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The Role of Convivial Conservation in Human-Wildlife Conflict Resolution in the Selous Game Reserve in Tanzania

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Abstract

Human-wildlife conflicts cause substantial drawbacks to environmental conservation initiatives in Tanzania, especially where conservation efforts overlap with other community needs. Various community-based approaches have either been developed or adopted in the country to promote coexistence near protected areas, and attract socio-economic advancement in target contexts. Yet, these have proven ineffective in reducing human-wildlife conflicts. This paper analyses how the convivial conservation approach may potentially help in addressing human-wildlife conflicts in protected areas, using the Selous Game Reserve as a case. It employs the convivial conservation approach proposed by Buscher and Fletcher (2019), and a mixed-methods methodology that includes in-depth interviews, focus group discussions, observations, and storytelling in eliciting how the specified approach fosters collaboration and conflict resolution between communities and conservation authorities. The results suggest that the convivial conservation approach is effective in resolving human-wildlife conflicts. The approach advocates for equitable power distribution, co-existence, participatory government, and community empowerment. It also protects biodiversity and connects conservation objectives with community interests. The results further reveal that the convivial approach converts conflict zones into mutually beneficial areas, and also encourages long-term coexistence and environmental justice. This paper proposes policy changes, increased awareness, education, capacity building, land use planning and participatory governance to protect local livelihoods and biodiversity.

Keywords: *convivial conservation, human-wildlife conflicts, protected areas, wildlife management areas*

1. Introduction

Human-wildlife conflicts (HWCs) are increasingly becoming a common phenomenon across the globe (Mekonen, 2020). These are caused by uncontrolled interactions between communities that live adjacent to wildlife protected areas and wildlife. HWCs cause significant drawbacks to conservation initiatives and disrupt relationships between wildlife authorities and local communities. However, despite conservation efforts by various actors, a majority of scientific reports on biodiversity conservation suggest an increase in human-wildlife conflicts (Hoffmann, 2022; Mekonen, 2020; Pooley et al., 2017; Stoldt et al., 2020).

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HWCs are forming a complicated subject that is rapidly becoming a global concern as humans and animals compete for available natural spaces. The expansion of human settlements and agriculture, and the isolation of wildlife habitats have increased the frequency and expanse of conflicts between humans and wildlife, with the majority of the consequences being damaging to one or both (Schell et al., 2020; Mekonen, 2020). Such damages range from the destruction of agricultural and animal husbandry activities, to threats to human life; threatening many elements of life, conservation efforts, and the survival of some wildlife species (Sebsibe, 2022). Compensation programs of HWC damages, while designed to balance economic losses caused by wildlife, are usually hampered by delays, low incentives, and limited reach; thereby undermining community support for conservation efforts (John, 2021a).

Intervention measures such as traditional conservation approaches, based on colonial and capitalist perspectives, have failed to address the core causes of HWCs since they usually highlight the separation of humans and wildlife (Makumbe et al., 2022; John, 2021b; Mekonen, 2020). Also, methods such as fortress conservation restrict local communities from decision-making, ignoring their needs and traditional knowledge (Brockington, 2002). This isolation not only alienates communities, but also undermines conservation objectives by encouraging anger and noncompliance. Similarly, wildlife fencing, which is intended to keep animals within protected zones to reduce potential threats, is frequently unsuccessful against huge mammals such as elephants, which break fences and raid crops (Montgomery et al., 2022; Evans & Adams, 2016).

In Tanzania and other African nations, HWCs present significant challenges, often resulting into adverse effects on local communities. Many conservation efforts have traditionally concentrated on resolving these conflicts through improving social services, as noted by Hoffmann (2022), Hsiao and Lan (2022), Fletcher and Toncheva (2021), John (2021b), Noe (2019), and Noe et al. (2017). However, modern scholarly discourse, as addressed by Pooley et al. (2017), has shifted towards cultivating coexistence, i.e., finding strategies that promote a harmonious relationship between humans and nature.

The highlighted intervention limitations call for the need to adopt convivial conservation as the more effective and inclusive strategy that emphasises coexistence, fairness, and community-led conservation activities. This method aims not only to eliminate conflicts, but also to improve community welfare and production through integrated policies that encourage long-term and mutually beneficial coexistence between humans and wildlife. This paper aims to contribute to this endeavour by eliciting successful convivial conservation practices that can be used to resolve HWCs in wildlife protected areas.

Convivial conservation practices offer a transformative methodology that emphasises coexistence over isolation by integrating biodiversity preservation with principles of equity, organisational reform, and environmental justice (Hsiao & Lan, 2022). Unlike traditional approaches, convivial conservation promotes inclusive governance by allowing local populations to engage in conservation efforts and realise direct benefits from biodiversity (Kiwango & Mabele, 2022). This approach ensures that conservation actions are fair and useful to both conservation organisations and communities by encouraging collaborative partnerships between them. For example, it promotes the involvement of adjacent communities in regulating human-wildlife interactions in a manner that helps them fulfil their local needs, while at the same time experiencing peaceful coexistence.

Moreover, the approach guarantees that conservation measures are in line with local development goals by incorporating marginalised groups in decision-making and recognising their rights and expertise (Ochieng et al., 2023). Convivial conservation also allows for the use of environmental justice concepts, preventing conservation measures from having a disproportionate influence on vulnerable communities. In Tanzania, where population growth and farmland expansion overlap with wildlife migration routes (Anthony et al., 2023; Njamasi et al., 2022), the approach may also potentially prevent conflicts by promoting integrated policies that benefit both the people and ecosystems; thereby enabling long-term coexistence and sustainable development.

This paper unveils the significance of convivial conservation approach and elicits its benefits as a useful intervention tool in advocating hygienic coexistence; a situation which eventually reduces human-wildlife conflicts. It offers rich conservation knowledge and necessary competencies that may be adopted by wildlife practitioners, facilitators, wildlife authorities and local government authorities in contexts where HWCs are prevalent.

