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Customary land governance dynamics and its implications for shea tenure and ecology in selected peri-urban communities in Ghana

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Introduction: The shea ecosystem provides critical ecosystem services. However, rapid peri-urbanization threatens the governance of peri-land and shea tree resources and poses multiple risks to urban and peri-urban households. Yet, studies on tree tenure in Ghana have focused on cocoa though shea possesses similar economic prospects. This study examines the customary land tenure systems in the Wa Municipality and their impacts on land and shea through a governance lens.

Methods: This study was purely qualitative and relied on data from focus group discussions and in-depth interviews with 64 purposely selected participants. To enable the retelling of the participants' stories, the data was first coded, thematised, and analyzed using NVivo 10 software.

Results: The results show that land and shea rights have been decoupled in peri-urban areas, and the grant of land for farming or housing is sequestered from the right to access and use shea trees without authorization. In view of this, urban usufructs cut shea trees to communicate their opposition to land transactions. Due to the fluidity of customary tenure, some family heads are redefining usufruct entitlements to land and counterclaiming the land and shea trees. In addition, the lack of incentives for smallholders to plant and manage shea trees inhibits shea governance and sustainability.

Discussion: This is exacerbated by the widespread tenure insecurity over land and investments in shea trees. Under family land jurisdictions, family heads must involve usufructs in all the processes of land transactions and assign them a clear mandate and entitlements in customary land administration to facilitate efficient land and shea governance.

KEYWORDS

land governance, land tenure, land rights, shea tenure, shea ecology, peri-urbanization, Ghana

Introduction

Shea populations in peri-urban and urban areas continue to diminish due to human activities and natural environmental factors (Amoah and Korle, 2020; Derbile et al., 2022). Besides the ecological challenges, the depletion of shea has both immediate and long-term implications for the urban and peri-urban populations who nest their

livelihoods around the shea industry (Wardell and Fold, 2013). The widespread depletion of shea is because many urban and peri-urbanites continue to exploit it for fuelwood and charcoal (Amoako, 2012). For instance, about 58% of the energy needs of Africa are met from fuel wood and charcoal alone (Specht et al., 2015) because they are cheaper and accessible to the urban poor (Derbile et al., 2022). Meyer et al. (2003) found that institutional, economic, and social capital variables are significantly related to forest depletion due to poverty. According to Amoah and Korle (2020), human activities are the main drivers of environmental depletion, followed by climate change and institutional failure to define or protect property rights (Derbile et al., 2022). The complexities in managing land and shea tree tenures are also heightened by the operations of various customary rules, regulations, and practices (Fortmann, 1985; Augusseau et al., 2006; Amoako, 2012).

When property rights are clearly defined under a functional governance system, ownership and efficient use of resources are enhanced (Amoah and Korle, 2020). In rural areas, however, the institutions that manage agricultural land and environmental resources have been described as backward and a disincentive to farmers (Amanor, 1999). Meanwhile, customary tenure systems remain dominant in rural and peri-urban land governance because they embody relevant principles, including social equity and redistribution, checks and balances, and the maintenance of ecological balance (Amanor, 1999). Fortunately, customary tenure systems also evolve and adjust to changing conditions and, therefore, are expected to be integrated with formal institutional structures. Communities build resilience to cope with environmental harshness by establishing institutional structures and by applying various principles and techniques (Okoth-Ogendo, 1994, p. 23). These institutions rely on endogenous knowledge of the community and in building synergies for mutual benefits (Sarfo-Mensah and Oduro, 2007; Berry, 2009).

In line with this, customary land management aims to improve sustainability by ensuring that land benefits both the current and unborn generations (Ollennu, 1962, p. 4–5). However, the customary land tenure tends to exhibit structural inadequacies. For instance, African land tenure systems have been slow to respond efficiently to market forces and hence have tended to restrict access in peri-urban areas due to excessive demand (Feeder and Noronha, 1987). Therefore, the characterization of the emerging land market reflects the failures of customary land institutions to provide social safety for its people and protect their livelihoods and heritage (Amoako, 2012; Ndeinoma and Wiersum, 2016). Under such circumstances, many urbanites who rely on customary kinships for land access as usufructs may have to resort to the market for land supply (Amanor, 1999). And where urban usufructs lose their lands in peri-urban areas, they fight to retain access to the economic trees on the land or exploit them (Poudyal, 2011).

These changes in peri-urban land and tree tenures have triggered changes in land relations (Mwingyine, 2019). As a result, the usufructs' normative entitlement to customary land and the devolution of land from aging fathers to their sons are fast disappearing. In addition, the commoditisation and individualization of customary land also raise concerns about the fiduciary roles of Chiefs and Tendaamba (Mwingyine, 2019; Sumbo, 2022). Hence, these changing land relations affect smallholders' productivity (Kuusaana, 2016) and how they can protect and benefit from economic trees. However, studies on intergenerational relationships on land tenure have tended to ignore the impacts of existing land governance dynamics on economic tree tenure systems (Mwingyine, 2019). Furthermore, since north-western Ghana continues to experience endemic poverty, agriculture and the exploitation of nature dominate their livelihood strategies (Kent, 2018). Hence, access to land and economic trees presents an opportunity to mitigate extreme poverty by adopting sustainable exploitation practices (Schreckenberg et al., 2006; Rasmussen et al., 2017; Mawa et al., 2021).

Even though many researchers have studied land tenure dynamics and how they impact on productivity (Aryeetey and Udry, 2010), marriage and inheritance (Hansen et al., 2005; German et al., 2009), produce prices (Godoy, 1992), production costs (Dewees, 1995), and impact on the management, utilization, and ecology of economic trees in agroforestry parklands (Poudyal, 2009), studies on the customary land governance dynamics and how these impact on land and shea tenure and ecology in peri-urban areas remain limited. The specific objectives of this study are (1) to explore the ownership, exploitation and management of land and shea trees; (2) to assess the impacts of customary governance structures on land and shea trees, and (3) to examine the challenges affecting institutional roles in land and shea governance. This study is important because weak land governance systems may lead to unsustainable and undesirable socio-ecological traps (Cinner, 2011; Boonstra and de Boer, 2014; Boonstra et al., 2016) and aggravate poverty (Cinner et al., 2016). Also, this study is important in understanding how on peri-urban land governance access can improve livelihoods, especially for women (Dapilah et al., 2019). Women are relevant in this discourse of peri-urban land governance as they hold temporary property rights to both land and economic trees (Fortmann, 1985) and their livelihoods fall within less profitable sectors (Beall and Fox, 2007). Hence, the depletion of urban agricultural lands and shea resources has dire implications for women farmers and the welfare of their households.

