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Editorial

Dear readers,
Welcome to the eighth volume of the African Resources Development Journal. This journal publishes articles which expose potentials and challenges available in Africa in the exploitation and utilization of its natural resources for the sustainable development of the continent. The editorial team wish to congratulate all authors whose papers are published in this issue. After passing through a double-blind independent peer-review, seven papers were recommended for publication in this issue.

The journal publishes original research articles and review papers. Paper submitted to this journal must contain original unpublished work and should not be under consideration for publication elsewhere. Any paper submitted to this journal will be subjected to the journal's double-blind review process.

Finally, let me take this opportunity to thank all authors who submitted their manuscripts and congratulate those who have their articles published in this issue. The editorial team appreciates the work well done by the peer-review experts who have enabled Volume 8 (Issue 2) of the African Resources Development Journal (ARDJ) to roll out. We hope that the articles published herein will widen the knowledge on abundant natural resources available in Africa and thus meet expectations and aspiration of our different esteemed readers of the journal. You are most welcome to send us your research manuscripts and book reviews for consideration in the upcoming issues.

Prof. Emmanuel Patroba Mhache
Chief Editor
The African Resources Development Journal

Trend and Impacts of Flood in Tanzania: Evidence from Open Sources Database

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Abstract
Climate change and climate variability have increased the frequency of flood events in many parts of Tanzania. Data related to flood events are limited at national, regional and district levels. In order to fill the gap on flood data at global to local level several open databases have been established in place such as International Disaster Database (EM DAT CRED), and UNDRR desInventar Sendai mentioning few of them. The study examines the trends of flood events and their associated impacts in Tanzania. The study purposively uses secondary data from EM DAT CRED online open database in studying the trend of flood in the united Republic of Tanzania. Data for 24 years have been considered as from 2000 to December 2024. The study relies on descriptive statistical analysis especially frequencies to express number of deaths, injuries, homeless and affected people. Study revealed that, 133 flood events have been recorded in the country. About 66% of all flood events within 24 years involved in this study documented to occur between 2014 and 2024. Morogoro (15%), Dar es Salaam (12%) and Arusha (8.2%) regions are far most leading in flood events. 21 flood events were experienced in 2018. Within the first quarter of 21st century, EM DAT CRED recorded 576 deaths, 547 injured people, 44 thousand homeless and 3.4 million people were affected by flood events. Although mortality and injury records are not consistently available, the existing data show an increasing trend. The study concludes that there is increasing trend of flood events and so does impacts (death, injury, homeless and total affected population). The study recommends that United Republic of Tanzania need to commit itself in developing disaster database that will enable determination of trend hence setting priorities for disaster management.

Keywords: *Database, EM DAT, Flood, Open Source, United Republic of Tanzania,*

1.0 INTRODUCTION

The 21st century recorded many flood events in many parts of the globe. Many deaths, injuries, and homeless impacts were associated with those floods. Tin et al. (2024) estimates that 54% and 20% of flood death occurs in Asia and America respectively. Climate change and climate variability have contributed to the increasing frequency of flood events

across Tanzania (United Republic of Tanzania [URT], 2004; URT, 2014; URT, 2022; Sakijege et al., 2014). Flood disaster in Tanzania is leading in its occurrence by 40% compared to other kinds of disasters (EM DAT in URT, 2022). However, reliable data on the impacts of floods such as deaths, injuries, displacement, and affected populations remain limited in many parts of Tanzania (Sakijege et al*.,* 2014).

International global databases have been in use in most of developing countries as means of overcoming problem of data availability. Some of these databases are commercial while others are open sources (Ahmad et al., 2022; Bhuiyan et al*.,* 2022; Tin et al*.,* 2024; Delforge et al*.,* 2025). These databases offer valuable statistical information that supports the analysis of disaster trends. Common open disaster databases include Emergency Events Database (EM-DAT) and DesInventor Sendai while more than 40 items EM DAT uses in collection of disaster information (Delforge et al., 2024). A study done by Tin et al. (2024) by using secondary data from EM DAT especially from 1995 to 2022 which revealed that hydrological disaster category took lead by 45% in African continent compared to other global regions and other categories of disasters. Open sources databases for disaster specifically EM-DAT open ways for making comparison of disasters herein floods event in both macro and micro level, international to local areas, regional to countries and sub countries.

Reviewed literature revealed that many studies relied on EM-DAT in studying disasters at the level of the globe. The study by Ahmad et al. (2022) focused on 210 countries on pandemic and epidemic disaster. Other studies focused on making review of literature established with dependency to open-source databases (Bhuiyan et al*.,* 2022). Limited researches have focused on single types of natural disasters such as floods. Furthermore, attention given to a single country on specific natural disaster particularly flood is limited. Thus, this paper entails to analyze trend of flood events in Tanzania as from 2000 - 2024 (24 years). It also entails to examine trend of the impact of floods especially on death, injuries, homeless and others.

2.0 MATERIALS AND METHODS

The study relied on secondary data from Emergency Events (EM-DAT) from 2000 to 2024. A 24-year period was selected to provide a clear picture of long-term trends in relation to recent climatic and environmental variability in the country. The data were extracted from the website of EM-DAT on 05th December 2024. Since the data were in

spread sheet format, data were filtered through country column to extract United Republic of Tanzania. Then after, data were filtered again to obtain only flood related disasters. The data-cleaning process included removing columns that were not relevant to the study. Finally, the study remained with key columns namely, type of disaster, places floods occurred, number of death, injured, affected and homeless/displaced population. Again, more than one flood event occurred in the same year over different location was combined to obtain total number of death, injured, affected and homeless/ displaced populations. Finally, cells with no data were labelled as "ND" implying No Data and were excluded from the study. Analysis was done by using Microsoft Office especially excel. Ethical considerations regarding secondary data usage have been adhered while developing this study.

3.0 FINDINGS

Finding from secondary data stored in EM DAT revealed that 133 flood events have been recorded in the United Republic of Tanzania in period lying between 2000 – 2024. The events were analyzed basing on the specific aspects namely year and region. Years with zero record of flood event were 2004, 2007, 2010, 2013 and 2015 while years with one to five events include 2000, 2001, 2002, 2003, 2005, 2012, 2014, 2017, 2021 and 2022. Years with five to 10 flood events are 2006, 2008, 2011, 2019, 2023 and 2024. Finally, years with more than 10 flood events include 2009, 2018, 2019 and 2020. Figure 1 indicates flood events from 2000 to 2024 presented in percentage. Years 2018 takes highest records (21.8%) then followed by 2009 with 11.3%, 2020 (10.5%), 2019 (9.8%) and rest were below 9.8% (Figure 1).

