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Viability of Community-Based Payments for Ecosystem Services in Conflict Resolution: Insights from Villages Adjacent to Mkungunero Game Reserve, Tanzania

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Abstract

Arguably, protected areas have long been the most effective and widespread measure for conserving nature and are recognised as a cornerstone for biodiversity conservation. Nevertheless, conflicts between the authorities of protected areas and communities adjacent to them in developing countries are persistent, mostly due to restrictions on access to ecosystem resources. Yet, there is a paucity of knowledge on the innovative strategies that could address this common conservation challenge. In recent years, however, community-based payments for ecosystem services (CB-PES) have emerged as one of the potential strategies for mitigating these conflicts. Using a case study approach and qualitative data collection methods, namely focus group discussions and in-depth interviews, along with document review and guided by political ecology theory, this study assessed the potentiality of CB-PES in resolving conflicts between conservation authorities and communities adjacent to the Mkungunero Game Reserve (MGR).Through these approaches, communities' perceptions were solicited and analysed using thematic analysis techniques. The results showed that, despite the 'usefulness' of CB-PES in involving communities in decision making and its potential for a sustainable benefit-sharing mechanism, it may not be the best tool for conflict resolution in the MGR. This is attributed to several factors, including an unpleasant historical background, socio-economic effects stemming from the community's loss of property and lives caused by persisting conflicts between the MGR authority and communities and fear to lose their identity. It is therefore, noted that CB-PES is a context-specific solution towards conflict resolution because its success depends on the nature of the conflict and the local community perception.

1. Introduction

An extensive body of research indicates that biodiversity losses have reached an alarming level worldwide, putting entire ecosystems at risk [1]. This situation has necessitated the urgent need for effective conservation instruments (Kaiser et al., 2023). It is along this line of argument that protected areas (PAs) are increasingly seen as the most effective and widespread measure for natural resources conservation, safeguarding biological and cultural diversity, and improving the livelihoods of local communities [2, 3]. Nevertheless, conflicts between PA authorities and the adjacent communities are increasingly becoming a worldwide problem [4, 5]. This is largely due to a failure to involve local communities in planning, management, and decision-making. Yet, the principle of local support states that protected areas cannot survive without the support of their neighbours [6]. This conventional and exclusionary conservation approach has resulted in local community displacement, restricted access to PAs, loss of property and, community disintegration, and reduced supply of goods and services in general [7, 8]. It was also observed that in the Tsitsikamma National Park in South Africa, the local community practices illegal activities as a form of retaliation against command and control conservation policies [9].

In Tanzania, about 38% of land is dedicated to PAs, exceeding the global average, which is (17.6%) of the earth's land under protected areas [10]. It, in fact, contributes more than most countries worldwide to

achieving the Kunming–Montreal Global Biodiversity Framework (KM-GBF) targets [11]. However, the situation on the ground suggests that conservation practices fail to adequately account for local communities' livelihoods. This results in marginalisation and further degradation of lands and livelihoods and eventual conflicts between local communities, wildlife, and larger stakeholders in the environment (ibid).

The Mkungunero Game Reserve (MGR), the focus of this study, was deemed a potential site for advancing the concept of Payments for Ecosystem Services (PES), especially CB-PES. However, MGR is characterised by serious land and boundary conflicts with the neighbouring villages of Keikei, Indidiri, Irikuishibour, and Kimotorok in Kondoa, Kiteto, and Simanjiro districts [12, 13]. Efforts have been underway to resolve these conflicts over the past few years. Unfortunately, these efforts are dominated by "command and control" and "protectionism approaches", alternatively described as "the fines and fence" approaches [7]. As a result, the conflicts have persisted and intensified [12]. This is attributed to the fact that the employed conflict resolution approaches are neither win-win nor sustainable (ibid). It has been observed that dispute resolution machinery in Tanzania is characterised by severe overlaps, long and everlasting cases, inaccessible justice, and is associated with great dissatisfaction [14]. Hence, the importance of incorporating a more participatory approach into PA decision-making processes has been widely recognised in the literature. One of the most often emphasised participatory approaches is CB-PES.

CB-PES is increasingly used to sustain both the natural environment and local livelihoods. It is part of a new and more direct conservation and management approach that explicitly recognises the need to bridge the interests of communities connected by ecosystems. On the other hand, CB-PES is designed to bridge PES and community-based conservation by directly engaging with communities [15]. The relevance of CB-PES in resolving conflicts over resource use stems from its design and implementation processes, which require specific consideration of project boundaries, clear land tenure, strong existing institutions, benefit distribution, capacity-building for community monitoring, and community control over land management decision-making processes [16]. In the context of forest conservation, implementation of CB-PES initiatives has been successful through the establishment of local forest user groups that monitor, regulate, and manage resource use at the village level [16].