The Wa Municipality was selected for this study to understand the complexities that affect the governance of land and economic trees. The existence of customary tenure systems under family holdings helps to situate the study better and present the nuances that make family heads or usufructs destroy or maintain shea trees (Kuusaana and Eledi, 2015).

The need to maintain existing shea trees or create new shea parklands is crucial since the shea industry plays a critical role in reducing endemic poverty (Ghana Statistical Service, 2013). Also, the increasing spate of illegal logging, commercial charcoal charring, bushfires, and agricultural mechanization have further exacerbated environmental degradation and poverty (Damnyag et al., 2011; Agyeman et al., 2012; Derbile et al., 2022). The paper is structured into seven (7) main sections. The section Introduction discussed the introduction of the study by outlining the state of the art and the gaps in the existing literature. Section Overview of land governance and tree tenure in Ghana presents an overview of land governance and the nexus with tree tenure systems in Ghana. In section Analytical lens: Governance and property rights over land and economic trees, the study discusses governance (formal and informal) as an analytical lens for land and tree governance. The section Study area profile, justification, and methodology presents the study area profile, justification for selecting these areas and the methods applied in collecting and analyzing the data. Section Results outlines the study results, which are structured in line with the research objectives. Section Discussion discusses the findings of the study in line with the relevant literature while section Conclusion and policy recommendations discusses the conclusions and policy recommendations.

Overview of land governance and tree tenure in Ghana

In Ghana, the hybrid land management system creates complexities (Baker et al., 2018), as customary authorities have remained historically resolute to retain considerable control over land resources (Kasanga and Kotey, 2001). At the same time the formal sector continues to struggle with low capacity to manage customary lands efficiently. As more land is lost to urbanization, individuals are less incentivised to invest in natural resource management [Kasanga and Kotey, 2001; Boni, 2006; Aryeetey and Udry, 2010; Kuusaana and Gerber, 2015; Ministry of Lands and Natural Resources (MLNR), 2016]. Hence, the National Land Policy was required to improve consultation and participation of landowners and customary authorities in land governance and biodiversity conservation (Berry, 2009). It was also to ensure the land sector institutions initiate and coordinate policy actions among the various land delivery agencies and customary landowners. Both customary custodians and usufructs in most rural areas of Ghana are sparingly consulted in the land management process (Mwingyine, 2019). Consequently, the Land Act 2020 (Act 1036) was passed to address fundamental land policy failures in both rural and urban areas (Ameyaw and De Vries, 2021).

According to Budlender and Alma (2011), customary land tenure arrangements have changed in several ways, but these changes can be safeguarded through legislation, title registration, and navigating various socio-cultural norms. For instance, socio-cultural norms define access to land, tree rights, incentives, and abilities to manage tree resources (Poudyal, 2011; Amoako, 2012). Sunderland et al. (2014) further stated that historically established and context-specific norms and beliefs dictate resource utilization. One of the most significant problems for the sustainable utilization of economic tree resources is the users' uncoordinated and diverse interests (Dapilah et al., 2019). According to Akinnifesi et al. (2006), the increase or decline in tree population is determined by how people are motivated to plant and protect the trees. According to Kepe and Scoones (1999), many grass landscapes are created through social processes (Maranz and Wiesman, 2003) and contracts (Fortmann, 1985; Sjaastad and Bromley, 1997), and the successes in the management of tree resources depends mainly on the human-ecology interactions and the definition of property rights. These customarily embedded human-ecology interactions are continuously negotiated and [re]defined by various actors by establishing social networks and alliances (Berry, 1993). These networks and alliances reflect society's social, economic, and political relations (Kasanga and Kotey, 2001) and hence can be best understood through a governance lens.

The term land tenure refers to the customary or statutory rules and regulations governing the ownership, use and transfer of land rights and interests (Kasanga and Kotey, 2001). Land tenure systems are designed by society to manage man and land relationships (FAO, 2020). According to the ECA (2009), land tenure system is a social construct that defines the relationships between individuals or groups by specifying the rights and obligations to the control and use of land. Tree tenure, on the other hand, is a bundle of rights to access and use trees and their products each of which may be held by different people at different times [Fortmann, 1985; Dumenu et al., 2014; Ministry of Lands and Natural Resources (MLNR), 2016]. Some examples of tree rights include the right to own, transfer, inherit, use, and exclude others from using trees and/or tree products among others. For the purposes of this study, land and [shea]tree tenures are used to refer to the relationships that exists among people in respect of their entitlement to own, exploit and alienate land and economic trees for their own benefit. These relationships define the unique customary governance strategies that can be applied in the management of land and economic trees in each context.

Analytical lens: Governance and property rights over land and economic trees

Governance is defined by Hufty (2011a, p. 405) as the "social interactions in which actors make decisions regarding collective problems and issues". In Hufty's (2011b, p. 407)

view, governance reflects the intersection of the actors, norms, processes, and stakes that constitute the elements of decision-making. Governance can be viewed in the light of the actors, the decision-making processes involved and the outcomes they yield (Nelson, 2021, p. 13). According to Rakodi (2004), governance helps to explain the relationship between state and non-state actors in society, through various political processes. Both the state and non-state actors are constantly building relationships through existing political processes that facilitate space-creation or impede their operations (de Oliveira and Ahmed, 2021). These processes become conduits through which various stakeholders express interests, assert rights, make decisions, and mediate conflicts (Bakker et al., 2008). Using the governance lens is relevant to identify the range of actors, their roles, their relationships, and the power dynamics that exist among them in the governance of land and shea trees (Fuller, 2010; Smit, 2016). These actors may be diverse within the peri-urban space and include organizations, agencies, groups, firms, and associations that participate in the formal and informal processes that shape that space (Filippini et al., 2019). In Ghana, there are both formal and informal systems that govern land and economic trees. The formal systems are statutory regulations, laws and agencies that relate to land and tree tenure systems. On the other hand, informal tenure systems comprise the norms, customs and practices that are applicable to land and economic tree tenure. Also, chiefs, Tendaamba, urban and peri-urban smallholders as well as developers are involved in these political processes that relate to customary tenure systems and property rights to deliver urban land.

