IMPACT OF CONSERVATION BENEFIT-SHARING INCENTIVE ON WILDLIFE CONSERVATION IN TANZANIA: A CASE OF LOCAL COMMUNITIES LIVING ADJACENT TO RUNGWA GAME RESERVE

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CERTIFICATION

The undersigned certifies that they have read and hereby recommends for acceptance by the Open University of Tanzania a dissertation titled: **"*Impact of Conservation Benefit-Sharing Incentive on Wildlife Conservation in Tanzania: A Case of Local Communities Living Adjacent to Rungwa Game Reserve",*** in partial fulfilment of the requirements for the Degree of Master of Arts in Natural Resources, Assessment and Management of the Open University of Tanzania.

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DECLARATION

I, **Winnie S. Kweka,** do hereby declare that this dissertation is my own original work and it has not been presented for a similar or any other award to any other University. It is hereby presented in fulfilment of the requirements for the Degree of the Master of Arts in Natural Resources Assessments and Management of the Open University of Tanzania.

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Signature

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Date

DEDICATION

This dissertation is dedicated to my family and friends. A special gratitude to my beloved parents Sosthenes Onesmo Kweka and Valeria Theobald Marenge, my adorable daughter Adventina-Morassa, beloved sisters Vida and Yvonne, brothers Nelson and Fredrick and friends including Anna Maganga and others for all their support, encouragement and endurance throughout the period of my study.

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ABSTRACT

This study investigated the impact of conservation benefit-sharing incentives on wildlife conservation among communities living near Rungwa Game Reserve in Tanzania. Employing a cross-sectional design, it utilized both qualitative and quantitative methods. Data were collected from 338 randomly selected households and seven purposively selected key informants. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data underwent content analysis. The findings revealed that local communities generally had a positive perception of conservation benefit-sharing projects. Household participation was high during the identification stage of projects but declined significantly during planning, implementation, and management phases. Rungwa Game Reserve engaged communities through mechanisms such as conservation meetings (mean score 4.24), beekeeping (mean score 4.18), and tree planting (mean score 3.76). These initiatives played a crucial role in raising conservation awareness, supporting anti-poaching measures, and contributing to habitat restoration. Implementing benefit-sharing projects significantly influenced community participation in conservation activities. In conclusion, the local communities near Rungwa Game Reserve are supportive of conservation benefit-sharing initiatives and that the strategies used by the reserve were effective in enhancing community engagement. The study recommends reviewing the legal framework regulating the distribution of monetary benefits among local communities surrounding game reserves to ensure more inclusive and equitable participation in conservation efforts.

Keywords: *Conservation Benefit Sharing, Wildlife Conservation, Local Communities, Game Reserve, Wildlife Conservation.*

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ADMADE	Administrative Management Design for Game Management Areas in Zambia
BSI	Benefit-Sharing Incentives
CAMPFIRE	Communal Areas Management Program for Indigenous Resources
CBC	Community-Based Conservation
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resources Management
CITES	Convention on International Trade in Endangered Species
CoFMA	Community Forest Management Agreements
FGDs	Focus Group Discussion
GMP	General Management Plan
GSE	Greater Serengeti Ecosystem
IUCN	The International Union for Conservation of Nature
KIIs	Key Informant Interviews
MDC	Manyoni District Council
NGOs	Non-Government Organizations
NTFP	Non-Timber Forest Products
PAs	Protected Areas
PPS	Probability Proportional to Size
RGR	Rungwa Game Reserve
SADC	Southern African Development Community
TAWA	Tanzania Wildlife Management Authority

ToC	Theory of Change
URT	United Republic of Tanzania
WD	Wildlife Division
WMA	Wildlife Management Area

CHAPTER ONE

INTRODUCTION

1.1 Background to the Research Problem

Benefit-sharing has proven instrumental in empowering local communities residing near protected areas to actively participate in wildlife conservation and enhance biodiversity outcomes (Kegamba *et al*., 2022; Snyman and Bricker, 2019; Baghai *et al*., 2018). These benefits include tangible outcomes such as direct financial returns from protected areas and access to specific resources within these areas (Snyman and Bricker, 2019). Sharing conservation benefits with neighboring communities serves as a vital tool for resolving conflicts and garnering local support for wildlife conservation efforts (Kegamba *et al*., 2022; Snyman and Bricker, 2019; Baghai *et al*., 2018).

When local communities are actively involved in conservation, have a degree of control over resource use, and receive a meaningful share of the generated income, they are more likely to manage those resources responsibly and sustainably (Mariki, 2013; Rasoolimanesh and Jaafar, 2017; Saarinen, 2016; Su and Wall, 2014; Timothy and Tosun, 2003). The core assumption is that when communities benefit, both materially and otherwise, from conservation and tourism associated with protected areas, they develop positive attitudes toward these areas and show greater commitment to conserving the natural resources they harbor (Kaaya and Chapman, 2017; Spenceley *et al*., 2017; Dewu and Røskaft, 2018; Snyman and Bricker, 2019; Ziegler *et al*., 2020).

The concept of benefit-sharing originates from Article 1 of the third objective of the Convention on Biological Diversity (CBD), which distinguishes between inter-state benefit-sharing, such as access to genetic resources, and state-to-community benefit-sharing, which pertains to the conservation and sustainable use of natural resources (Morgera and Tsioumani, 2010). This concept was later embraced by the Vth IUCN World Parks Congress, emphasizing that conservation institutions should contribute to poverty alleviation for local communities residing near protected areas (Scherl *et al*., 2004). Early mechanisms of conservation benefit-sharing included the continuation of local practices for accessing natural resources, the sharing of local revenue, and the provision of employment opportunities within local communities (Snyman and Bricker, 2019). Ultimately, conservation institutions bear the responsibility of distributing benefits to the local populations affected by the establishment of conservation areas (Woodhouse *et al*., 2018).

Globally, various benefit-sharing approaches have been utilized to engage local communities living near protected areas. In India, for instance, the "Eco-development Project" provides funding from a World Bank-supported NGO for village development initiatives and access to Non-Timber Forest Products (NTFP) for communities residing close to seven targeted national parks. The project aims to minimize adverse impacts on protected areas while simultaneously addressing the needs of the local population (Mahanty, 2002; Gubbi, 2006). Similarly, benefits derived from genetic resources and traditional knowledge are shared worldwide, often guided by frameworks like the Nagoya Protocol (Laird *et al*., 2020).

In sub-Saharan Africa, the concept of conservation benefit-sharing is implemented through various conservation programs. One such initiative is the Protected Area Outreach Program, which allocates a portion of revenue generated from protected area entrance fees to support local communities (Archabald & Naughton-Treves, 2001; Ahebwa *et al*., 2012). Another example is the Collaborative Management Program, where communities and conservation authorities jointly manage resources under a negotiated framework that outlines the roles and responsibilities of each partner (Venter, 1998). Additionally, Community-Based Conservation (CBC) or Community-Based Natural Resources Management (CBNRM) assigns ownership and management responsibilities to communities, enabling them to derive direct benefits from natural resources (Venter, 1998). Examples include the Communal Areas Management Program for Indigenous Resources (CAMPFIRE) in Zimbabwe (Frost & Bond, 2008; Taylor, 2009) and the Administrative Management Design for Game Management Areas (ADMADE) in Zambia. These programs focus on empowering local communities by granting them legal rights to access protected areas, harvest wildlife for household use, and utilize land for cultivation, among other activities.

In Tanzania, many local communities residing near protected areas benefit from initiatives provided by conservation institutions (Kegamba *et al*., 2022). The Tanzania Wildlife Management Authority (TAWA), through its outreach unit, offers various benefits, including conservation education, support for income-generating projects, and assistance with community-initiated development initiatives. The success of protected areas heavily relies on the support of these local communities.

Research conducted elsewhere indicates that when communities receive tangible and intangible benefits from protected areas, they are generally more inclined to support conservation efforts. However, limited information exists on the impact of conservation benefit-sharing on wildlife conservation within Tanzania's protected areas, particularly after the adoption of participatory approaches under the paradigm shift (Kegamba *et al*., 2022).

The acceptance of conservation benefits is closely tied to the history of engagement between communities and conservation institutions (Kegamba *et al*., 2022). For instance, benefits derived from Wildlife Management Areas (WMAs) are viewed more positively by local communities due to their effective engagement practices compared to those provided by national parks (Kegamba *et al*., 2022). WMAs have garnered strong community support by involving locals in decision-making processes and ensuring that conservation benefits contribute to improving livelihoods (Campbell and Shackleton, 2001; Nelson *et al*., 2007).

However, recent conflicts over the allocation and use of benefits from WMAs have led some communities to consider withdrawing their cooperation (Bluwstein *et al*., 2016; Moyo *et al*., 2017; Kicheleri *et al*., 2018, 2021). Similar dissatisfaction with benefit-sharing—stemming from the neglect of local perspectives and priorities—has been documented in Tanzania’s Selous Game Reserve (Gillingham and Lee, 1999), Zimbabwe (Shereni and Saarinen, 2021; Parker *et al*., 2022), and India (Arjunan *et al*., 2006). Given the pivotal role local communities play in the success of conservation efforts, it is essential to understand their perceptions, participation

levels, and the challenges they face in benefit-sharing initiatives. This study seeks to explore these aspects, with a particular focus on communities living adjacent to the Rungwa Game Reserve in Tanzania.

To ensure the long-term sustainability of protected areas (PAs), it is crucial to understand the perceptions of local communities living adjacent to these areas towards the benefit-sharing projects implemented. This perspective is essential for the success of conservation initiatives, as community support and participation are crucial for the sustainability of protected areas (Ahebwa *et al*., 2012; Dewu and Røskaft, 2018).

Studies have shown that communities' involvement and their perceived benefits from conservation efforts can significantly influence their attitudes and behaviors towards these initiatives (Kihima and Musila, 2019; Störmer *et al*., 2019). This research seeks to evaluate community perceptions, participation, and mechanisms deployed by Rungwa Game Reserve management in engaging local communities towards wildlife conservation in Rungwa Game Reserve. By understanding these factors, the study aims to provide insights for more effective and inclusive conservation strategies, thus emphasizing the need for this research to enhance both wildlife conservation and community well-being.

1.2 Statement of the Problem

The conservation of wildlife resources is linked to the perceptions of local communities towards wildlife conservation efforts. Research has demonstrated that

successful conservation outcomes are heavily dependent on the local people's willingness to engage in these efforts (Dewu and Røskaft, 2018). Achieving this engagement necessitates the implementation of equitable benefit-sharing projects that directly benefit local communities, fostering a mutually advantageous relationship between conservation initiatives and community development. Despite the recognized importance of community involvement in conservation, the perception of local communities on benefit-sharing projects, particularly in areas adjacent to Rungwa Game Reserve, remains inadequately documented.

Moreover, there is limited understanding of the extent to which these communities participate in such projects. This gap in knowledge is critical, as the success of conservation efforts hinges on the active and informed participation of these communities at every stage of the project lifecycle—from identification and planning to implementation and management (Kihima and Musila, 2019). Without this understanding, conservation efforts risk being poorly targeted and less effective, potentially leading to disengagement or even opposition from local communities.

The urgency of this study is underscored by the need for timely and effective conservation strategies that not only protect wildlife but also support sustainable community development. Consequently, this study aims to fill these critical gaps by investigating the perceptions of local communities on benefit-sharing projects, their level of participation, and the mechanisms used by Rungwa Game Reserve to involve local community in conservation activities in the study area.

1.3 Study Objectives

1.3.1 General Objective

The main objective of this study is to examine the impact of conservation benefit-sharing incentive on wildlife conservation among local communities living adjacent Rungwa Game Reserve in Tanzania.

1.3.2 Specific Objectives

i. To explore perception on benefit sharing incentive projects among local communities living adjacent to Rungwa Game Reserve.
ii. To assess the level of participation in conservation benefit-sharing projects among local communities living adjacent to Rungwa Game Reserve.
iii. To assess the mechanisms for conservation activities among local communities living adjacent to Rungwa Game Reserve.

1.4 Research Questions

i. What is the perception on benefit sharing incentive projects among local communities living adjacent to Rungwa Game Reserve?
ii. What is the level of participation in conservation benefit-sharing projects among local communities living adjacent to Rungwa Game Reserve?
iii. What are the mechanisms for conservation activities among local communities living adjacent to Rungwa Game Reserve?

1.5 Significance of the Study

The study provided a better understanding regarding the perceptions of local communities regarding the benefit-sharing incentive projects, the level of

participation in these conservation benefit-sharing initiatives among communities living adjacent to the reserve, and the mechanisms employed by Rungwa Game Reserve to engage local communities in conservation activities. Understanding the perceptions and participation levels of local communities in benefit-sharing incentive projects can help tailor conservation strategies that align with community needs and values, leading to more effective conservation outcomes. The findings can inform policymakers and conservation organizations about the effectiveness of current benefit-sharing mechanisms and guide the development of policies that enhance community engagement and support sustainable conservation practices. This study adds to the existing body of knowledge on community-based conservation and benefit-sharing mechanisms, providing valuable insights for future research and practice in similar contexts.

1.6 Scope of the Study

The study focused on the specific benefit-sharing projects implemented in the local communities adjacent to Rungwa Game Reserve. Further, while wildlife conservation encompasses various aspects including habitat protection and restoration, anti-poaching and law enforcement, species management and monitoring, community engagement in conservation efforts, education and awareness, sustainable land use planning, legal and policy frameworks, this study focused on participation of local community in conservation activities such as conservation meetings, beekeeping, and tree planting. Further, in terms of geographical scope, the study focused specifically on the local communities living adjacent to Rungwa Game Reserve in Tanzania. The research was conducted within

this specific geographic area to understand the nature of benefit-sharing projects and their influence on conservation activities. Furthermore, regarding to temporal scope, the study examined the conservation benefit-sharing projects implemented from 2019 to 2023 in the study area. This timeframe enabled a comprehensive analysis of the initiatives undertaken in recent years and provides insights into their short-term and potentially long-term effects on conservation activities. In addition, methodologically, the study adopted a cross-sectional study design with a combination of both quantitative and qualitative research approaches. Data were collected from various stakeholders, including local community members, Rungwa Game Reserve officials, and conservation organizations in the field.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers the literature review for this study. It includes the conceptualization of key terms, theoretical review, empirical literature review, research gap and conceptual framework for this study.