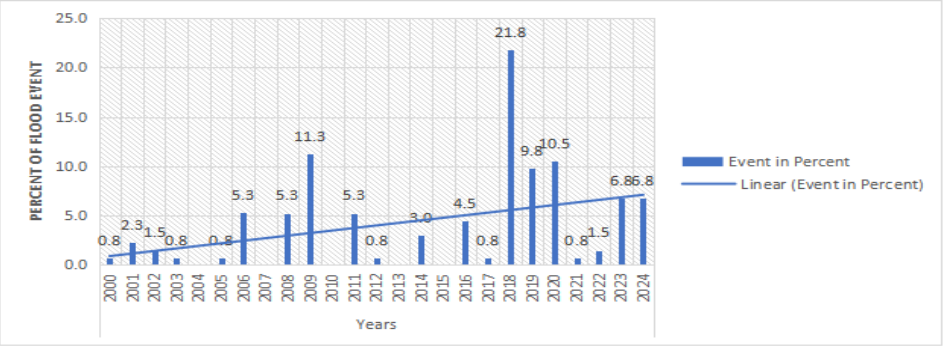

Figure 1: *Yearly flood events in Percent*
Source: EM -DAT 2024

On the side of flood events per region; Morogoro Region leads in flood event records with 20 (15%), followed by Dar es Salam 16 (12%), Arusha 11(8.2%) records, Kilimanjaro and Pwani each 8 (6%) records, Mbeya 7

(5.3%), Tanga, Dodoma and Mwanza 6 (4.5%) records each, Lindi and Manyara each 5 (3.8%) records. Only Singida and Njombe regions did not record any flood events within specified time of the study. Figure 2 indicates number of flood events recorded in the level of region.

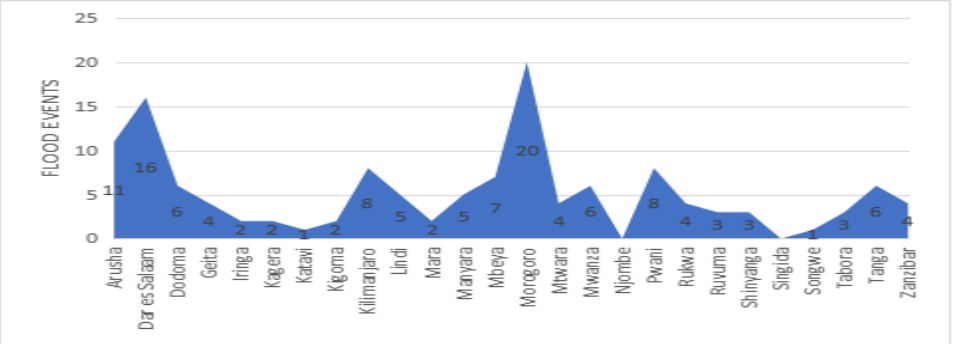

Figure 2: *Flood Events in Regions from 2000 -2024*
Source: EM-DAT, 2024

Deaths associated with flood events were recorded in multiple years throughout the study period. A total of 576 people were reported dead following flood events in 24 years. In 2000 death were 35 people, 2001 (5 people), 2002 (9 people), 2003, 2005 and 2021 (1 person in each year), 2008 (73 people), 2009 (38), 2011 (17 people), 2012 and 2022 (10 people each), 2024 (31people), 2015 (12 people), 2016 (16 people), 2017 (7 people), 2018 (15 people), 2019 (47 people), 2020 (33 people), 2022 (10 people), 2023 (51 people) and 2024 (164 people). Figure 3 display number of deaths resulted from flood as from 2000 to 2024. Highest number of death were recorded in 2024 whereby total of 164 people died.

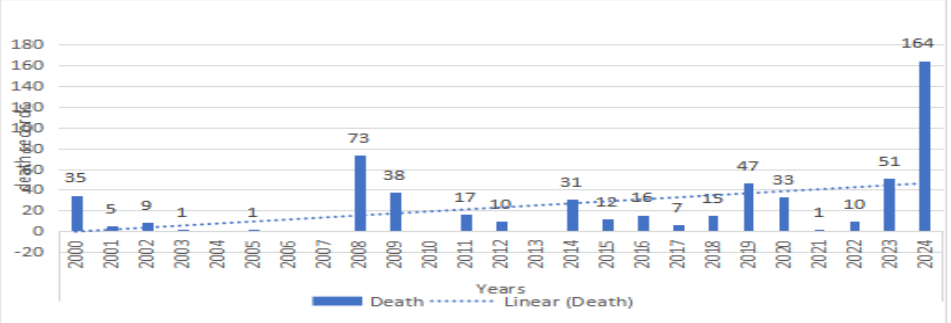

Figure 3: *Death recorded in each year with flood event(s)*
Source: EM – DAT, 2024

Number of injured cases was also recorded in number and percent of flood events. Total injuries recorded were 547 people. Injured people were recorded in only six years out of all years experienced flood events. In 2000, total of 17 (3.1%) people was injured, 2006 they were 26(5.1%),

and in 2008 were 15(2.1%), 2011 total of 200 (36.5%) people before decreasing in 2018 to 11 (2%) people and rise to 276 (50.5%) people in 2024. Figure 4 presents the number of people injured by flood events from 2000 to 2024.

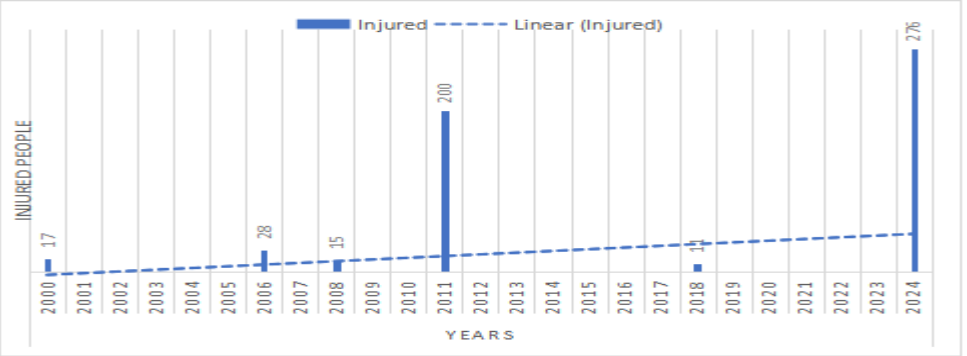

Figure 4: *Injured people from 2000 to 2024*
Source: EM DAT, 2024

Thousands of people reported to be affected following flood events recorded over study period. In 2000, no record for affected population, similarly in 2001, 2004, 2006, 2007, 2012, 2013 and 2017. Finding reveals that total of 3460900 people was affected by flood. Year 2023 hold highest record of affected people whereby it reaches 83.5% (2,898,500) and 2024 hold second position with 5.8% (200,000) and 2016 with 3.2% (112,000) being in third position. Table 1 portrays affected population and Figure 5 indicates population affected by flood as from 2000 to 2024.