2. Theoretical Framework

This paper employs the political ecology (PE) framework to analyse the complicated relationships between actors, interests, and conflict outcomes. The framework investigates the five pillars of convivial conservation, namely: *equality, inclusion, community empowerment, environmental justice,* and *coexistence* (Massarella et al., 2023), as shown in Figure 1. In convivial conservation, *equality*, refers to the equitable distribution of conservation-related rights, duties, and benefits. It addresses structural injustices and power disparities among varied stakeholders, ensuring that all individuals—including marginalised and discriminated communities—are fairly represented in terms of voice, access, and opportunities in conservation programmes and procedures (Massarella et al., 2023).

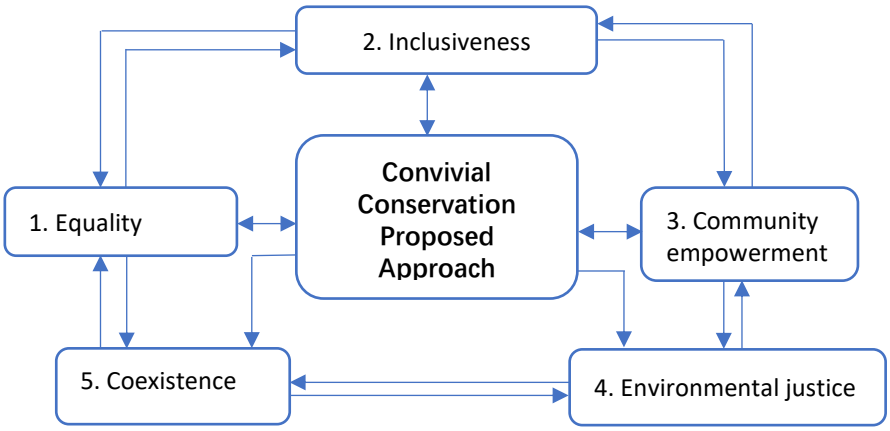

Figure 1: Convivial Conservation Pillars
Source: Modified from Massarella et al. (2023: 34).

Inclusivity and *community empowerment* (pillars 2 and 3) advocate for the inclusion of local voices, particularly those who have historically been marginalised (Pratt, 2019), in the management and use of land designated for conservation or development in protected/promoted areas. The fourth pillar, *environmental justice*, attempts to establish a balance between ecological protection and social injustice. It protects local and indigenous peoples' rights, while settling conflicts over who bears the expenses and benefits of environmental projects.

On the other hand, pillar number 5 promotes *coexistence* with animals by blending conservation objectives into human activity (Massarella et al., 2022). It emphasises human-wildlife interactions through transformative strategies such as shifting from tightly protected areas to 'promoted areas', and promoting integrated landscapes. *Co-existence* is a key component of accomplishing significant change in biodiversity protection because it blends traditional knowledge with modern conservation strategies to reduce conflicts and enhance mutual benefits (Fiasco & Massarella, 2022). The convivial conservation approach switches the emphasis from environmental protection to respect for the interdependence of human and animal life; as well as from passive tourism to active and participatory tourism (Nchanji et al., 2023).

2.1 Synergies Between Political Ecology and Convivial Conservation and HWC Resolution

Political ecology and convivial conservation are complimentary approaches to resolving human-wildlife conflicts because they address the interconnected social, economic, and ecological components of conservation. Political ecology offers an

important perspective on how power dynamics, economic interests, and historical disparities affect conservation programs and human-wildlife interactions (Komi & Nygren, 2023; Massé, 2016). It focusses on issues such as land dispossession, marginalisation, and the unequal distribution of conservation program costs and benefits (Roberts, 2020). On the other hand, *convivial conservation* emphasises cohabitation by incorporating conservation goals into human activities, while also encouraging unrestricted, inclusive, and participatory approaches (Nchanji et al., 2023; Massarella et al., 2022). It encourages transformative tactics such as transitioning from exclusionary protected areas to integrated landscapes or 'promoted areas' that balance human well-being with biodiversity conservation.

Together, the two approaches argue for conservation practices that empower marginalised groups, preserve environmental justice, and combine indigenous knowledge with modern conflict-resolution strategies. Political ecology, for example, can demonstrate how land privatisation or tourism-driven conservation disturb indigenous traditions (Buitelaar,2024; Nustad & Swanson; 2022; Newmann, 1992), whereas convivial conservation focusses on including local perspectives and expertise when designing wildlife corridors or sustainable land-use plans (Buscher & Thakoli, 2024). This combination promotes reciprocal advantages, cultural respect, and shared conservation obligations.

Despite the potential of the synergy between political ecology and convivial approaches, both frameworks may pose challenges if their adoption and implementation are not carefully guided. The former may face difficulties in operationalizing solutions because it frequently emphasises systemic disparities without concrete action plans (Acheampong, 2020; Roberts, 2020). On the other hand, the latter, while revolutionary, may necessitate considerable changes in governance structures, and hence encounter opposition from entrenched interests that benefit from traditional conservation strategies (Buscher & Fletcher, 2019). Furthermore, both approaches can necessitate long-term commitment and teamwork to establish trust and navigate competing interests.

The political ecology framework was found appropriate to be applied in the Selous Game Reserve where convivial conservation is recommended because it helps explain the history of the causes and processes of HWCs. This framework is useful in explaining the historical, structural, and economic elements that have shaped the conflict zones between conservation and local people's livelihood. It aids in a better understanding of the reasons why certain conservation measures are impossible; as well as the importance of including local communities in the quest for more long-term solutions to HWCs. The PE framework also sheds light on how conflicts over land and resources can be resolved by using a method known as 'convivial conservation', which tries to combine wildlife and human requirements. Too, the framework enhanced data interpretation and illuminated on how participative, equitable, and culturally relevant conservation methods are supposed to be adopted and applied.

Moreover, the PE framework was critical in analysing and revealing the role of convivial conservation and its potential to effectively address HWCs. The framework assisted in the understanding of convivial conservation by focussing on the sociopolitical and ecological linkages that drive conservation practices, particularly in marginalised groups. The study used this lens to examine how traditional ecological knowledge and cultural practices of the communities around the Selous Game Reserve—such as community farming systems and rituals that promote coexistence—can match with conservation goals when power imbalances and restrictive legislation are addressed; as the perspective emphasises the necessity of human-wildlife care, dialogue, and reconciliation in resolving disputes in a sustainable manner. Political ecology, on the other hand, investigated the power relations that underpin conservation; which included sociopolitical and economic elements that explain land regulations, power dynamics, and historical injustices that have excluded local communities.