Despite its importance, scientific analysis of CB-PES and its potential for conflict resolution is generally limited. Only a handful of studies exist which indicated successful implementation of CB-PES programmes [17] and alleviate the conflict of parks versus people [18]. More specifically, studies on PES in Tanzania have tended to focus on other aspects, such as the designing of PES programmes, allocation of payments/incentives, willingness to pay for environmental services, and impacts of PES on livelihoods [19–21]. Consequently, there has been scant scholarly attention on how CB-PES could be implemented as a conflict resolution strategy. Apparently, the absence of CB-PES in conflict resolution is attributed to weak property rights and institutional capacity to increase community engagement in CB-PES. This article discusses CB-PES as a possible instrument for conflict resolution by drawing references from Mkungunero Game Reserve. [22, 23] suggest that, when implemented judiciously, CB-PES schemes

could serve as a sustainable tool for harmonious natural resource management, including forests, watersheds, and wildlife. The study was guided by two questions: (i) How detrimental is the prevailing conflict to local communities adjacent to the MGR? (ii) Is the CB-PES viable to sustainably address the escalating conflict between MGR and the adjacent communities?

2. Historical Overview of the Conflict Between MGR and Adjacent Villages

Conflicts

between the MGR authority and the adjacent communities have been persistent since mid-2000, triggered by the resurveying of MGR boundaries [12, 13]. The resurvey and expansion led to new territorial claims by state authorities over areas that were traditionally used by villages and rural communities. Lands that were once legally recognised for cultivation and grazing suddenly became off-limits for human use. This shift triggered unresolved land-use conflicts, leaving local residents vulnerable to violence, forced evictions, and loss of their livelihoods [12].

A re-survey of local boundaries has kicked up a lot of conflicting claims about who controls which areas. Some people argue that Kondoa District belongs to Dodoma Region, while Simanjiro and Kiteto Districts should belong entirely to Manyara Region. A huge part of the problem is that the new administrative lines are cutting right through villages that have always been managed by a single district and region. For instance, Kimotorok Village is officially listed as being in Simanjiro District, but it actually appears to be located within Kondoa District's territory [12]. Another complicated issue is about the borders of the M G R and Tarangire National Park, which slice through village lands and add more confusion over who is really in charge (Fig. 1).

As a result of this conflict, between 2008 and 2015, over 421 acres of crop fields, including beans, maize, and sesame, were destroyed, causing loss to the communities of about Tshs. 62 million, equivalent to USD 35,514 [13]. The conflict happened alongside the violation of human rights, involving forced disappearance, rape, extortion, and burning of seven Maasai houses commonly known as *'bomas'* and injuries to 61 people [24]. Regular meetings with community leaders, provision of conservation education, and land surveys have been used to address the conflict but have never been effective in addressing such skirmishes.

3. Methodology

3.1. The Study Area

The MGR is 743 km^2 in size [25]. It is found in Kondoa District in Dodoma Region of Central Tanzania (Fig. 2). The research was conducted in three of the eleven villages adjacent to this reserve. These villages include Keikei, Kimotorok, and Irkiushibor, located in Kondoa, Simanjiro, and Kiteto districts,

respectively. The main economic activities for most of the people residing in these villages are agriculture and livestock keeping. The three villages were selected as they all experienced conflicts with the Game Research (GR) authorities over the years. Kimotorok and Irkuishibor are mainly pastoralist villages and therefore depend on the reserve for water and grazing. On the other hand, residents in Keikei are dominantly farmers who require fertile land to produce food and cash crops. Hence, access to land as the basis of their livelihoods cannot be overemphasised.

Source: Geographic Information System (GIS) Unit, University of Dodoma (2023)

3.2. Conceptual Framework

To assess the root and resolution of the conflicts around the MG R, political ecology (Walker, 2005; Watts, 2017) was used as an analytical framework and supplemented with environmental justice theory. Specifically, we focused on- CB-PES as a policy tool to see whether it can genuinely help resolve conflicts. Instead of treating the conflict as a simple misunderstanding between groups, political ecology provides an understanding of how conservation is entangled with broader issues of power, land conflicts, and unequal access to natural resources. This approach helped to investigate how old arguments about boundaries, the government's control over protected areas, and rules limiting access to resources have changed people's lives creating a deep rift between the goals of conservation and the community's need to survive. Furthermore, environmental justice helps to focus on how local communities judge whether conservation programmes are fair and legitimate. This perspective zooms in on three connected ideas of justice namely distributive justice, which concerns whether the benefits and burdens of conservation are fairly shared between the reserve and the people living nearby, procedural justice which helps to assess whether communities have a position in the decisions being made about conservation and the CB-PES programmes and recognition justice that helps to analyse whether the identities, knowledge, and cultural ties to the land, especially for pastoralist communities, match with conservation strategies. This combined approach provides the foundation for analysing CB-PES in resolving conflicts in PAs. The aim was to determine whether a tool like CB-PES can be seen as legitimate and socially acceptable in a place with a complicated history of contested land rights, where people depend on nature for their livelihoods, and where there is little trust between communities and conservation authorities.

