forest management in Ghana focus on the practicalities of the policy designs and implementation, including barriers and enablers (Acheampong et al., 2016, 2018; Akamani, 2023; Asumang-Yeboah et al., 2022; Osei-Owusu and Frimpong, 2019). For example, in assessing the MTS, Acheampong et al. (2016) observed that although the MTS requires farmers to be legally registered, the process is often delayed, and in some cases, farmers are not registered altogether. Asumang-Yeboah et al. (2022) reported that although civil society organizations that roll out community forest monitoring projects call for the inclusion of all community groups, women were marginalized in some communities due to a lack of consideration for local social power differentials. While useful, most of these studies treat local communities as undifferentiated, sterile actors devoid of agency to influence or be influenced by the introduced reforms. Thus, it is unclear how local actors have changed over the years in response to policy changes and interventions and with what impacts strengthening agency and self-determination as critical factors for truly genuine and effective participatory forest management (Ostrom, 1990; Pagdee et al., 2006).

This study aims to complement the existing literature by engaging

the literature on governmentality to unpack the various subjectivities that have emerged from collaborative forest management reforms. To achieve this, the paper draws on data from Ghana’s Juaboso Forest District, particularly in communities within and around the Krokosua Hills Forest Reserve (KHFR). The area was selected due to its history of implementing collaborative forest management interventions, alongside its ecological importance and cultural significance amid numerous conservation and socio-economic challenges (Adams et al., 2016; Asumang-Yeboah et al., 2022; Forestry Commission, 2010). Focusing on the MTS and community forest monitoring reforms in communities within and around the KHFR, the paper analyses interviews from 30 participants across MTS and community forest monitoring activities, three focus groups, and key informant interviews (7) with public officials and local organizations to: i) characterise the subjects that prevailed before the introduction of both initiatives in the study localities, and ii) unpack the dynamics of subjects emerging from the ongoing implementation of MTS and community forest monitoring in the area.

By expanding on these two issues, the paper enriches the current literature in at least three ways. Firstly, we demonstrate that collaborative forest management may be an opportunity or a threat to sustainable forest management based on the type of subjects it creates amid reforms. For example, the emergence of participatory and transformative subjects such as “*environpreneurs*” offers an opportunity to address deforestation and other challenges that imperil the functional integrity of the KHFR. Secondly, the paper holds that processes for structuring or making the various subjects neglect critical questions such as unequal power relations and decision-making over whom local forests are managed and who sets the rules in that direction. Thirdly, the paper contributes to scholarship on multiple governmentality, which acknowledges a heterogeneous range of actors, diverse modes of interactions, and continued negotiations and compromises at work in the operation of governmentality.

To advance these arguments, after this introduction, we draw on environmental politics literature to develop an analytical framework for the paper in Section 2. Our framework lies at the intersection of governmentality and environmentality, which emphasizes the act of governing by influencing peoples’ beliefs and actions through various techniques, practices and rationalities to alter their behavior around a given resource. We clarify the methods used to collect and analyze data from forest fringe communities around the KHFR in Section 3 before providing results from applying the framework in Section 4. The paper concludes by discussing our contributions to the literature and reflecting on the path to improving collaborative forest management in Ghana.

## 2. Analytical framework

Democratic governance theories argue for rethinking sovereign or authoritative approaches to forest governance. This means extending agency beyond traditional authoritative actors, such as the state, to create space for other actors who embody different interests and values. This pluralism aims for more significant equity in processes and outcomes from forest management. Equity, as a normative aspiration and from a political ecology perspective, is not given merely by expanding the scope of actors. Alternatively, it invites critique and engages with how powerful differential actors use a plethora of mechanisms to create discipline subjects for achieving their preferred interests. Understanding how such subjects emerge, encounter, and interact with power in collaborative initiatives requires unpacking at least three key variables: the nature of subjects, mechanisms underpinning their formation, and their evolution over time.

Starting with the nature of subjects, Foucault’s governmentality theory provides a penetrative lens for understanding how knowledge, discourses and social practices influence how different individuals internalize norms that influence their perceived responsibilities within society, and in turn, their response to who controls processes and outcomes of social processes and institutions. This means that the creation

of subjects is inextricably linked with the logic and technologies of power (Foucault, 2007).

Recognizing this, Arun Agrawal argues, in their seminal work, “*Environmentality: Technologies of Government and the Making of Subjects*,” that collaborative forest management, as an institution, needs to be interpreted not merely as a mechanism for conserving biodiversity, improving livelihoods, or other stated, declared goals, but an attempt to influence and transform individuals into governable subjects. Indeed, Agrawal’s work shows how collaborative forest management fosters the internalization of conservation norms, transforming individuals into stewards of the environment for the benefit of powerful actors at the expense of marginalized actors. This is achieved by employing various coercive and persuasive elements such as (dis)incentives, knowledge and cultural narratives. These elements mirror power elements in the actor-centred power approach (Kimengsi et al., 2025; Krott et al., 2014) and may be used by powerful actors to transform the agency of less powerful forest stakeholders (Kumeh, 2023; Mawutor and Hajjar, 2024), or cause even them to operate against their preferred will or interests (Kumeh and Hiron, 2025).