Table 1: Flood Affected population from 2000 to 2024

Year	Population	%	Year	Population	%
2000	ND	ND	2013	ND	ND
2001	ND	ND	2014	40,000	1.2
2002	1200	0.0	2015	5,000	0.2
2003	2000	0.0	2016	112,000	3.2
2004	ND	ND	2017	ND	ND
2005	10000	0.3	2018	15,800	0.5
2006	ND	ND	2019	5,000	0.1
2007	ND	ND	2020	6,500	1.9
2008	9000	0.3	2021	2,000	0.1
2009	50000	1.5	2022	3,500	0.1
2010	5200	0.2	2023	2,898,500	83.7
2011	15700	0.5	2024	200,000	5.8
2012	ND	ND	**Total**	**3,460,900**	**100**

*ND= No data recorded
Source: EM DAT, 2024

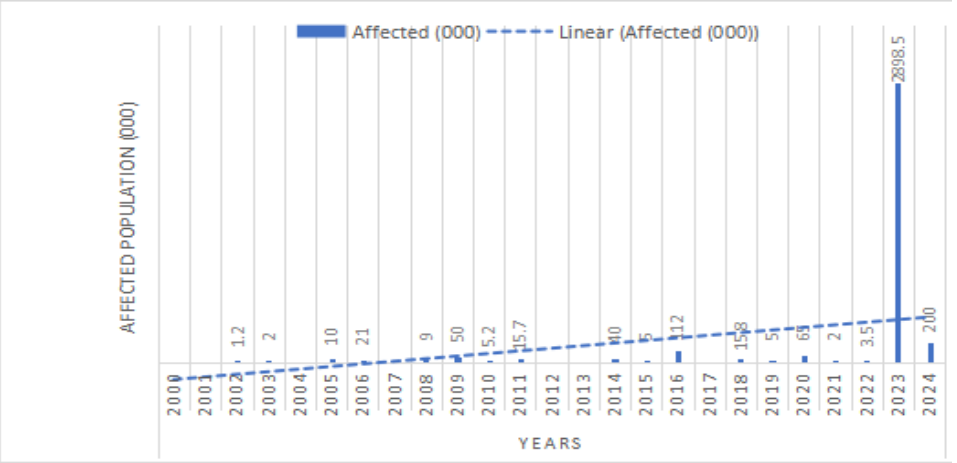

Figure 5: *Flood affected population as from 2000 – 2024*
Source: EM- DAT, 2024)

Homeless was among aspects considered in the study. Records revealed that 1800 (4.1%) were left homeless after flood in 2001. In 2006, more than 21500 (48.4%) were left homeless, 2008 were 1942 (4.4%), 2020 were 17500 (39.4) and 2022 were 1500 (3.4%). Figure 6 indicates records of population left homeless from 2000 to 2024. The homelessness data show no clear increasing or decreasing trend, largely because only a few years recorded significant numbers of people left homeless.

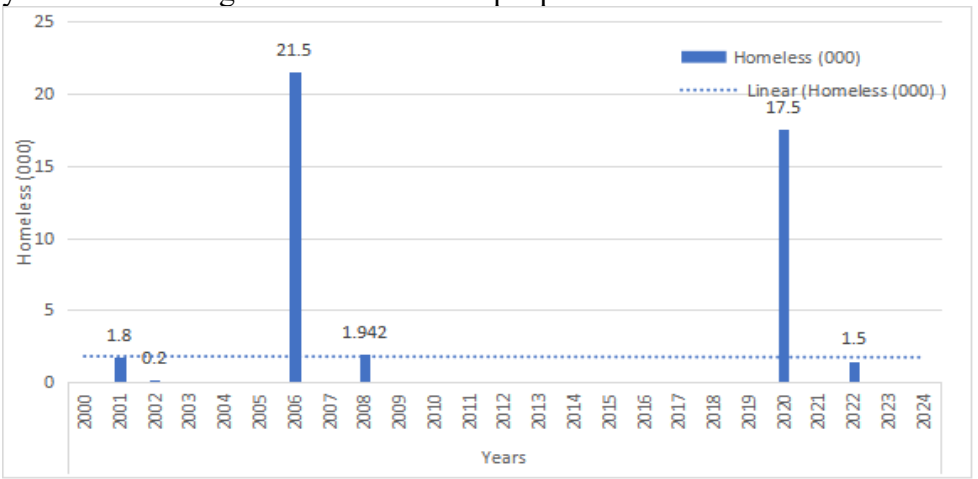

Figure 6: *Homeless population from 2000 to 2024*
Source: EM-DAT, 2024

4.0 DISCUSSION

Total of 133 flood events recorded to occurs in Tanzania and about 66.35% of all flood events has occurred between 2014 and 2024. The finding of the study concurs with study performed by Delforge et al.

(2025) and Ringo et al. (2025) which identified flood increased in occurrence among natural disasters. The increased number of flood events in the past decade suggests a growing frequency of extreme rainfall in several parts of Tanzania. Also, factors such as introducing settlements in flood prone areas and urban development of all which increase surface running water while reducing percolation of water to the soil.

The regions of Morogoro, Dar es Salaam, and Arusha experienced the highest number of flood events between 2000 and 2024. 47 (35%) flood events out 133 flood events recorded from 2000 to 2024 are from those three regions. Nevertheless, floods in these regions have reported in almost all constituting districts. For example, Morogoro regions districts including Kilosa, Morogoro, Malinyi, Ulanga, Gairo and Kilombero have entered in the EM-DAT database particularly floods in not less than 15 years with floods events considered in this study. The findings of the study concur with studies done in Morogoro, Dar es Salaam and Arusha (Michael et al*.,* 2023; Kemwita et al*.,* 2023; Mhache, 2023) which expressed recurrence of flood, impact and adaptation to flood.

Njombe and Singida regions are only two regions with no record of flood event in any year. Contrary to study done in Singida which expressed flood event occurred in 2019 (Kimati *et al*., 2022). Lack of flood records in these regions might be influenced with number of reasons including means and sources used to gather data that are entered in the EM DAT database. According to Delforge et al. (2024) EM DAT can be affected by systematic bias which influenced with reporting protocols, threshold and geographical biases. Thus, Singida and Njombe might be affected by one among thse factors.

Number of deaths, injured people, affected and homeless resulted from flood events occurred between 2000 and 2024 have been analyzed based on years and not regions. The finding of the study concurs with what Tin et al. (2024) observed that trend of death and injured people increased in African, America and Asia continents. Since, one particular flood event used to record summation of all deaths, injured people, affected and homeless populations occurred in different regions then it is difficult to develop a clear cut of which geographical location is directly affected much. However, the trend of death, injured and affected realized to increase in the recent decade. Increased trend of death and injured people imply that during flood events people encounter shortage of food, humanitarian aids and breakdown of communication including roads, and bridges.

Only loss of settlements (homeless) events has shown that not occurring frequently as only two years experienced mass population reported flood events have left them homeless. Therefore, trend estimates remain uniform throughout. The finding of the study contradicting with observation made by Ringo et al. (2025) whereby 1734 household left homelessly following flood occurred in 2018 in Kilosa District. The finding of the studies implies that people remain in their places despite flood incidences or they quit for some hours to allow water being drained out from their houses.