2.2 Conceptualization of Key Terms

2.2.1 Game Reserve

According to NEMC (n.d.), game reserves are categories of wildlife protected areas which are declared for the purpose of conservation. Both consumptive and non-consumptive wildlife utilization are allowed after permit has been obtained from the Director of TAWA (Tanzania Wildlife Management Authority). No human activities are allowed, unless, with permit granted by the Director of TAWA. Lindsey (2007) defines a game reserve as a large area of land where wild animals are hunted in a controlled way for sport. In a game reserve, ecosystems are protected and conservation is usually key. In this study, a game reserve is defined as a designated protected area for the conservation and protection of wildlife. Unlike national parks, which are often stricter in terms of human activities and development, game reserves allow sustainable use of natural resources, controlled game hunting, and other activities that can benefit both wildlife conservation and local communities.

2.2.2 Wildlife Conservation

Based on CITES (2019), wildlife conservation is the practice of protecting wild animal and plant species and their habitats. It involves managing and maintaining

natural environments to ensure the survival and well-being of wildlife populations. Conservation efforts can include habitat restoration, anti-poaching initiatives, and public education to raise awareness about the importance of preserving biodiversity. Wildlife conservation aims to safeguard the diversity of species and ecosystems, promoting ecological balance and sustainable coexistence between humans and wildlife.

According to Dawson *et al*. (2011), wildlife conservation refers to the practice of protecting wild species and their habitats from threats such as habitat destruction, poaching, pollution, climate change, and other human-induced pressures. The goal of wildlife conservation is to maintain biodiversity, ensure the long-term survival of species, and preserve ecosystems for future generations. In this study, wildlife conservation encompasses a range of activities and strategies that engage local communities in conservation of wildlife resources in RGR through increasing their level of participation in conservation meetings, beekeeping and tree planting activities that are essential for improving their conservation awareness and livelihood as well as minimizing their unsustainable utilization of wildlife resources from RGR.

2.2.3 Conservation Benefit-Sharing

Snyman and Bricker, (2019) stated that benefit-sharing in the context of conservation refers to a commitment to channel some kind of returns whether monetary or non-monetary back to the range of designated participants: affected communities, source communities or source nations, participants in clinical trials, genetic disease patient groups. According to Kegamba *et al*. (2023), conservation benefit-sharing refers to

the practice of distributing the positive outcomes and advantages resulting from conservation initiatives among various stakeholders, particularly local communities residing in or around protected areas. This concept recognizes that conservation efforts should not only aim to protect biodiversity and ecosystems but also contribute to the well-being and development of the communities directly impacted by conservation activities. In the context of this study, conservation benefit-sharing refers to the practice of distributing the benefits derived from wildlife conservation initiatives among local communities living in proximity to game reserve. The goal is to ensure that communities are actively involved in or affected by conservation efforts through receiving tangible and equitable benefits.

2.2.4 Local Community

McMillan and Chavis (1986) defines local community as rural populations living in a specific geographical area, typically in close proximity to each other. These communities share common social, cultural, economic, and environmental characteristics. The term "local" is relative and may refer to a neighborhood, village, town, or region, depending on the context. Further, local community is a group of interacting people living in a common location. According to Chavis and Wandersman (1990), the phrase, local community refer to a group that is organized around common values which are attributed with social cohesion within a shared geographical location, generally in social units larger than a household. A sense of community refers to people's perception of interconnection and interdependence, shared responsibility, and common goals. On the other hand, Putnam (2000) defined local community as a self-identified human group that relates to a life environment in

collective ways which are often used to define a shared territory and culture. In this study, local community refers to the local population living in the villages adjacent to Rungwa Game Reserve.

2.3 Theoretical Review

This study is guided by a Theory of Change (ToC) initially proposed by Carol Weiss in 1995 (Weiss, 1995). A theory of change is a framework or model that outlines the steps or processes believed to bring about a desired social, environmental, or organizational change. It helps organizations or individuals understand the causal pathways between their actions and the intended outcomes. Typically, a theory of change outlines the underlying assumptions, inputs, activities, and expected outputs that are intended to bring about desired changes in a particular context. The assumptions about how change will occur, which may not always align with the complexities of real-world conditions is one of the potential weakness of the theory of change. In some cases, the pathways and causal relationships depicted in a theory of change may oversimplify the actual processes involved in achieving desired outcomes.

The adoption of a theory of change in this study help to map out the underlying assumptions, inputs, activities, and expected outputs associated with each benefit-sharing initiative (Reinholz and Andrews, 2020). It helps to provide a structured approach to understanding how perception towards benefit-sharing initiatives, such as education programmes, initiated community development projects such as water supply, infrastructure, and economic projects are expected to influence the

participation of communities in wildlife conservation activities, such as participation in conservation meetings, beekeeping, and tree planting, among local communities living adjacent to Rungwa Game Reserve so as to increase their conservation awareness and minimize their unsustainable practices towards the conservation of Rungwa Game Reserve.

2.4 Empirical Literature Review

2.4.1 Perception on Benefit Sharing Projects among Local Communities

Tshidzumba *et al*. (2018) conducted a study evaluating beneficiaries' perceptions of benefit-sharing modalities in forest-based land reform initiatives within their communities. Using a random sampling technique, the study selected 140 households from Ama-Bomvini in KwaZulu-Natal and 175 households from Cata in the Eastern Cape Province. The findings revealed that beneficiaries lacked awareness of the criteria used for benefit disbursement. Additionally, over 70% of households in Ama-Bomvini, compared to significantly fewer in Cata, preferred allocating rental income toward infrastructure development in their communities. The analysis showed a statistically significant relationship between the perceptions of respondents from both communities regarding the existence of established benefit-sharing criteria (χ^2=34.452, df=4, p<0.005). Furthermore, Tshidzumba *et al*. (2018) study identified lack of transparency, trust, and instances of greed as key challenges undermining effective benefit-sharing mechanisms. The study recommends that political will and governmental commitment are necessary to develop and strengthen existing benefit-sharing policies, thereby improving the livelihoods of land beneficiaries.

Abukari and Mwalyosi (2020) highlight that perceptions are crucial for evaluating the performance of conservation projects, enabling the development of better policies to enhance biodiversity protection and improve the well-being of communities near protected areas. By examining perceptions across various aspects of conservation initiatives, one can identify both successful elements and areas needing improvement. This study investigated four aspects governance, management, ecological outcomes, and social impacts of conservation in protected areas in East and West Africa, specifically in Tanzania and Ghana. A national park from each country was selected, and local community perceptions regarding the impact of these parks on livelihoods and community development were assessed. Household surveys were conducted in park-adjacent communities, including 181 households near Tarangire National Park in Tanzania and 184 households near Mole National Park in Ghana. The findings revealed that the geographical location of protected areas influences community perceptions.

While 64% of respondents in Ghana believed that Mole National Park positively impacted their livelihoods and community development, only 40% of respondents in Tanzania felt the same about Tarangire National Park ($\chi 2 = 20.71$, $df = 1$, $p < 0.001$). Further analysis showed that governance issues were the most significant factor influencing local communities' perceptions of the parks' impacts. The results suggest that conservation authorities and stakeholders in both parks, as well as those across Africa, should focus on creating more inclusive governance structures that prioritize the roles and entitlements of local communities. Such initiatives can help position

these communities as key stakeholders and strengthen their support for conservation efforts.

2.4.2 Participation in Aspects of Conservation Benefit-Sharing Projects among Local Communities

Kegamba *et al*. (2022) conducted a systematic review of over 1,000 peer-reviewed articles published between January 1999 and February 2021 to assess the acceptability and effectiveness of benefit-sharing mechanisms among local communities near protected areas. Out of the 71 publications that met the selection criteria, all major categories of protected areas in Tanzania were represented. The benefit-sharing mechanisms identified were: i) provision of social services, ii) livelihood support, and iii) employment for local people. Approximately 48% of the studies found that local communities either accepted or strongly accepted the benefits provided by conservation institutions, with the level of acceptance closely tied to the history of engagement between communities and conservation authorities. In contrast, 40% of the studies reported negative perceptions. The authors suggest that future research should focus on understanding the values and needs of communities living near protected areas, particularly those with negative views, to ensure that benefit-sharing mechanisms achieve both positive socio-economic outcomes for local communities and effective conservation results.

Lwankomezi *et al*. (2021) investigated benefit-sharing mechanisms in Community-Based Conservation programs, specifically in the Makao Wildlife Management Area (WMA) in Meatu District, Tanzania. Data was gathered from 281 heads of

households through a survey employing a mixed-methods approach. Simple random sampling was used, selecting participants from a list of registered household heads in each village provided by the village chairpersons. Key findings revealed a significant increase in income from wildlife-related investments over the past five years, which has been used for paying Village Game Scouts (VGS) salaries, covering food and other expenses for VGS, supporting community development, and sharing benefits among member villages. The study also found that limited involvement in WMA activities led to a low perception of the benefits among local communities. The authors recommend greater community involvement in the design and management of WMAs to enhance acceptance and ownership. They also suggest that benefit-sharing in protected areas should be used as a strategy to offset conservation costs and foster local community support for biodiversity conservation.

Spenceley (2014) identified six major challenges related to benefit-sharing from protected areas (PAs) in Southern African Development Community (SADC) countries. These challenges include: (1) the small value of benefits per person when shared among a large population, (2) the benefits of social infrastructure, such as schools and water, not always being linked to conservation or tourism, (3) the beneficiaries not necessarily being the same people who bear the costs of conservation, such as those affected by human-wildlife conflict or loss of land access, (4) the poorest community members often being excluded from the benefits, (5) community organizations lacking the capacity to collaborate with other stakeholders or to agree on benefit-sharing processes, and (6) legal frameworks that may limit the effectiveness of benefit-sharing. Moreover, stakeholder engagement is

closely tied to equity, and evaluating equity requires assessing governance quality based on principles of good governance.

Tumusiime and Vedeld (2012) emphasized that stakeholder engagement is crucial for effective benefit-sharing. Poor communication of benefits to stakeholders and a lack of capacity within community structures to manage funds from protected area tourism can exacerbate negative outcomes when governance is inadequate. A key challenge lies in identifying the stakeholders who should benefit, as this group can be large and diverse within tourism systems. While some stakeholders are easily identifiable, others are less apparent and may emerge over time as tourism develops. Additionally, stakeholders often have different, sometimes conflicting, reasons for engaging in tourism, which adds complexity. Another challenge is ensuring that a clear connection exists between the benefits received and the tourism and protected areas generating them. Deciding how benefits should be shared within and among stakeholder groups whether on an individual or collective basis, and who will manage this process presents further challenges. Ultimately, benefit-sharing from PA tourism is hindered by a lack of stakeholder empowerment and participation, compounded by the recognition that there will be costs, which necessitate benefit-sharing programs that are scaled to offset these potential costs.

Kideghesho (2008) argues that while benefit-sharing is important, it alone may not be enough to motivate communities to engage in wildlife conservation. The decision of whether communities have economic incentives to conserve wildlife and whether they are economically better off with wildlife involves more than simply returning a

portion of wildlife revenues as development or social infrastructure benefits. It also depends on the economic costs associated with wildlife, the form in which benefits are received, the competing costs and benefits of other economic activities, and various external factors that restrict communities' ability to translate wildlife benefits into tangible livelihood improvements.

2.4.3 Mechanisms for Conservation Activities among Local Community

The study by Niskanen *et al*. (2018) emphasizes the critical role of local communities in addressing illegal wildlife trade (IWT). The researchers conducted a comprehensive analysis of various community-based initiatives across Kenya, aiming to identify effective strategies for involving local populations in conservation efforts. The study underscores that empowering communities to actively participate in wildlife protection not only enhances conservation outcomes but also fosters sustainable livelihoods. By integrating local knowledge and interests, these initiatives can lead to more effective and enduring solutions to IWT.

Further, the study by Roe and Booker (2019) provides a comprehensive analysis of community engagement strategies aimed at combating illegal wildlife trade (IWT). They identify a range of approaches, including participatory conservation, benefit-sharing mechanisms, and community-led monitoring, all designed to involve local populations directly in conservation efforts. While these initiatives have shown promise, the study highlights a significant gap in robust, consistent monitoring and evaluation, hindering the ability to determine their true effectiveness. Roe and Booker emphasize the necessity for clear objectives, equitable benefit-sharing, and

the integration of local knowledge to ensure the success of community engagement initiatives. They advocate for adaptive management approaches that can respond to the evolving nature of IWT and the diverse needs of communities.

Involving local communities in conservation activities is crucial for the sustainable management of natural resources. Education is a fundamental mechanism for engaging local communities in conservation efforts. Programs designed to raise awareness about the importance of biodiversity and ecosystem services have been shown to foster positive attitudes towards conservation. For instance, the study by UNESCO (2022) emphasized the role of environmental education in enhancing community participation in conservation projects. By increasing awareness and understanding of ecological issues, such initiatives can empower communities to take active roles in conservation.

Capacity building is another critical approach that involves equipping communities with the necessary skills and resources to manage conservation efforts effectively. This includes training in sustainable practices, monitoring techniques, and resource management. Don Carlos *et al*. (2013) illustrated how capacity-building initiatives led to increased community engagement in wildlife conservation, demonstrating that when communities are trained and supported, their involvement in conservation efforts significantly improves.

Collaborative management frameworks, which involve partnerships between government agencies, NGOs, and local communities, have proven effective in

various conservation contexts. For instance, the research conducted by Snowden (2019) on community-based conservation highlighted how collaborative approaches not only enhance conservation outcomes but also foster a sense of ownership among local communities. By sharing decision-making power and responsibilities, these partnerships encourage communities to invest in and prioritize conservation activities.

The integration of traditional knowledge and practices into conservation strategies has emerged as a vital mechanism for community involvement. Traditional ecological knowledge (TEK) can provide valuable insights into sustainable resource management. A study by Sinthumule (2023) & Phuong (2021) emphasized that recognizing and incorporating TEK in conservation planning can enhance the relevance and effectiveness of conservation measures, leading to better ecological and socio-economic outcomes for communities.