Analysis of environmental subjects indicates they may emerge, in broad sense, from regulatory (Agrawal, 2005; Cepek, 2011; Kamuti, 2014), neoliberal (Fletcher, 2010, 2017; Haggerty, 2007; Jepson et al., 2012), and responsabilization (Mustalahti and Agrawal, 2020; Rutherford, 2007) mechanisms. This manifests in instruments such as due diligence regulations, corporate social responsibility, and multi-stakeholder platforms that actors use to (re)define rules and institutions, assign responsibilities and distribute costs, and benefits associated with managing resources (Cosimo et al., 2024; Cullen, 2020; Grabs et al., 2024). Whereas multiple environmental subjects may emerge from actors’ encounter with, interaction, or resistance to each instrument and/or their combinations, a set of subjects may be advanced within a compliant-resistance continuum (Table 1) for debating subjects created by the collaborative forest management initiatives under consideration, i.e., MTS and community forest monitoring. This continuum may also be partly influenced by how passive or active the

**Table 1**  
Environmental subjectivities, motivations and orientation toward agency and power relations.

Environmental subjects	Motivations	Orientation to agency and power relations
Compliant	Working with authoritative actors to reach their predetermined goals.	Power differentials exist for a reason and the role is to follow an ascribed position and role.
Participatory	Engaging in land and forest management in ways that meet goals achieved through dialogue and compromise.	Cognisant of power differences and hopeful of exploring options that optimise synergies amid competing and conflicting interests.
Transformative	Deeply held intrinsic values around sustainability, equity and justice across actors, scales, species and generations.	Aware of power relations and deeply committed to achieving significantly greater equity through collaboration over time.
Opportunistic	Concerned with improving their material and political gains about land and forest resources.	Good awareness of power differences with a focus on exploiting them to their benefit.
Passive	Self-preservation in ways that do not necessarily intersect with land and forest resources management.	Unconcerned by power differentials and its impacts on their ability to shape decisions about the land and natural resources.
Resistant	Redefining rights and access relations to land and forests on their own terms.	High awareness of agency, power, and rights in relation to authoritative actors.

Source: Authors’ construct based on Agrawal (2005); Choi (2020); Fletcher (2010, 2017).

various actors are in relation to actors within the collaborative forest management initiative.

Firstly, compliant subjects may participate or engage with both initiatives by internalizing or succumbing to imposed rules, norms or external pressure from more powerful actors, even against their will. Actors in this subject class may possess limited intrinsic commitment, engaging mainly because they have to, or are forced to do so, without questioning the imposing authority. Secondly, participation-oriented subjects may be inspired to get involved in land or forest governance and internalize conservation and livelihood norms based on their interests or desire to safeguard resources or meet their livelihood concerns. A third class of subjects may be identified as transformative based on their deep commitment to conservation, social well-being, justice or other virtues they advocate for. Fourthly, opportunistic subjects focus on exploiting environmental governance initiatives, primarily for material or political gains, such as securing direct benefits or sensitive positions to establish, consolidate or maintain control over other actors. The fifth group, passive subjects, follow pre-existing or new norms, stakeholders, or social expectations without active engagement. The main difference between this and the compliant subject is that passive subjects do not engage. Instead, they adopt a lax stance. Finally, resistant subjects tend to oppose governance initiatives, processes or structures that they perceive as unjust, unfair, exploitative, or exclusionary. People in this class may have high consciousness, a robust and resilient sense of self-agency and the right to self-determination about their land and forest resources.

The espoused classes of environmental subjects are not mutually exclusive. Instead, different actors may occupy multiple spaces within the compliant-resistance continuum. Recognizing this, we contend that more than merely identifying actors along the various classes, it is imperative to pay attention to the logics that influence their position(s), with what implications for the policy and praxis of why, how and when to engage them in collaborative forest management initiatives. This means identifying and discussing the different subjects created by a collaborative forest management initiative’s motivations, agency and power relations. The former involves material or intrinsic factors influencing a given subject’s participation in collaborative forest management initiatives. The latter concerns their ability to influence the dynamics of participation, inclusion, exclusion, and inequality in implementing the initiative at hand. These factors are not static. In contrast, they may change in response to a subject’s access to resources, encounter with knowledge, innovation, or even the state of the natural resource in question. They could also be influenced by actors’ awareness and consciousness of how power influences their participation and ability to benefit from their local environment on their own terms or whose interest is served by a specific initiative or approach to resource governance.

Nuances to the broader subject classes are reported in the conservation literature. For example, Choi (2020, p. 81) directs attention to a few subjectivities in analyzing conservation practices: ‘environmental citizens’, alter their behavior upon being persuaded by emerging concepts introduced by actors who control resource management, this resonates with “compliant subjects” in the typology. ‘Enterprising farmers’ (Choi, 2020, p. 81), as participatory subjects, embrace opportunities provided by environmental interventions to increase their competitiveness in the farming and ecotourism markets in addition to being persuaded by the governing discourses. Finally, ‘green brokers’ are conservation agents who transition into the subjects of the very practices they preach (Choi, 2020, p. 83) and may be seen as transformative subjects. ‘Opportunistic environmentalists’, or opportunistic subjects, take advantage of incentive mechanisms provided by interventions despite their lack of genuine conviction about the logic underpinning those interventions (Choi, 2020, p. 82). In a separate analysis, Mustalahti and Agrawal (2020) point to subjectivity by responsabilization, where individuals (agents) opt-into natural resource governance interventions and are expected to shoulder conservation responsibilities

despite various challenges without questioning power inequities, as is often the case with compliant, participatory and transformative subjects.

Recognizing this and the frontier of knowledge on environmental subjects, we structure our analyses three-fold. Firstly, we identify the various actors involved in the MTS and community forest monitoring initiatives and their relative position within the compliant-resistance continuum of our construct. Secondly, we discuss their motivations surrounding the pre-existing power structures for forest management in Ghana. Finally, we discuss the evolution of the subjects and the factors that influence their relative positioning. We achieve this by focusing our analysis on narratives and practices of respondents selected from communities within and around Ghana's KHFR, which have come under intense scrutiny for the rise in deforestation despite the introduction of multiple participatory forestry reforms to curb the menace and its impacts (England, 1993; Kumeh et al., 2021, 2022).