5.0 CONCLUSION AND RECOMMENDATIONS

Climatic change has caused increase in flood events in the United Republic of Tanzania. Since, 2014 Tanzania has experienced frequent flood events and general trend seems to increase. Within 24 years, all Tanzanian regions recorded number of flood events except Njombe and Singida regions. Morogoro, Dar es Salaam and Arusha take a lead in terms of floods. The study recommends that Tanzanian government should commit itself in developing disaster database that will enable determination of trend hence setting priorities for disaster management. Also, promote land use planning while considering factors such as elevation, slope, and nature of the soils to reducing occurrence of flood.

Open-source database including EM-DAT play vital role in filling the gap of "no data" on disaster cases especially in country like Tanzania. However, Open sources particularly global databases face some limitations: missing data in several aspects such as estimate loss and damage, database lacks spatial specificity as many regions/districts and even ward as flood events in different place generalized together. Apart from weakness observed still developing countries including URT have opportunity to utilize open source in decision making relating to disasters particularly flood. This study offers an opportunity for other researches focusing on building flood resilience in parts recorded to experience many floods events.

6.0 LIMITATION

Although EM DAT open databases contain records of flood events in Tanzania, still flood events lacks consistency of the data. There are many missing data particularly in number of deaths, injuries, homeless and affected groups. This situation affects scientific researches. However, Tanzania has opportunity to continue using ED DAT and other open

databases while setting a platform for having national disaster database that will record all disaster in the country.

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Impacts of Tourist Accommodation Facilities on Migratory Wildlife Species within Serengeti National Park, Northern Tanzania

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Abstract
Tourist accommodation facilities play an important role in facilitating tourism activities in many protected areas. Despite their significance, these facilities have several negative impacts on migratory wildlife species, particularly in Serengeti National Park (SNP). This study aimed to assess the effects of tourist accommodation on migratory wildlife species in the SNP, Northern Tanzania. Various methods were used for data collection, including field visits with Global Positioning System (GPS) technology to gather location points of tourist facilities in hotspot areas. Additionally, desktop research was conducted to compile visitor influx statistics from the park's visitor database, and the movement and duration of stay of GPS-collared migratory animals, such as wildebeests and zebras, were analyzed. The findings revealed that 64% of the tourist accommodation facilities were situated in Seronera Valley, which hosted 84% of all tourists visiting the SNP. Furthermore, migratory wildlife species (zebras and wildebeests) spent less time in areas with a high concentration of tourist accommodations in Seronera Valley compared to Ndutu/South and Kogatende/Mara in the north. To address these issues, it is recommended to reduce or control the number of tourist accommodation facilities from the core of SNP to its periphery, develop and adopt eco-friendly practices within these facilities, and effectively utilize existing policies and regulations to promote harmonious coexistence between migratory wildlife species and tourist accommodations in the SNP.

Keywords: *Accommodation facilities, migratory species, Serengeti National Park, time spent, tourism hotspots*

1.0 INTRODUCTION

Constructed tourist accommodation facilities support tourism in natural areas (Bulatović, 2017). These constructed accommodation facilities in attractive natural resources and landscapes are intended to draw in tourists **Error! Reference source not found.** as well as enhancing tourists experience and satisfaction of the area (Bulatović, 2017). Despite of their importance, they are associated with several negative impacts on

migratory wildlife species. The study by **Error! Reference source not found.**, support this as it found that tourism estates comprised of hotels, resorts and camp grounds had potential adverse impacts on the environment on which tourism depends. Again, lodges/ hotels were the top most contributors to the negative impacts on the environment because of their high capacity to utilise resources such as water, energy, and production of waste (Karis et al*.,* 2013). Prior studies have highlighted numerous important effects of tourist accommodation facilities such as habitat alteration, animal habituation, the transmission of zoonotic diseases, inadequate solid waste management, depletion of grazing lands and water supplies, loss of vegetation cover, soil erosion, the introduction of non-native species, and the risk of wildlife extinction (Erdogan and Tosun, 2009; Rimaze et al., 2020).

It was further revealed that lodges/ hotels have potential disruption to wild species and their habitats, which might be caused by human proximity and their associated activities **Error! Reference source not found.**. These facts are also supported by Rimaze et al. (2020) through their study on mammals' diversity and abundance and their interactions with different accommodation facilities in Kwakuchinja Wildlife Corridor adjacent to Tarangire National Park. Vividly, the results of the study by Rimaze et al. (2020) signified the negative impact of lodges/ hotels on wildlife as they attract animals towards their vicinities. Although, SNP has been extensively researched in relation to protected areas in Tanzania, there is limited information on the effects of tourist accommodation facilities on migratory wildlife species within this renowned conservation estate. Thus, this study aimed to evaluate the effects of tourist accommodation facilities on migratory wildlife species in SNP, northern Tanzania. This paper hypothesised that, time spent by migratory species performing their behavioural activities within the tourist hotspots within the SNP tourist's hotspots would decreases as the number of tourist accommodation facilities increased.

2.0 MATERIALS AND METHODS

2.1 The Study Area

Serengeti National Park is situated in northwest Tanzania, spanning from Longitude 34° to 36° E and Latitude 1° 15′ to 3° 30′ S (Figure 1). It was established in 1959 (Kaltenborn et al*.,* 2011). The park holds both World Heritage Site (WHS) and Man and Biosphere Reserve (MAB) designations due to its exceptional globally significant biological resources **Error! Reference source not found.**. Covering an area of

14,763 square kilometers (Díez Gutiérrez et al., 2017; Scoon, 2018), it features diverse habitats, including grasslands, riverine forests, swamps, and woodlands, all rich in wildlife diversity **Error! Reference source not found.**.