The property rights refer to the bundle of rights of a person to productive assets and includes the rights to hold the property, to invest in it, to use it and to transfer it (Demsetz, 1967; Platteau, 1996; Brasselle et al., 2002). The property rights of a person must be established, transferred, and enforced at a transaction cost (Allen, 1999). Property rights must first be acquired, secured, and maintained to guarantee security of tenure. When property rights are clearly defined, and the owners must incur a transaction cost to put the property to use and to enjoy the benefits thereof, the property would be put to its most productive use (Boycko et al., 1995, p. 19). In Africa, the land marketisation has largely been attributed to the shift from communal property rights toward individualized rights (Otsuka and Place, 2001). In Ghana, four main property rights regimes are identifiable—"owner-operated with full property rights, owner-operated with restricted property rights, fixed-rent and sharecropping contracts" (Abdulai et al., 2008, p. 16). The right to property is regarded a fundamental human right in Ghana and hence, the 1992 Republican Constitution of Ghana guarantees private property rights (see Article 17, Article 18, Article 22, Article 36, and Article 256). The formal legislations on property rights help to consolidate these rights beyond the complexities of customary tenure, and define ascertainable entitlements of ownership, access, use and transfer of land and economic trees. Population growth and increased urbanization has further exacerbated the changes observed in land tenure practices from communal toward more individualized ownership (Platteau, 2002; Amanor and Ubink, 2008; Kidido and Kuusaana, 2014) and increased monetisation in land acquisitions (Alchian and Demsetz, 1973).

In Ghana, customary institutions are challenged to maintain shea trees in urban and peri-urban areas (Dapilah et al., 2019). According to Arko-Adjei (2011), the existing customary systems in peri-urban areas are incapable of progressing to the point where they can cope with the pace, extent, diversity, and complexity of contemporary land management concerns. This is because many new urban and peri-urban areas lack the requisite land-use plans to guide urban development and sustainably protect green infrastructure generally. This is because, the Land Use and Spatial Planning Authority (LUSPA) faces numerous challenges that make land use planning difficult. According to Boamah et al. (2012), most planning authorities deal with financial and logistical obstacles, as well as recurrent human resource attrition, and conflicting legislations. According to Owusu and Waylen (2009), uncontrolled peri-urban development negatively impacts shea trees and shea-dependent livelihoods, exacerbated by climate change-related threats, and land degradation (Derbile et al., 2022). Also, poor land governance and tenure insecurity threaten investments in land in both urban and peri-urban areas (Ministry of Lands and Natural Resources (MLNR), 2016).

The peri-urban area is the interface between the urban and rural areas or zone with mixed urban and rural characteristics (Follmann, 2022). This urban fringe is also characterized by mixed land uses, with a quick dissipation of agricultural land uses (Ezeomedo and Igbokwe, 2013) due to the fluidity of land governance. For instance, farmlands are easily converted to civic, commercial, residential, and industrial uses and many peri-urbanite lose their original livelihoods through the process of urbanization. Peri-urbanization is the process through which rural areas located on the outskirts of established cities become urbanized over time and manifest changes in the physical, economic, and social structure of the village (Webster, 2002, p. 5). Peri-urbanization is used here to describe the process through which the rural areas bordering urban centers become gradually urbanized over through peri-urban development (Ravetz et al., 2013). Peri-urbanization is transitional and drives structural changes of rural areas into urban areas (Follmann, 2022). Hence, peri-urbanization influences both the spatial and socio-economic characteristics of rural areas (UN-Habitat., 2016) and result in the emergence of neo-urban hubs in fringes of the city (McGregor et al., 2006; Simon, 2021). The emergence of the neo-urban hubs in the transitional zone is driven by the emergence of a vibrant land market with relatively cheaper land values as compared to the cities (Cobbinah and Amoako, 2012). According to the UN-Habitat. (2016) peri-urban areas in developing countries are dominated by informal developments, inadequate basic infrastructure, poor and limited public services,

substandard housing, depletion of farmlands, and widespread poverty. The loss of farmlands coupled with the widespread poverty (Abass et al., 2018), presents dire consequences for shea populations as many shea parklands are destroyed to pave way for residential developments. As shea parklands are destroyed, the livelihoods of peri-urbanites which are woven around agriculture and forest resources are most affected.

Study area profile, justification, and methodology

Study area profile

This study was conducted in the Wa Municipality. Wa lies within latitudes 9°55'N to 10°10'N and longitudes 2°18'W to 2°37'W (Ahmed et al., 2020). According to the Ghana Statistical Service (2021) the current population of the Municipality is 200,672 as compared to 107,214 in 2010, with an average annual population growth rate of 6%. Due to the overall rapid population growth in Wa, several peri-urban communities have grown from patches of settlements to big villages (Osumanu et al., 2019; Ahmed et al., 2020). Wa, like other secondary cities in the north of Ghana, is characterized by low-level development though with high prospects for growth (Ahmed et al., 2020). It has a very high incidence of poverty, and poorly serviced with social infrastructure and services especially in peri-urban and rural areas (Ghana Statistical Service, 2018; Ahmed et al., 2020). The low-level development of many towns in northern Ghana is attributable to harsh environmental conditions, and historical state-led marginalization (Whitehead, 2002) and a, many of the people are subsistent and poor (Amanor, 1999; Dapilah et al., 2019). Hence, the discussions on land tenure are important in this area since they help to improve investment in agriculture, and the growing and maintenance of economic trees as a major supplementary livelihood. In the urban and peri-urban areas of the Savannah, shea populations are decreasing due to various social, economic, and institutional factors occurring simultaneously. Even though shea generally exists in the wild in many cases, governance practices may help improve their growth, yields, and management.