### 3. Study area and methodological approach

The KHFR is a moist semi-deciduous forest type within the West Africa Upper Guinean Forest. Experiencing a bimodal rainfall pattern, annual rainfall in the area is 1250–1500 mm (Decher and Fahr, 2007). Established in November 1935, the areas within and around the KHFR supports diverse livelihood activities, including logging, surface gold mining, cocoa and food crops farming (Ghana Statistical Service, 2021). Contradictions between these livelihoods has often led to conflicts between forestry officials, traditional authorities and forest-fringe communities (England, 1993; Kumeh et al., 2021), leading to growing deforestation in the area. According to Brobbey et al. (2020), the area of admitted farms<sup>1</sup> and villages at the time of reservation in 1935 was 88.48 ha. This had expanded to 351.59 ha in 2019. This history of encroachment and implementation of collaborative forest management, alongside its ecological importance and cultural significance amidst numerous conservation and socio-economic challenges, informed our selection of the KHFR for our analysis. For example, the area and its associated district, the Juabeso district, is one of eight forest districts where community forest monitoring is being piloted in Ghana (Asumang-Yeboah et al., 2022).

Data was collected from five communities fringing the KHFR, Asemaneye, Brekrom, Breman, Elluokrom, and New Papaase (Fig. 1), with evidence of MTS and community forest monitoring. We used purposive sampling to select and interview 22 participants involved in MTS activities within the communities. The respondents were selected from a list of members provided by their local leaders.

Regarding respondents for community forest monitoring, we used a snowball sampling approach to interview eight (8) respondents (Table 2) due to the discrete and delicate ways in which community forest monitors operate. Civil society organizations and forestry officials train community forest monitors to secretly record or document illegal operations and relay information to them (Asumang-Yeboah et al., 2022).

The aim of the study was explained to the respondents before each interview and oral consent secured, with the clarification they could discontinue the interview at any time if they were uncomfortable. Although the initial plan was to record all interviews, only 10 respondents granted permission for them to be recorded. The main themes in the MTS interviews were: 1) respondents' willingness to continue without support from the Forestry Commission, 2) behavioral changes, 3) individual relations with CSOs and the Forestry Commission, 4) benefits obtained from MTS, and 5) barriers and solutions. The main themes for community forest monitoring included: 1) selection criteria,

2) training process, 3) forest infractions, 4) behavioral changes, 5) benefits and challenges.

Three focus group discussions (FGDs) were convened: one each exclusively for men and women and a third for a mixed group. Fifteen participants were engaged across the three focus groups, with all the participants excluded from the village level interviews to enable a triangulation of issues discussed.

Finally, seven (7) key informant interviews were conducted with leaders of the Hotspot Intervention Area (HIA)<sup>2</sup>, Community Resource Management Area (CREMA), Forestry Commission, CSO, i.e., Tropenbos Ghana, and the Nature and Development Foundation.

Data from the interviews and FGDs was analyzed to identify themes and explore the connections between environmental subjects and the broader social, cultural, and economic contexts in the study localities. In presenting the results, codes are attached to materials quoted from our interviews and focus groups to distinguish the various respondents: the gender of the respondent is represented by M (male) or F (female), the first letter of each community, the type of collaborative forest management practiced, the numerical order of the respondent and the date of the interview, e.g., F, A, MTS, 03, 22/05/23. This pseudonymization, in line with best practice, conceals the identity of our respondents, essential to protect them.

### 4. Findings: subjects within the collaborative restoration-monitoring initiatives

This section presents the study's findings, focusing on how the MTS and community forest monitoring have shaped the creation of different environmental subjects in the study communities. We begin by tracing the main subjectivities in the study localities prior to the introduction of the MTS and community forest monitoring. This is followed by insights on the new subjects that have emerged since both initiatives, including their roles, motivations, and impacts on forest management practices.

#### 4.1. Pre-existing environmental subjects

Understanding the conditions in the study localities pre-MTS and community forest monitoring introduction is critical to appreciate how they have facilitated the emergence of multiple environmental subjects within the study communities in recent years. Three main points are noteworthy within this context. Firstly, power and authority for managing the area rested primarily with the state, represented at the study localities by forestry officials. In their work on the creation of the KHFR, Kumeh (2023) argues that until November 1935, traditional rulers controlled what is now the KHFR. He argues that the use of traditional bylaws and (post)colonial statutes to transform the pre-existing order has created a pluralistic, state-sovereign contract characterized by multiple tensions whereby the state tries to squeeze traditional rulers and limit their rights to land and resources over time.

Thus, while the pre-existing subjects in the decades leading up to the MTS and community forestry monitoring are challenging to pinpoint, it is conceivable it ranged along the compliant-resistance continuum. Compliant and participatory subjects in such a situation are likely to have involved indigenes, but also, migrants who complied with rules and norms established by the Sefwi Traditional Council in order to gain access to farmlands, especially for cocoa production. Resistant actors, although there is little historical material regarding this specific space (e.g., Boni, 1999; Roberts, 1983), included other powerful chiefs and tribes who may have contested the areas with the Sefwi people, as is amply demonstrated for other stool lands in (pre-)colonial Ghana (Bond,

<sup>1</sup> Admitted farms and villages are preexisting farming rights and settlements, respectively, that the colonial administration sanctioned to local land users during the enclosure of the forest reserve.

<sup>2</sup> The Hotspot Intervention Area Governance Mechanism is a multi-tier landscape planning and management body. It was established by the Forestry Commission and partners as a vehicle for investing and distributing carbon payments accruing under Ghana's Cocoa Forest REDD+ Programme.