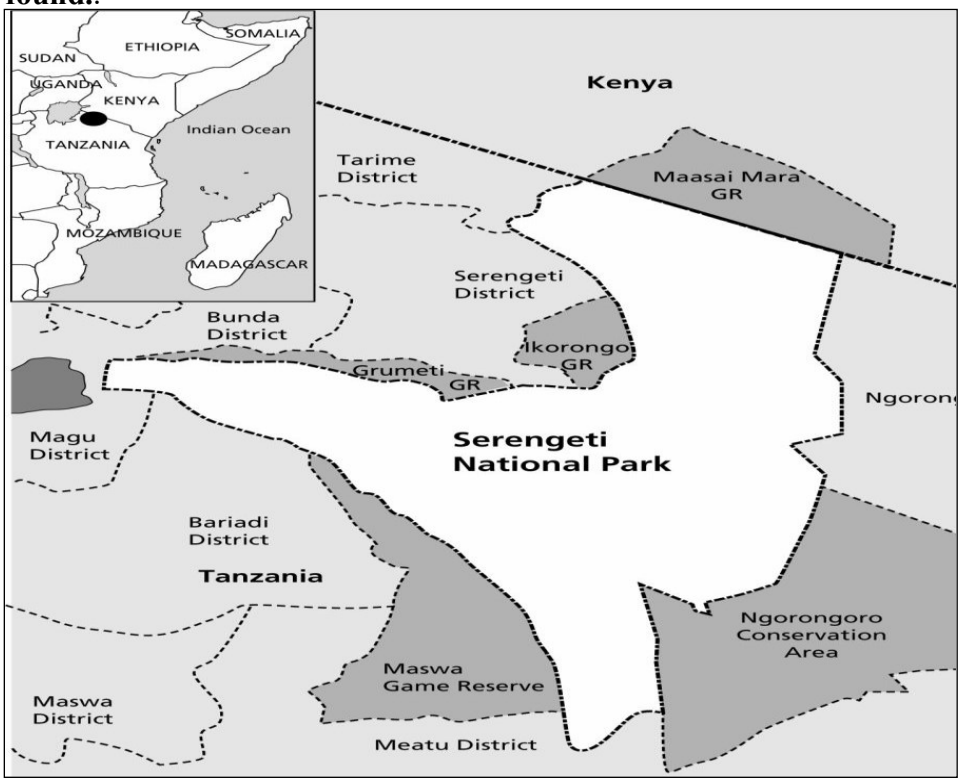

Figure 1: *Serengeti National Park and adjacent protected areas*
Source: Kaltenborn et al., 2011)

The climatic conditions in the Serengeti are diverse, affecting precipitation patterns. Rainfall varies from a minimum of 500 mm per year in the southeastern part of the park influenced by the rain shadow of the Ngorongoro Highlands, to a maximum of 1,100 mm per year in the northeast and 900 mm per year in the northwest (Belsky, 1984). SENAPA experiences bimodal rainfall, with shorter rains occurring in October, November, and December, and longer rains from March to May. The distinctiveness of SNP is linked to the presence of migratory wildlife species, particularly the wildebeest (*Connochaetes taurinus*) and zebra (*Equus buchelli*), with populations estimated at approximately 1.5 million and 0.5 million individuals, respectively (Joly et al., 2019; UNESCO, 2020). This annual event begins in the southern part of SNP and moves northward through SNP before continuing to the neighbouring Masai

Mara National Reserve (MMNR) in Kenya (UNESCO, 2020). The short grass plains in southern SNP, adjacent to the Ngorongoro Conservation Area (NCA), provide optimal calving conditions due to their nutrient-rich pastures during the wet season. In contrast, northern SNP and MMNR serve as refuges during the dry period (Msoffe et al., 2019; UNESCO, 2020). Serengeti National Park was specifically chosen for the study because of its high tourist numbers, ample accommodation facilities, and the presence of migratory ungulates that are not found in other parks.

2.2 Data collection methods

2.2.1 Research design

Research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004; Gara and Mhache, 2021). This research was based on a multiple research method for data collection and analysis keeping in minds the prevailing COVID-19 pandemic limitations. Moreover, it also relied on correlation and other statistical tests to deduce the required conclusion. This framework was considered as it rendered the researcher with flexibility in obtaining the required data and subsequently their analysis while also reducing the health risks following the emergence of the COVID-19 pandemic.

2.2.2 Sampling

To meet the study objectives, both purposive and random sampling methods were used. As noted by Saunders et al. (2016) and Etikan and Bala (2017), purposive or judgmental sampling depends on the researcher's discretion to select the most relevant cases that facilitate answering of research questions and meeting the study objectives. The specific study areas namely Ndutu, Seronera Valley and Mara/Kogatende were purposeful chosen due to their importances for migratory species including calving grounds, all year-round tourism spots, dry season refuge as well as the Mara River crossing, all of which have a high concentration of tourist accommodation facilities.

Furthermore, to evaluate the number of tourist accommodation facilities and the migratory species in the areas, three blocks of equal size (484.124703 km^2) were designated, one in each hotspot. All facilities and migratory animals within these blocks were included as samples for the study. Serengeti National Park has a total of 273 accommodation facilities, comprising 12 hotels/ lodges, 73 seasonal campsites, 15 special campsites, and 6 public campsites. These were sampled to examine the

impact of tourist accommodation on migratory wildlife species in hotspot areas. Consequently, the three selected study sites were analyzed for the duration of migratory species' presence, measured in the number of days spent in the hotspot areas. Ultimately, the temporal patterns of these animals were evaluated in relation to tourist numbers and accommodation facilities to assess their impact on migratory wildlife species, and a correlation was tested.

2.2.3 Data collection methods and materials

In this study both primary and secondary data was collected. A Global Positioning System (GPS) Garmin Montera^{TM} was used to collect primary data during field visits carried out in March and April 2020 to determine the tourist accommodation facilities located within SNP. On the other hand, secondary data on visitors' number and recorded movements of the GPS collared migratory species comprised of two-years data (2018/2019 and 2019/2020) obtained from the existing SNP visitor's database and Serengeti Biodiversity Project. Although the researcher aimed to employ various data collection methods, the onset of the COVID-19 pandemic restricted the use of face-to-face data collection techniques, leading to a reliance on field and desktop research methods. This was particularly relevant since the study concentrated on the duration spent by migratory wildlife species in tourist hotspot areas. The data within a hotspot area were obtained from a total of 87 collared individuals comprising of two migratory animal species (wildebeests *Connochaetes taurinus* and zebras *Equus buchellis*).

2.3 Data analysis

The organization and storage of the collected visitor statistics from the sampled facilities were managed using MS Excel. Additionally, the Statistical Package for the Social Sciences (IBM SPSS, Version 26) was used to analyze the quantitative data, with the goal of determining whether there were statistically significant temporal variations in animal movements within hotspots, influenced by tourist accommodation facilities and the influx of visitors over specific periods. Furthermore, the mapping of collected GPS coordinates for tourist accommodation sites and the movements of collared animals in the tourist hotspot areas was carried out using ArcMap software (Version 10.3). Ultimately, to evaluate the statistical relationships between the number of accommodation facilities/tourists and the time spent by 87 collared animals in the hotspots, as well as the temporal variations across the three tourist hotspot areas, correlation analysis and ANOVA tests were conducted.

3.0 RESULTS

3.1 Number of Tourist Accommodation Facilities, Density and Category

Out of the 273 accommodation facilities in the Serengeti National Park, 106 are located within the three sampled tourist hotspots; Ndutu/South, Seronera Valley/Central, and Kogatende/Mara (Figure 2).