Justification for site selection

As shown in Figure 1, the study was conducted in three peri-urban communities: Danku, Kperisi, and Kpongu, all of which are within a 15-km radius from Wa and have both rural and urban characteristics (Dapilah et al., 2019; Ahmed et al., 2020; Abdulai et al., 2022). Land prices within these peri-urban communities have risen significantly over time (Boamah, 2013; Kuusaana and Eledi, 2015; Ahmed et al., 2020) and agricultural activities are fast diminishing (Dapilah et al., 2019). According to Poudyal (2009), shea parklands are better maintained on farmlands than in the wild or fallow lands. Hence, reduction in agricultural activities in the peri-urban areas impedes the governance of land and tree tenures. As farmlands give way to urban infrastructure development in these communities, farmers are compelled to exit agriculture and adopt alternative livelihoods (Abdulai et al., 2021). The focus of this study on shea tree tenure in north-western Ghana is because the shea remains a crucial economic tree and the income obtained from participating in the shea value-chain remains very high (Poudyal, 2009; Kanlisi et al., 2014; Mawa et al., 2021; Derbile et al., 2022).

Methodology

This study employed a cross-sectional case study design so that various perspectives and lived experiences of the participants as they interact with their natural environment can be incorporated (Creswell, 2009, p. 3; Creswell, 2014). Case studies are suitable for explaining, describing, and exploring events or phenomena in the everyday context in which they occur (Yin, 2009). The qualitative approach was adopted to allow for in-depth understandings of the land and shea tenure systems, and the lived experiences with these systems. Focus group discussions and in-depth interviews were used to gather primary data from purposely selected community members and key informants in the study areas. This was complemented with rigorous literature review on customary land tenure and governance in Ghana. The study population included chiefs, family heads, peri-urban land users and various agencies that govern the land and shea trees. These institutional factors such as customs, norms, traditions, practices, actors, and agencies inform the management of shea as an economic tree.

Purposive sampling was used to select participants for the focus group discussions and institutional interviews, while snowballing was used to select community members for interviews. The data were collected using audio recording devices (with the permission of interviewees) and transcribed from *Waali* to English. NVivo 10 software was used to analyse the field data by first organizing it into various themes. The thematization of the various responses allows for flexibility, accessibility and the collation similar thoughts or concepts from the interviews and focus group discussions (Braun and Clarke, 2006; Kiger and Varpio, 2020). NVivo analysis was conducted in two stages. The transcribed data was first coded and thematised. The codes were developed by labeling regular responses in the data. The queries tool in NVivo was used to identify patterns in the data and to refine codes further to reflect the study objectives. These patterns were subsequently organized into various research themes in line with the research objectives. Some of the themes used for this study included: land ownership, loss of land, challenges of accessing land, access to shea trees, and

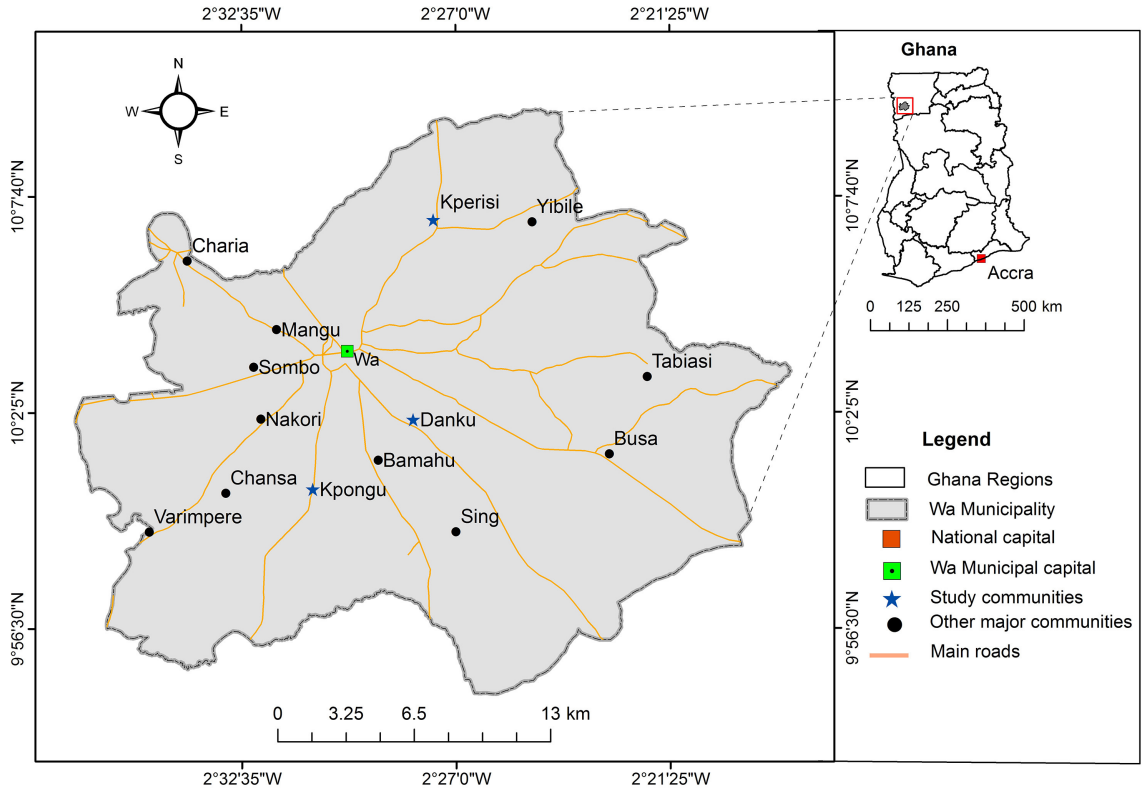

FIGURE 1
Map of the Wa Municipality showing the Study sites. Source: Author Construct, 2022.

loss of shea trees. To ensure reliability of the data and validity of the results, a robustness criterion was deployed through the member check approach consisting of three (3) participants to check the accuracy of the transcribed data and to see if the data resonated with the lived experiences of the participants. From the members check approach, all three selected participants endorsed the results (Birt et al., 2016; Brear, 2019).