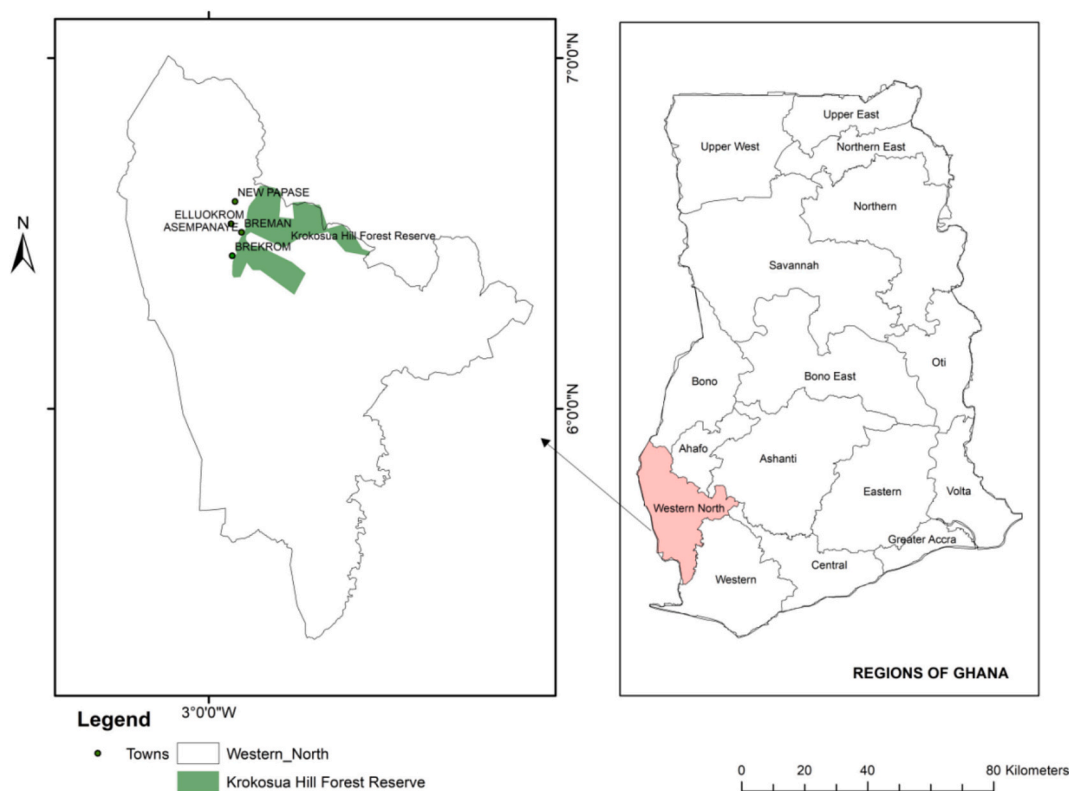


Fig. 1. Map of the study area. (Source: Authors' construct)

Table 2  
Socio-demographic characteristics of community respondents interviewed.

Variable	Frequency (n = 30)	Mean [SD]
<i>Gender</i>		
Male	19	
Female	11	
<i>Residency status</i>		
Indigene	26	
Migrant	4	
<i>Age (years)</i>		
20–29	2	44 [13.1]
30–39	5	
40–49	5	
50–59	10	
60–69	6	
70–79	2	
<i>Type of practice</i>		
Modified (Taungya System)	22	
Community forest monitoring	8	
<i>Duration since participating in CFM (years)</i>		
1–5	18	6.9 [5]
6–10	8	
11–15	1	
15–20	3	

Note: CFM = Collaborative Forest Management; SD = Standard deviation.

2002; Nti, 2013).

Secondly, following the state assumption of control over the KHFR, the study communities were characterized by widespread *illegalities* by different actors, such as timber operators, artisanal and small-scale miners, and farmers. "Illegality" in this context means defiance of state-established rules by a wide range of actors to gain access to forest resources in the area. In many instances, state rules conflict with the locally accepted norms of the people in the forest fringe communities (Amankwa et al., 2024; Ramcilovic-Suominen and Epstein, 2015).

Kumeh et al. (2021) argue that such norms were often reinforced by the understanding that people around forest resources have a right to access such resources for their self-reproduction. Thus, "illegality" in such a context may be interpreted as a form of resistance, indicating that resistant subjects occurred.

Thirdly, the literature directs attention to a "land hunger" among communities fringing the KHFR (England, 1993; Kumeh et al., 2022). This unavailability of land, especially for farming, stems from a confluence of "over-reserving" agricultural lands as forest reserves within the broader landscape of the KHFR by state authorities (Kumeh, 2023), and the emergence of cash crops, notably cocoa which limits the access of communities fringing the KHFR to arable land for food production (Ajagun et al., 2021). Additionally, the literature suggests that poverty, inequality, and hunger are commonplace in many communities surrounding the KHFR. Apart from underinvestment in healthcare and quality education in the area by the government, the historical portrayal of the area is that it is a region for resource extraction. This translates into limited industrialization, unemployment and limited opportunities for the growing population in the area.

Overall, a confluence of the aforementioned factors has pushed local people, largely unemployed youth in the study community, to depend heavily on land and forest resources as a safety net to meet their needs. This dependency partly explains and reinforces various illegal activities and extractivist relations within communities in the KHFR. Such activities include encroachment of farms in the KHFR, illegal logging, and artisanal and small-scale mining (Kumeh et al., 2022; Kumeh and Hirons, 2025). At the same time, the contest over land in forest reserves between state and traditional rulers exacerbates the proclivity of certain actors—such as local farmers, timber merchants, and community members reliant on forest resources—to partake in forest-depleting livelihood strategies in what appears to be a race to the bottom.

The MTS and community forest monitoring were introduced to address some of these challenges. For example, by making land in

degraded forests available to local communities, forestry officials hypothesize that “land-hungry” communities will have improved access to food and livelihood opportunities, reducing their resistance and transforming them into more collaborative and productive subjects.