3.3. Data Collection Methods

The study employed a case study research design complemented by a qualitative approach, as it is relevant for producing a thick (detailed) description of participants' feelings, opinions, and experiences [26]. It also helps to interpret the meanings of their actions [27]. The design was important for generating a holistic understanding of the conflicts in communities adjacent to the MGR, as well as their views on the potential of CB-PES to address these conflicts. Data were collected through in-depth interviews and Focus Group Discussions (FGDs). In-depth interviews involved key informants who were mainly officials at various levels, community members and local leaders such as the Leigwanani from the respective villages. Each interview took between 30 and 40 minutes which were deemed adequate to solicit and

capture relevant and critical issues from the respondents. Community members were also involved during the interview. The snowball sampling technique [28] was used to identify individuals who were most affected by the conflict. Initially, a few participants were identified with the assistance of ward and village executive officers, who helped locate community members with direct knowledge and experience of the boundary disputes. These initial participants were then asked to refer other individuals who were similarly affected or knowledgeable about the issue. This process continued iteratively until data saturation was reached, meaning that no new relevant information or perspectives were emerging from additional participants [29].On the other hand, FGDs involved six groups, three of which involved women, and the rest (three) involved men (Table 1). Each discussion took about 40–60 minutes, focusing on issues related to community members' relationship with the MGR authority, the prevailing conflicts, sources of livelihoods, and whether and how their livelihoods are affected by the prevailing conflicts. Also, the discussion touched on whether CB-PES is an ideal tool for conflict resolution. Each group comprised five to seven participants (Rabiee, 2004). The FGD participants were selected based on a range of criteria, including sex, age, gender roles and their experience with the escalating conflict with the MGR authorities.

Table 1
List of Research Participants

S/N	Position/Role of the Key Informant			# of key informants selected	Location
1.	**MGR Manager**			**1**	**Kondoa District**
2.	MGR Wardens			2	Kondoa District
3.	Ward Councillors			2	Keikei and Loiborsiret wards
4.	Ward Executive Officers (WEO)			3	Makame, Keikei, and Loiborsiret
5.	Village Executive Officers (VEO)			3	Keikei, Kimotorok, and Irikuishbor villages
6.	Community members			42	Keikei, Kimotorok, and Irikuishbor villages
7.	Leigwanani (traditional leader)			2	Kimotorok and Kimotorok wards
8.	**Total**			**55**	
	Focus Group Discussions				
	Ward	Village	No. of groups	No. of participants	
1.	Keikei	Keikei	2	12	Keikei Village
2.	Loiborsiret	Kimotorok	2	14	Kimotorok Village
3.	Makame	Irikuishbor	2	13	Irikuishbor Village
Total			**6**	**39**	

During FGDs male participants were separated from female participants. The separation was important because, traditionally/culturally, for the Maasai, it is wrong and unbecoming for women to speak or argue before men (Hodgson, 2011). Thus, separating the participants was critical to give each participant freedom to express their views and feelings about various issues, particularly about the existing conflicts, confidently. In terms of analysis, we used thematic analysis techniques to analyse both the KI and FGD data. Through this method, we closely examined the data to identify key emerging themes, concepts, topics, ideas, and patterns that we subsequently used to address the research by saying something about an issue that we investigated [30]. This analysis approach was relevant because it allowed for flexibility in interpreting the data and made analysing large datasets easier by sorting them into broad themes [31, 32]. To be more credible, the data analysis processes adopted a range of different but interrelated stages in the auspice of thematic analysis as expounded in Table 2 below:

Table 2
Thematic Analysis Stages and Process

Sn	Stage	Description of the process
	Familiarising with data	**This stage entailed transcribing the data, reading and re-reading it while noting down initial ideas.**
	Generating initial codes	This stage involved coding interesting features of the data systematically across the entire data set, while collating data relevant to each code.
	Searching for themes	Here we collated codes into potential themes and gathered all data relevant to each potential theme.
	Reviewing themes	This stage involved checking whether the themes align with the coded extracts and the entire data set to generate a thematic 'map' of the analysis.
	Defining and naming themes	Proceeded with analysis to refine the specifics of each theme, and the overall story the analysis tells, while generating clear definitions and names for each theme.
	Developing the report	This was the final opportunity for analysis that entailed the selection of vivid, compelling extract examples, final analysis of selected extracts, relating the analysis back to the research question and literature, and producing a scholarly report of the analysis.

Source: Adopted from Braun and Clarke, 2006

4. Results

4.1. Situation of the Conflict During the Study

During data collection, there was no actual conflict that was reported. However, there were situations which demonstrated tension and psychological distress among the community members., The atmosphere in the communities bordering the MGR was thick with fear and stress. It was noted that seeing armed wardens constantly patrolling the villages was deeply unsettling, with many villagers perceiving it as intimidating and traumatizing. As one resident put it:

Though I am a government leader and it may not be right to talk about what is happening in our village, I always get puzzled when I see the MGR wardens regularly, moving around our village with their vehicle holding guns. This is a very detrimental practice as I think it significantly traumatize people. [A male village leader; Aged 59, 7th February 2023].

Such a situation has created fear and mistrust among local residents as they associated the patrols and previous enforcement operations with livestock repossession and other punitive actions by reserve authorities. For instance, villagers reported that a man from Irkuishibor village had approximately 100 of his cattle seized by wardens in July 2018. He was accused of allowing his cattle to graze inside the

reserve., In addition to the confiscation of his cattle he was fined 20 million Tanzanian shillings, equivalent to $9,000.