Besides, the PE framework helped in examining human-animal conflicts through the perspectives of unevenness that necessitate fairness and inclusivity in seeking for solutions. It also aided in outlining the manner of using traditional ecological knowledge, and the consideration of fair and just resource management and governance and legislative improvements to reduce conflicts while increasing conservation. Additionally, the combination of political ecology and convivial conservation approaches provided a strong way to reinvent conservation as a practice of cohabitation, equity, and shared prosperity for humans and wild species. As mentioned earlier, this is due to the fact that while political ecology emphasises the political aspects of resource usage and access (Roberts, 2020), the convivial conservation perspective promotes a better interaction between people and wildlife that minimises conflicts, and maximises benefits.

3. Context and Methods

3.1 The Study Site

The study that yielded the data for this paper was conducted in the Selous Game Reserve in Rufiji District, Tanzania (Figure 2). The area covers about 50,000km^2 (Gasto et al., 2020). Nearly 60% of the game reserve was upgraded to the Nyerere National Park in November, 2019 (Gayo et al., 2021). The Selous Game Reserve is amongst the largest protected areas in Africa, and is surrounded by many districts, including Kisarawe, Ulanga, Kilombero, Morogoro rural, Kilosa, Malinyi, Tunduru, Namtumbo, Liwale, Kilwa, and Rufiji (John, 2021a). The reserve harbours one of the most significant concentrations of hippopotamus, crocodiles, and elephants. Also, it has an exceptionally wide variety of habitats, including the miombo woodlands, open grasslands, swamps, and riverine forests (Gasto et al., 2020).

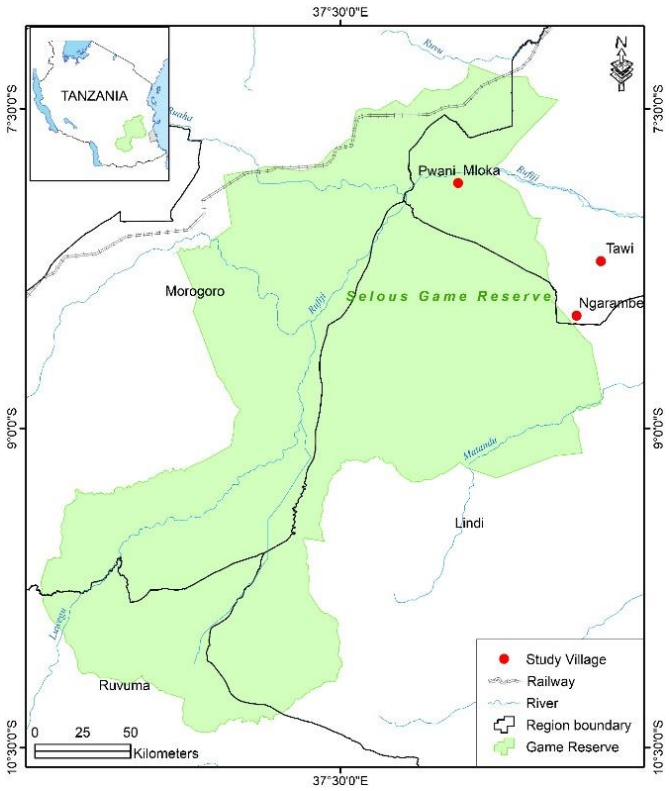

Figure 2: A Map of the Study Area
Source: (UDSM IRA-GIS LAB, 2025)

This study was conducted in the northeastern sector of the Selous Game Reserve ecosystem as one of the three sectors in the New Partnership for Sustainability (NEPSUS) research project (www.nepsus.info). Three villages within the ecosystem in the Rufiji District were purposely selected based on reported incidences of human-wildlife attacks and crop damages by wild animals; with these villages also being reported to have experienced many cases of HWCs. These villages are Ngarambe, Mloka, and Tawi (Figure 2). Mloka and Ngarambe represent the villages that are found within the wildlife management areas (WMAs).

3.2 Sampling

The study targeted local communities surrounding the Selous Game Reserve, where a major fraction of households was sampled. A total of 133 heads of households were interviewed: 47 from Tawi, 44 from Ngarambe, and 42 from Mloka. These household heads shared their narratives on their encounters with wild animals, conflicts, and livelihoods endeavours. The village offices provided lists of easily accessible household heads for the study.

3.3 Research Approach

A qualitative approach was used to research HWCs within the game reserves. This involved a diverse range of key informants: from village residents and leaders, to representatives of conservation NGOs such as the WWF, USAID, Frankfurt Zoological Society, Belgian Technical Corporation; and governmental bodies, including district game officers and the Tanzania Wildlife Management Authority. These informants were carefully chosen to represent a diverse range of opinions and insights on local concerns such as crop damage, illegal wildlife hunting, and resource availability.

3.4 Data Collection Methods

The data were collected from both primary and secondary sources. The primary data were captured through structured interviews, key informant interviews, focus group discussions (FGDs), storytelling, household interviews, and field observation. Questionnaires were used at the household level to capture data on HWCs, their causes, and mitigation techniques. Fourteen (14) FGDs were held in the villages: five (5) in Ngarambe, five (5) in Mloka, and four (4) in Tawi. Furthermore, the study was enhanced by including storytelling components from older community members, which aided in capturing historical and cultural settings that influence current human-wildlife interactions. The incorporation of these narratives deepened the understanding of long-standing community links, attitudes towards wildlife, and conservation actions.