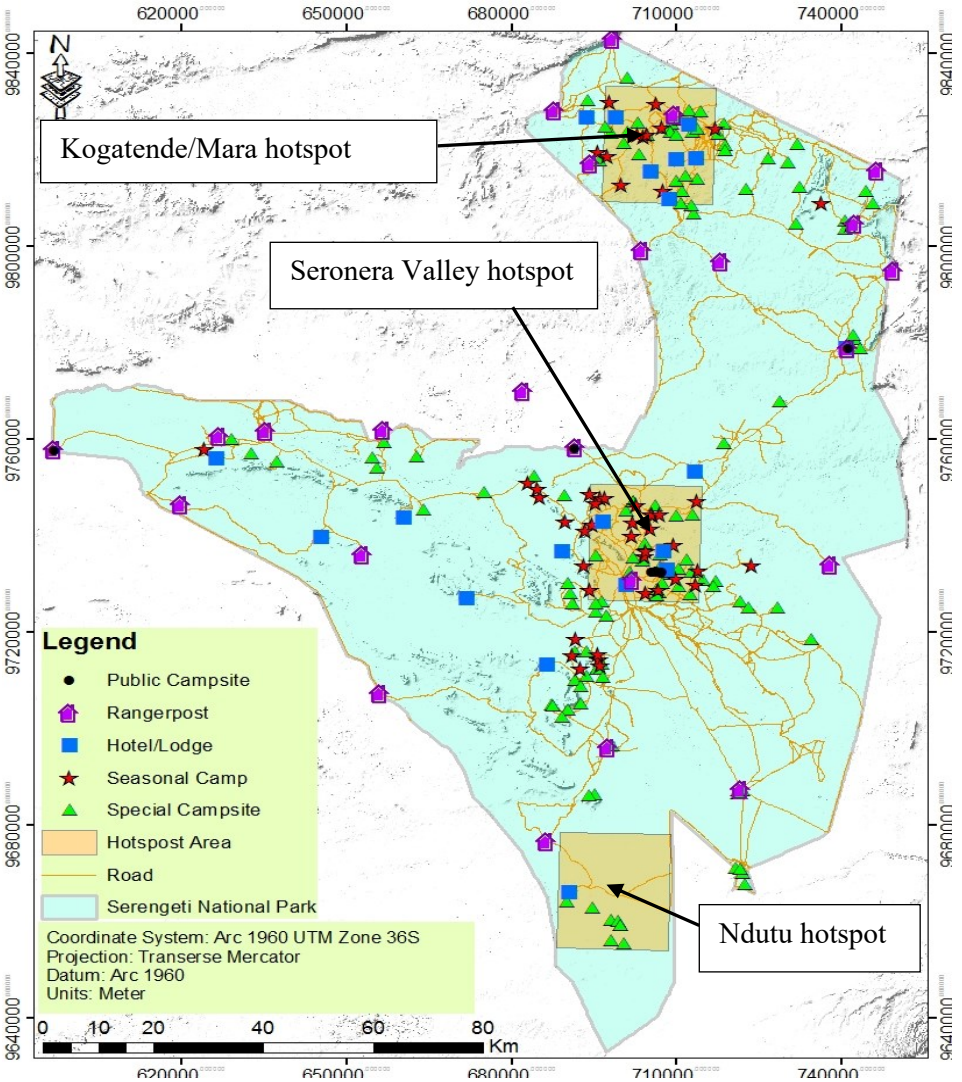

Figure 2: A map illustrating the spatial distribution of tourist accommodation facilities across the three tourist hotspots

The results show that Seronera hotspot has the highest number of tourist accommodation facilities compared to the other hotspots. Specifically,

Seronera has 68 (64.2%) facilities, while Ndutu has 6 (5.7%) and Kogatende/Mara has 32 (30.2%), indicating a greater density of facilities in Seronera. The analysis of facility density across the three equal blocks of 484 km² in these hotspot areas revealed that Seronera Valley is significantly developed, with a facility density of 0.1405 facilities per km². While Ndutu/South tourist hotspot expressed a low facility density with a value of 0.0124 facilities per km^2, Kogatende/Mara hotspot fall in the medium facility density category with a value of 0.0661 facilities per km^2. Regarding the composition of tourist accommodation facilities, the results identified four categories: Hotels/Lodges 12 (11.3%); Seasonal Camps 73 (68.9%); Special Campsites 15 (14.2%); and Public Campsites 6 (5.7%). Despite the variation in facility types, their effects on the time spent by migratory wildlife species during the periods of 2018/2019 and 2019/2020 were statistically insignificant, with p-values of P=0.177 and P=0.691, respectively.

3.2 Number of Tourists Staying in Accommodation Facilities in the Hotspot Areas

The number of tourists staying at the sampled facilities increased during the two years (2018/2019 and 2019/2020), despite the impact of the COVID-19 pandemic. This rise can be attributed to the fact that the pandemic began at the start of the low tourism season, when most tourists had already visited the park. The results found a total of 194,223 comprising of 87,656 and 106,567 tourists residing from the accommodation facilities for 2018/2019 and 2019/2020 years respectively. Further, the results indicated uneven distribution of tourists within the hotspots. According to the results Seronera Valley received 163,170 (84%) tourists compared to Ndutu 2,858 (1.5%), and Kogatende/Mara 28,195 (14.5%) tourists.

The results also found uneven distribution of tourists is various categories of tourist accommodation facilities within SNP. For the two years period used by the study Seasonal campsites attracted 86,658 (44.62%) of tourists visiting Serengeti. Other categories with the number of tourists attracted include public campsites 57,475 (29.59%), Hotels/Lodges 33,870 (17.44%), and Special campsites 16,220 (8.35%).

3.3 Time spent by migratory species within hotspot areas

3.3.1 Abundance and distribution of migratory species within hotspot areas

Data on the movements of 87 GPS-collared wildebeest and zebra individuals were collected and analyzed to assess the duration of stay of these migratory species in tourist hotspot areas. Of the total, 63 wildebeests (72.4%) and 24 zebras (27.6%) were tracked. The analysis revealed that the encounters of these individuals within hotspot areas were as follows: 29 (33.3%) in Ndutu, 35 (40.2%) in Seronera Valley, and 23 (26.4%) in Kogatende/Mara.

3.3.2 Duration of migrants stay in the tourist hotspot areas

The results from 87 collared individuals indicated that the mean duration of animals' stay in the tourist hotspot areas varied. On average, migratory animals spent between 12 and 6 days in these areas during the years 2018/2019 and 2019/2020, respectively. Specifically, the mean duration of stay for migratory animals in each hotspot area was as follows: Ndutu/South had averages of 29.52 and 59.04 days; Seronera Valley/Central had 9.285 and 2.228 days; and Kogatende/Mara maintained an average of 15.869 and 15.04 days. While other hotspots showed different averages, Kogatende/Mara consistently had a mean stay of about 15 days. Notably, 2018/2019 mean duration of stay of migrants in Ndutu/South was half the number of days spent in 2019/2020. The same trend was experienced in Seronera Valley/Central where the migrants mean duration of stay for 2019/2020 was 25% of the 2018/2019 mean. Despite the variations in the time spent in hotspot areas, there was no statistically significant difference between the different types of accommodation facilities and the time spent by migratory animals in these areas during 2018/2019 and 2019/2020, with values of X^2=45.508, df=42, p=0.328 and X^2=21.176, df=30, p=0.882, respectively. Furthermore, the results indicated no evidence of a relationship between the duration of animal stays and the number of tourists, with X^2=218.629, df=189, p=0.069 and X^2=230.798, df=216, p=0.232 for 2018/2019 and 2019/2020, respectively. These findings suggest that neither the type of accommodation facility nor the number of visitors to these facilities significantly affects wildlife behavior. This could be attributed to the fact that many tourists' accommodation facilities in Serengeti are tented camps which their construction is relatively less destructive to the surrounding environment hence making it tolerable.