In December 2020, another incident occurred in Ijora Village. A water borehole, was being constructed to supply water to the local kindergarten school. However, MGR authorities intervened and halted the construction, claiming that the construction site was within the MGR boundary. As a result, approximately 80 students had to transfer to another school18 kilometers away. Furthermore, about 30 children could not join primary school the following year because the kindergarten had to close due to lack of water. This incident highlighted a lack of coordination among relevant stakeholders, thereby exacerbating the existing conflict. While the education department had approved the new kindergarten, the MGR management team blocked its establishment, citing conservation regulations. During the discussion, one respondent questioned this apparent contradiction:

How is it possible for the same government that allowed us to construct a school for our children with approvals of construction design by the district engineer to come back and tell us that this is a reserved area? [A male respondent Aged 61- Irkuishbor Village, 13th February 2023]

Similar grievances were revealed in relation to operations conducted at the local community level. It was reported that several fishing sites were destroyed, five fishermen were arrested, and 70 fishermen lost their fishing equipment during enforcement operations conducted by reserve wardens. A woman who sells fish described the significant financial impact this operation had on the community.

On the same day that fishermen were arrested, I lost my money amounting to TZS 600,000 (US$ 260) which was my earnings from fish sells and utensils and equipment I use for roasting and storing fish….[A female respondent aged 46 years in Irkuishbor Village, 13th March 2023]

A conflict

also occurred in Keikei Village in 2006, when officials from the local game reserve declared that many residents' farms were within the reserve's boundary. The decision had a severe impact on the community, leaving more than half of the households (162 out of 234) without farmland. This was particularly difficult for the residents to accept, as they had depended on these farms for both income and food, resulting in serious food shortages and a substantial loss of income.

Human-elephant conflict, most likely caused by the extension of the MGR boundary is also a critical problem facing communities adjacent to the reserve. In 2019, for instance, elephants invaded Keikei village and damaged crops on people's farms. Although the victims suffered significant losses, no compensation was provided. In fact, they were required to pay TZS 5,000 (approximately US$2) for a form to submit their claims for compensation or consolation. By the time of this study, none of the affected community members had received any compensation from the MGR authorities. This could be due to the fact th there is no regulatory framework in Tanzania for compensating losses caused by the wildlife. This state of affairs is a clear demonstration that communities surrounding protected areas in

Tanzania are often affected more negatively than positively by their interactions with wildlife. As opposed to full compensation, Section 71 (1) of the Wildlife Conservation Act, 2009 provides for consolation payments for loss of life, crops, or injury caused by dangerous animals [33]. The Act gives the Minister responsible for wildlife the mandate to make regulations specifying the amount to be paid as consolation to a person or group of persons who have suffered such losses (ibid). To enforce these provisions, the Wildlife Conservation (Dangerous Animals Damage Consolation) Regulations, 2011 established consolation payment rates for various types of damage. For instance, the payment rate for loss of human life is TZS 1,000,000 (approximately $400), TZS 500,000 ($200) for permanent disability, and TZS 200,000 ($80) for temporary injury. But the rationale for these payment rates is not stipulated in the relevant regulations. Yet it is evident that the amounts are significantly low relative to the magnitude of damages. Worse still, these consolation payments are subject to numerous conditionalities and bureaucratic procedures, including reporting the incident within three days and verification by a Wildlife Officer, Agricultural or Livestock Officer, Village Executive Officer, Ward Executive Officer, and two independent witnesses from the area (Kegamba et al., 2024).

In addition to losses reported earlier homes, farms, and wetlands used for livestock grazing during dry seasons are reportedly located within the reserve's boundary. In this regard, the MGR officials have denied community members access to these important wetlands, claiming that Kisondoko sub-village in which tese resources are is an illegal settlement situated entirely within MGR. These restrictions and denials have resulted in the loss of a significant number of livestock belonging to neighbouring communities. For example, in 2009, in Kisondoko Sub-village, about 13 cows were lost when park wardens invaded the neighbouring village and set fire to the Maasai *bomas*. During the same incident, other belongings, such as mobile phones and an *olalem* (Massai swords), were reported to have been lost.

In 2014, about seven *bomas* were set ablaze by the MGR wardens, affecting approximately 700 people who lost their properties. In 2018, MGR wardens confiscated livestock near villagers' homesteads. The livestock owners were required to pay fines to rescue their livestock on the grounds that the livestock had allegedly entered MGR. The fines were extremely high, ranging from TZS 1 million to TZS 5 million (approximately US$500–2,500). Moreover, these payments were collected without issuing official government receipts. This highlights the severity of livestock confiscation lack of transparency and accountability in the fines imposed. One key informant from Kimotorok reported that in 2019, his 131 cows were confiscated by MGR wardens, and he was forced to pay TZS 6.7 million (about US$3,000) to recover them. In seeking for justice, he filed a case against MGR. However, by the time of this study, he was still attending court sessions without any signs that the case would be fairly resolved. This situation affected him both financially and psychologically.

Table 3
Summary of Events in Villages Adjacent to MGR with Potential Negative.