The study used a triangulation technique to determine and verify information, combining primary interview and observation data with TAWA reports, government reports, and scholarly works. Thematic field data coding was performed on concerns such as compensation schemes, payment delays, crop loss, and insufficient community participation in wildlife management; which were then verified against administrative data to confirm the reality of financing and policy matters. Some historical literature, particularly Neumann's Imposing Wilderness, explains why people remain doubtful by exploring the colonial past of exclusionary conservation. This thorough perspective elucidated the community's discontent regarding conservation policies; thereby highlighting challenges within Tanzania's sociopolitical landscape, and revealing the disparity between rhetoric and reality, and suggesting that policies aimed at mitigating HWCs are inadequate and lack the comprehensiveness of convivial conservation.

3.5 Data Analysis

The analysis of data was carried out based on the principles established by Braun and Clarke (2006). The data were first coded and divided into smaller units of meaning aligned within inductive and deductive procedures as outlined in the literature. After coding, the codes were extracted and examined to allow the generation of potential themes by recognising patterns and linkages, and to

formulate more abstract categories that highlighted meaningful constructs. Each created theme was assigned a descriptive term to facilitate immediate comprehension of its individual concept without additional clarification. The final step entailed synthesis and analysis to convey results clearly, substantiated by participants' quotations to elucidate the concerns identified in the analysis. With regard to the analysis of quantitative data, the IBM SPSS (version 23), and Microsoft Excel software were employed. The process commenced with data entry and editing, during which all quantitative data were entered and comprehensively cleaned to eradicate any inaccuracies.

The political ecology framework was used to examine the interlinked social, economic, and ecological components of human-wildlife conflicts; and how they can be resolved through convivial conservation. The framework was employed to analyse the impact of power dynamics and historical events—such as land conflicts and segregation conservationist policies—on the interactions between communities and conservation authorities. The qualitative data analysis also allowed the adoption of interviews, group discussions and community stories. This investigation revealed how convivial conservation models are situated between the conflicts of ecological and social fairness. Using the PE framework, the study was able to demonstrate how convivial conservation could help in conflict resolution, while also creating coexisting opportunities through integrated and bottom-up conservation strategies.

4. Results and Discussions

This section examines the role of convivial conservation in resolving HWCs inside the Selous Game Reserve. It places emphasis on the importance of implementing the convivial conservation strategy to improve coexistence in human settlements near such reserves as the Ngarambe, Tawi, and Mloka. The use of this method has been reported to increase sustainable cohabitations and conflict resolutions, ultimately improving the link between people and wildlife conservation. Various initiatives aligned with convivial conservation are discussed below.

4.1 Equitable Power Distribution

The results indicate that convivial conservation can mitigate human-wildlife conflicts by promoting equitable power allocation, community engagement, and interaction between local populations and wildlife authorities. The interviews with the leaders of the MUNGATA WMA emphasised that their participation in wildlife-related business elevates governance by incorporating local communities, especially via the development of WMAs. The convivial conservation method involves local leaders in wildlife resource management, customising it to local needs and perspectives; while fostering ownership and accountability for conservation, as detailed in one focus group discussion with the WMA executive committee:

> *"The establishment of a WMA by the government, where local leaders may meet with government authorities to address wildlife-related business issues, such as our hunting block, is a step forward in conservation management. The local community now manages the WMA, and we have the authority to announce the tender for the hunting block, and decide who should conduct business in our area"* ***(FGD with MUNGATA WMA, September, 2018)***.

The results from the interviews and observations also showed that the governance of WMAs by local leaders aligns with the principles of convivial conservation, which promote equitable power distribution. For example, it was reported that at the end of a WMA leadership term, the campaigns for electing new WMA leaders resembled the electoral process for parliamentary candidates. A female participant in one FGD remarked that community residents had become dissatisfied with the practice of electing new leaders each term as WMA leaders often served only one term. This process of electing new leaders each term ensured that every community member had an equal opportunity of being chosen as a leader of a WMA.

Furthermore, the study results indicate that the election of local leaders underscores the importance of involving local individuals in WMA governance, highlighting locally elected officials as exemplars of power-sharing and cooperative administration. Local community involvement in WMA activities was perceived as a manifestation of collaborative governance, which fostered participatory and equitable power dynamics. This practise has demonstrated a harmonious and empathetic approach to wildlife management, thereon enhancing collaboration between communities and authorities. These findings demonstrate that collaborative engagement, community involvement, and effective management have fostered the coexistence of humans and wildlife in Mloka and Ngarambe villages.

Interviews with the chairman of the MUNGATA WMA revealed that WMAs foster community trust and transparency, which is critical when working with the government to resolve conflicts. Incorporating village game scouts and park rangers in monitoring and enforcement activities, for example, decreased illegal activities, while also encouraging collaborative management. According to an interview with one of the WMA game scouts, local people are more likely to support conservation when they actively participate in the protection of local resources such as animal habitats:

> *"Involving community members in the monitoring and enforcement of regulations significantly reduces illegal activity. When everyone takes part, it fosters a sense of responsibility for wildlife conservation. Working with park rangers builds confidence between us and the authorities. It makes it easier to handle issues with the government because everyone is on the same page. People are more inclined to support conservation projects when they take an active role in conserving our natural*

resources and wildlife habitats. When the community believes they have a stake in wildlife protection, it has a huge impact" (***Interview with a Village Game Scout at Ngarambe, September, 2018***).

Furthermore, results in WMA villages like Mloka and Ngarambe suggest that convivial conservation encourages peaceful and respectful interactions with wildlife, thereby lowering hostility and fear. For example, elephants were observed wandering through the villages, and eating fruits at the local market, with no one daring to chase them away. A successful two-way communication, understanding, and respect could have assisted in establishing safe wildlife corridor zones for such animals to prevent similar incidences that may lead to agricultural losses and risks on human lives. Communities can use the WMA platform to discuss and actively participate in animal movement and the protection of wildlife corridors.

As a mentioned earlier, convivial conservation promotes cooperative care arrangements in which humans and wildlife can coexist together. It also actively seeks to empower marginalised communities by integrating them more thoroughly into decision-making processes, which improves conservation outcomes. This method improves the human dimension of conservation by distributing power and responsibility evenly, thereby promoting community-based conservation.