Community-based initiatives such as tree planting, beekeeping, and ecotourism projects have also been effective in engaging local populations in conservation. The work of Kassa and Megerssa (2020) examined how beekeeping not only contributes to forest conservation but also serves as a livelihood strategy for communities in Ethiopia. Such initiatives can create economic incentives for conservation, further promoting community involvement.

A study by Gillingham and Lee (1999) in Tanzania highlighted the importance of involving local communities in decision-making processes through structured

meetings and consultations. These meetings enable community members to voice their concerns, participate in planning, and develop a sense of ownership over conservation initiatives. The success of these meetings depends on regular, transparent communication and ensuring that community views are incorporated into conservation strategies.

The study conducted by Minja and Nkumilwa (2016) explored the role of beekeeping in forest conservation and poverty alleviation within Moshi Rural District, Tanzania. Utilizing a mixed research design, the study sampled 70 beekeepers and incorporated both primary and secondary data. Various data collection methods were employed, including household questionnaires, interviews, wealth ranking, observation, and focus group discussions. The findings showed that 40% of the beekeepers surveyed believed that beekeeping contributed to forest and biodiversity conservation through afforestation initiatives. The results also demonstrated a significant positive correlation ($r = 0.718$) between the number of beehives and the amount of honey produced annually in the district. However, 75% of respondents disagreed that beekeeping significantly alleviated poverty, citing challenges such as a lack of skills, reliable markets, and appropriate technology.

2.5 Research Gap

Several studies elsewhere (including Strickland-Munro & Moore, 2013; Snyman, 2016; Kegamba *et al.,* 2022) have shown that benefit-sharing initiatives influence the wildlife conservation among local communities living adjacent to protected areas. Further, researchers such as Spenceley (2014); Tumusiime & Vedeld (2012); and

Kideghesho (2008) have observed that there are various challenge facing implementation of the benefit-sharing incentive among local communities living adjacent to protected areas. However, regardless of implementing various benefit-sharing projects to local communities living adjacent to Rungwa Game Reserve (RGR), there are limited published studies on the impact of implemented benefit-sharing projects. Consequently, there is little understanding on how these implemented benefit-sharing projects have influenced the participation in wildlife conservation activities among local communities in RGR. Therefore, this study sought to address this research gap by investigating how benefit-sharing projects influence the involvement of local communities in wildlife conservation activities and by identifying the perceptions and challenges associated with implementing benefit-sharing incentives among local communities living adjacent to Rungwa Game Reserve.

2.6 Conceptual Framework

The conceptual framework illustrates the relationship between independent and dependent variables. It posits that local communities' perceptions on benefit-sharing incentives (BSIs), such as values of education programs on livelihoods, values of water supply projects on livelihoods, values of infrastructure development on livelihoods, and values of income-generating initiatives on livelihoods, along with their level of participation in the identification, planning, implementation, and management of these projects, function as independent variables. These variables influence the willingness of the community to participate in wildlife conservation activities. Wildlife conservation encompasses habitat restoration, public awareness

about conservation, and combat wildlife poaching. The local communities were involved in wildlife conservation through three key mechanisms: tree planting activities to support habitat restoration, conservation meetings as part of public education to raise public awareness about conservation, and beekeeping activities to contribute to anti-poaching initiatives. Both theoretical and empirical literature review guided the development of the conceptual framework (Figure 2.1).

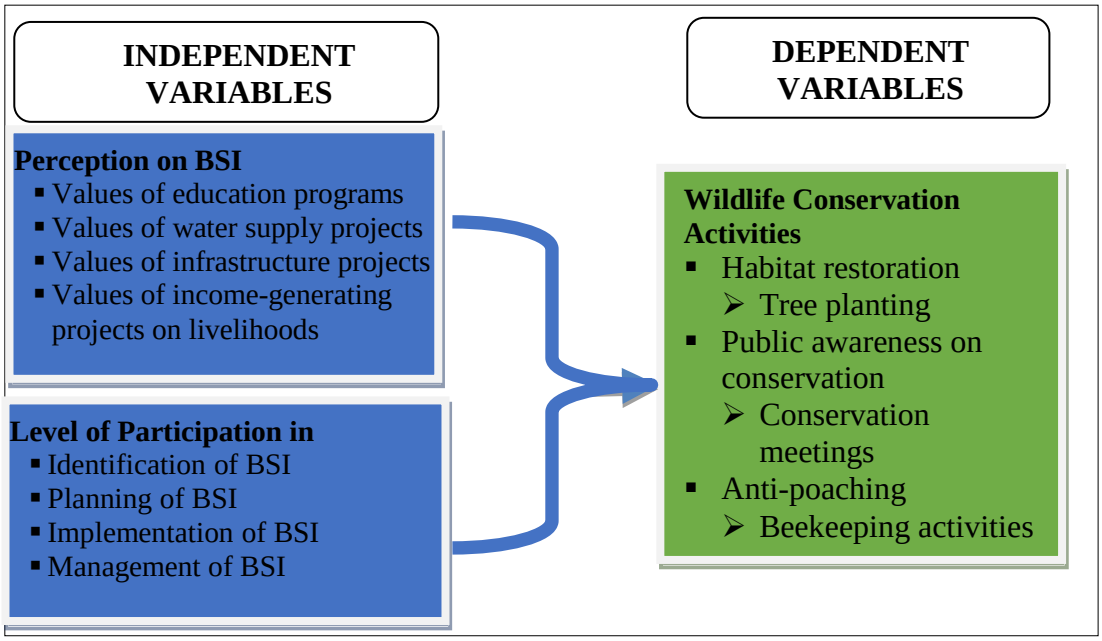

Figure 2.1: Conceptual Framework

Source: Researcher (2024)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter present the research methodology adopted in this study. It outlines research design and approach, the study area, study population, sampling procedure and sample size, data collection methods and instruments, validity and reliability issues, data management and analysis and ethical issues.

3.2 Research Approach

The study applied a combination of mixed quantitative and qualitative research methods approach for collection of both quantitative and qualitative data. While the quantitative methods provided numerical data for statistical analysis, the qualitative methods provided an in-depth exploration of perspectives, experiences, and context, which offered additional extent and context-specific insights, helping to complement each other (Crossman, 2020). The use of a mixed-methods approach is justified by the superiority of the mixed approach over a single research method (Creswell 2009; 2014; 2018). The strengths of one research method mitigated the weaknesses of the other research method thus enhancing its complementarity (Leavy, 2017). The use of multiple data sources and methods (triangulation) assisted in cross-validating findings, increasing the overall trustworthiness and reliability of the study's results (Creswell, 2018).

3.3 Research Design

This study adopted a cross-sectional study design. The rationale of using cross-sectional study design is based on its ability to collect data at a single point in time,

providing a snapshot of the current situation regarding the perception of local communities on benefit sharing incentive projects, participation of local communities in conservation benefit-sharing projects, and mechanisms used by Rungwa Game Reserve to involve local community in conservation activities among local communities. Additionally, a cross-sectional study design is efficient in terms of time and resources, making it practical for a study focusing on a specific timeframe and aiming to capture a broad representation of the community (Sekaran and Bougie, 2016).

3.4 Study Area

The study was conducted in Rungwa Game Reserve (Figure 3.1). Rungwa Game Reserve (RGR) is the oldest and still the second largest reserve in Tanzania, re–described and gazette through GN. No. 275 of 1974 with an area of 9,000 km^2 located in two regions of Singida and Mbeya, with its large portion (96%) lying in Manyoni District in Singida while the remaining 4% lies in Chunya District in Mbeya region. It is located between latitudes 07°41'S and 6°32 and longitudes 33°41' E and 34°89'E (URT, 2011; WD, 2015, RGR GMP 2023 - 2033). Previously, it was a unification of three game reserves namely: Rungwa, Kizigo, and Muhesi that were established at different times but in April 2022 the reserves were managerially unmerged for the purpose of strengthening their management.

This game reserve is part of the Ruaha–Rungwa ecosystem that includes protected and unprotected areas with a total area of 50,886 km^2. The selection of this study area is based on the fact that Rungwa Game Reserve is regarded as one of the most

important wildlife areas that form part of the Ruaha-Rungwa ecosystem with diverse flora and fauna. This ecosystem is the second largest wildlife area in Tanzania after the Selous-Mikumi ecosystem, and its conservation significance is extraordinary (URT, 2011; WD, 2015). According to the elephant census results of 2015, this ecosystem is known to have the largest population of African elephants in Tanzania, with an estimated 15,836 elephants (Ministry of Natural Resources and Tourism, 2015). The game reserve is also popular for trophy hunting due to plentiful Miombo woodlands, which offer the special habitats for a number of wildlife species including lions, leopards, buffaloes, zebras, elephants, impalas, and different species of birds. Trophy hunting was also known to attract roughly about 100 hunters annually (Ministry of Natural Resources and Tourism, 2015).

The study was conducted in the two villages, namely, Rungwa and Mwamagembe which border the Rungwa Game Reserve. The study purposively selected two out of four villages due to their proximity to the Rungwa Game Reserve. The two villages were in accessible places and had benefit sharing projects and wildlife conservation activities. Therefore, they were good representatives for adjacent villages to the Rungwa Game Reserve. In addition, Tarimo and Mgumia (2018) reported that the villages had diverse socio-economic activities, mainly cultivation, livestock and bee keeping. The latter was a popular activity with honey and beeswax being an important source of income for most the households. Moreover, in the settled areas and on a small-scale livestock keeping was undertaken (Tarimo & Mgumia, 2018).

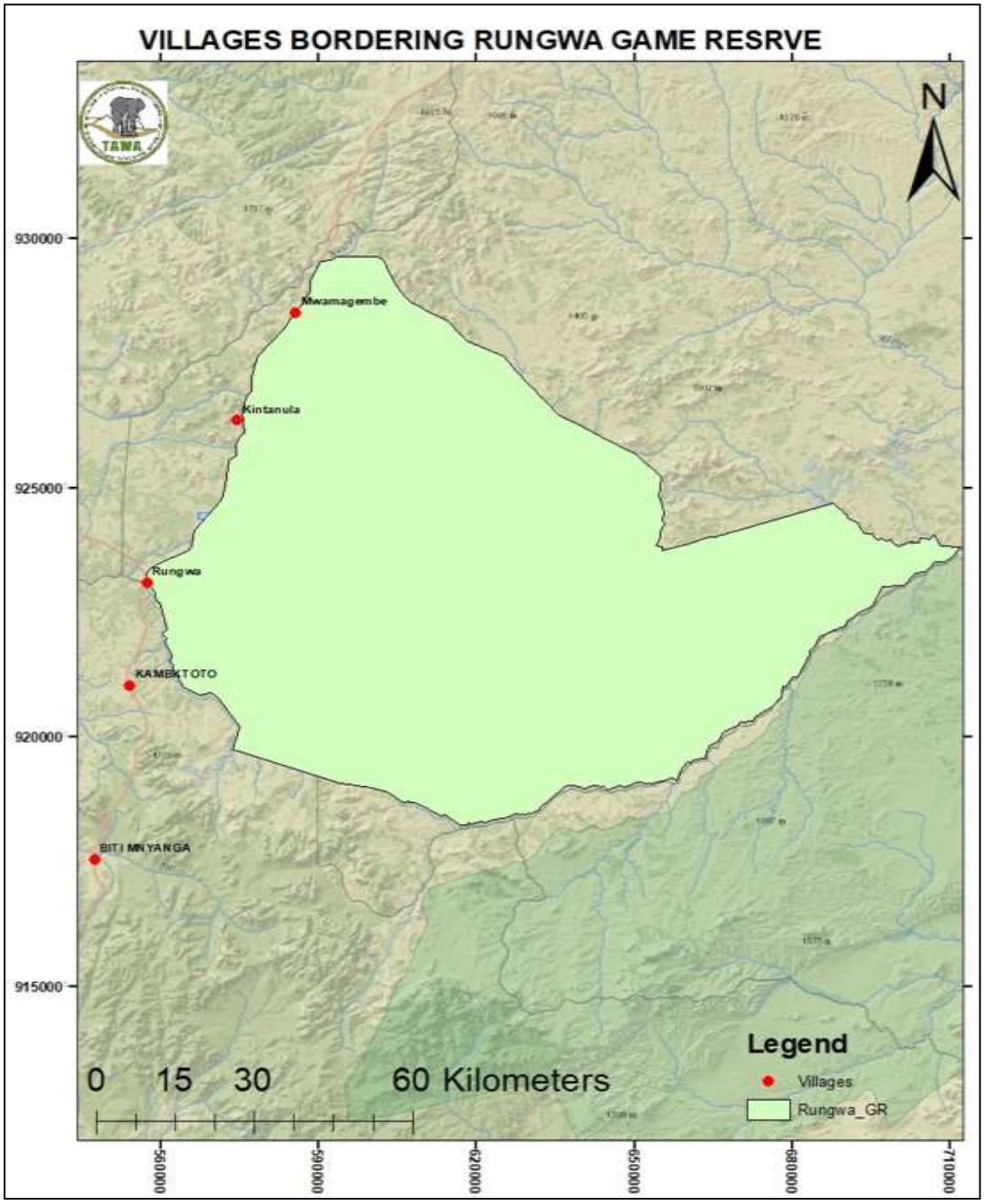

Figure 3.1: Map of Rungwa Game Reserve showing the Study Area

Source: Tanzania Wildlife Management Authority (2023)

3.5 Study Population

The study population includes the local communities living in the villages surrounding Rungwa Game Reserve. Based on the 2022 Population and Housing

Census, Rungwa village is composed of 552 households while Mwamagembe village is composed of 1,616 households, making a total of 2,168 households (NBS, 2022).

3.6 Sample Size and Sampling Procedure

Given the study population of 2,168 households, 95% confidence level, 5% margin of error, the sample size was calculated to be 338 households according to the statistical formula given by Yamane (1967).

$$n = \frac{N}{1 + N(e^2)}$$

Where:

n – Sample size

N–Population size

e- Estimated sampling error

$$n = \frac{2{,}168}{1 + 2{,}168\ (0.05)^2} = 338$$

Therefore, total sample size estimation for this study was 338 households.