Sn.	Year	Event
	2009	**13 cows and other properties in Kisondoko Sub-village got lost when the MGR wardens invaded the sub-village and set ablaze the Maasai *bomas*.**
	2014	Seven bomas were set ablaze by the MGR wardens, and about 700 people lost their properties.
	2018	The MGR wardens confiscated and locked up villagers' livestock. The owners of the livestock were penalised, paying fines ranging from TZS 1,000,000 ($400) to 5,000.000 ($2000).
		100 cattle were confiscated in Irkuishibor Village, and the owner was charged a fine TZS 20,000,000 ($8000)
	2019	131cows belonging to a village were confiscated and he was compelled to pay a fine amounting to TZS 6,700, 000 ($2680)
	2020	The MGR authority stopped construction of a water well for a kindergarten school in the Ijora Village

Details in Table 3 above, suggests that local people remain deeply suspicious of conservation initiatives. This past bad experience, is aggravated by a lingering sense of injustice and ongoing land disputes, have significantly shaped the community's perceptions of conservation policies implemented in the area.

4.2. Awareness and Perceptions of CB-PES in Conflict Resolution

The findings indicated that almost all villagers in the study area were not aware of the concept of CB-PES and its operationalisation and relevance in conservation and management of natural resources. This was illustrated by a statement made by one of the FGD participants in Keikei Village, who stated categorically:

I have never heard about the concept you are talking about. If it exists, why has the MGR authority never told us about it? [A male aged 54 in Keikei village, 22nd February 2023]

The community ack of awareness, and basic knowledge of the CB-PES concept suggests that community members need to be enlightened to get an understanding of the CB-PES concept and its importance for both conservation and livelihood improvement. Intriguingly, villagers in the study area did not perceive CB-PES as a potential tool for sustainable conservation and conflict resolution, despite the fact that it shares some similarities with the Wildlife Management Areas (WMAs) which they are familiar of. This perception cannot simply be attributed to a lack of knowledge about the CB-PES concept but rather it may be denoting more critical issues that needs to redress. During key informant interviews and focus group discussions (FGDs), participants were provided with a detailed explanation about CB-PES and how it could be integrated into conflict resolution initiatives. Upon further probing, community members provided several reasons that justified their pessimism about the potential of CB-PES in

resolving conflicts. A women FGD in Keikei Village, revealed that many women did not favour the idea of CB-PES as they perceived that, once implemented, CB-PES would involve direct cash payments. According to the participants, such payments would likely not benefit them because cultural norms and experiences suggest that monetary payments are typically entrusted to men. Participants noted that when money is paid to men, there would be a high likelihood of women, particularly wives, not to benefit from the initiative. This practice is reportedly common in many African households [34] where payments received by men rarely translate into benefits for other household members. This situation suggests that, for CB-PES to operate in a manner beneficial to communities adjacent to MGR, alternative forms of compensation or rewards may need to be considered in place of direct cash payments.

It was also noted that community members in Keikei village did not prefer any kind of compensation that would emanate from CB-PES. All they needed was unrestricted land access, because to them land is more than incentive or rather economic gains. To them land it is a cultural, social and spiritual asset. This was revealed during focus group discussions with male participants when most of them argued that access to land was more important than receiving cash income or in-kind payments from any payment-based initiative, such as CB-PES. In Irkushibour village, people were not in favour of the establishment of CB-PES as they feared for the possible change of their ethnicity and identity. This was largely because the Maasai who reside in this village belong to Kiteto District, Manyara Region, while the MGR is in Kondoa District, Dodoma Region. They were therefore of the perception that accepting the boundary that would place Irkuishibor village under MGR would mean belonging to Kondoa District, yet Kondoa is not their district of origin. Historically, the Maasai have stronger norms and stronger cultural attachment to their land, which differentiates them from other Tanzanian societies, hence their adamance to accept the resurveyed boundaries suggested by the MGR authority. Irkushibor village is part of the MAKAME Wildlife Management Area (WMA) which was established in 2009 involving five Maasai villages. .One would therefore expect the Irkuishibor village residents to easily understand and accept CB-PES as a tool for solving the existing conflict since to a large extent WMAs operate in the same way as CB-PES. However, that was not the case, as they still recalled past bad experience during boundary extension to establish the WMA.

The, Makame WMA has brought some real benefits to the adjacent communities in terms of job creation, provision of scholarships, and construction of classrooms and village offices. However, even with these benefits, community members noted that the WMA had never helped to resolve the escalating land conflicts. It is on the basis of these sentiments that villagers were pessimistic questioning whether CB-PES would offer any meaningful improvement over the existing conservation approach and subsequently address what seemed to be an everlasting conflict.

Discussions

Although the CB-PES concept is often promoted as an initiative to support positive conservation and livelihood outcomes, it was noted that its ability to resolve natural resource conflicts depends on local socio-political and historical contexts. In the Mkungunero Game Reserve, it became clear that previous

grievances, deep mistrust of institutions, and a persistent sense of unfairness have strongly influenced how local people feel about any conservation initiative such as CB-PES. The foregoing may could represent lack of effective community participation in various conservation interventions from the planning stage, a shortfall which can substantially hinder the success of conservation efforts (Nkansah-Dwamena, 2013). Previous studies have emphasised that the success of CB-PES programmes largely depends on the degree to which local communities perceive them as legitimate, equitable, and beneficial [35, 36]. Where such programmes are perceived as externally imposed or insufficiently responsive to local needs, they may fail to generate the intended conservation outcomes. This is particularly so,because such approach creates state of distrust which is frequently cited as an obstacle to sustainable natural resources management (Erickson and Biedenweg, 2022).