In the absence of any reliable data on community members involved in the shea economy, the snowballing technique was important in identifying the women participants. The first set of women involved in shea collection, processing or trade were identified with the help of the Assembly Member, and these were then asked to recommend other participants in similar activities. In total, sixty-four (=64) participants were involved in the study. This comprised ten (=10) women and two (=2) men from each study community. In addition, six (=6) opinion leaders comprising the chiefs, assembly members, *Tendaamba* (Landlords), *Magajie* (women representative) and two community elders from each study community were selected for the focus group discussions (see summary of respondents in Table 1). These community leaders were chosen because of their role in governing land and shea tree tenures. In addition, the Lands Commission, the Environmental Protection Agency (EPA), the Forestry Commission, the Town and Country Planning Department, and the Ministry of Food and Agriculture had two participants in each of the study areas. These authorities were selected because they are responsible for urban planning and land management in the Municipality.

Results

This section presents the data of the study and discusses it within the context of existing literature. It discusses the formal and informal governance of shea trees; ownership, exploitation, and management of shea trees; impacts of customary governance of land and economic trees; and the challenges of both informal and formal governance of land and shea trees.

Formal and informal governance of land and shea trees

In the management of land and shea trees in Ghana, both formal and informal tenure systems are applied. This has birthed a hybrid system of land management which applies both customary and statutory systems and processes concurrently.

TABLE 1 Number of respondents and methods of data collection used in the study.

Data collection methods	Community	Participants number	Sampling technique
In-depth Interviews	Danku	12	Snowball sampling
In-depth Interviews	Kpongu	12	Snowball sampling
In-depth Interviews	Kperisi	12	Snowball sampling
Focus group discussion	Danku	6	Purposive sampling
Focus group discussion	Kpongu	6	Purposive sampling
Focus group discussion	Kperisi	6	Purposive sampling
Institutional interviews	Wa	10	Purposive sampling
Total		64	

Source: Author compilation.

Land and shea trees are owned and allocated by the Tendaamba, who are the first settlers of the community. At the family level, the land is managed by family heads who are descendants of the Tendaamba. The rights of the Tendaana and the family head are recognized by both customs and statute in Ghana, and they are principal actors in customary land management. In the Wa Municipality, these family land ownership systems supplement the statutory agencies in delivering urban and peri-urban lands for urban developments. The processes applied and the performance of this hybrid system of land management reflects the nature of society and influences security of tenure (de Oliveira and Ahmed, 2021), and how well they have combined both the statutory and customary regulations, principles, and norms. The formal actors such as the Lands Commission and the Land Use and Spatial Planning Authority assist to formalize and legitimize informal transactions, sometimes through the Customary Land Secretariats. This is because the formal rules, structures and processes of land administration fail to effectively anchor the informal systems. So, the Town and Country Planning Department continues to use development controls to mediate inclusion and exclusions from customary land use in both urban and peri-urban areas (Prov'e et al., 2019). Where formal tenure fails to guarantee land and shea trees security, interpersonal relationships and social networks are useful in securing customary tenure (Nchanji, 2017). Hence, informal governance relies on informal arrangements between family heads and usufructs (Söderbaum, 2004), while formal governance systems rely on deeds and title registration. Also, while the statutory systems are somewhat homogenous across the country, the customary tenure differs from community to community.

At the community level, various customary actors adapt different approaches to manage land and shea trees. For instance, each community has byelaws on economic trees protection and preservation. In all the study communities, natives can prune shea trees or cut deadwood for sale and home consumption without any restrictions. However, it is a prohibited to cut fresh shea trees without authorization from the family head, and in some cases the community chiefs since they have authorization over community commons. Particularly, no restrictions frown on the cutting of non-performing shea trees in peri-urban areas especially if such lands are being prepared for farming or housing development (Poudyal, 2009). However, the level of compliance with these community level restrictions differs among various people and across the selected communities since many households continue to depend on charcoal and wood for fuel. For an example, during the focus group discussions in Kpongu, one of the participants said:

> "We have various customs that are used to control the cutting of shea trees in this community. Unfortunately, the dominant source of household energy for cooking is charcoal and firewood. Since we cannot afford other forms of energy, we sometimes cut these trees to provide for our energy needs. Lately the restrictions on cutting trees are seriously enforced" (43-year-old female respondent, 2021).

The Reagent [acting chief] of the Kperisi community during the focus group discussion also said:

> "We know the importance of these trees and so we are committed to protecting these trees by enforcing the community bylaws. Recently, some strangers came into the community and cut several shea trees and were hauling it to the city. When we heard about it, we ordered their arrest at the police barrier. They were arrested and the tricycle and wood were ceased. We will ensure they face the law" (Focus group discussion held in Kperisi in 2021).

A female respondent from the Kperisi community during an interview said:

> "We have laws which are working. Once you are arrested, you will be fined. We used to cut shea trees for fuel in the past but now we do not. We understand the importance of shea trees and we now only go around to collect deadwood for fuel. Sometimes we go deep into the bush to harvest non-economic trees for firewood" (51-year-old female respondent, 2021).

From the study, every community has a distinct system of land and economic tree governance. These systems of governance are put in place to protect the overexploitation of shea trees (Amoako, 2012). For instance, various punitive measures are established to enhance the effectiveness of these

governance systems and to discipline lawbreakers. Where there is weak enforcement of land tenure systems, the depletion of shea trees becomes more intense (Amoako, 2012). However, the framing of these systems differs from community to community and with different degrees of enforcements. In some communities, anyone caught cutting down a shea tree is arrested and presented to the community chief[s] and elders for interrogation. If the person is found guilty, he/she is fined depending on the severity of the situation. It was established that these governance practices in peri-urban communities of Wa have reduced the indiscriminate cutting of fresh shea especially those on community commons. However, farmers have created shea parklands by protecting saplings and preventing indiscriminate cutting of trees and bush burning.