#### 4.2. The emergence of new subjects

Four main subjects have emerged since forestry officials and NGOs introduced MTS and community forest monitoring into the KHFR area. We parse out the various subjects, showing nuances within the subject categories, and their interactions. Additionally, we highlight how they influence power relations and actions within the KHFR.

##### 4.2.1. Participatory subjects

Implementers of the MTS and community forest monitoring present them as opportunities to better involve people living in communities within and around the KHFR in forest management. Starting with the MTS, forestry officials held that people living in communities in and around the KHFR do not have reliable access to farmlands, particularly for food production. Some scholars attribute this to an over-cultivation of cocoa on arable lands outside the reserve. Others argue that the MTS needs to be seen from an alternative perspective, whereby the state exploits the labor of such communities to recursively dispossess them from their ancestral lands, which were appropriated and placed under protection by the British colonial administration (Kumeh, 2023). With the post-colonial government having failed to manage such areas sustainably, the MTS, such works argued, is an instrument for the state to revegetate severely degraded portions of the reserve in order to keep the local residents out. However, by presenting this as an apolitical opportunity for collaboration, forestry authorities reproduce exploitative power relations without opening space for deliberation or redressing the inequitable land relations it creates by enclosing a considerable share of the local peoples’ land.

Largely unconscious of these underlying power structures, respondents who fell under the participatory class interpreted and presented the MTS primarily as a “consideration” from the state, which is responding to their plights of lacking access to land to produce food from their households and community:

Now that I have land to be a full time MTS farmer, I do not hawk again because there is always food at home for my family from my farm products. (F, A, MTS, 03, 22/05/23).

Forestry officials and NGOs entice forest communities to internalize such norms through community “awareness” programs and workshops, using scientific knowledge visualized through visually stimulating maps that show and emphasize forest degradation and deforestation as cardinal that need to be resolved urgently. Communities are often vilified and blamed for contributing to the problems, with the MTS subsequently presented as a solution and means for forestry authorities to collaborate and work together to rehabilitate the degraded areas over time.

“Converts” from such workshops and activities do not only internalize the “collaboration norm” that forestry officials and NGOs ascribed to the MTS. Alternatively, they become “MTS advocates” with time, as illustrated by a respondent:

I have been privileged to attend training and workshops in Accra on sustainable forest practices and REDD+. So, I try to educate my fellow farmers and community members on the benefits of planting and protecting the forest. I try my best to pass on what I learn at the workshops to my community. That is my little contribution to protecting the forest reserve. (M, B, MTS, 14, 23/05/23).

Typical of participatory subjects, the quote above shows that the invitation to engage is seen as a privilege to engage more authoritative actors and help fulfil the latter’s will. Along this line, such participatory actors may also be labelled as compliant subjects because they focus mainly on finding solutions on the terms of more powerful actors

without questioning the underlying logic and inequities that precipitate the MTS in the first place.

Participatory subjects in the context of community forest monitoring follow a similar trajectory, except nestled in a more clandestine pathway. Within this, participatory subjects do not only internalize the “surveillance norms” that NGOs promote to them. They also embrace it as an invitation to spy on their peers, community and adversaries for external actors, namely the state and NGOs. In this case, participation is about documenting illegalities in forest areas beyond the immediate reach of the state and reporting perpetrators to the state and NGOs. Again, there is no deeper reflection or engagement with the logic of how forest enclosures appropriated community rights or their agency to determine for themselves what the best use of their local environment is.

A key instrument promoters of MTS use to stimulate local communities to participate is incentives in the form of food secured from MTS plots (short-term) and timber revenue (long-term). Whereas our respondents indicated receiving the former, many were concerned about the latter due to a lack of documentation and clear access pathway between them and forestry authorities:

There is no documentation on our MTS plots. (M, B, MTS, 20, 23/05/23). [Therefore,] How can we claim that forestry officials gave us this parcel of land some time back? All our efforts will likely be futile. Convincing others to participate in the MTS is difficult when we cannot guarantee them access to proceeds on the lands they legitimately established. (M, E, FM, 22, 28/05/23).

The quote highlights two main issues. Firstly, it shows how forestry officials may use a lack of documentation to manage the agency of MTS participants over time, this is also recognised in the management plan of the KHFR. Secondly, it also reveals how the apparent lack of documentation creates tensions, serving as a roadblock to enrolling new participatory subjects.

##### 4.2.2. Transformative subjects

The main difference between participatory and transformative actors is the latter’s stronger motivation and commitment to equity, justice and sustainability. In the context of our respondents, transformative subjects within the MTS expressed a deep commitment to reducing pressure on the KHFR. To achieve this, they reported investing deeply in green and biodiversity businesses, becoming what may be labelled as “environpreneurs” in relation to MTS as a practice. Some of the environmentally friendly businesses they were engaged in include tree nursery establishment, snail farming, apiculture and fungiculture:

I nurse tree seedlings and plantain suckers and sell them to NGOs and some farmers... I now benefit greatly from the forest even though I do not enter like I used to. (M, E, FM, 22, 28/05/23).

The transformation journey of the *environpreneurs* streams along two paths, illuminating different forms of agency. Respondents involved in tree nursery establishment often initiated this as their own entrepreneurial spirit and expenses. Typically, they sourced native tree seeds and wildlings from the adjoining KHFR and the seeds of exotic species such as *Tectona grandis* (teak) and *Cedrella odorata* (Cedrella) from external suppliers. The Forest Services Division (FSD) of the Forestry Commission procures the established seedlings from these actors for onward distribution to MTS farmers. Occasionally, these actors also supply their seedlings to their peers freely, especially those not absorbed by the FSD.