In the context of MGR, respondents expressed scepticism towards CB-PES largely due to past experiences of displacement, resource restrictions, and enforcement actions carried out by conservation authorities. These experiences appear to have created a legacy of mistrust that undermines the perceived legitimacy of new conservation initiatives. As argued by [37]that historical conflicts and social injustices have shaped community attitudes towards conservation policies. Often, the communities living near protected areas perceive conservation policies as exclusionary when they restrict access to culturally significant resources [38]. This demonstrates that conservation strategies cannot be effectively implemented without addressing underlying social and historical grievances. Apparently, this sitauation highlights the ongoing challenge of balancing biodiversity conservation with the livelihoods of communities, particularly those living adjacent to protected areas. Basically, conservation strategies which prioritise ecological goals without adequately addressing the socio-economic needs of local communities often generate resistance and conflict [7, 9]. This argument is in line with Abubakari & Mwalyosi, (2020) who stated categorically that that community attitudes towards protected areas are largely influenced by the perceived impacts of conservation policies on household livelihoods From the political ecology perspective protected areas often become grounds of misunderstanding between conservationists and the rights of local people, such as access to resources (Kimengsi et al., 2019). This implies that, conservation policies that disrespect customary land rights and local socio-economic truths may intensify conflicts rather than resolve problems. In most cases, conservation approaches are characterised by strict enforcement, restricted access, and punitive measures, marginalising local communities and exacerbating tensions between conservation authorities and local residents (Guzman et al., 2020; Brockington, 2004).

The local people perception of e the MGR is also shaped by lack of coordination between the government agencies which are in charge of conservation, land management, and local development issuing of conflicting decisions regarding land use. In some cases, community infrastructure such as a school building, was approved for construction in a particular area, only for authorities to later announce that the land was now part of the reserve. Such institutional inconsistencies create confusion and undermine community trust in conservation governance. Similar institutional challenges have been reported elsewhere, where ineffective communication and weak coordination among agencies have been found to exacerbate conservation-related conflicts (Salvatori et al., 2020). The situation around

MGR was further aggravated by forceful, enforcement-based conservation strategies as it creating a deeper wedge between authorities and local communities, livestock repossession, property destruction, and other enforcement actions for instance, pushed the community to perceive conservation as an aggressive and exclusionary force. This connects to a growing debate among researchers about the consequences of militarized conservation [39]. Scholars argue that militarized conservation creates more mistrust and resistance, especially in regions where people are already struggling with land disputes and trying to make a living. Similar concerns have also been reported [40, 41], pointing out how paramilitary conservation in parts of Africa has been linked to accusations of violence and human rights violations.

Furthermore, the presence of existing conservation mechanisms, such as Wildlife Management Areas (WMAs), also shapes community perceptions towards CB-PES. Although WMAs are designed to promote community participation in wildlife conservation and provide economic benefits to local communities, it was revealed that these mechanisms have not fully resolved existing conflicts in the MGR landscape. This raises important questions regarding the ability of new incentive-based conservation approaches to address deeply rooted land-use conflicts. We have argued that conservation initiatives that fail to ensure equitable distribution of benefits and meaningful participation in decision-making processes may struggle to gain long-term community support [42]. In addition, the presence of existing conservation mechanisms, such as Wildlife Management Areas (WMAs), also shapes community perceptions towards CB-PES. Although WMAs were designed to get local people involved in protecting wildlife and to provide them with economic benefits, the approach has not fully resolved existing conflicts in the MGR landscape. This raises the question of whether any new, incentive-based conservation programme can really solve such deep-rooted problems. This is because findings show that conservation initiatives that fail to ensure equitable distribution of benefits and meaningful participation in decision-making processes may fail to gain long-term community support [42].

The study also highlight the importance of considering cultural values and identity in conservation policy design. In the study area, Maasai communities expressed concerns that boundary adjustments associated with conservation initiatives could undermine their cultural identity and territorial affiliation. This reflects broader debates within environmental justice literature, which emphasize that conservation policies must recognize and respect the cultural identities and traditional knowledge systems of indigenous and local communities [43, 44]. Ignoring these dimensions may lead to resistance and undermine the legitimacy of conservation programmes. Findings from this study revealed the importance of considering social, cultural, and identity in conservation strategy design. For instance, the Maasai communities were fearful of shifting boundaries for a conservation project because it would weaken not only their connection to the land but also their identity. This finding reflects broader debates within environmental justice, which highlight that conservation policies must take into consideration and respect the cultural identities and traditional knowledge of local communities [43, 44].

This tudy suggest that CB-PES cannot be accepted as a universal solution for conflict resolution in the conservation approach. Instead, its effectiveness depends on addressing wider governance challenges,

such as land tenure security, stakeholders' coordination, equal sharing of benefits from the conservation project, and participatory decision-making processes. It has also been reported that communities that experience economic costs from conservation without receiving tangible benefits are not fully ready to participate in conservation initiatives [43, 45, 46]. Therefore, making CB-PES work requires not only financial incentives but also the building of trust, transparency in governance, and genuine engagement with the community.