This study applied both probability (simple random) sampling and non-probability (purposive sampling) procedures. A sample of 338 households were selected by using probability proportional to size (PPS) sampling method from the selected study villages of Rungwa and Mwamagembe in the study area. The sample of households in each study village was selected from the respective village proportional to the total number of households as shown in Table 3.1.

Table 0.1: Sampling Matrix of Households in each Village

Study Villages	No of Households	Sampling ratio	Sample
Rungwa	552	25.5%	86
Mwamagembe	1,616	74.5%	252
Total	**2,168**	**100%**	**338**

Source: Researcher (2024)

Further, this study applied simple random sampling to select the representative sample of households in each village for administering questionnaires. The village register of households in each study villages was used as a sampling frame. The researcher used computer (Excel Application) to generate random numbers for the required sample size of households in each village. The computer-generated random numbers for each selected village were matched against the serial numbers in the register of households to get the names of households for administering questionnaire in the respective village. The justification of using probability sampling procedures is to ensure that each household in the study villages have an equal chance of selection in this study and thus reducing the selection bias. These sampling techniques enabled the findings of this study to be more representative and generalizable to the study population (Creswell, 2018; Leavy, 2017; Sekaran and Bougie, 2016).

On the other hand, the study adopted purposive sampling method to select seven key informants for conducting in-depth interviews. The potential keys informants are Rungwa Game Reserve In-Charge/Conservator (1), Officer (1) responsible for community services, Ward Executive Officer (1), study villages chairmen (2), study village executive officers (2) in the study area. These key informants were representatively selected based on their roles/positions, knowledge, skills, experience

and capacity to provide the required information in this study. Table 3.2 provides the summary of overall sampling categories of the respondents.

Table 0.2: Summary of Overall Sampling Matrix for categories of Respondents

Categories	Population size	Sampling Procedure	Sample
Households	2,168	Simple random sampling	338
Rungwa Game Reserve - In Charge	1	Purposive sampling	1
RGR Officer - Community Services	1	Purposive sampling	1
Ward Executive Officer	1	Purposive sampling	1
Village Chairmen	2	Purposive sampling	2
Village Executive Officers	2	Purposive sampling	2
Total			**345**

Source: Researcher (2024)

3.7 Data Collection Methods

3.7.1 Sources of Data

This study used both primary and secondary sources of data. Primary sources including households, key informants and field sites which were deployed by using questionnaire, interview guide and observation checklist respectively. The secondary sources including official reports, publications, websites such as www.tawa.go.tz and www.maliasili.go.tz were collected by conducting documentary review.

3.7.2 Data Collection Instruments

3.7.2.1 Questionnaire

The researcher conducted field surveys to administer the questionnaire (Appendix 1) to the 338 randomly selected households in the study area. Questionnaires with both closed and open-ended questions were administered by researcher to the 338

randomly selected heads of households as follows: Rungwa 86 households and Mwamagembe 252 households. The closed-ended questions collected mostly quantitative data while the open-ended questions enabled the respondents to gather more detailed qualitative information on issues that could not be given on closed - ended questions. The questionnaires essentially examined the respondents' demographic information, perception of local communities on benefit sharing incentive projects, participation of local communities in conservation benefit-sharing projects, and mechanisms used to involve local community in conservation activities. The justification of using a questionnaire for data collection is due to its relative advantages such as the ability of collecting large amount of data from many respondents in a short period of time, standardization of questions across respondents, data analysis at a relatively higher speed and cost-effectiveness (Creswell, 2018).

3.7.2.2 Interview Guide

The researcher used interview guide (Appendix 2) for conducting in-depth interviews to the 7 purposively selected key informants in the study area. The key informants were purposively selected in the study area based on their positions in the organization, knowledge, experience, and capacity to provide the required information for this study. The interview guide with the open-ended questions essentially assessed the perception of local communities on benefit sharing incentive projects, participation of local communities in conservation benefit-sharing projects, and mechanisms used to involve local community in conservation activities. During the interview session, alongside taking notes, the researcher used a voice recorder to

aid in data collection and transcription after fieldwork. While the interview guide comprised a specific set of questions, the researcher had the freedom to dig deeper beyond the provided responses, request clarification, and seek elaboration. The reason for employing the in-depth interview method in combination with administering questionnaires is that the former method captures more detailed information that may not be obtained through other means. Furthermore, the use of mixed methods allows for data complementarity and enhances data quality (Saunders *et al*. 2007).

3.7.2.3 Field Observation Guide

A checklist for observation such as implemented benefit sharing projects and wildlife conservation activities were shown in Observation guide (Appendix 3). To gain more insight of the issues, the researcher adopted direct observation method by watching, recording, taking notes and photos of the actual situations in its natural settings in the study area. This method is very useful particularly in situations where the participants cannot provide some responses.

3.7.2.4 Documents Review

The researcher conducted documents review of various secondary sources to collect secondary data. These secondary sources included official statistics for implemented projects and wildlife conservation activities among local communities living adjacent to Rungwa Game Reserve. The rationale of collecting secondary data is based on its usefulness in providing background information on the subject; establishing the gaps and deficiencies; complementing primary data and show how the present study relates to existing researches (Goodwin, 2012).

3.9 Validity and Reliability

3.9.1 Validity

The researcher upheld the validity of the study by employing a sound study design, utilizing appropriate sampling procedures, and employing valid research methods and tools for data collection. To administer questionnaires, respondents were chosen from the comprehensive list of names of village register of households by using a simple random sampling technique. To mitigate selection bias, participants for in-depth interviews were purposefully selected based on predetermined criteria related to their roles, position in their organizations, capacity, knowledge, and experience.

3.9.2 Reliability

The following steps were taken to enhance the reliability of the study's data and findings. The researcher carried out pilot testing of the data collection tools prior to their application to the respondents for actual data collection, allowing for the identification of any inconsistencies. Moreover, to strengthen the credibility of the qualitative data, the researcher adopted a triangulation technique, primarily utilizing multiple sources and methods to verify the consistency of the findings.

Triangulation was achieved by gathering data from various sources and employing diverse research methods and tools (such as questionnaire, in-depth interviews, observation and documentary review). Additionally, the study was conducted with consistency and precision as outlined in the research methodology to strengthen the dependability of the qualitative data (Creswell, 2018).

3.9 Data Management and Analysis

The quantitative data was entered, cleaned, edited and analyzed by using SPSS version 26 statistical software. The respondents' demographic information was summarized by using descriptive statistics such as frequency and percentage. Variables of interest were summarized in descriptive statistics such as frequency, mean and percentage, and presented in a tables, graphs and/or charts. A content analysis method was adopted for the analysis of qualitative data. This approach involves systematically coding and categorizing textual information to identify themes, patterns, and meanings within the data. By doing so, it helps to interpret and understand the context and substance of the qualitative information gathered during the study.

3.10 Data Presentation

Quantitative data were presented using tables, figures, and graphs to clearly illustrate patterns, trends, and relationships among variables. In contrast, qualitative data were presented in narrative form through detailed textual descriptions, allowing for the interpretation of themes, perceptions, and contextual insights derived from respondents' views and experiences.

3.12 Ethical Issues

The researcher adhered to all research ethics and practices in conducting this study. The researcher sought approval of research clearance from the Open University of Tanzania. Further, the researcher requested to be provided an introduction letter by Open University of Tanzania to facilitate data collection process in the study area.

All participants in this study were informed about their research rights including the following: the right to adequate information about this study, informed consent before participating in this study, voluntary participation in the study, free withdraw from the study at any time, protection and confidentiality of the information they were providing.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results and discussion of this study. The results and its discussion include perception of local communities on benefit sharing incentive projects, participation of local communities in conservation benefit-sharing projects, and mechanisms used to involve local community in conservation activities in RGR.

4.2 Demographic Characteristics of Respondents

The data provided in Table 4.1 outlines the characteristics of the study respondents across various demographic categories, offering insights into their distribution in terms of village, sex, age, marital status, education level, occupation, and household size. Out of 338 respondents, 58.0% were males. In terms of age, about half (46.8%) of respondents were youth aging between 18 – 35 years. All demographic characteristics of respondents are summarized in Table 4.1

Table 4.1: Summary of the Respondents' Demographic Characteristics

Characteristics	Category	Frequency	Percent (%)
Study villages	Rungwa	86	25.4
	Mwamagembe	252	74.6
Sex	Male	196	58.0
	Female	142	42.0
Age (years)	18-25	78	23.1
	26-35	80	23.7
	36-45	84	24.9
	46-60	80	23.7
	Above 60	16	4.7
Marital Status	Single	137	40.5
	Married	180	53.3
	Divorced	15	4.4
	Widow	6	1.8
Education level	No formal education	22	6.5
	Primary Education	163	48.2
	Secondary Education	124	36.7
	College education	21	6.2
	University level	8	2.4
Occupation	Farming	153	45.3
	Beekeeping	82	24.3
	Business	42	12.4
	Livestock keeping	36	10.7
	Employed	20	5.9
	Mixed	5	1.5
Household size	1-2 members	84	24.9
	3-4 members	114	33.7
	5-6 members	97	28.7
	Above 6 members	43	12.7

Source: Field Data (2024)

Sex distribution of respondents indicates a balanced representation of male and female participants in the study sample. Males accounted for 58.0%, while females constituted 42.0%, ensuring that both genders are represented in the study. The balanced representation of male and female respondents ensures that the study captures diverse perspectives and experiences from both genders, which is essential when evaluating community involvement in conservation benefit-sharing incentive

and wildlife conservation. Further, the age distribution of respondents shows a balanced spread across several age groups, indicating diverse representation in terms of age. Those aged between 18-25 years accounted for 23.1% of the respondents, those between 26-35 years made up 23.7%, and respondents aged 36-45 years comprised the largest group at 24.9%. Additionally, those aged 46-60 years also represented 23.7% of the sample, while the smallest group, those above 60 years, constituted 4.7%.

Furthermore, the marital status of the respondents shows that the majority are married (53.3%), followed by those who are single (40.5%). A smaller portion of the population is divorced (4.4%) or widowed (1.8%). In terms of education, primary education is the most common level attained, with nearly half of the respondents (48.2%) falling into this category. A significant portion has secondary education (36.7%), while 6.5% have no formal education. A smaller percentage of respondents have college education (6.2%) or have attained a university degree (2.4%).

In addition, the occupation distribution of respondents in Table 4.1 reveals that farming is the predominant activity, with 45.3% of participants (153 individuals) engaged in this livelihood. The types of crops grown include maize, beans, sweet potatoes, cassava, peanuts, sunflowers, watermelons, vegetables, and tobacco. Beekeeping follows as the second most common occupation, with 24.3% (82 individuals) involved in this sector, highlighting its significance in the local economy. Business activities account for 12.4% of the respondents (42 individuals), while livestock keeping (mainly cattle, goat, sheep and poultry) comprises 10.7% (36

individuals), indicating its role as an important, though secondary, livelihood. A smaller percentage of the population, 5.9% (20 individuals), is employed in formal jobs. Additionally, 1.5% (5 individuals) reported having mixed occupations, combining several economic activities to sustain their livelihood.

Finally, the household size of respondents reveals that most households contain 3-4 members (33.7%), followed by 5-6 members (28.7%). Smaller households with 1-2 members make up 24.9%, while larger households with more than 6 members represent 12.7%. In summary, the demographic characteristics highlight that this is a community primarily engaged in farming and natural resource-based occupations, with a relatively balanced gender and age distribution.

Further analysis by Chi-square test provides significant insights into how respondents' demographic characteristics influence the types of benefit-sharing incentive projects. Notably, gender does not significantly affect these projects ($\chi^2 = 2.945$, $df = 1$, $p > 0.05$). This suggests that men and women have equal opportunities or face similar barriers in their participation in or selection of benefit-sharing initiatives. The lack of gender-based disparity in project involvement highlights a relatively neutral approach to gender inclusivity in benefit-sharing initiatives.

Conversely, the analysis reveals that respondents' age ($\chi^2 = 52.563$, $df = 4$, $p < 0.05$) significantly affects the types of projects, indicating that preferences or participation vary among different age groups. Younger individuals might prioritize projects providing immediate benefits, such as income generating projects, while older

respondents could favor initiatives offering long-term gains, such as infrastructure or health facility projects. This finding emphasizes the need to tailor benefit-sharing projects to accommodate the specific interests and needs of different age groups.

The results also show a significant association between respondents' education level and project types ($\chi^2 = 22.872$, df = 4, $p < 0.05$). Respondents with higher education levels may gravitate toward projects that are more complex or offer greater long-term potential, such as infrastructure or health facility projects. This highlights the role of education in enhancing understanding and engagement with diverse project types.

It was found that respondents' occupation also demonstrates a significant association with the types of benefit-sharing projects ($\chi^2 = 20.005$, df = 5, $p < 0.05$). This indicates that the nature of one's occupation influences their project preferences or participation. For instance, businessmen might be more involved in income-generating projects while farmers might prioritize infrastructure or health related projects. Policymakers and implementers can leverage this information to design projects that align with the occupational realities and needs of their target communities. These findings underscore the importance of considering demographics characteristics when designing and implementing benefit-sharing projects. Tailored approaches can ensure greater inclusivity, relevance, and success of these initiatives in meeting community needs.

In addition, Chi-square test shows that there were significant associations between respondents' demographic characteristics and the mechanisms used in conservation

activities such as conservation meetings, beekeeping, and tree planting. It was found that respondents' gender was significantly related to the employed mechanisms used in conservation activities ($\chi^2 = 21.463$, df = 4, $p < 0.05$). This finding suggests that men and women might engage with conservation activities differently. For instance, men may participate more actively in physically demanding activities like beekeeping and tree planting, whereas women might show greater involvement in conservation meetings reflecting traditional roles. Further, the respondents' age also exhibited a significant association, indicating that community involvement in conservation activities varies across age groups ($\chi^2 = 64.214$, df = 16, $p < 0.05$). This result suggest that younger individuals may prefer hands-on activities such as tree planting, which align with their physical capabilities, whereas older participants may favor strategic involvement, such as attending conservation meetings.

Additionally, respondents' education level influenced the mechanisms used to involve communities in conservation activities ($\chi^2 = 33.159$, df = 16, $p < 0.05$). This finding suggests that individuals with higher education levels may be more inclined to participate in structured activities like conservation meetings due to their understanding of conservation issues and ability to contribute ideas. Conversely, those with less formal education might find practical activities such as tree planting or beekeeping more accessible.