Unlike the first group, the entrepreneurship of the second group, i.e., respondents associated with apiculture, fungiculture, and snail farming, was typically sparked through external actors. Non-timber forest products such as snails, mushrooms, and honey were argued to be abundant in the research communities in the past but have declined due to degradation and over-harvesting. By cultivating mushrooms and rearing bees and snails, this class of *environpreneurs* aimed to leverage the alternative livelihood initiatives to boost the local supply of such NTFPs and reduce overreliance and overharvesting such produce from the

KHFR. Whereas this indicates some form of commitment to overcoming destruction of the KHFR and working toward environmental sustainability, the intrinsic drive of these actors generally is not comparable to, for example, those of some indigenous communities, as reported in the literature. As such, it is perhaps not surprising that these subjects, like the participatory ones identified earlier, do not contend broader power inequities underpinning the wider institution of forest enclosure and the unequal relations they legitimize between the state and forest communities.

It is worth mentioning that NGOs, as key stakeholders of the MTS and community forest monitoring, fall in this category. In the latter context, some NGO actors perceive community forest monitoring as a tool to break the dominant hold of the state over forest management. In their estimation, their role in community forest monitoring in alliance with their agents in the forest-fringe communities provides a critical check to the state, pushing it to be more accountable to external actors. For example, by flagging timber irregularities within Ghana's wood tracking system, the NGOs hope that the state would be more accountable to international actors and honor its commitments to halt trade in illegal timber.

This may be seen as relevant for engendering some forms of equity between the national government and forest communities, as mediated by the accountability commitments to external actors. However, it does little to improve equity between forestry officials and forest-fringe communities, particularly with regard to their agency and right to self-determination. This was illuminated during data collection when the state issued logging permits to timber firms to harvest old-growth areas of the KHFR, designated as globally significant biodiversity areas. For years, the state used this biodiversity richness as a mechanism to proscribe local communities from accessing such spaces. With the stroke of a pen by state officials, this richness mattered no longer. Instantly, the forest communities and their environment were disenfranchised from an equity perspective. Neither transformative subjects within the community forest monitoring nor MTS could directly halt this development. Alternatively, they are now involved in civil legal action with the state (Arocha Ghana et al., 2024), even as the timber firms make their way to start logging operations. Effectively, irrespective of their commitment to sustainability or justice, there are inherent limits or boundaries to how successfully they can achieve such goals so long as the state sets the boundaries or "rules of the game". Such boundaries limit the possibility for transformative actors to take genuinely emancipatory action under both initiatives. Alternatively, such emancipatory actions are more likely where initiatives enable the creation of endogenous, resistant actors who are more capable of challenging the status quo (Kaufer, 2023; O'Brien, 2019).

#### 4.2.3. Opportunistic subjects

The state and NGOs' introduction of the MTS and community forest monitoring in the study communities also appear to have created a savvy, predominantly exploitative group of people that may be termed "opportunistic subjects". People in this subject class demonstrated no intrinsic commitment to either initiative. Nor were they concerned about the sustenance of the forest. In contrast, they perceived and engaged in both initiatives as a way to further their interests in extracting forest resources. These included timber and non-timber resources and forest rent through fertile soils. Many of these actors use the MTS to obtain a legitimate basis to enter the KHFR. Once inside, they go beyond the boundaries of their entry rules, establishing farms in difficult-to-reach areas, employing various strategies to protect their investments. Kumeh et al. (2021, 2023) and Kumeh (2023) provide intricate accounts of the process and the arguments some of these actors use to justify and protect their opportunistic operations while offering the need to be reflexive about power, agency and justice in engaging the decisions and actions of such actors. We embrace this invitation in the discussion.

Meanwhile, opportunistic subjects in the context of the community

forestry initiatives operated in two main ways to their advantage. Having taken up the role of forest monitors, some of these actors employ their newly acquired agency to monitor people's activities in the KHFR, generating evidence that they use to their advantage. For example, displacing so-called illegal farmers from the forest to increase their own access to such spaces. Others use the agency to become watchdogs, tipping off their friends and other community members about the timelines and operations of forest guards and other forestry officials. This enables such groups to cultivate crops and cocoa at scale within the KHFR without apprehension.

The actions of opportunistic subjects within both initiatives may appear similar to what resistant subjects gravitate toward. However, there is a subtle difference. Whereas resistant subjects question established institutions of exploitative, colonial forest enclosures to reconfigure the rules and establish alternatives that recognize local values and engender equity, opportunistic subjects, in our case, focus primarily on what they can derive from the forest with little consideration for its sustainability. Also, whereas opportunistic actors use deception to further their interests, agents of resistance use overt (Blum, 2020; Faye, 2015) and covert (Kumeh, 2023) measures depending on the gulf in relative power between them and guardians of the established, exploitative institutional order.

#### 4.2.4. Passive subjects

A final group of subjects that has emerged since the introduction of MTS and community forest monitoring are people who expressed little concern about collaborating with other stakeholders about the KHFR. Such people tend to assume a passive stand, unbothered and unwilling to be involved in ongoing activities. Some of the reasons cited for the indifference include perceived inequity in benefit sharing under the MTS and allocation of equipment to community forest monitors and lack of interest in being exposed to health and safety risks associated with working in the KHFR:

Why would you bring protective clothing and cutlasses for just three monitors, knowing that you trained five monitors in this community? How did they expect us to share that? Even though monitoring is voluntary, I felt unappreciated; why would I risk my life to do such a job and be treated unfairly? This made me stop reporting, and now I illegally farm in the forest. (M, E, FM, 19, 25/05/23).