Conclusion

The aim of the study was to assess the applicability of CB-PES as an approach for resolving conflicts between Mkungunero Game Reserve and neighbouring communities. Although CB-PES is hypothetically a promising participatory conservation approach, its applicability in MGR and adjacent communities is inadequate. Previous grievances, livelihood and property damages, lack of trust and transparent in conservation strategies, and the presence of WMAs have enhanced negative community perceptions regarding new conservation initiatives. Subsequently, CB-PES alone cannot successfully resolve the conflict unless underlying issues, such as land access, trust, transparency, and meaningful community participation, are first addressed through comprehensive, context-specific governance approaches.

Declarations

I declare that Informed consent was voluntary obtained from all participants before commencement of there participation in the study

Author Contribution

T.P. and I.M. contributed to the conceptualization and design of the study. K.H.P. conducted data collection, performed data analysis, and drafted the main manuscript. T.P. and I.M. provided critical revisions and intellectual input to improve the manuscript. All authors reviewed, read, and approved the final version of the manuscript.

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Footnotes

1. Programmes offering contracts and payments to entire communities for services provided on communally or publicly-owned lands (Wegner, 2016). It is also used to describe local-level programmes designed to support community development and poverty alleviation (Dougill et al., 2012)
2. A Laigwanan is a respected traditional leader or elder in the Maasai community of Tanzania and even in Kenya. He is responsible for settling community disputes, overseeing age-set rituals. He acts as a liaison between the community and modern governance. They are the community leaders who are carefully and meticulously selected, appointed and installed in a symbolic ceremony (Faustine et al., 2002).
3. A traditional circular homestead inhabited by extended Maasai families.

4. A form of the Community-Based Natural Resources Management (CBNRM) approach that aims at integrating and fostering sustainable rural livelihoods in line with improving wildlife conservation. It is an approach that devolves full ownership and responsibility for wildlife to rural communities living with the wildlife resources on their lands (Mwakoba et al., 2024).