Finally, respondents' occupation was significantly associated with the mechanisms of conservation activities ($\chi^2 = 41.546$, df = 20, $p < 0.05$). For example, farmers may favor participating in tree planting due to its direct relevance to agriculture and land

use, while bee-keepers might prefer to engage more in beekeeping. These findings emphasize the importance of designing mechanisms for conservation activities that are inclusive and consider demographics diversity. Tailoring activities to align with the gender, age, education level, and occupation of community members can increase participation rates and ensure the success of conservation efforts.

4.3 Perception on Benefit Sharing Incentive Projects among Local Communities

This section presents the results on types of conservation benefit sharing incentive, sources of information, and local communities' perceptions towards implemented conservation benefit-sharing projects.

4.3.1 Types of Conservation Benefit sharing Incentive offered by RGR

Further, research findings indicated that Rungwa Game Reserve offered various conservation benefit sharing incentives. Most respondents (84.0%) reported that major incentives were education project, followed by infrastructure projects which were mentioned by 51.2% of respondents, then income-generating projects, health facility projects, water supply projects, and other projects as presented in Figure 4.1.

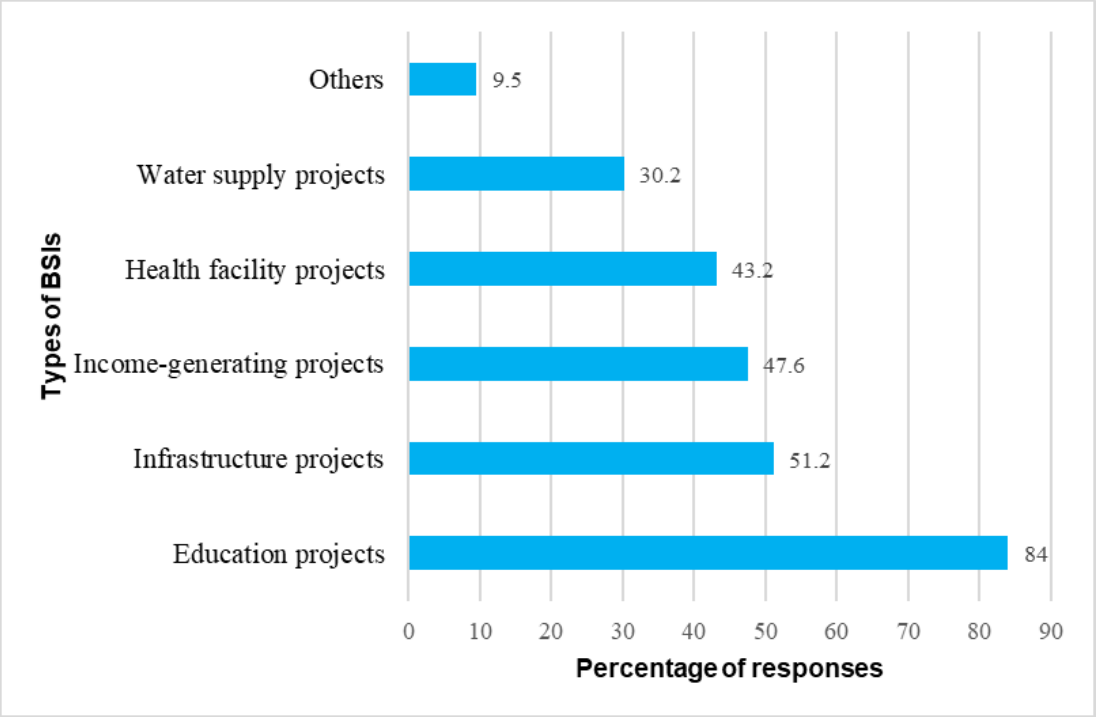

Figure 4.1: Types of Conservation Benefit Sharing Incentive Offered by RGR

Source: Field Data (2024)

The findings revealed that education projects are the most common type of conservation benefit sharing incentives provided, with majority of the respondents acknowledging their presence. This suggests a significant focus on education as a key strategy for promoting conservation efforts among local communities. Following education, infrastructure projects were reported by almost half of respondents, indicating the importance of building and improving physical facilities in these areas. These projects may include the development of roads, schools, or other essential infrastructure that supports community livelihoods.

Income-generating projects were recognized by less than half of the participants, demonstrating the focus on creating sustainable livelihoods for the communities.

These initiatives are crucial in promoting economic self-reliance and reducing the dependency on unsustainable activities that may harm wildlife and their habitats. Health facility projects were reported by less than half of the respondents, indicating that health services are also prioritized in benefit-sharing strategies. Providing healthcare infrastructure and services can contribute to community well-being and enhance support for conservation.

A third of respondents recognized water supply projects as another important aspect of BSIs. These projects ensure that communities have access to clean and reliable water, which is critical in rural areas where water resources may be limited. Finally, very few respondents mentioned other types of projects, which include various smaller-scale initiatives aimed at improving community welfare and supporting conservation goals. Overall, the variety of BSIs highlights the diverse ways in which Rungwa Game Reserve management are working to engage and benefit local communities while promoting wildlife conservation efforts.

The respondents further highlighted key benefit-sharing projects that have significantly impacted the local communities and enhanced their involvement in conservation efforts. These projects not only addressed basic community needs but also fostered a sense of ownership and responsibility toward conservation. Among the most notable projects were the construction of essential infrastructure, such as toilet facilities at Nkawa, Kudema, and Itaga Primary Schools, as well as the development of a classroom, desks, and a teacher’s office at both Kudema and Mwanagembe Primary Schools. These educational development initiatives have had

a profound influence on the local population by improving access to better learning environments, thus increasing the community's support for conservation efforts as they directly benefit from these initiatives.

Plate 4.1: Toilets at Nkawa Primary School, Classroom and Teacher's Office at Kudema Primary School built by Support from Hunting Activities in RGR

Source: Field Data (2024)

Another transformative project is the construction of a bus terminal in Rungwa village, which has opened new avenues for economic growth. The bus terminal has facilitated various entrepreneurial activities among the residents, with many engaging in small-scale businesses such as selling food, drinks, and other products to travelers. This has provided the community with a direct source of income, further reinforcing the importance of conservation as it contributes to their livelihood.

Plate 4.2: Rungwa Bus Terminal Built by Support from Hunting Tourism in RGR.

Source: Field Data (2024)

Additionally, modern beekeeping projects, mushroom farming, and the drying of traditional vegetables funded for the community have proven to be sustainable alternatives that help mitigate the negative impacts of destructive practices like “bangubangu”. The practice of “bangubangu” cutting down trees to harvest honey and stripping bark to make log hives has historically posed a threat to the Rungwa Game Reserve, leading to deforestation, the destruction of natural habitats, and the loss of wildlife.

Plate 4.3: Local Beehives and the Destructive Effects they Cause in RGR

Source: Field Data (2024)

However, these sustainable alternatives have reduced the community's dependency on environmentally harmful practices. By introducing modern beekeeping methods and other income-generating agricultural projects, local residents have gained new sources of livelihood that are less detrimental to wildlife habitats.

Plate 4.4: The Apiary And Beehives, and Solar Drier for Mushroom Provided to Villagers for Economic Generation in Mwamagembe Village

Source: Field Data (2024)

The findings of the present study were partly consistent with the study by Kegamba *et al.* (2023) conducted in Greater Serengeti Ecosystem (GSE) in Tanzania which found that social service provision, livelihood support, and employment were the main categories of benefits offered by conservation institutions in the GSE. However, the types of benefits within these categories varied significantly among institutions, especially in terms of the level and frequency of benefits received by communities. In addition, the researcher analyzed the challenges facing implementation of the benefit-sharing projects in RGR. The respondents identified legal barriers (91.5%) as a major challenge while small project value (52.1%) as the

least common barrier affecting the implementation of conservation benefit-sharing incentives (Table 4.2).

Table 4.2: Challenges Facing Implementation of the Benefit-Sharing Projects

Challenges	1	2	3	4	5	Mean	SD
Legal barriers affect implementation of benefit sharing incentive	1.8	0.9	5.8	51.1	40.4	4.29	0.753
Poor community engagement affects implementation of benefit sharing incentive	0	2.4	15.7	35	46.8	4.26	0.809
Inadequate communication affects implementation of benefit sharing incentive	2.1	0	11.5	50.2	36.3	4.18	0.797
Improper timing of projects affects implementation of benefit sharing incentive	1.5	4.5	10.9	42.6	40.5	4.16	0.899
Inappropriate beneficiaries affect implementation of benefit sharing incentive	1.8	0.6	21.1	38.7	37.8	4.1	0.877
Limited benefits affect implementation of benefit sharing incentive	0	2.4	13.2	63.5	21	4.03	0.661
Limited capacity of community affects implementation of benefit sharing incentive	2.1	6.4	25.1	36.7	29.7	3.85	0.989
Small value of projects affects implementation of benefit sharing incentive	1.5	0.6	45.8	36.8	15.3	3.64	0.8

Source: Field Data (2024)

The results showed that one of the most prominent challenges is legal barriers, with most respondents (91.5%) agreeing that legal obstacles significantly affect the implementation of conservation benefit-sharing incentives. This stem from complex regulations or unclear legal frameworks governing the projects. Poor community engagement was also identified as a key challenge, with 81.8% of respondents believing that it impedes project success. The lack of proper involvement and

consultation with the community could reduce the overall effectiveness and local support for the projects.

Inadequate communication emerged as another significant factor, with 86.5% of respondents pointing to poor communication between stakeholders as a major hindrance to the smooth execution of benefit-sharing projects. Effective communication is essential to ensure clarity, transparency, and responsiveness throughout the project lifecycle. Improper timing of projects posed a challenge as well, with 83.1% of respondents expressing concerns over projects not being executed at the right time. This could affect the overall impact or level of community engagement in these initiatives.

Another notable challenge was the inappropriate selection of beneficiaries, with 76.5% of respondents suggesting that misidentification of beneficiaries may cause unfair distribution of benefits or dissatisfaction within the community. Limited benefits offered by the projects were also seen as an obstacle, with 84.5% of respondents agreeing that the scope and scale of the benefits might be insufficient to meet community needs or expectations.

Additionally, the limited capacity of the community to engage with and benefit from the projects was a challenge as indicated by 66.4% of respondents. This suggests that the community might lack the skills or resources to fully participate in or benefit from the initiatives. Moreover, the small value of the projects was noted by 52.1% of respondents as a challenge, indicating that the scale of the projects might not be large

enough to make a significant impact on the community. Addressing these challenges will require targeted interventions to improve legal frameworks, community engagement, communication strategies, project timing, beneficiary identification, and the scale of benefits offered.

In addition, the respondents elaborated that, the success of these benefits-sharing initiatives has been hampered by other challenges. Key issues include delayed disbursement of funds, delays in project completion, and a lack of transparency from local leaders in terms of fund allocation and usage. Additionally, some villages, particularly those meant to receive the 25% allocation from tourism hunting revenues, have reported not receiving the promised funds, causing frustration and skepticism about the effectiveness of the benefit-sharing process. A major challenge contributing to negative perceptions of the Rungwa Game Reserve is the ongoing issue of human-wildlife conflicts, particularly with destructive wildlife like elephants. These animals have been a source of considerable distress for local communities, as they not only feed on crops in the fields, causing significant agricultural losses, but they also occasionally destroy homes in search of food. The damage caused by elephants exacerbates the sense of vulnerability and dissatisfaction among community members, undermining the positive impact of the benefit-sharing projects and straining relations between the reserve management and the local population.

The challenges identified in this study regarding the implementation of conservation benefit-sharing incentives reveal significant barriers that align with and contrast

against previous research findings in the field. In line with this study, Spenceley (2014) identified six key challenges faced by benefit-sharing initiatives in Southern African Development Community (SADC) countries. These challenges resonate with the findings of this study, particularly the issues of the value for money per person is small if divided among a large number of people; those who benefit are not necessarily the same as those who experience the costs of conservation; poorest residents are often not the beneficiaries; community entities may not have the capacity to partner with other stakeholders or to agree on benefit-sharing processes. These findings suggest that addressing the challenges associated with conservation benefit-sharing incentives is crucial for fostering meaningful community engagement and enhancing the effectiveness of conservation initiatives.

4.3.2 Sources of Information for Benefit-Sharing Projects in the Community

It was found that the majority of respondents (85.2%) indicated that they first learned about the benefit-sharing projects through various sources of information, with village meetings being the most prominent channel. Social gatherings and local NGOs (13.3%) were found to be the least common sources of information for benefit-sharing projects in the community (Table 4.3).

Table 4.3: Various Sources of Information for Benefit-Sharing Projects

Sources of information	Frequency	Percentage
Village meetings	288	85.2
Community leaders	216	63.9
Local government offices	118	34.9
Youth clubs	77	22.8
Women's groups	68	20.1
Local NGOs	45	13.3
Social gatherings	45	13.3

Source: Field Data (2024)

The findings show that village meetings and community leaders are the most useful sources of information for benefit-sharing projects in the community. Village meetings are highly effective sources of information for benefit-sharing projects because they offer a platform for accessible and inclusive communication. These meetings are typically organized at central locations convenient for the majority of community members, ensuring wide participation of most members in the target community. Their informal yet structured format allows for real-time interactions where participants can ask questions, voice concerns, and provide feedback. This two-way communication fosters a participatory approach, enabling the community to feel more engaged and informed about the projects. Additionally, village meetings are cost-effective, leveraging existing communal practices to disseminate information efficiently without incurring significant expenses.

Community leaders are equally influential as sources of information due to their established trust and credibility within local settings. As respected figures with strong ties to their population, they act as bridges between external organizations and the community. Their involvement not only lends authenticity to the information but also encourages broader acceptance and engagement from community members. Community leaders also provide a culturally relevant channel for communication, aligning with traditional structures that emphasize collective decision-making. Their ability to mobilize people and ensure the accurate relay of information makes them indispensable in the success of benefit-sharing initiatives. This finding is in line with the study Kideghesho *et al.* (2007) which emphasized the role of village meetings in raising awareness about community-based conservation programs in areas

surrounding the Serengeti National Park, Tanzania. Similarly, the study by West *et al.* (2006) and Dewu & Røskaft (2018) observed that community leaders, often respected and trusted within local contexts, are effective in promoting conservation efforts and mobilizing community participation in protected area initiatives.