At the beginning of our training, we were assured of phones and of monthly data packages to aid us in our operations. Now, most of the monitors have not received anything for nearly a year. Let those who have the phones do the work; for me, I am out. (M, N, FM, 28, 31/05/23).

The quotes suggest that although some people could not be bothered and automatically embraced this subjectivity, others drifted into it based on their experiences of trying to become participatory subjects. One could conjecture that if such experiences had been positive, such actors would have transitioned into entirely different subjects. But perhaps a more revealing aspect of this concerns how a lack of intrinsic drive or motivation within an actor limits their potential to fight for their beliefs or interests in forest management. We take up this point and other broader inferences revealed in our findings by way of discussions.

## 5. Discussion

### 5.1. Environmental subjects created by MTS and community forest monitoring

The initial part of this section interprets our findings, situating the subjects from our analysis within the broader literature of governmentality. This enables us to contribute to the prevailing literature on collaborative forest governance literature in at least two ways. Firstly, we show that collaborative forest governance initiatives are not

apolitical. In contrast, they aim to create governable subjects across space and time. Secondly, we argue that certain key factors may explain the extent to which subjects from collaborative governance institutions may contest such pre-existing power relations. This includes the intrinsic motivation of the actors within the collaborative governance domain, which is influenced by how conscious they are of entrenched power relations and willingness to find solutions within or outside the remits of the already defined boundaries.

### 5.2. Evolving dynamics of subjects within MTS and community forest monitoring

The environmentality literature suggests that power works not only by limiting actions but also by shaping desires and beliefs, creating new subjects oriented toward new objectives. Our findings indicate that proponents and implementers of the MTS use the practice not only to control who may access the KHFR but to influence locals to believe that they are essential for restoring the protected area to its former glory. While the initial wrestling of power by the state from local communities partly contributes to dissociating the people from their environment, power is largely left undiscussed in the assembling, promotion and implementing the MTS and community forest monitoring interventions. By sidelining power, it is perhaps not surprising that questions of rights, local ownership and equity are not part of the moral fibre of new subjects created by, for example, the MTS. This may explain why most of the subjects created lean strongly toward being more docile, compliant, or participatory without strongly resisting or rejecting the practice of MTS entirely, especially given the risk as an instrument for the recursive dispossession of the local communities, i.e., when the trees they plant within the MTS mature and render their planters redundant and superfluous. Many studies on the MTS indicate that local communities who embrace the practice attempt to overcome this recursive dispossession with everyday resistance, for example, by planting the trees at larger intervals and exterminating promising trees on their MTS plots (Ros-Tonen et al., 2014; Derkyi et al., 2013; Kumeh, 2023). Indeed, this may be interpreted as forest communities' repudiation of the desires, norms and beliefs that the state is trying to instill into them - the false hope that everyone and everything will be better off once the KHFR is rehabilitated. Still, this is a long mile from communities setting off with their own beliefs and values, either to maintain the forest or use it for something completely new, as self-determination, backed by relentless and ruthless standing up for one's values, would demand. From this standpoint and unless something changes radically, it may be hypothesized that the subjects emerging in relation to the MTS and community forest monitoring are unlikely to wrestle back control over their forests from the state.

Having established the above, it is conceivable to predict the actions of intersecting compliant, participatory, transformative and opportunistic subjects that have emerged around the KHFR. Firstly, they have internalized a logic of collaboration, albeit toward different ends. *Entrepreneurs*, akin to Choi's (2020) enterprising farmers, perceive collaboration as a means to build wealth. Participatory and collaborative subjects embody it as a mechanism to salvage their declining forest resources, while opportunistic subjects embrace it to destroy the protected area primarily for material gains. The former are also opportunistic, but the difference lies in their motivation.

Ultimately, these unique subjects were created due to their exposure to international and national forest laws, conferences, and workshops. However, by providing these nuances, we debunk and caution against a solely negative interpretation of opportunistic subjects, as described by Choi (2020). Seeing environmental actors as part of the continuum thus becomes one of our key contributions to the literature. This contrasts with the orthodoxy of placing them solely in a given subject class.

Similarly, our findings suggest that economic, social, and cultural developments are essential in making environmental subjects. This contrast but also complements ideas about how actor-centered power, at

least in the sovereign sense, influences the creation of governable subjects (Krott et al., 2014; Kumeh and Hirons, 2025). Indeed, these factors are not always mutually exclusive but interlink. Consequently, their convergence influences how a person in a forest-fringe community may act or organize where collaborative forest management initiatives are promoted. We posit that environmental subjectivity is not stagnant in such confines: transformation across categories is possible. An individual who belongs to one category can also be influenced by other factors and be transformed into another category. Recognizing this, our findings provide a first snapshot of subjects that have emerged, which may be used as a benchmark in the future to trace how both initiatives influence beliefs, values and people's motivation for engaging in MTS and community forest monitoring. At the same, they also question the existing logic that passive subjects emerge in response to the restricted involvement of local residents in forest governance decision-making processes (Hansen, 2022). Our findings suggest that involving actors in decision-making alone may not be enough. On the contrary, a transformation of passive subjects may lie in deciphering and allying with their interests and concerns. Thus, we agree with the clarion call by Anand and Mulyani (2020) for the development of conservation practices where the locals are not only engaged in decision-making but create more horizontal modes of governance in order to enable the making of subjects who can self-organize and act independently within the structure of decentralized environmental governance.