Moreover, the respondents stated that wildlife incursions into the villages mostly affect the production of crops such as maize, rice, and sorghum, prompting some residents to sleep on trees to guard their crops; something that is very risky and counterproductive. Due to such a situation, there is a need for more inclusive and successful conservation strategies; and convivial conservation here becomes especially important because it promotes peaceful coexistence via constructive communication, respect, and shared responsibility.

4.2 Co-existence

The results indicate that the coexistence strategy directly addresses human-wildlife conflicts by emphasising on solutions that allow both wildlife and humans to share the same place in a sustainable and equitable manner. Rather than relying solely on high fences or expensive removal methods, as in other countries, the approach focusses on habitat preservation, active community involvement at all stages, and the development of user-friendly approaches such as wildlife corridors, buffer zones, and simple conflict-resolution strategies as seen in Ngarambe, Mloka, and Tawi villages. In these villages, areas adjoining the game reserve have opened buffer zones in accordance with the guidelines of local communities where human activities are not allowed. These combined strategies have been shown to reduce disagreements, improve animal protection, and boost community earnings; all while improving routine safety.

Moreover, the findings show that convivial conservation can improve coexistence by effectively recognising and resolving the root causes of human-wildlife interactions, as well as the underlying concerns of local populations. They also underline how land use change—particularly those caused by agricultural development and the expansion of protected areas—frequently contribute to HWCs. Addressing these challenges by respecting existing animal movement lanes—particularly for elephants, warthogs, and wild pigs—has been shown to improve coexistence.

According to the results of interviews done in Ngarambe village, allowing cohabitation can encourage more beneficial behaviours among community members, such as better detection of land use changes caused by animal movements, and the mitigation of human-wildlife-related dangers. Overall, using a cohabitation approach appears to promote more peaceful and cooperative relationships between humans and wildlife as explained by an old man:

> *"We gain from wildlife through the WMA hunting block, which is graded. For example, last year we collected USD30,000 in hunting block fees. The money was then donated to the Ngarambe and Tapika villages as member villages; and it was used to renovate the primary school and a dispensary in our villages* ***(Interview, Old Man, Ngarambe, October, 2018)***.

The results further demonstrated that recognising local communities as active participants in community-based conservation initiatives is critical for attaining genuine coexistence because it allows residents to protect animals while meeting their basic needs. Many communities reported changing their agricultural methods, such as by planting wildlife-resistant crops like sesame and cashew nuts, which has helped prevent crop raiding, notably by elephants, which are known to feed on maize and sorghum. It was reported that sesame and cashew nuts are less preferred by wildlife animals, hence less vulnerable to animal destruction. Thus, the adoption of such friendly crops has enhanced cooperation and reduced violence, while also providing alternative income streams in communities such as those in Ngarambe, Mloka, and Tapika villages. However, the reputation of elephants as dangerous animals, as well as the havoc they inflict, have continued to drive anti-wildlife attitudes and hostility to conservation efforts, particularly in communities closer to reserves where interactions are more common.

The study findings revealed that wildlife populations grew in WMA villages such as Mloka and Ngarambe between 2015 and 2019 (Figure 3). The increased number of animals in these villages has also contributed to increased tourism, while also demonstrating that human-wildlife coexistence is effective; although there are still incidences of small crop damage and human fatalities. Villages outside of the WMA, such as Tawi, reported fewer wild animals than Mloka and Ngarambe.

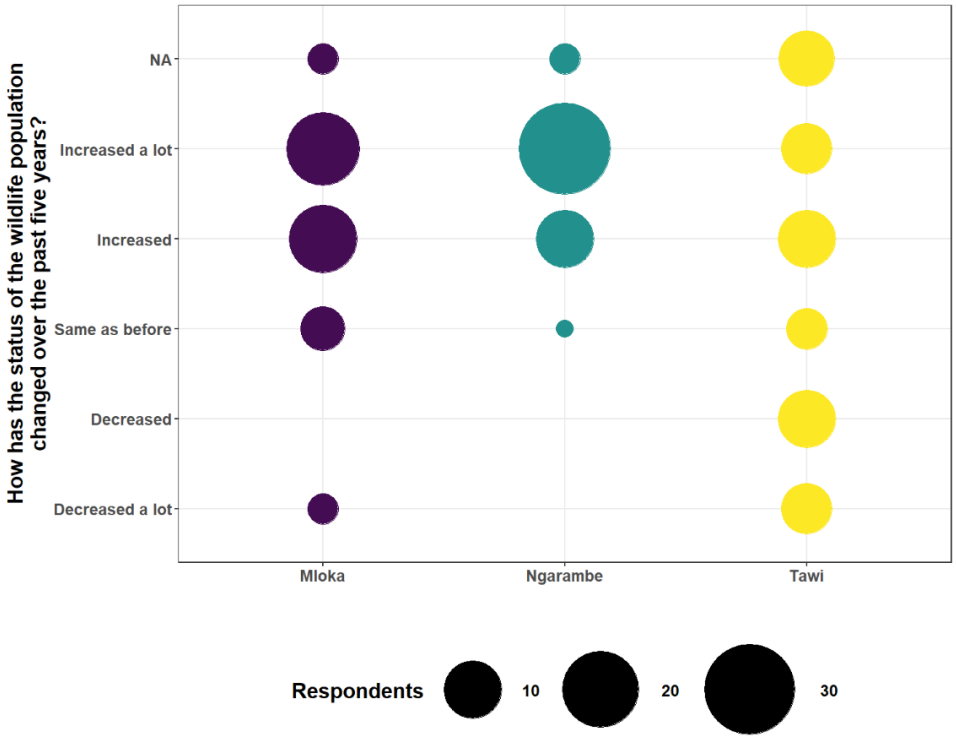

Figure 3: Local Perception of the Status of Wildlife Population
Source: John, 2021a.

During FGDs and interviews, the vast majority of respondents stated their concern with wildlife raiding farms. One of the residents told this particular story:

> *"When we plant crops, we stay on the farm 24 hours a day, seven days a week, for three months to protect them from wild animals, particularly elephants, which are difficult to control. However, when we switched to sesame and cashew nuts, the benefit was visible* ***(Male Elder, November 2018)***.