4.3.3 Perceptions of Local Communities on Conservation Benefit-Sharing Projects

It was further found that the perceptions of respondents toward the implementation of conservation benefit-sharing projects reflect a generally positive perception, with the majority expressing higher positive perception with education programs (93.8%) as shown in Table 4.4.

Table 4.4: Perceptions towards implemented Benefit-Sharing Projects

Benefit-sharing projects	Perception	Frequency	Percentage
Education programs were implemented in our village /ward	Negative	3	0.9
	Neutral	18	5.3
	Positive	317	93.8
Income-generating projects were implemented in our village/ward	Negative	6	1.8
	Neutral	39	11.5
	Positive	293	86.7
Infrastructure projects were implemented in our village/ward	Negative	18	5.3
	Neutral	41	12.1
	Positive	279	82.5
Health related projects were implemented in our village/ward	Negative	17	5.2
	Neutral	94	29.0
	Positive	213	65.7
Water supply projects were implemented in our village/ward	Negative	51	15.1
	Neutral	119	35.2
	Positive	168	49.7

Source: Field Data (2024)

Specifically, the study noted that education programs received the most positive perception from majority of respondents. This overwhelming positive response stems

from the community's recognition of the importance of education in improving literacy and skills. Education is seen as a powerful tool for both personal and societal advancement, offering better job opportunities and a pathway to economic stability. Additionally, education programs often have long-term benefits, which are highly valued by the community as they contribute to the growth and development of future generations.

Income-generating projects also garnered a high level of positive perception from most respondents. These projects are critical for increasing household income, providing individuals with the means to support their families and improve their living conditions. By diversifying sources of income, these projects contribute to economic stability and resilience. They may also create opportunities for entrepreneurship, empowering community members to start small businesses or engage in productive activities that lead to sustainable livelihoods.

Further, infrastructure projects were viewed positively by many respondents, reflecting their significance in improving living conditions. Such projects, including the construction of schools and healthcare facilities, directly enhance the quality of life in the community. Improved infrastructure also increases accessibility to essential services, markets, and educational opportunities, fostering social and economic development. Additionally, the construction of infrastructure often provides short-term employment opportunities, which could further explain the positive reception. Moreover, perceptions towards the implemented health-related projects were also perceived to be positive by a high proportion of respondents. This

implies that health-related projects were generally well-received by the community, with a significant majority recognizing their positive impact. The strong positive perception indicates that these initiatives have addressed key health concerns or improved access to healthcare services.

Additionally, water supply projects, while receiving a slightly lower positive perception by respondents, still play a vital role in the community. Those who view these projects favorably appreciate the improved access to clean and reliable water, which is essential for daily living and reduces the burden of fetching water from distant sources. The availability of clean water also contributes to better health outcomes by reducing waterborne diseases and improving sanitation. Furthermore, consistent water supply supports agricultural activities, which are key to the livelihoods of many residents, particularly in farming and livestock-keeping communities. These positive perceptions reflect the tangible benefits that conservation benefit-sharing projects bring to local communities, contributing to improved living standards and long-term economic sustainability.

In overall, this strong positive response suggests that most community members are optimistic about the potential economic benefits of conservation benefit-sharing initiatives. They likely perceive these projects as valuable opportunities to enhance their livelihoods, increase income, and improve overall well-being. Such a high level of confidence can lead to greater community engagement and support for conservation efforts, as people see a direct link between environmental stewardship and economic advancement. Further, respondents emphasized that, in general, the

local communities in the study villages maintain a positive perception of the conservation benefit-sharing projects provided by the management of Rungwa Game Reserve. This positive perception is largely attributed to the educational initiatives undertaken by the RGR management, which aimed at increasing awareness among communities living near the reserve about the importance of conservation and the potential benefits from these projects.

However, some respondents expressed dissatisfaction with the provided benefits, feeling that the benefits did not offset the high costs incurred from wildlife incursions onto their land. This study highlights that local communities are open to supporting conservation efforts but expect conservation institutions to address the costs they bear, their livelihood needs, and their access to natural resources or other benefits. In overall, the findings of this study imply that successful conservation depends not only on the ecological management of protected areas but also on the social and economic well-being of neighboring communities. Effective benefit-sharing mechanisms can lead to greater local buy-in, reduce conflicts, and contribute to the long-term sustainability of conservation efforts.

The finding of this study is consistent with the review by Andrade and Rhodes (2012) who found that communities tend to have a more positive perception of protected areas when they receive tangible benefits, such as educational programs and income-generating projects. Similarly, Kideghesho *et al.* (2007) reported that local communities around Serengeti National Park viewed educational programs as one of the most effective benefits from conservation initiatives, leading to greater

community involvement in conservation activities. The provision of income-generating projects also significantly influenced positive attitudes toward protected areas, as it directly addressed the economic needs of the local population. These studies collectively suggest that communities are more likely to support conservation initiatives when the benefits they receive are directly relevant to their livelihoods and well-being, particularly in areas such as education, income generation, and infrastructure development. The findings emphasize the need for conservation benefit-sharing programs to prioritize projects that align with the specific needs and expectations of the local communities.

4.4 Level of Participation in Aspects of Conservation Benefit-Sharing Projects

This section present results regarding the level of participation of local community in identification, planning, implementation, and management of benefit-sharing projects. The level of participation of community in benefit-sharing project activities varied significantly across different stages of the projects as presented in Table 4.5.

Table 4.5: Level of Participation in Conservation Benefit-Sharing Projects

Stages of benefit-sharing project activities	**Level of participation (%)**					**Mean**	**SD**
	Very Low	Low	Medium	High	Very high		
Identification of benefit-sharing projects	9.6	11.4	10.5	15.0	53.5	3.91	1.40
Planning of benefit-sharing projects	49.7	17.4	.9	2.1	29.9	2.45	1.76
Implementation of benefit-sharing projects	49.1	10.5	6.0	4.8	29.6	2.55	1.76
Management of benefit-sharing projects	64.4	2.5	.6	3.1	29.4	2.31	1.83

Source: Field Data (2024)

4.4.1 Level of Participation in Identification of Benefit-Sharing Projects

The level of participation of community in identification of benefit-sharing presented in Table 4.5 was high (mean score = 3.91) suggesting that many community members were actively involved in determining which projects are to be initiated. This is supported by 53.5% of respondents indicating very high participation and 15.0% reporting high involvement. However, 9.6% and 11.4% of respondents reported very low and low participation, respectively, pointing to a need for more inclusive approaches to ensure every segment of the community is heard at this foundational stage.

Further analysis of Table 4.5 showed that most respondents (64.2%) reported attending at least a few times a year, indicating periodic engagement with project-related activities. Meanwhile, 34.9% of respondents attended these meetings or activities at least once a month, reflecting a more consistent level of participation. However, only 0.9% of the respondents attended several times a week, suggesting that frequent involvement in these activities is relatively uncommon within the community. This distribution highlights varying levels of commitment and engagement among community members regarding conservation benefit-sharing initiatives.

In line with this study, previous studies by Agrawal (1999) & Koricha and Adem (2024) have shown that community participation in benefit-sharing projects has been recognized as a critical factor influencing wildlife conservation outcomes. The study by Agrawal (1999) among the Raika pastoralists in Rajasthan, India emphasized that

community involvement is pivotal in natural resource conservation, as local communities often possess valuable traditional knowledge and vested interests in the sustainable management of their surroundings. Moreover, recent research by Koricha and Adem (2024) in Ethiopia highlights the significance of community-based approaches in biodiversity conservation within the Bale Mountains National Park. Their study underscores the dual benefits of these approaches: enhancing biodiversity while simultaneously promoting socio-economic development for local communities. By integrating community participation into benefit-sharing frameworks, conservation projects can create a sense of ownership among community members, leading to increased commitment to wildlife protection.

4.4.2 Level of Participation in Planning of Benefit-Sharing Projects

It was found that the level of participation of community in terms of planning of benefit-sharing projects was considerably low (mean score = 2.45). Almost half of the respondents (49.7%) reported very low participation, with an additional 17.4% indicating low participation in planning of benefit-sharing projects. Only 29.9% of respondents participated at a very high level, while high and medium participation in planning of benefit-sharing projects were minimal, at 2.1% and 0.9% respectively. This suggests that the planning process have been less participatory, with fewer opportunities for broader community participation.

The respondents elaborated that villagers are rarely involved in the planning phase of benefit-sharing projects. Instead of participating in decision-making or prioritizing the types of projects to be implemented, they were merely informed by village

leaders about the decisions that have already been made. This approach limits opportunities for community members to provide input during the planning phase, preventing them from aligning projects with their specific needs and priorities. In line with the findings of this study, Kegamba *et al*. (2022) and Mfunda *et al*. (2012) in the Greater Serengeti Ecosystem in Tanzania, reported that local communities' involvement in benefit-sharing decision-making processes is highly limited. In these cases, most community members are simply informed of the benefits to be provided, despite their active participation in wildlife management. Further, Said and Misana (2023) found that the majority of respondents in Zanzibar had minimal participation in the key aspects of Community Forest Management Agreements (CoFMA), including decisions regarding the use of forest resources. Instead, decision-making was dominated by a select group of influential individuals such as local leaders, educated members, politicians, and some community conservation committee members who collaborated with government officials to plan on behalf of the wider community.

4.4.3 Level of Participation in Implementation of Benefit-Sharing Projects

It was found that during the implementation of benefit-sharing projects, participation levels remained very low for a significant portion of respondents (mean score = 2.55). Nearly half (49.1%) reported very low participation, while 10.5% indicated low participation. However, 29.6% reported very high participation, and 4.8% were highly involved, demonstrating that while implementation was open to community members, it might have been dominated by a smaller, more engaged group. The respondents indicated that the implementation of these benefit-sharing projects is

often carried out by village leaders, apparently driven by financial motives. The respondents added that the villagers were only called upon when their labor force is required.

For instance, villagers are asked to participate in implementation of the project by performing tasks such as digging foundations for construction projects. This limited involvement in implementation, where villagers are engaged primarily as a source of labor rather than as active participants in the decision-making and implementation process, points to a top-down approach in managing these projects, which undermines the potential for broader community ownership and empowerment. The findings of low participation in the implementation phase of benefit-sharing projects align with trends observed by Maganga *et al.* (2007) in Morogoro Tanzania which emphasized that institutional barriers and limited resources often restrict broader participation during critical implementation stages.

Further, a study by Mattee and Shem (2006) among pastoralists communities in Tanzania identified that effective participation in project implementation is constrained by several challenges such as exclusion from decision-making processes, contradictions in national policies, resource scarcity, and the marginalization of pastoralists in development programs. Similarly, Ojalammi (2006) in Ngorongoro District Tanzania found that power dynamics often led to the exclusion of broader community groups during project implementation. Only small, influential groups were fully engaged, creating disparities in benefit-sharing and overall project success.

4.4.4 Level of Participation in Management of Benefit-Sharing Projects

It was also found that a large proportion of respondents (64.4%) reported very low participation in the management of benefit-sharing projects (mean score = 2.31). Low and medium participation levels were also minimal, at 2.5% and 0.6% respectively. However, 29.4% of respondents participated at a very high level, and 3.1% were highly involved. This suggests that the management of these projects was primarily handled by a select few, with limited broader community involvement in decision-making and oversight. Overall, these findings highlight disparities in participation across different stages of the benefit-sharing projects. While community involvement was high during the identification phase, engagement dropped significantly during the planning, implementation, and management stages.

This suggests potential challenges in ensuring inclusive participation throughout the project lifecycle, which could impact the effectiveness and sustainability of these initiatives. The respondents highlighted significant concerns regarding the legal barriers surrounding the management of financial contributions, specifically the USD 5,000 provided by hunting companies and the 25% of game fees allocated to villages located within or adjacent to hunting blocks. These funds, intended to benefit local communities, are often subject to issues related to poor allocation, mismanagement, and poor accountability.

One of the primary concerns raised by respondents was the mismanagement and misallocation of the 25% game fees by District Executive Directors (DEDs) and village leaders. Due to the absence of a clear legal framework, some DEDs have

been known to divert or improperly allocate these funds, which are channeled through their district council accounts. This lack of proper oversight has resulted in delays in fund disbursement, limiting the timely execution of planned community projects as well as the lack of transparency from local leaders regarding how the funds are allocated and utilized. These challenges have led to delays in the completion of important community projects, as the necessary funds are either not available on time or are misused.

The respondents expressed the view that there is a need to review existing regulations to enhance transparency in the management of benefit-sharing projects. They suggested the formation of a project management committee consisting of representatives from the village, district council, and Tanzania Wildlife Authority (TAWA). This committee would be responsible for overseeing the management of the project's funds, ensuring that the community is actively involved in decision-making processes and that resources are used in an accountable and transparent manner. By involving multiple stakeholders, this approach could help to prevent the misuse of funds, reduce financial motives driving exclusive leadership control, and ensure that the projects truly benefit the broader community.

The finding of this study on the level of participation in management of benefit-sharing projects (Table 4.5) is in line with observations by Nelson and Agrawal (2008) who noted that while community-based programs intend to empower local populations, insufficient funding, and weak institutional frameworks often limit active management roles for the majority in sub-Saharan African countries. Further,

the study by Blomley *et al.* (2008) found that in community-based forest management programs in Tanzania, local communities were often excluded from decision-making roles, particularly in the management phase, due to a lack of capacity and centralized governance structures. Similarly, the study by Ribot *et al.* (2010) observed that community members in countries like Senegal and Uganda often face systemic barriers to engaging in project management. These barriers include inadequate training, poor communication between stakeholders, and the dominance of external agencies in decision-making processes, leaving only a small, well-connected group to actively participate. These studies underscore the structural and operational barriers that constrain broader community involvement in project management, emphasizing the need for tailored interventions to enhance inclusivity.