Ownership, exploitation, and management of land and shea trees

The ownership of land and shea trees can be joint or separated. This is because land ownership may come with automatic access and exploitation of economic trees, and in other instances, the rights to hold and beneficially use land are separated from the rights to collect shea nuts for both domestic and commercial use (Bruce and Fortmann, 1988; Rocheleau and Edmunds, 1997). These relationships built between people, land and economic trees are influenced by the prevailing tenure systems. However, the survival and sustainability of shea parklands especially those that are on farmlands or active fallow lands are shaped by various human activities (Pullan, 1974). The motivations for farmers and landowners to preserve, protect or plant new shea trees depend on if the plants bear edible[sweet] fruits, possess large nuts, and produce quality butter. When these factors are present, [farm]landowners are driven to institute restrictions on the shea cutting (Augusseau et al., 2006). They may also be motivated to maintain shea parklands by rationally comparing the cost of sustaining the survival of shea trees viz-a-viz the economic returns from the sale of the fruits, nuts, or butter (Bruce and Fortmann, 1988). If the maintenance cost exceeds the benefits, they may be unwilling to invest in shea tree management and the vice versa. In the selected communities, many farmers are unwilling to invest in shea planting because of insecurity of tenure but may manage existing shea parklands so long as they are entitled to collect the fruits and nuts.

According to Poudyal (2009), the performance of shea is better on active farmlands than on fallow bushlands. Shea trees on farmlands are intensively managed by periodic pruning, cutting or selective retention of the saplings. These agronomic activities improve shea productivity and increase the farmers' sense of ownership, control, and exclusion. In Mali and in Benin, Kelly et al. (2004) and Djossa et al. (2008) respectively found that shea trees growing on active farmlands or fallow lands had bigger girth and regular distribution than those on inactive fallow lands. However, due to the pruning and selective removal of shea trees on active farmlands (Blench and Dendo, 2004; Poudyal, 2011), the density of these trees is lower as compared to inactive fallow lands and forests. The reduction in the density of shea trees and the destruction of their regenerative abilities are primarily attributed to the prevailing mechanization system (Maranz and Wiesman, 2003; Amoako, 2012). Consequently, as shea populations reduce on farmlands, the owners are compelled to intensify the exclusion of non-family members from exploiting shea fruits and nuts from their farms. This explains why access and exploitation shea trees are governed by social relationships [marriage] and status [indigenes or settlers] (Kent, 2018). Hence, the ownership, access and use of shea trees can be coupled or decoupled depending on the institutions that manage this relationship.

The maintenance of shea trees also depends on both economic and institutional factors (Poudyal, 2009). The economic factors are the actual or prospective returns from trading in the fruits, nuts, or shea butter, and the cost of establishment, protection, and maintenance of the shea parkland. The institutional factors concern the land tenure itself—security or insecurity, and the rules, regulations, customs, practices, directives and restrictions, and personalities put in place to manage shea trees—chiefs and Tendaamba. The management and ecology of shea trees are undertaken at the household level and depend on the families' values and behaviors (Poudyal, 2009). Households with exclusive rights over land also invariably have rights over the trees. These rights to shea trees are further emboldened when the trees are planted or nurtured by the occupants of the land. Even though shea trees have generally grown on their own in the wild, farmers sometimes nurture shea saplings growing in the wild and transplant them to their farmlands. In the peri-urban areas, urban developments have significantly decreased shea populations (Poudyal, 2011; Amoako, 2012) while many usufructs whose lands have been alienated by their allodial landlords without their prior consent are expressing their resistance by cutting down shea trees for fuelwood and charcoal charring. Charcoal charring is an alternative livelihood, especially for women, as they are the most affected by urban land transactions (Dapilah et al., 2019; Abdulai et al., 2022). The Assembly member of Danku who had a contrary view during a focus group discussion said that:

> "In this community, once a land is sold, the person acquires ownership of the economic trees on the land, be it cashew, shea nut, dawadawa, mango, name them. They all now belong to the new owner of the land. We do not have instances where we sell land to a person and withhold the tree ownership rights from the person. Some land sellers, however, have issues with buyers over the trees on the land. But at the end of the day, the buyer always wins. The buyer can decide to give the seller access to the trees or restrict him. The seller has little to say in this regard".

Impacts of customary governance system on land and shea tenure

The existing customary land governance system has impact on land and tree tenure systems in peri-urban communities in Ghana. Destruction of shea trees in urban and peri-urban areas is attributable to the complexities of customary tenure and the constellations of powers to grant land and tree rights (Pottier, 2005; Amoako, 2012). For instance, poor resource governance and policies are responsible for the depletion of environmental resources in peri-urban areas (Manjoro, 2017). This is because the more powerful sect of the society always has secure access to land, while the weaker sect has a more fragile tenure system (Antonio, 2018). At the central and local government levels, there are no specific rules that stipulate what should be done with economic trees on purchased or leased land. Shea trees are managed by applying various customs and prescriptions that are spatially diverse. According to Vanderpuye et al. (2020), the lack of comprehensive policies to protect forest reserves, has led to various disputes in the use, control, and management of trees. In the Wa Municipality, the authority of family heads [as trustees] to allocate land to other persons is limited to the unencumbered portions of family land, but not on land that belongs to other family members. Here the beneficial interest resides with the usufructs, or families that *de jure* or *de facto* possess [in]active fallow lands. Farmlands here are acquired through inheritance or through usufruct holding systems. The chief of the Danku community said:

> "Land in this community is passed down along ancestry. Such lands are managed at the family level by the family head, who decides on what to do with the family land or who gets land. The chief and elders are usually not informed if the family wants to sell all or part of their family land. Once a portion of land is alienated, everything on the land belongs to the buyer except it is agreed that the trees would remain for the exploitation of the family head" (Focus group discussion, 2021).

One may own land and not own the trees, and one may access trees for personal benefit and not own the land. Families that occupy family land may be granted primary rights to shea trees while others may be granted secondary rights on fallow family lands. Landowning and landless families can access shea trees from the community commons on both personal and commercial bases but cannot exclude others. When family land is alienated, the new owner may have exclusive entitlement to the land, including naturally existing shea trees and those planted. Such new landowners tend to exclude usufructs from trespassing. Perceiving this exclusion, as soon as family land is alienated in the urban and peri-urban areas, other family members immediately cut down the trees unless they can continue to farm and collect shea nuts on it. According to the Tendaana of Kpongu community:

> "We have community bylaws covering land transactions. These have to do with the economic trees on the land. If anyone comes to buy land, especially in large quantities and wants to develop the land we cut the tree on the land for charcoal or firewood. Afterwards, any other tree that grows on the land belongs to the buyer. I cannot sell my land to someone and add the trees to the person. If the buyer is interested in owning the trees, then he or she must pay for them".