3.3.2.1 Time spent Vs Number of tourists

A Correlation Analysis was conducted to explore the relationship between the time spent by migratory wildlife species and the number of tourists residing in accommodation facilities. The results showed a weak negative

correlation between the duration of animal stays in hotspot areas (in days) and the number of tourists in these facilities for the years 2018/2019 and 2019/2020. This is reflected in Pearson Correlation (r) values of -0.125 and -0.095 when comparing the animals' duration of stay for 2018/2019 with the number of tourists for 2019/2020, and vice versa. The weak negative correlation persisted in the comparisons of animal duration of stay for 2019/2020 against the respective groups, as well as the correlation between the number of tourists in 2018/2019 and other groups. However, the significance levels for all correlated groups were above the alpha threshold of 0.05, ranging from 0.247 to 0.382, indicating no significant differences in the time spent by migratory animal species in the hotspot areas. In contrast, the Chi-Squared Test (X^2) revealed that the time spent by migratory animals significantly differed based on the number of tourist accommodation facilities within the hotspots, with results showing $X^2=114.758$, df=68, $P<0.0001$.

3.3.2.2 Testing the Significance of Migratory Animals' Time Spent in Hotspots Using ANOVA

Given that the correlation analysis indicated no significant differences in the time spent by migratory species in the hotspots, an ANOVA statistical test was conducted to explore this further. The ANOVA results revealed variations in the duration of migratory species in the hotspots across the years, with mean durations ranging from 2 days in 2019/2020 for Seronera Valley/Central to 59 days in 2019/2020 for Ndutu/South hotspot. The variances for 2019/2020 displayed a similar trend, with a minimum of 18.7 days in Seronera Valley and a maximum of 2241.7 days in Ndutu/South. Overall, the Analysis of Variance (ANOVA) strongly indicated a significant difference in the time spent by migratory animal species within the hotspots, with a p-value of $P = 8.04 \times 10^{-16}$.

4.0 DISCUSSION

4.1 The Number of Tourist Accommodation Facilities and Tourists in Hotspot Areas

The study found that SNP has a total of 273 tourist accommodation facilities, including hotels/lodges, seasonal campsites, special campsites, and public campsites. While the selection, allocation, and development of these facilities adhere to the guidelines set forth by SNP GMP, TANAPA DALP, and the Tourism Investment Manual documents (Tanzania National Parks, 1995; TANAPA, 2014, 2019), the majority are situated within Seronera Valley compared to the Ndutu/South and Kogatende/Mara hotspots. The current findings show that there are 12

(11.3%) Hotels/Lodges, 73 (68.9%) Seasonal Camps, 15 (14.2%) Special Campsites, and 6 (5.7%) Public Campsites, which are crucial for accommodating tourists visiting SENAPA. Additionally, these facilities had the capacity to host a total of 87,654 and 106,567 tourists during the 2018/2019 and 2019/2020 financial years, respectively. Despite the onset of the COVID-19 pandemic, which could have affected tourist numbers, the results indicated an increase in the total number of visitors. This was mainly due to the fact that the pandemic heightened at the beginning of low tourism season. However, the manifestation of the effects of the pandemic were largely observed in 2020/2021 following the imposition of stringent measures to curb the pandemic worldwide (Kideghesho et al., 2021; World Travel Organization (UNWTO), 2021). As a result of pandemic established control measures the number of tourists' arrivals in Serengeti declined from 6,000 to 24 a day in April 2021 (Kideghesho et al., 2021).

4.2 The Time Spent by Migratory Wildlife Species in Realtaion to Accommodation Facilities and Tourists

The impact of tourist accommodation facilities on wildlife is well-documented (Rimaze et al., 2020). This study found that, due to the high number of tourist accommodation facilities, migratory species spent less time in Seronera Valley in the central Serengeti compared to Ndutu/South and Kogatende/Mara. Additionally, the presence of migratory animals has influenced the establishment of tourist accommodation facilities in these hotspots (UNESCO, 2020). The park's reputation, bolstered by the migration of 1.5 million wildebeests, zebras, and gazelles, attracts a significant number of tourists globally (UNESCO, 2020), leading to increased demand for the development of accommodation facilities. Furthermore, factors such as ease of access, supporting infrastructure (e.g., information centers), and water availability also contribute to the growing number of tourist accommodation facilities in hotspot areas. Due to an ease of access, 66% of tourist accommodations in Kruger National Park South Africa were located in the Marula South (Ferreira and Harmse, 2014). Similarly, Mogende and Moswete (2018), reported the disturbance to migratory animals due to the development of tourist facilities along waterfronts of the Chobe River in Chobe National Park in Botswana and the Okavango Delta. Furthermore, this finding reinforces the hypothesis that a higher number of tourist accommodation facilities and an increase in tourist numbers lead to a reduction in the time spent by migratory wildlife species in tourist hotspot areas. In contrast, this research is consistent with findings from other studies, such as as Larsen

et al. (2020) and Díez-Gutiérrez et al. (2017), which indicate that migratory species tend to avoid tourist accommodation facilities due to associated disturbances, and that the Seronera area has a higher concentration of these facilities compared to other regions. This situation, combined with increased tourism activities, may compromise the Seronera Valley's status as a year-round water source for migratory and other animals, significantly affecting grazing and water availability for herbivores. This aligns with Kihwele et al. (2020), who argue that the surface, spatial, and temporal distribution of water is crucial for wildlife and for understanding the composition of large herbivore assemblages in savannah ecosystems.

Tourist accommodation facilities are strategically positioned in the Ndutu/South, Seronera Valley/Central, and Kogatende/Mara hotspots to align with the movements of migrating ungulates traveling from the southern regions to the Maasai Mara National Reserve in Kenya and back. According to Msoffe et al. (2019) and UNESCO (2020), areas in the southern Serengeti, including Ndutu in both the Serengeti and Ngorongoro Conservation Area, serve as crucial nursing grounds for lactating wildebeests and their calves. The presence of short grass plains provides a safe environment against predators while offering nutritious grazing for both the mothers and their young (Msoffe et al., 2019; Larsen et al., 2020). The calving season, which occurs between January and March each year, draws tourists to the southern Serengeti to witness this remarkable event. Due to the increased demand for accommodation during this period, many operators of seasonal camps relocate their facilities to the southern Serengeti to cater to tourists until the migration northward begins. The movement of the migrants toward the north is prompted by the depletion of resources, such as pasture and water, in the plains (Harris et al., 2009).