Figures

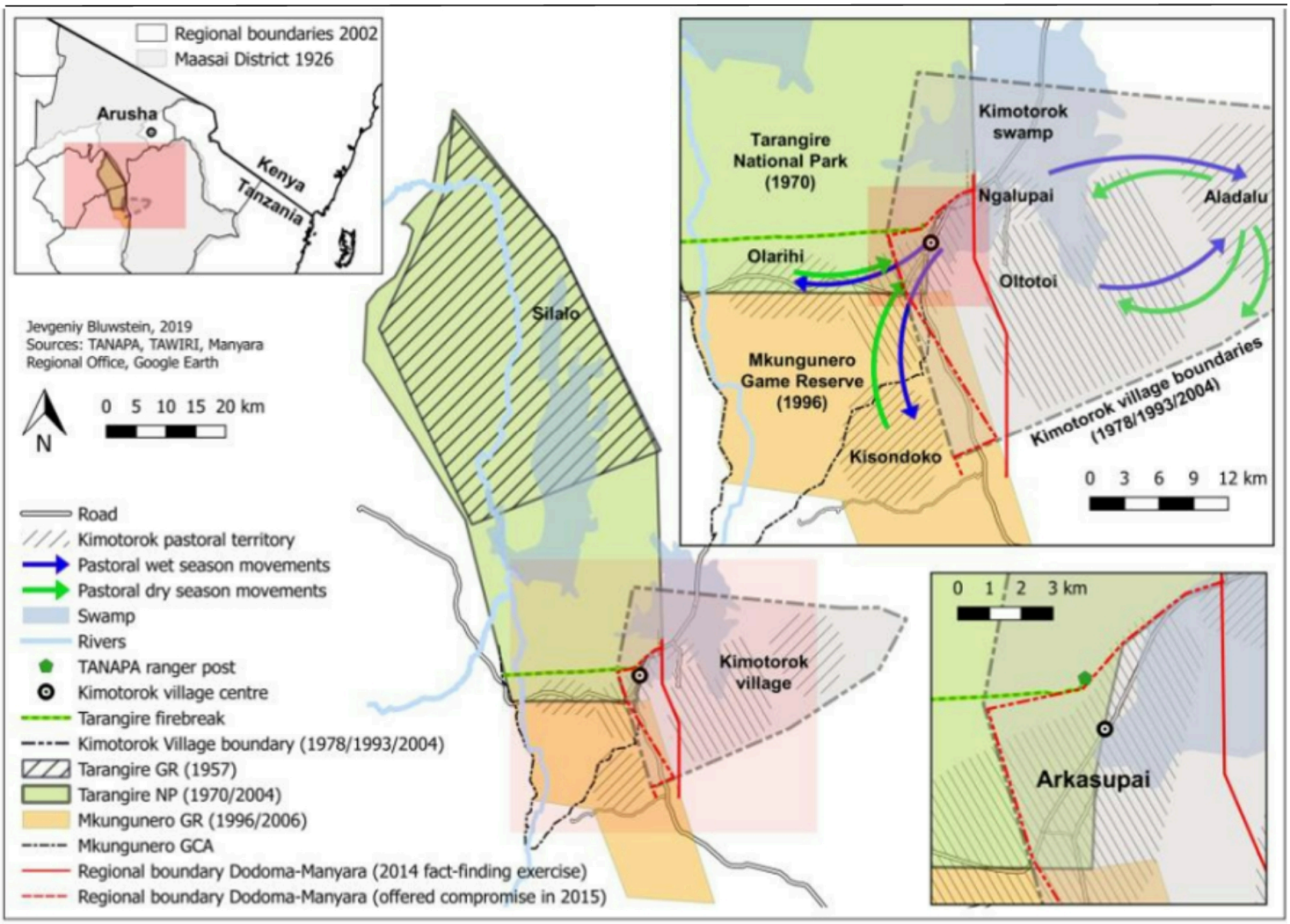


Figure 1

Pastoral land use and boundary overlap with protected and administrative areas. Red lines (solid and dotted) illustrate how the regional boundary cuts through Kimotorok Village. Source: Adopted from Bluwstein (2019)

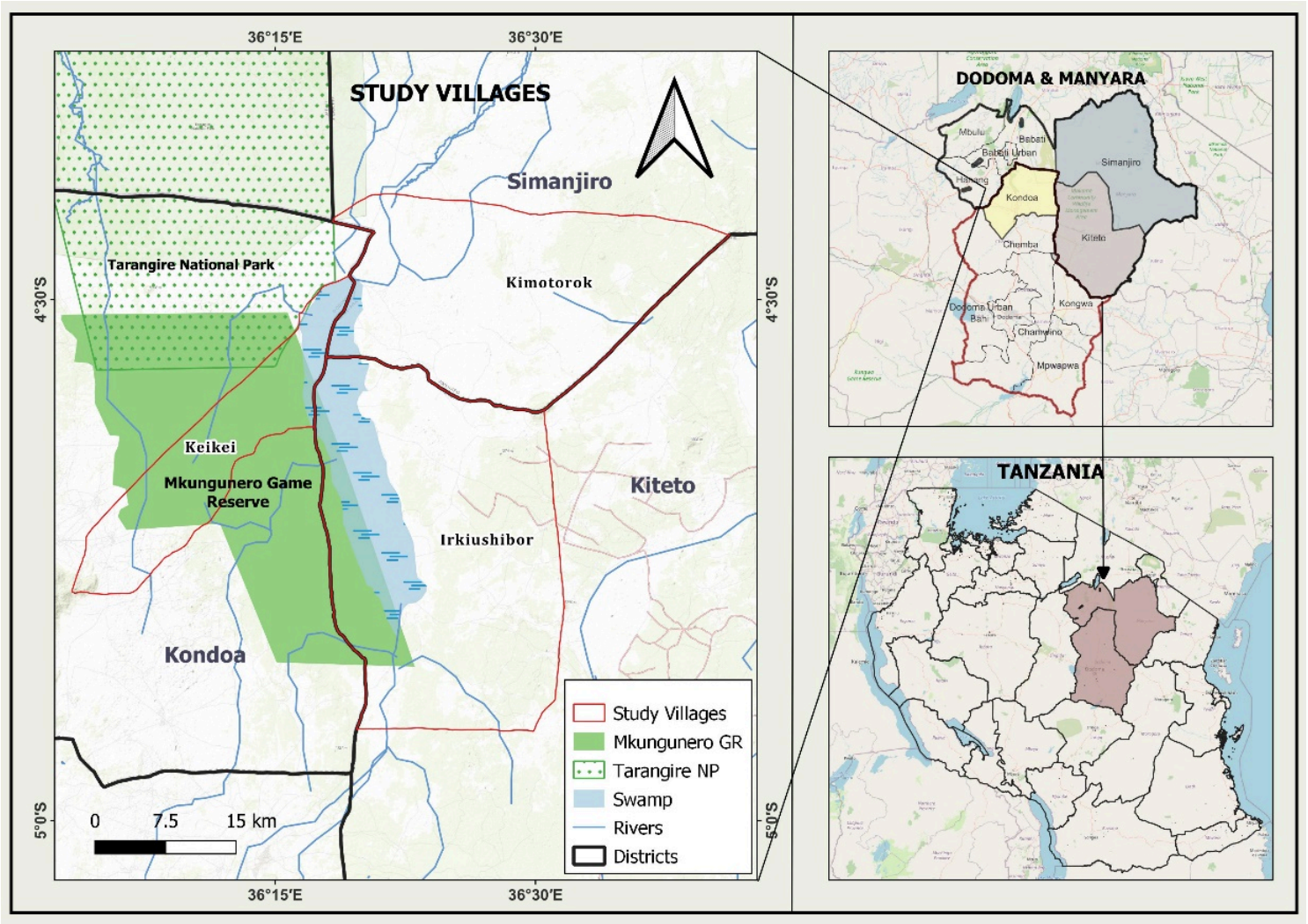


Figure 2

Location of Mkungunero Game Reserve and bordering villages in Kondoa, Simanjiro, and Kiteto districts

Source: Geographic Information System (GIS) Unit, University of Dodoma (2023)