Achieving this would require forest stakeholders to move beyond the current tools and technologies used in the study context in the subject-making process, e.g., knowledge sharing at workshops and conferences. The governmentality literature shows that regulations, responsibilities, rights, and key technologies of government create the context within which subjects come to care for the environment and participate in its management. Unfortunately, the current approaches used by forestry officials and NGOs constitute treating local communities as vessels or receptacles to be filled, in the Freirean sense (Freire, 1996). The different subjects identified in our study localities transcend receptacles: they are bodied entities, entities that not only have hopes and aspirations but are cognizant of their history in relation to the KHFR despite attempts by (post)colonial administration to suppress that history by prioritizing scientific forms of knowledge over the people's oral history (Kumeh, 2023). We hold that recognizing the local history and the people's hopes and aspirations may enable the (re)design of more transformative initiatives, enabling the making of more contextually relevant subjects and the distinct possibility of engendering nature recovery - "helping life in the KHFR area to thrive by repairing human relationships with the rest of their natural environment" (The Levrhulme Centre for Nature Recovery, 2025).

### 5.3. Implications for reimagining current barriers to effective collaborative initiatives

Our findings hold at least two key implications for the policy and praxis of collaborative forest management around protected areas. First, and in the context of the MTS and other restoration-oriented interventions, it is essential to move beyond their technocratic vision to ask what they truly seek to restore or reproduce and for whom. As revealed by our study, so long as the underlying logic is to dispossess local communities recursively, there is a good chance some actors will see such initiatives as an invitation to conduct activities that deplete the resources further. Alternatively, where such initiatives are seen as an endogenous attempt to give communities more control and rights over their local environment, there is an improved chance of more embedded ownership and collective action as opposed to a handful of actors spying on their own people, which can create dissent, distrust and weaken social cohesion. In this context, we agree with Ros-Tonen et al. (2013) that for MTS to work for local communities, it needs to be backed by clear benefit-sharing agreements that confer rights and benefits to local communities in the short, medium and long terms. This contrasts with

current short-term and erratic benefits approaches used by forestry officials and NGOs in our study communities but also reported in other contexts (e.g., Agevi, 2014).

The second implication of our findings concerns power and the place of colonial forest enclosures in contemporary societies, particularly in low-income countries. Well managed colonial forest enclosures are associated with benefits for national economies and local people (e.g., Mawa et al., 2022). However, they are also quite unpopular in many areas, especially where people and their communities were historically dispossessed and disenfranchised to enable their creation (Kumeh, 2023; Wang et al., 2024; Zhu et al., 2014). In our case study, the state retains an upper hand in setting the rules of who may access such places and under what conditions, with political participation in collaborative forest initiatives often being one of those conditions. Unfortunately, while local communities are being asked to give up their identity and connection to such spaces, many countries in such contexts are opening up the same spaces to foreign capital through various carbon and biodiversity offsetting schemes. These developments raise serious justice questions, especially when many of the objectives of such projects, including climate mitigation, are not the fault of local communities. Contrarily, such communities suffer disproportionately from climate and biodiversity decline impacts. At the same time, research suggests mixed well-being outcomes across forest-dependent communities (e.g. Kimengsi et al., 2020; Kluvánková et al., 2018; Poudel et al., 2023). Future studies on collaborative forest management needs to reflect critically on this development to prevent legitimizing what is increasingly becoming a neocolonial mechanism for neglecting the needs, interests and priorities of people in forest communities in order to satisfy the interests of capital and the peoples of high-income countries.

## 6. Conclusions

Drawing on governmentality and environmentality scholarship, this study developed and applied a nuanced framework to examine the subjectivities produced through collaborative forest management innovations in Ghana. As a neoliberal governance mechanism, collaborative forest management restructures the socio-economic and cultural landscapes of its subjects by embedding new forms of environmental conduct, responsabilization, and power relations (Arts, 2014; Fletcher and Cortes-Vazquez, 2020; Boer, 2018; Ellefson et al., 2007; Ungirwalu et al., 2025). Our findings reveal that these governance interventions, in the context of our study localities, engender four primary subjectivities, participatory, transformative, opportunistic, and passive, each reflecting distinct positionalities in relation to conservation imperatives.

While participatory and transformative subjects, such as entrepreneurs, align with conservation objectives by leveraging collaborative forest management to facilitate ecological restoration and enhance socio-economic well-being, opportunistic subjects strategically exploit the same initiatives for material and political gains. Passive subjects, much like their opportunistic counterparts, remain largely disengaged from the asymmetrical power structures embedded within these governance mechanisms. The subject-making tools employed in these interventions contribute to this depoliticization by positioning local communities as recipients of conservation discourses rather than as autonomous agents capable of critically engaging with, contesting, or reshaping forest governance. Debates about this are gaining growing attention, with scholars questioning how environmental authoritarianism enables and entrenches this development (e.g., Cao et al., 2025; Liang et al., 2024; Niedzialkowski et al., 2025).

This study advances scholarship on governmentality and environmental subjectivities by demonstrating how neoliberal conservation regimes operate as technologies of governance that produce and regulate environmental subjects in ways that often obscure the underlying power asymmetries and hegemonic interests at play. By highlighting the constraints imposed by subject-making processes, our findings underscore the need for governance frameworks that move beyond the mere

incorporation of local communities into conservation agendas toward mechanisms that cultivate reflexive and emancipatory forms of environmental agency. Future research should critically examine the socio-political conditions that enable local actors to challenge, negotiate, or reconfigure the governance structures shaping their environmental realities, ensuring that collaborative forest management fosters both ecological sustainability and social equity over time.

## CRedit authorship contribution statement

**Ransford Sackey:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Lawrence Kwabena Brobby:** Writing – review & editing, Writing – original draft, Validation, Supervision, Conceptualization. **Eric Mensah Kumeh:** Writing – review & editing, Writing – original draft, Visualization, Validation, Conceptualization. **Joana Akua Serwaa Ameyaw:** Writing – review & editing, Writing – original draft, Validation.

## Declaration of competing interest

We wish to confirm that there are no known conflicts of interest associated with this publication.

## Data availability

The authors do not have permission to share data.

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