The above quote implies that convivial conservation, in conjunction with a community-based strategy, can improve conservation enforcement. This is crucial for managing ecological health and human requirements as it allows for more effective solutions to the growing problem of human-wildlife conflicts. The increased number of wild animals in the villages further demonstrates that convivial conservation supports peaceful coexistence between communities and wildlife; thereby reducing conflicts while promoting reciprocal benefits. This is made feasible by guided stewardship, sustainable livelihoods, local participation, and the use of local knowledge: all of which promote convivial conservation, and advance conservation objectives.

These results correspond with those of other studies conducted in various protected areas in Africa, which reveal that although the WMAs were established in accordance with convivial conservation to assist local communities in resolving HWCs, inadequate management of WMAs has exacerbated conflicts and disrupted the livelihoods of individuals residing near these protected areas (Mtweve et al., 2025; Ochieng et al., 2023; John, 2023c; John, 2021b). In addition, Nchanji et al. (2023) assert that numerous studies on human-wildlife interactions agree that convivial conservation, when utilised correctly, can minimise the number of coexistence concerns that occur in communities living in close proximity to wildlife protected areas.

4.3 Participatory Governance

Furthermore, the results suggest that convivial conservation has boosted participatory governance systems by allowing various organisations and interest groups to collaborate with both local and national governments. These collaborations are based on common goals and interests, with the purpose of improving the socioeconomic situations of populations living near protected areas, while also strengthening wildlife conservation efforts. This strategy is based on inclusive governance of wildlife resources, which actively incorporates local communities in their management. Convivial conservation is strongly aligned with this participatory governance paradigm since it emphasises organised, respectful, and community-driven management of human-wildlife interactions. Also, this strategy promotes greater understanding and cooperation, and encourages local residents to actively participate in conservation projects, and assume responsibility for long-term wildlife management.

It is also revealed in the results that different actors work together to manage wildlife, with each playing a specific role in a coordinated effort. Conservation NGOs such as the GIZ, WWF, Frankfurt Zoological Society (FZS), German Development Bank (KFW), and the Belgian Technical Corporation (BTC) are important stakeholders in conservation initiatives. The continuous involvement of the German and Tanzania governments demonstrates their dedication to the protection of the Selous Game Reserve, particularly after it was designated as a World Heritage Site in danger in 2014 due to elephant poaching (Dulias, 2022; Noe et al., 2019; Mayer, 2018). The German government's financial support has fostered cooperation with agencies such as the GTZ and FZS, which—also in association with the WWF—helped establish the MUNGATA WMA in 2003. Similarly, the Belgian government's funding through the BTC aided the establishment of the JUHIWANGUMWA WMA in 2016 (Figure 4). These results emphasise the necessity of collaborative multi-stakeholder initiatives to advance animal conservation and sustainable resource management.

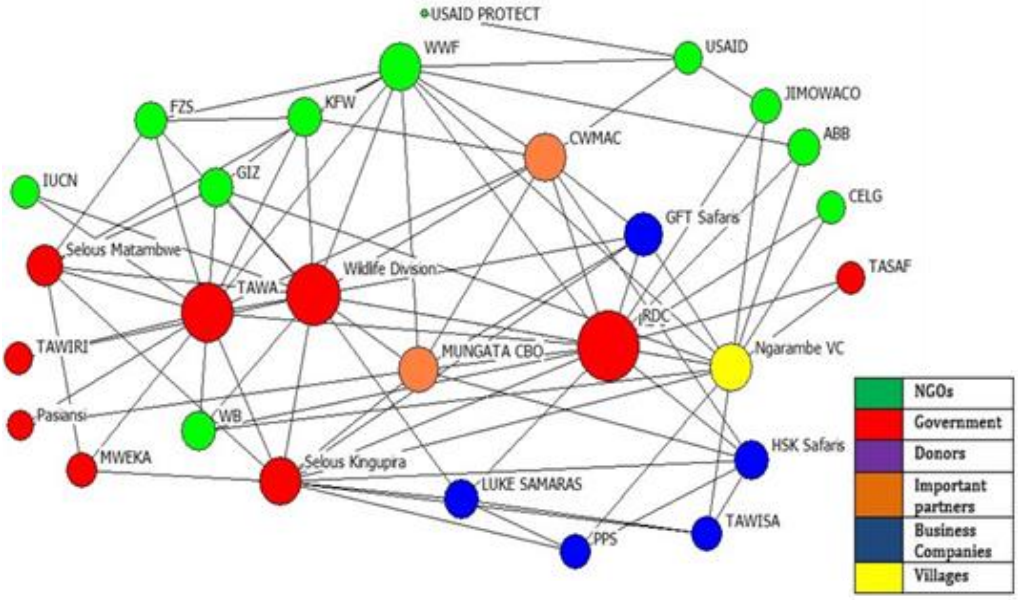

Figure 4: MUNGATA WMA and Supporting NGOs and Business Partners
Source: Improved from John (2021a)

The interviews revealed that these partnerships greatly promote convivial conservation by encouraging increased participation from diverse actors. This collaborative approach improves animal resource management and sustainability, as demonstrated in Ngarambe village, where active stakeholder engagement has led to more effective conservation initiatives and community involvement, as revealed by one woman participant:

> *"Various actors came together to support us during the establishment of the MUNGATA WMA in the 1990s, including the GTZ and the WWF. They helped us by teaching us about conservation and giving us new ways to chase elephants* ***(Interview with a Woman, Ngarambe, November, 2018).***

According to the interviews, the MUNGATA WMA was established in 2003. From 1995 to 1997, the WMA got assistance from the GTZ and the WWF. In 1995, ten young people were taken to Sekamaganga College to learn about the WMAs. This information was brought up during a focus group meeting with the MUNGATA WMA executive committee at Ngarambe village:

> *"The World-Wide Fund for Nature (WWF) advised us that the area in Ngarambe community was insufficient for the protection of wildlife, and recommended that we include the Tapika village in the scheme. We were confident that preserving wild creatures would pay out in the long-run"* ***(FGD with the MUNGATA WMA Executive Committee, October, 2018***).