4.5 Mechanisms for Conservation Activities among Local Communities

Wildlife conservation among local communities involves habitat restoration, raising public awareness about conservation, and combat wildlife poaching. The mechanisms used by RGR to involve local community in wildlife conservation includes tree planting initiatives to support habitat restoration, conservation meetings to provide public education, and beekeeping activities to contribute to anti-poaching initiatives. These activities were designed to actively involve local communities in wildlife conservation efforts and foster a deeper understanding of the importance of preserving natural resources. Table 4.6 presents the findings on mechanisms to involve local community in wildlife conservation activities.

Table 4.6: Mechanisms Used by RGR to Involve Local Community in Wildlife Conservation Activities

Mechanisms Used for Conservation Activities	1	2	3	4	5	Mean	SD
Conservation meetings as part of public education	0.9	0.9	3.9	61.3	32.9	4.24	.654
Beekeeping as part of anti-poaching initiatives	0.9	4.8	6.6	50.2	37.5	4.18	.827
Tree planting as part of habitat restoration	1.8	8.5	23.3	44.7	21.8	3.76	.947

Source: Field Data (2024)

Key: 1 =Strongly Disagree, 2=Disagree, 3=Neutral, 4= Agree, 5=Strongly Agree

The study revealed that the majority of respondents (94.2%) participated in conservation meetings, with a notable mean score of 4.24, highlighting their active involvement in this key mechanism for raising awareness about wildlife conservation. Conservation meetings were designed to serve as a vital platform for educating the community about the importance of conserving wildlife and natural habitats, discussing the threats posed by activities such as poaching and habitat destruction, and promoting sustainable practices. These meetings also facilitated the exchange of ideas, enabling participants to share their perspectives and collaboratively explore solutions to conservation challenges. The high level of participation suggests that the local community recognized the value of these meetings in enhancing their understanding of conservation issues and fostering a sense of collective responsibility for wildlife protection.

Additionally, the findings revealed that most respondents (87.7%) acknowledged significant participation in beekeeping activities among local communities as a

means of contributing to anti-poaching initiatives (mean score of 4.18). Beekeeping activities included the construction of apiaries and the use of modern beehives, which not only contributed to conservation but also provided alternative livelihoods for the community. Beekeeping was employed as a strategic mechanism to integrate conservation efforts with livelihood improvements, offering an alternative source of income that reduced dependence on activities potentially harmful to wildlife, such as poaching.

Through engaging in beekeeping, community members not only generated sustainable economic benefits but also developed a vested interest in preserving the natural ecosystems that support their hives. This dual benefit of economic empowerment and environmental stewardship likely enhanced community buy-in for conservation objectives. Moreover, beekeeping has served as a practical deterrent to poaching by providing a tangible, conservation-aligned economic activity that directly tied the community's welfare to the health of the local environment. The high participation rate and mean score reflect the community's positive perception of beekeeping as both a viable livelihood option and an effective conservation strategy. This underscores the importance of designing conservation initiatives that address the socio-economic needs of local populations while simultaneously contributing to anti-poaching initiatives.

Furthermore, a higher proportion of respondents (66.5%) identified tree planting as an effective mechanism for engaging the local community in supporting habitat restoration (mean score of 3.76). Tree planting initiatives were seen as a practical and

accessible way for community members to actively contribute to environmental conservation. These activities played a crucial role in restoring degraded habitats, improving biodiversity, and ensuring the sustainability of ecosystems vital for both wildlife and human livelihoods. The involvement of local communities in tree planting provided them with a sense of ownership over conservation projects, fostering long-term commitment to environmental stewardship. Additionally, tree planting served as an educational tool, raising awareness about the importance of forests in maintaining ecological balance, supporting wildlife habitats, and mitigating climate change.

In overall, these conservation mechanisms were successful in engaging local communities in wildlife and environmental preservation efforts. By involving community members in habitat restoration through tree planting, enhancing public awareness about conservation through conservation meetings, and supporting anti-poaching initiatives through beekeeping activities, these mechanisms effectively imparted a sense of ownership and responsibility for the environment among participants. These mechanisms not only contributed to the conservation of wildlife and natural resources but also addressed socio-economic needs by providing alternative livelihoods. The high levels of participation observed across the various mechanisms highlight their relevance and impact in mobilizing community support for wildlife conservation.

Further analysis by Chi-square test reveals significant insights into how various aspects related to conservation benefit-sharing incentives (BSIs) influence the

implementation of conservation activities among local communities. It was noted that the respondents' awareness of implemented conservation benefit-sharing incentives had a statistically significant influence on their participation in conservation activities ($\chi^2 = 82.214$, df = 10, $p < 0.05$). This implies that individuals who were more aware of the benefits offered by these incentives were more likely to participate in conservation activities. Awareness plays a crucial role in motivating community involvement, as people tend to participate more actively when they understand the tangible benefits of conservation.

Moreover, the types of implemented benefit-sharing projects also significantly influenced the participation in conservation activities. Education projects ($\chi^2 = 113.324$, df = 10, $p < 0.05$), water supply projects ($\chi^2 = 79.535$, df = 10, $p < 0.05$), infrastructure projects ($\chi^2 = 101.765$, df = 10, $p < 0.05$), health facility projects ($\chi^2 = 43.884$, df = 10, $p < 0.05$), and income-generating projects ($\chi^2 = 20.501$, df = 10, $p < 0.05$) were all found to have a statistically significant influence on participation in wildlife conservation activities. These results suggest that when conservation activities are tied to projects that provide tangible community benefits—such as education, improved water access, infrastructure development, healthcare services, and economic opportunities—there is a greater likelihood of success in implementing conservation activities.

The respondents' belief that benefit-sharing projects could improve their household's economic situation had a strong statistical influence on participation in conservation activities ($\chi^2 = 108.523$, df = 10, $p < 0.05$). This indicates that economic incentives

are a powerful driver for participation in conservation efforts. When communities perceive that BSIs contribute to their financial well-being, they are more persuaded to support and engage in these conservation initiatives.

Additionally, Chi-square statistical test indicated that respondents' perceptions towards the implemented BSIs such as education projects ($\chi^2 = 315.324$, df = 20, $p < 0.05$), water supply projects ($\chi^2 = 76.288$, df = 20, $p < 0.05$), infrastructure projects ($\chi^2 = 225.797$, df = 20, $p < 0.05$), health facility projects ($\chi^2 = 187.773$, df = 20, $p < 0.05$), and income-generating projects ($\chi^2 = 432.271$, df = 20, $p < 0.05$) significantly influenced their participation in conservation activities. Positive perceptions of these projects foster trust in conservation efforts, as community members perceive the direct benefits that improve their quality of life. These favorable views motivate stronger engagement in conservation initiatives.

Finally, the statistical analysis underscores the importance of community participation in different stages of benefit-sharing projects. Respondents' involvement in the identification ($\chi^2 = 227.693$, df = 40, $p < 0.05$), planning ($\chi^2 = 220.609$, df = 40, $p < 0.05$), implementation ($\chi^2 = 254.417$, df = 40, $p < 0.05$), and management ($\chi^2 = 213.803$, df = 40, $p < 0.05$) of benefit-sharing projects all significantly influenced wildlife conservation efforts. This suggests that when communities are actively involved in the decision-making and execution of projects, they are more committed to the success of these initiatives. Participation in these stages fosters a sense of ownership and responsibility, which can enhance the long-term sustainability of conservation efforts.

The overall implication of the findings of this study is that conservation meetings, characterized by high participation rates, are pivotal for improving public education as they provide a structured platform to raise awareness and impart knowledge about wildlife conservation. These meetings allow local community members to learn about the ecological importance of wildlife and their roles in protecting natural habitats. The inclusion of benefit-sharing projects implemented in local communities serve as tangible examples of how conservation efforts lead to economic and social benefits. Through showcasing these initiatives, conservation meetings can demonstrate the direct link between sustainable practices and improved livelihoods, reinforcing the idea that conservation contributes to community well-being. Furthermore, by integrating conservation messages with local cultural values, traditional knowledge, and the tangible outcomes of benefit-sharing projects, public education efforts can become more impactful and resonate deeply with the community. These approaches not only enhance understanding but also motivate long-term engagement in conservation activities.

Beekeeping plays a vital role in anti-poaching initiatives by offering sustainable alternative livelihoods that reduce the community's reliance on wildlife for income or subsistence. The financial gains from honey production and sales help combat poverty, a primary driver of poaching. Additionally, beekeeping promotes forest conservation by highlighting the importance of healthy forests and ecosystems for supporting bee populations. By involving local communities in managing apiaries and constructing modern beehives, conservation initiatives instill a sense of ownership and responsibility for natural resources, thereby reducing the likelihood of

participation in poaching activities. Beekeeping also serves as a powerful educational platform, raising awareness about the intricate connections between biodiversity, forest preservation, and economic stability. By showcasing the practical benefits of conservation, these programs bolster anti-poaching efforts and encourage sustained community engagement in environmental protection.

Tree planting activity is a critical component of habitat restoration efforts in the study area. This activity directly addresses issues of deforestation and land degradation, which are major threats to wildlife habitats. By increasing forest cover, tree planting initiatives help restore ecosystems, improve soil fertility, and provide shelter and food for wildlife. These programs can be strategically aligned with broader conservation goals by focusing on native species that are essential to the local biodiversity. Engaging communities in tree planting fosters environmental stewardship, creating a sense of responsibility for the restored areas. Furthermore, integrating tree planting with education and awareness campaigns can ensure sustained commitment to habitat restoration and promote the long-term viability of conservation efforts.

The finding of this study is partly in agreement with a study by Fragallah *et al*. (2021) in Uluguru Mountains–Tanzania which showed that majority of the community were actively involved in conservation activities over the catchment. These activities ranged from tree planting for economic gains, soil erosion control and water conservation. Further, the findings of this study are consistent with those of Kideghesho (2008) which highlighted that offering economic incentives, such as

income-generating activities and infrastructure development, can enhance local communities' willingness to engage in conservation efforts. Similarly, Andrade and Rhodes (2012) found that tangible benefits, such as education programs and healthcare provided through conservation projects, significantly improve community attitudes toward conservation of protected areas. Moreover, Tarimo and Olotu (2022) emphasized the vital role local communities' play in conservation by providing critical information on illegal activities. However, the exclusion of these communities from decision-making and equitable benefit-sharing often results in poor conservation outcomes, with communities expressing resentment and resorting to illegal use of wildlife resources. Additionally, Kegamba *et al*. (2023) highlighted the effectiveness of benefit-sharing mechanisms in gaining the support of communities living near protected areas, contributing to the successful implementation of protected area objectives and improving conservation initiatives.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter includes a summary of the findings, conclusions, and recommendations. The conclusions are drawn from the study's findings and organized according to the specific objectives. Additionally, the recommendations are based on these findings.

5.2 Summary of Major Findings

The findings indicated that the respondents had generally positive perception towards implementation of conservation benefit-sharing projects, with the majority expressing higher positive perception with education programs (93.8%), followed by income-generating projects (86.7%), infrastructure projects (82.5%), and water supply projects (49.7%).

Further, the level of participation of households in benefit-sharing project activities varied significantly across different stages of the projects, with the identification of benefit-sharing projects having high level of participation (53.5%). However, in terms of planning of benefit-sharing projects, participation levels among most respondents were considerably very low. During the implementation of benefit-sharing projects, participation levels remained very low for a significant portion of respondents. Lastly, for management of benefit-sharing projects, a large proportion of respondents (64.4%) reported very low participation. The majority of respondents identified legal barriers (91.5%), poor community engagement (81.8%), inadequate

communication (86.5%), improper project timing (83.1%), inappropriate beneficiaries (76.5%), limited benefits (84.5%), limited community capacity (66.4%), and small project value (52.1%) as the key challenges affecting the implementation of conservation benefit-sharing incentives. Other challenges include, delayed disbursement of funds, delays in project completion, and a lack of transparency from local leaders in terms of fund allocation and usage.

The mechanisms used by Rungwa Game Reserve to involve local community in conservation activities includes conservation meetings as part of enhancing public awareness on conservation (mean score 4.24), followed by beekeeping activities to support anti-poaching initiatives (mean score 4.18), and then tree planting activities to support habitat restoration (mean score 3.76). Implementation of conservation benefit-sharing projects had a statistically significant influence on their participation in wildlife conservation activities. The types of implemented benefit-sharing projects also significantly influenced the participation in wildlife conservation activities. Education projects, water supply projects, infrastructure projects, health facility projects, and income-generating projects were all found to have a statistically significant influence on participation in wildlife conservation activities. Similarly, community participation in different stages of benefit-sharing projects were found to statistically influencing their participation in wildlife conservation activities.

5.3 Conclusion

This study concludes that the local communities living adjacent to Rungwa Game Reserve have a positive perception towards the implemented conservation benefit-

sharing projects. The majority of respondents have higher positive perceptions of educational projects, income-generating projects, and infrastructure initiatives, reflecting the importance of these projects in fostering community support for wildlife conservation activities in Rungwa Game Reserve. This positive perception among local communities implies a stronger likelihood of community engagement and support for conservation practices.

The overall level of community participation in the aspects of conservation benefit-sharing projects is low. Specifically, community participation in conservation benefit-sharing projects is very high in the identification of projects, but very low in the planning, implementation, and management of benefit-sharing projects among the majority of local community living adjacent to Rungwa Game Reserve. Key challenges facing implementation of the benefit-sharing projects among local communities living adjacent to Rungwa Game Reserve includes legal barriers, poor community engagement, inadequate communication, improper project timing, inappropriate beneficiaries, limited benefits, limited community capacity, small project value, delays in project completion, and lack of transparency from local leaders in terms of fund allocation and usage.

The mechanisms used by RGR to engage local communities in conservation activities includes habitat restoration through tree planting, enhancing public awareness about conservation through conservation meetings, and supporting anti-poaching initiatives through beekeeping activities. The implemented benefit-sharing projects significantly influence the community participation in wildlife conservation activities. The types of benefit-sharing projects, including educational, water supply,

infrastructure, health facility, and income-generating projects positively affects the level of community participation in conservation efforts. The community participation in different stages of benefit-sharing projects including identification, planning, implementation, or management of the projects, positively influence their level of participation in wildlife conservation activities.