In some cases, the usufructs cut these shea trees before the bare land is alienated for urban development. This practice can be a subtle expression of discontent to land transactions (Otutei, 2014) and a weapon of the weak (Scott, 1985). Purchasers of the land may subsequently plant their own trees or nurture existing saplings. According to a 32-year female participant in Danku,

> "When parts or whole of our farmlands are alienated, we are aware that the new owner[s] will come to develop the land someday. To do that they must cut down the trees on the land. When this happens, we cannot access the trees for charcoal or even firewood. The new owners from nowhere come to sell the trees. For some time now, we are fast to cut down the trees so that we do not lose twice" (Interview, 32-year female participant in Danku).

Challenges of formal and informal land and shea tree governance

The governance of land and shea trees in the Wa Municipality is impeded by the natural growth pattern of shea trees, lack of incentives to manage shea trees, tenure insecurity and uncontrolled urbanization. Despite the various state-led interventions in protecting economic trees in Ghana, little attention is given to shea trees because they primarily grow as wild trees with limited success in creating secondary parklands. Much of the recent attention on planting and nurturing economic trees in Northern Ghana has focused on mangoes and cashew. Even though there are recent attempts to cultivate shea on a commercial basis, these trees are performing poorly, coupled with land tenure insecurity and long maturation period. Hence, many urban and peri-urbanites are rather into commercial production of cashew and mango because of their wider profit margins and massive national and international support. Even though this is another way urban and peri-urban households are contributing to ecological change, some farmers

are replacing shea trees with mango and cashew. According to the Chief of Kpongu:

> "About 20 years ago, this community had many shea trees. Now the population of these trees has reduced drastically. People go to cut these trees for charcoal and other things. We also have people coming to this community to buy land for housing and in the process, they cut down these trees to make way for their development. If a system is adopted where the shea seedlings are entrusted into the hands of individuals to nurture and protect till the trees grow and fruit, like it is done with cashew and mango seedlings, I am sure these trees will be better protected. Now, everyone can have access to the trees, so people are abusing this freedom by cutting down the trees for charcoal and other purposes" (Interview with the Chief of Focus group discussion held in Kpongu in 2021).

Incentives are relevant in the management of land and economic trees (Barrera-Bassols et al., 2006). Unfortunately, the incentives to maintain shea parklands are non-existent besides the collection of shea nuts and deadwood. This is exacerbated by the fact that no compensation packages are available to usufructs whose lands are alienated by their allodial landlords. According to Unruh (2008), every successful agro-ecological arrangement will require that urban and peri-urban farmers have incentives to plant and protect trees. To provide agro-ecological benefits, there is the need to consider the prevailing shea tenure systems simultaneously with land tenure arrangements and the socio-economic conditions under which they exist (Poudyal, 2009). For instance, the non-criminalization of shea extraction from the wild must come with clear restrictions and sanctions on the cutting of these shea trees. According to a participant of the focus group discussion in Kperisi:

> "Farmers are willing to protect and maintain shea trees if the byelaws on tree cutting are effectively and impartially enforced. People who indiscriminately cut down shea trees must be identified and fined heavily. In addition, the economic trees must be entrusted to individuals or even families for safeguarding" (Focus group discussion held in Kperisi in 2021).

Individualization of land rights is gaining prominence following the nuclearization of families, and the birthing of private proprietary rights (Otsuka and Place, 2001) are gradually limiting the oversight powers of the family head. Hence, families tend to take center stage in managing family lands and in protecting the economic trees. According to Kidido and Kuusaana (2014, p. 39), the individualization of land rights can be attributable to population growth, poor economic conditions and breakdown of social systems that greased the wheels of communal rights (Platteau, 2002; Amanor and Ubink, 2008).

Insecurity of tenure is another factor that explains why shea tenure governance is problematic in the Savannah of Ghana. The shea rights generally include the right to own, use, inherit, alienate, or exclude others from using trees and/or tree products. A secure tree tenure must constitute an immunity from third parties termination (Ministry of Lands and Natural Resources (MLNR), 2016). Land and shea tenure security is relevant because it defines the consumption patterns, utilisations, and management practices (Acheampong and Marfo, 2011). Farmers will manage and protect economic trees if there is a certainty their efforts and investments are beneficial. Unfortunately, environmental protection policies in Ghana have failed to address the complexities of tree tenure systems and grant smallholders the assurances on tenure security. Hence, land and shea tenure insecurity pose a challenge to the governance of land and shea trees.

Another challenge to urban and peri-urban shea trees governance is uncontrolled urbanization. As soon as land markets develop, the rate of urbanization consumes agricultural lands and shea trees. This is because spatial planning practice in Ghana fails to protect farmlands and economic trees. According to Kasanga and Kotey (2001), as soon as community planning schemes are approved, farmers lose control of their farmlands and the economic trees on it. Gradually, patches of villages around the city develop into small towns that are closely connected and influenced by the city (Osumanu et al., 2019). The men's representative during the focus group discussion in Danku said that:

> "Danku is fast developing. The community used to be a small village. Now developments are seen everywhere. These developments have continued unabated. People have bought lands and continue to buy more. Many strangers have bought lands and are developing them." (Focus group discussion held in Danku in 2021).

According to the Assembly member of Danku, the purchase of land in the community is an interesting way of communicating that land is scarce in other places. As almost all the land in Danku has been allocated already, there are more new settlers now than the indigenes in the community.