Other partners include businesses such as hotels and lodges that serve tourism in Mloka village. The tourism—which include photographic tourism at Mloka village—business partners are shown in blue colour in Figure 5. The government and its agencies are also playing a major role in supervising the tourism business and conservation objectives; and are presented in red colour in Figure 5. The agencies are in charge of supervising conservation activities. These include the Tanzania Wildlife Management Authority (TAWA), Rufiji District Council, and the Kingupira and MWEKA Wildlife Colleges: all of which are in charge supervising and protecting wildlife. As described above, the activities of these different actors that work together through participatory governance, along with the principles of convivial conservation, enables the society to balance community development and effective wildlife conservation in the region.

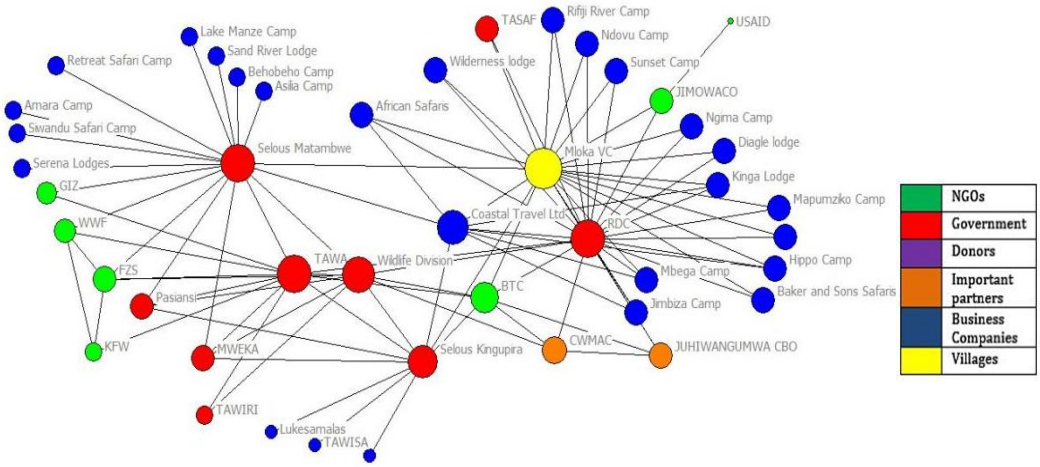

Figure 5: Social Network Analysis of Conservation/Business Partners (JUHIWANGUMWA WMA)

Source: Improved from John (2021a)

Similar findings were reported from interviews at the Department of Wildlife Resources Management Service at the TAWA. The interviewees disclosed that they had benefited from collaboration with local communities where they have placed informers to update them of what is going on in the villages. For example, one TAWA staff disclosed:

> *"The main objectives of TAWA are to control illegal hunting of wild animals for trophy in collaboration with local communities. Local communities give us information of any suspected illegal activity. At the same time we supervise tourism activities conducted in the game reserve and in the villages"* ***(Interviewee at TAWA, 2018)***.

However, the interview results indicate that Tawi villagers hold a different view from that of Mloka and Ngarambe villagers who actively participate in tourism within the WMA. Tawi villagers complained that they do not gain anything from the game reserve because their village lies outside the WMA. Hence, they are subjected to social marginalisation because most conservation initiatives target WMA villages, leaving communities on the periphery with no benefits. This demonstrates the skewed nature of the distribution of benefits and the failure of conservation frameworks that are designed to adequately protect and engage all communities. In the absence of convivial conservation approaches outside WMAs, populations outside the WMA will become isolated and resistant to conservation initiatives, hence endangering the very efforts to achieve conservation goals. This was as disclosed by the village chairman during interviews in Tawi village:

> *"There are no NGOs or corporate partners conducting tourism activities in the village because our village is located outside the boundaries of the WMA, although a large number of wild animals cross the village due to the conservation of forests. As a result, we have been unable to gain the benefits that other WMA periphery villages have received as a result of conservation activities such as tourism income or conservation NGO help"* ***(Village Chairman, Tawi Village, 2018)***.

This paper demonstrates that collaboration among various partners in wildlife management and conservation has improved wildlife resource management, resulting in increased wildlife populations in villages such as Ngarambe and Mloka. This increase indicates a good protection of wild animals. However, the growth has been accompanied by increased damages to crops, human deaths, and decreased human movement within settlements.

The findings on the increase of wild animals in the villages corresponds with those of Swalehe and Yanda (2023), who also researched some villages next to the Selous Game Reserve, and reported that the damages were greater in villages where the populations of wild animals had increased. Similarly, Kegamba et al. (2024) reported comparable outcomes at the Serengeti National Park when they carried out a study on the agricultural damages, livestock killings, and violence targeted towards humans from 2015 to 2022 in the Serengeti District and the Ngorongoro Conservation Area. Stoldt et al. (2020) also found that human-wildlife conflicts occurred due to increasing wildlife population at the Kavango-Zambezi reserve.

Adopting a convivial conservation framework may help in addressing the human-wildlife conflicts issues (Nchanji et al., 2023; Fiasco & Massarella, 2022; Kiwango & Mabele, 2022). The fundamental basis of convivial conservation is that there should be cooperation of all stakeholders, and active participation of locals in conservation and the distribution of benefits. This approach can support conservation to protect wildlife through collaborative management, provision of other income promotion, and education on wildlife.

4.4 Community Empowerment

Furthermore, the findings suggest that community empowerment in Ngarambe and Mloka villages has been successfully achieved through a variety of complementary measures, enabling convivial conservation. Mloka inhabitants actively manage land by farming and leasing portions to tourism lodges and other economic operations, thereby directly participating in the tourism industry, and influencing land use and conservation practices. In Ngarambe, the community manages tourist hunting blocks, lending their hunting block to an investor who pays USD30,000 per year for hunting block grade B (Interview, WMA Chairman, 2018). This has in turn bolstered convivial conservation by combining community livelihoods with biodiversity management, encouraging shared duties and benefits.