5.4 Recommendations

i. Improving Timely Disbursement of Funds, Transparency in Fund Management and Timely Completion of Projects

The study recommends that Rungwa Game Reserve should enhance the efficiency of benefit-sharing projects in the respective communities near RGR by addressing delays in disbursing funds, particularly the 25% and USD 5,000 allocation from tourism hunting revenues, improving transparency in fund allocation and usage, and ensuring timely completion of benefit-sharing project. Prompt disbursement of funds would enable communities to carry out development activities without delays, reinforcing the connection between conservation efforts and tangible community benefits. Transparency in fund management, through regular reports or meetings, is essential to reduce suspicions of mismanagement and ensure fair distribution of benefits. Timely completion of projects would build trust and motivate community support for conservation initiatives.

ii. Review of the Legal Framework Governing the Management of Monetary Benefit-Sharing

The study recommends a review of the legal framework governing the management of monetary benefit-sharing among local communities. It suggests the formation of a

project management committee comprising representatives from the village, district council, and Tanzania Wildlife Authority (TAWA). This committee would be tasked with overseeing the management of funds returned as 25% and USD 5,000 for supporting initiated community development projects, ensuring active community involvement in decision-making, and promoting transparency and accountability in resource utilization within the respective villages. By including multiple stakeholders, this approach aims to prevent the misuse of funds, reduce financial motives that drive exclusive control by leadership, and ensure that the projects genuinely benefit the wider community.

iii. Control of Problem Animals and Fair Compensation Due to Losses Incurred by Local Communities

The government, in partnership with the Tanzania Wildlife Management Authority (TAWA), should intensify efforts to manage destructive wildlife, particularly elephants. This should involve increasing the deployment of wildlife rangers to ensure a swift response when wildlife encroaches on local communities. Additionally, mechanisms should be established to fairly and promptly compensate residents living near game reserves for the losses they suffer as a result of wildlife invasions. Compensation could cover damage to crops, property, or livestock, providing a more sustainable solution to mitigate human-wildlife conflicts. Such measures would not only protect community livelihoods but also foster better relations between local communities and conservation authorities, ultimately promoting greater support for wildlife conservation efforts.

5.5 Areas for Further Research

Future research could focus on strategies to improve the timely disbursement of funds for conservation benefit-sharing projects. Delays in fund allocation can hinder project implementation, affecting both conservation outcomes and community trust. Investigating the root causes of these delays and proposing effective solutions, such as streamlined bureaucratic processes or alternative funding mechanisms, could enhance the efficiency of conservation initiatives.

Another critical area for study is transparency and accountability in the management of monetary benefit-sharing funds. The lack of transparent fund management often leads to mistrust among stakeholders and limits the success of conservation projects. Understanding how greater community involvement in decision-making processes influences the success and sustainability of benefit-sharing initiatives could provide valuable insights for designing more inclusive conservation programs.

Additionally, the legal framework governing monetary benefit-sharing needs further examination. Identifying gaps or ambiguities in the current regulations and proposing reforms to strengthen legal provisions could help address challenges related to fund management and project execution. This could also include analyzing how legal frameworks influence the participation and trust of local communities.

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APPENDICES

Appendix 1: Questionnaire

IMPACT OF CONSERVATION BENEFIT-SHARING INCENTIVE ON WILDLIFE CONSERVATION IN TANZANIA: A Case of Local Communities Living Adjacent to Rungwa Game Reserve

Introduction

My name is **Winnie Kweka,** pursuing a Master of Arts in Natural Resource Assessment and Management at the Open University of Tanzania. I am doing a research project to assess **impact of conservation benefit-sharing incentive on wildlife conservation in Tanzania: a case of local communities living adjacent to Rungwa game reserve.** We assure you that all collected information will be treated with highest level of confidentiality and no unauthorized persons will have access to the data collected.

SECTION ONE: DEMOGRAPHIC INFORMATION OF RESPONDENTS

(Put tick (√) where applicable)

Name of the respondents' village ……

1. Sex of respondent:

a) Male ( )

b) Female ( )

2. Age of respondent (***in years***):

a) Below 18 ( )

b) 18-25 ( )

c) 26-35 ( )

d) 36-45 ( )

e) 46-60 ( )

f) Above 60 ( )

3. Marital status of respondent:

a) Single ( )

b) Married ( )

c) Divorced ( )

d) Widow ( )

4. Education level of respondent:

a) No formal education ( )

b) Primary education ( )

c) Secondary education ( )

d) Certificate /Diploma ( )

e) Degree graduate ( )

5. Occupation of respondent:

a) Farming ( )

b) Bee keeping ( )

c) Business ( )

d) Livestock keeping ( )

e) Employed ( )

f) Mixed ( )

6. Respondent's household size:

a) 1 - 2 members ( )

b) 3 – 4 members ( )

c) 5 – 6 members ( )

d) 7+ members ( )

SECTION TWO: RESEARCH QUESTIONS

7. Are you aware of any conservation benefit sharing incentive offered by Rungwa Game Reserve Management within your area? *(For each statement, put tick (√) appropriately in the respective box)*

a) YES ( )

b) NO ( )

7b) If yes what are those conservation benefit incentives provided in your area? (*tick all which apply)*

a) Education projects ( )

b) Water supply projects ( )

c) Infrastructure projects ( )

d) Health facility projects ( )

e) Income-generating projects ( )

f) Other (specify)…… ( )

8. How did you first learn about the benefit-sharing projects? Identify the sources of information (*tick all which apply*)

a) Community leaders ( ) i) Women's groups ( )

b) Local government offices ( ) j) Youth clubs ( )

c) Village meetings ( ) k) Traditional healers ( )

d) Local NGOs ( ) l) Marketplaces ( )

e) Religious institutions ( ) m) Public announcements ( )

f) Community radio stations ( ) n) Social gatherings ( )

g) Farmer associations ( ) o) Word of mouth ( )

h) Cooperative societies ( ) p) Social media ( )

9. Do you believe that benefit-sharing projects can improve your household's economic situation?

a) YES ( )

b) NO ( )

Why or why not?

……

……

……

……

……

10. Kindly indicate your perceptions towards implemented conservation benefit-sharing projects among local communities living adjacent to Rungwa Game Reserve *(For each statement, put tick (√) appropriately in the respective box).*

S/N	Perceptions towards implemented conservation benefit-sharing projects	***Negative***	***Neutral***	***Positive***
1.	Education programs were implemented as BSI in our village /ward			
2.	Water supply projects were implemented as BSI in our			

	village/ward			
3.	Infrastructure projects were implemented as BSI in our village/ward			
4.	Health facility projects were implemented as BSI in our village/ward			
5.	Income-generating projects were implemented as BSI in our village/ward			

10b). Kindly, briefly explain why you have the indicated perception towards implemented benefit-sharing project in your area

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What are your main concerns regarding the implementation of benefit-sharing projects? Identify potential issues or obstacles that may hinder project acceptance and success.

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……

Have you or any household member participated in any conservation benefit-sharing project meetings or activities?

a) YES ( )

b) NO ( )

12. Kindly indicate your level of participation in conservation benefit-sharing projects implemented among local communities living adjacent to Rungwa Game Reserve (*For each statement, put tick (√) appropriately in the respective box).*

S/N	Level of participation in benefit-sharing projects	***Not participated***	***Very low***	***Low***	***Medium***	***High***	***Very high***
1.	I participated in identification of benefit-sharing projects in my village/ward						
2.	I participated in planning of benefit-sharing projects in my village/ward						
3.	I participated in implementation of benefit-sharing projects in my village/ward						
4.	I participated in management of benefit-sharing projects in my village/ward						

13b). Kindly, briefly explain how you participated in the above levels in benefit-sharing projects in your village/ward

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…….

How frequently do you attend meetings or activities related to these projects?

At least a few times a year ( )

At least once a month ( )

Several times a month ( )

Once a week ( )

Several times a week ( )

Every day ( )

15. Do you feel that the community has been adequately involved in the planning and decision-making process for benefit-sharing projects?

a) YES ( )

b) NO ( )

Evaluate the inclusiveness and transparency of project planning processes.

……

……

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……

16. Kindly indicate the extent you either agree or disagree in assessing the challenges facing implementation of the benefit sharing incentive among local communities living adjacent to Rungwa Game Reserve (*For each statement, put tick (√) appropriately in the respective box).*

S/N	Challenges facing implementation of benefit sharing incentive	***Strongly Disagree***	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
1.	Small value of projects affects implementation of benefit sharing incentive					
2.	Limited benefits affect implementation of benefit sharing incentive					

3.	Poor community engagement affects implementation of benefit sharing incentive					
4.	Inappropriate beneficiaries affect implementation of benefit sharing incentive					
5.	Inadequate communication affect implementation of benefit sharing incentive					
6.	Limited capacity of community affects implementation of benefit sharing incentive					
7.	Improper timing of projects affects implementation of benefit sharing incentive					
8.	Legal barriers affect implementation of benefit sharing incentive					

16b). Kindly, briefly explain how the mentioned challenges affect the implementation of the benefit sharing incentive among local communities living adjacent to Rungwa Game Reserve

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……

……

17. Kindly indicate the mechanisms used to involve local communities in conservation activities in Rungwa Game Reserve (*For each statement, put tick (√) appropriately in the respective box).*

S/N	Mechanisms Used in Conservation Activities	***Strongly Disagree***	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
1.	The implemented benefit sharing projects have influenced my participation in conservation meetings					
2.	The implemented benefit sharing projects have influenced my participation in beekeeping activities					

3.	The implemented benefit sharing projects have influenced my participation in tree planting					

17b) Kindly, briefly explain how the implemented benefit-sharing projects have influenced your participation in wildlife conservation activities in Rungwa Game Reserve

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16. In your opinion, what should be done to improve the benefit sharing incentives for promoting wildlife conservation in Rungwa Game Reserve?

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*****Thank you for your participation in this study*****

Appendix 2: Semi-Structured Interview Guide

1. Are you aware of any benefit-sharing projects related to the game reserve in your area? Assess general awareness and knowledge about existing or proposed projects.
2. How did you first learn about the benefit-sharing projects? Identify the sources of information and effectiveness of communication channels.
3. Do you believe that benefit-sharing projects can improve your household's economic situation? Why or why not?
4. What is your perception towards implemented benefit-sharing project among local communities living adjacent to Rungwa Game Reserve?

   Probe: when and where implemented, the value, etc
5. To what extent / level did the local communities participate in benefit-sharing projects implemented in their areas?

   Probe: identification, planning, implementation, management of benefit-sharing projects
6. What are the challenges affecting the implementation of the benefit sharing incentive among local communities living adjacent to Rungwa Game Reserve?

   Probe: How did the challenges affect the implementation, what is the severity of the challenges?
7. How did the implemented benefit-sharing projects influence participation of local communities in wildlife conservation activities in Rungwa Game Reserve?

   Probe: participation in conservation meetings, participation in beekeeping activities, participation in tree planting

8. What should be done to improve the benefit sharing incentives for promoting wildlife conservation in Rungwa Game Reserve?

Probe: who should do what, how, when?

Appendix 3: Observation Guide

Checklist for observation

a) Implemented benefit-sharing projects

b) Wildlife conservation activities such as beekeeping activities and tree planting

c) Taking photos and videos of the implemented benefit-sharing projects, beekeeping activities and tree planting

Appendix 4: Research Clearance

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE OPEN UNIVERSITY OF TANZANIA

Ref. No OUT/PG202186411 **7th June, 2024**

Commanding Officer,

Rungwa Game Reserve,

P.O.Box 128,

SINGIDA.

Dear Officer,

RE: RESEARCH CLEARANCE FOR MS. WINNIE S.KWEKA REG NO: PG202186411

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1st January 2007.In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

3. To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief background, the purpose of this letter is to introduce to you **Ms. Winnie S. Kweka Reg.No: PG202186411),** pursuing **Master of Arts in Natural Resource Assessment and Management (MANRAM).** We here by grant this clearance to conduct a research

titled **"Impact of Conservation Benefit-Sharing Incentive on Wildlife Conservation in Tanzania: A Case of Local Communities Living Adjacent to Rungwa Game Reserve.** She will collect her data at your area from 10th June to 30th July 2024.

4. In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820.We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,

THE OPEN UNIVERSITY OF TANZANIA

Prof.Gwahula Raphael Kimamala

For: VICE CHANCELLOR

Appendix 5: Research Permit

JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA RAIS
TAWALA ZA MIKOA NA SERIKALI ZA MITAA
HALMASHAURI YA WILAYA YA ITIGI
(Barua zote zitumwe kwa Mkurugenzi Mtendaji Wilaya)

HALMASHAURI YA WILAYA ITIGI

Email- ded.itigidc@singida.go.tz

Ofisi ya Mkurugenzi Mtendaji ,
Halmashauri ya Wilaya ya Itigi,
01 Barabara ya Halmashauri,
S.L.P 70,
434831- ITIGI-SINGIDA,

Unapojibu tafadhali taja
Kumb.Na.HW/ITG/L/vol II/105.

25 Juni, 2024

THE OPEN UNIVERSITY OF TANZANIA,
S.L.P, 23409,
DAR ES SALAAM.

Yah: **KIBALI CHA KUFANYA UTAFITI.**

Tafadhali husika na somo tajwa hapo juu.

2. Rejea barua yako yenye **Kumb. Na.OUT/PG202186411** ya tarehe **07 Juni, 2024** iliyohusu **Ms Winnie S. Kweka** kufanya utafiti katika Halmashauri ya Wilaya ya Itigi. Utafiti huo utajikita katika mada inayohusu **IMPACT OF CONSERVATION BENEFIT-SHAIRING INCENTIVE OF WILDLIFE CONSERVATION IN TANZANIA.**

3. Kwa barua hii ninakutaarifu kuwa ombi lako limekubaliwa atafanya utafiti huo katika Halmashauri ya Wilaya ya Itigi Kata ya Rungwa kuanzia ya tarehe **10 Juni, 2024** hadi tarehe **30 Julai, 2024.**

4. Nakutakia kazi njema.

Joyce J. Masoga
K.N.Y MKURUGENZI MTENDAJI (W).

K.n.y: MKURUGENZI MTENDAJI
HALMASHAURI YA WILAYA YA ITIGI

Nakala: Mis. Winnie S. Kweka - Mtafiti

Afisa Mtendaji kata ya Rungwa,
Halmashauri ya Wilaya ya Itigi. - Mpokee na kumpa ushitikiano