Discussion

In this study, the governance and property rights lenses were used to examine the tenure systems through which land and shea rights are managed, the impacts, and challenges faced in the process. The main actors of land and shea tree management under family settings are the Tendaamba, family head, smallholder farmers and shea collectors, processors, and traders. Chiefs serve as intermediaries for the management of community commons, not as owners, but as brokers of

development and mediators of conflicts (Ahmed et al., 2018). The Tendaamba and family heads are responsible for allocating land to indigenes as usufructs, to settler farmers as licensees and to developers on leasehold terms. Smallholders operating in the urban and peri-urban interface are responsible for shea collection, processing, and trading, hence, they are critical in maintaining shea parklands on their farms or in cutting them for domestic fuel. The chiefs and Tendaamba deploy various customary practices, rules, and regulations to manage land and shea trees. Urban developers acquire land through family heads and through other urban developers on assignment terms. Based on the unique interests of each of the parties, the relationships among the stakeholders can be cordial or competitive. For instance, while urban developers may have a cordial relationship with the Tendaamba or family heads as suppliers of land, they may be viewed as destroyers or invaders of the smallholders space. This is because, urban developers may end up destroying shea trees and prevent farming activities on encumbered peri-urban lands. However, the Land Use and Spatial Planning Authority is unable to mediate the process because they are constrained in terms of manpower and financial resources (Kuusaana and Eledi, 2015).

From the study, it was found that land and shea ownership can happen in a spectrum, where land rights are coupled with or decoupled from shea rights. This means the right to hold and use shea nuts or benefit from collecting shea fruits is held separated or held jointly with land rights. The relationship that exists among people, land, and economic trees is shaped by existing customary tenure systems (Poudyal, 2011), and these invariably shape sustainability of shea tree populations (Lovett and Haq, 2000; Maranz and Wiesman, 2003; Amoako, 2012). The maintenance of economic trees is influenced by their economic viability and cost of maintenance (Poudyal, 2011). The exploitation of shea trees is open access on community commons but restricted on shea parklands where farmers play a role in the planting, protection, and maintenance (Boffa, 1999). This is because as farmers invest in sustaining shea parklands, they accumulate rights to realize their investments by excluding all others. The access to shea trees is also defined by the social status (Kent, 2018), population of existing trees (Schreckenberg, 1999; Maranz and Wiesman, 2003; Amoako, 2012) and various institutional factors (Fortmann, 1985; Boffa, 1999). Institutional factors here are relevant in dictating security of tenure of ownership and use of shea trees. Farmers with insecure tenure express their resistance to alienations of their shea parklands by cutting down the trees (Scott, 1985; Otutei, 2014).

Customary complexities affect shea tree governance in Ghana. Land remains with the family and members can access it as usufructs. As usufructs, they own both the land and the shea trees on it. When families alienate portions of their usufructuary lands, the new owners take the shea trees unless there are express agreements to the contrary. Hence, usufructs who intend to maintain shea access on alienated lands must discuss these with new owners or may proceed to cut the economic trees for charcoal before the lands are transferred. The exploitation of shea trees is guided by community byelaws that frown on the cutting of shea trees unless it is meant to give room for development (Poudyal, 2009). Shea trees in the wild continue to face management challenges in Savannah. This is because they are exploited as common pool resources with no responsibility to sustain it and no criminalization of exploitation (Platteau, 2002; Amanor and Ubink, 2008). Hence, there is already a shift toward the individualization and excludability on privately asserted lands in Northern Ghana. According to Kidido and Kuusaana (2014, p.39), the individualization of land rights can be attributable to population growth, poor economic conditions, and breakdown of social systems. Also, the lack of incentives to manage shea trees is exacerbated by the fact that usufructs are not compensated for their land and shea parklands when their farmlands are alienated by their allodial landlords (Barrera-Bassols et al., 2006; Unruh, 2008; Amoako, 2012). Insecurity of tenure against third parties is problematic unless smallholder parklands are properly protected by recognized social institutions and their rights are enforceable. Farmers have no assurance of enjoying their investment in shea parklands. Farmers who tend shea saplings on privately owned lands, must be able to enjoy the shea produce as private property. These concerns are deepened by uncontrolled urbanization that continues to consume farmlands across various cities of Ghana (Owusu and Waylen, 2009).

Conclusion and policy recommendations

Shea trees are an important ecosystem services supplier and contribute to a complex shea value chain with many industry players. The study generally centered on the land governance dynamics and how these impact on tree tenure and ecology in peri-urban areas in Ghana. Specifically, the empirical section of the study sought to address three important dimensions. The first was to explore the ownership, exploitation and management of land and shea trees, the second was to assess the impacts of customary governance structures on land and shea trees, and the third to examine the challenges affecting institutional roles in land and shea governance. The right to benefit from economic trees dominates tree rights in Northern Ghana. As a result, shea tree governance should be a collaborative endeavor among chiefs and family heads who use or regulate tree resources at the community level. This is aimed at ensuring that benefits reach all those who contribute to establishing shea parklands and create the right incentives for them to continue to plant, protect and manage shea tree for the long-term benefits. In line with this, there is the need for both the customary and statutory institutions to establish institutional frameworks that impartially enforce restrictions on the exploitation of shea trees. This will require the [re]institutionalization of customary land tenure systems and the informal procedures in customary

land administration in Ghana. Ownership and entitlements of smallholders who establish shea parklands must be clearly documented at the community level by the Customary Land Secretariats, and if there is the intention for usufructs to share benefits with their allodial landlords, this too must be documented. To facilitate efficient peri-urban land and shea governance in family land jurisdictions, family heads must involve family members in all the processes of land transactions and assign them a clear mandate and entitlements in customary land administration.

This study is limited in the sense that it adopts a purely qualitative approach and hence fails to posit the findings within the existing statistics on research into land and shea tenure systems for generalization. Since this study fails to discuss the details of how various sections of participants in the shea economy are affected by changes in land and tree tenure systems, further research could be targeted to this area.

Data availability statement

The raw qualitative datasets supporting the conclusions in this article can be made readily available to anyone upon a formal request. The data is part of a larger dataset collected by Kristonyo Blemayi-Honya, EK, and Elijah Yendaw. Request to access the datasets should be directed to EK, ekuusaana@ubids.edu.gh.

Author contributions

The author was responsible for the conceptualization and writing of the manuscript. The author confirms being the sole contributor of this work and has approved it for publication.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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