The interviews conducted at the Ministry of Natural Resources and Tourism revealed that the development of WMAs has increased community empowerment by shifting land control from traditional village councils to community-based organisations. This has improved local involvement in conservation decision-making and opened up new revenue streams, allowing communities to earn financially from animal resources. Overall, this initiatives show how convivial conservation empowers communities by fostering active engagement, shared governance, and a sustainable use of animal resources: all resulting into ecological integrity and socioeconomic growth.

Also, the interviews in Rufiji District also revealed that the establishment of WMAs—such as the JUHIWANGUMWA and MUNGATA—has resulted in the allocation of vast expanses of land for conservation purposes. The MUNGATA WMA, for example, authorised 767km^2, whereas the JUHIWANGUMWA WMA assigned 188.2km^2 for hunting, 173.5km^2 for photography, and 134.7km^2 for resident hunting (FGD, JUHIWANGUMWA leaders, 2018). As shown in Figure 6, significant amounts of land were designated as WMAs for hunting and conservation reasons in several areas bordering the Selous Game Reserve. These measures significantly strengthened the local community's sovereignty over lands and resources, while also allowing them to actively participate in wildlife management, thereby promoting resource development and efficiency by fostering ownership (empowerment) through conservation and economic development.

The findings regarding the allocation of a specific land area for conservation adjacent to protected zones support previous research, including those of Kegamba et al. (2022), Holterman (2020), Bluwstein and Lund (2018), Mambo and Makunga (2017), and Baldus et al. (2003); all of whom found that a significant area was earmarked for conservation surrounding the Selous Game Reserve.

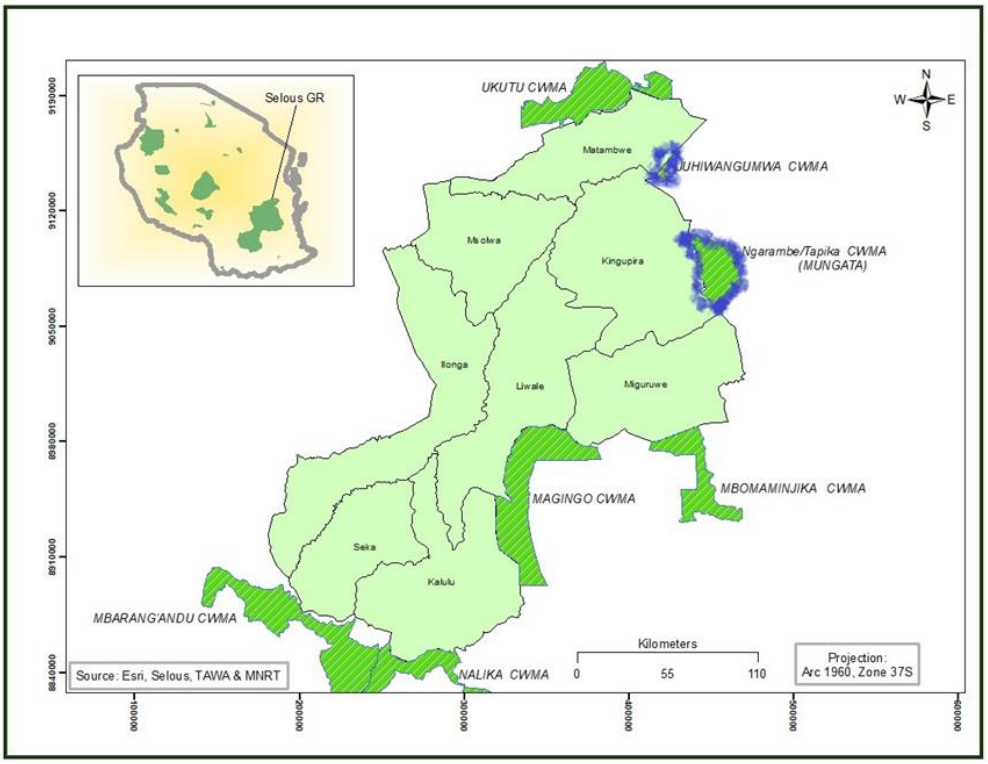

Figure 6: WMAs Established Across Selous Game Reserve to Extend Wildlife Protection in the Villages

Source: John (2021a)

Similarly, Mugisha (2015) reports that the expansion of designated areas in Uganda's conservation environment has demonstrated how such transfers frequently change local community boundaries and land use restrictions. However, in their investigation of the development of buffer zones around national parks in Kenya, Onditi et al. (2021) discovered that, while intended to promote biodiversity, these zones became contentious over land access and ownership to the indigenous people.

In terms of community empowerment in wildlife management, these studies suggest that the creation of WMAs has increased convivial conservation practices by encouraging active community participation in wildlife tourism and related economic activities. Such participation has empowered local communities to take responsibility for biodiversity and ecosystem health, as well as to promote conservation-driven sustainability. On the other hand, land relocation for conservation purposes has increased the risks to socio-community relations, land access governance, stratified social structure, and unequitable

distribution of associated benefits. These challenges may cause splits and disputes in a variety of settings. Hence, conservation and development require an appropriate participatory planning framework based on communal conservation strategies to address them.

7. Conclusion and Recommendation

This paper has demonstrated that implementing convivial conservation provides a novel strategy to regulating human-wildlife interactions near protected areas. The paradigm of convivial conservation differs from traditional conservation methods by focusing on the connections between ecological sustainability and the ideals of social and environmental justice, equitable economic development, and inclusive governance. Convivial conservation aims to bridge the widening divide between humans and wildlife—which is exacerbated by population growth and restrictive legislations—by including local perspectives and valuing traditional knowledge. Also, the approach highlights the need for ecologically friendly and culturally appropriate laws and regulations, which can ensure more equitable and sustainable management of animal resources, thereby promoting a more harmonious coexistence between humans and the natural world. This is crucial for the long-term health of biodiversity and local communities because it guarantees that conservation strategies are fair and effective. Furthermore, a democratic governance of wildlife resources engenders coexistence, protects wildlife, and boosts livelihoods.

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Declaration of Conflict of Interest

The author declares no conflict of interest

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