Conversely, various types of pollution, including dust, human-made noise, light, and fuel emissions, disrupt the natural behaviors of animals (Ndibalema et al., 2008; Kight and Swaddle, 2011; Francis and Barber, 2013; Harding et al., 2019) and could be the major reason for migratory animals less time expenditure in Seronera Valley. Some of the quantified anthropogenic effects to animals include reduced reproduction, survival, abundance, diversity, and altered interactions between species (Shannon et al., 2016; Larsen et al., 2020). Moreover, habitat fragmentation resulted from animal movements obstruction within SENAPA especially in Seronera Valley, may be due to the development tourist accommodation

facilities. Within this context, Rimaze et al. (2020) explain the adverse effects of tourism developments (accommodation facilities) to smooth dispersal of animals in protected areas. Cited example includes Reindeers preference to areas with low human presence over developed areas leading to habitat fragmentation in the Polar Regions (Gundersen et al., 2019). According to the study results, neither the type of facility nor does the number of visitors to the accommodation facilities impacted wildlife behaviour signalling that the number and locations of the developments could be the major culprit of the disturbance. This was elaborated by Gundersen et al. (2019, p. 26), who noted that "decreased habitat use, a loss of foraging resources, and alterations to traditional migration routes (such as fewer crossings, delays in crossings, or the complete cessation of crossings)" were consequences of the development of visitor infrastructure in areas critical for reindeer". Furthermore, the findings revealed that the disruption of migratory animals' behaviour was due to the overall number and location of the facilities. The study by Skarin & Ahman (2014), found that human activities and infrastructure development interfered with the seasonal migratory patterns of reindeer in Arctic and subarctic regions. Other previous studies example Vistnes and Nellemann, (2008); Nellemann et al. (2010); Skarin and Ahman (2014) and Gundersen et al. (2019) provide evidence for migratory animal's avoidance of anthropogenic developments.

Additionally, the variation in avoidance distance is influenced by the type of human activity and infrastructure, as well as the sex of the animal. According to Skarin & Ahman (2014), reindeer avoidance distances ranged from 8 to 12 km in areas with tourist resorts featuring hiking and snowmobile trails, but this distance could decrease to about 4 km around the resort after disturbances, particularly for males, while females still tended to avoid these areas. Similarly, the avoidance distance for reindeer concerning infrastructure varies with the level of disturbance, ranging from 0.5 to 25 km. Beyond a certain threshold, if alternative habitats are available, the animals may abandon the area (Nellemann et al., 2010). Although this study did not focus on the avoidance distance of migratory wildebeests and zebras from accommodation facilities, it was noted that reindeer maintained a distance of 3.5 km from developments, irrespective of their prior use of the area (Skarin & Ahman, 2014). However, based on past experiences and perceived benefits, animals may exhibit increased tolerance to disturbances (Skarin & Ahman, 2014). Therefore, tourist accommodation facilities development and disturbance may result into the loss of traditional migratory routes within Serengeti National Park.

Elsewhere, the loss of important migration corridors due to infrastructure development has happened in reindeer strongholds (Gundersen et al., 2019). The shorter duration of stay for migrants in the Seronera Valley, a key year-round tourism hotspot, signals a need for intervention. While the study found no statistically significant impact of visitor numbers on the time migratory wildlife species spent in these tourist areas, the trend of reduced time spent in some hotspots serves as a warning for park management. Due to excessive tourist accommodation facilities development within Seronera Valley wildebeest and zebra are forced to abandon their traditional migration routes. The findings corroborate Skarin & Ahman (2014) findings, prompt reduction or completely removal of facilities reindeers return to their original ranges despite the doubling number of tourists.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This study concludes that the time migratory animals spend varies across different years and tourist hotspot areas. Specifically, migratory species tend to spend less time in areas with a high concentration of tourist accommodation facilities, with Seronera Valley showing shorter durations compared to Ndutu/South and Kogatende/Mara in the north. This is attributed to the abundance of such facilities. Consequently, the impacts linked to tourism and accommodations—such as obstruction of migratory routes, pollution, and ecological disturbances—are significant factors disrupting the movement patterns of migratory animals within the Serengeti. These issues highlight the need for effective mitigation strategies.

To address these challenges, the study recommends reducing or regulating the number of tourist accommodations from the park's core to its edges, implementing eco-friendly practices within these facilities, effectively enforcing existing policies and regulations, and conducting studies on current migratory animal movement patterns. These recommendations aim to prevent development along migratory routes while fostering a harmonious coexistence between migratory wildlife species and tourist accommodations in Serengeti National Park.

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Assessing Local Community's Attitudes towards Wildlife Conservation: A Case Study of Makao Wildlife Management Area in Tanzania

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Abstract
Understanding communities' attitudes towards wildlife conservation is essential because human behaviour greatly influences wildlife sustainability. This study assesses local communities' attitudes towards wildlife conservation in Makao wildlife management area. Four villages, Makao, Jinamo, Sapa and Mwabagimu, were randomly selected for this study. Data were collected using questionnaire survey, focus group discussions, and key informants' interview from 363 heads of households, selected using purposive sampling and simple random sampling technique. Results indicate that, L local communities were aware of human-wildlife conflicts existence 90% ± 2. Power disparity among wildlife stakeholders (β = -0.137), Crop damage (β=- 1.245), Wildlife animal attack (β=- 1.014), family size (β=- .137) negatively influences local attitudes towards wildlife. On the contrary, educational level (β= 1.415), age (β= 1.388), and economic activities (β= .743) positively influenced local attitudes toward wildlife conservation. Therefore, the appreciation of local attitudes is a key for the successful implementation of any conservation project. The study recommends engagement and education to enhance conservation awareness and foster a positive attitude towards wildlife conservation among local communities.

Keywords: *Attitude, Makao, Wildlife conservation, Wildlife management area, local communities*

1.0 INTRODUCTION

Wildlife conservation has attracted increased attention in recent years because of mounting problems such as habitat loss, poaching, and climate change (Advani, 2023; Børresen et al., 2023; Obradović et al., 2023). While conservation efforts have traditionally focused on protected areas and wildlife reserves, there is growing recognition that the involvement and support of local communities are critical for the success of conservation initiatives (Kideghesho, 2016; Keane et al., 2019). Worldwide, local communities coexist with wildlife and rely on natural

resources for their livelihoods (Lwankomezi et al., 2021b; Felix et al., 2022; Doley and Barman, 2023; Zhou, 2023). Yet, conflicts arise when wildlife destroys crops, attack and kill livestock and sometimes threats to human life (Lyamuya et al., 2014). At a global scale, community attitudes towards wildlife get shaped on the interactions among benefits and costs. Positive experiences, such as income from tourism or recognition of cultural values, can foster stewardship. On the other hand, unfavorable experiences such as crop raiding, livestock predation, human injury, or resource restrictions tend to generate hostility and bitterness (Jew & Bonnington, 2011).

In sub-Saharan Africa, where most of the rural communities derive their subsistence and livelihoods from natural resources, such a delicate balance between conservation and human welfare is very detestable (Hariohay et al., 2018; Felix et al., 2022). Studies from Tanzania, Kenya, and Namibia revealed that, communities suffering repeated crop losses to elephants, livestock depredation by large carnivores, or exclusion from grazing land often perceive wildlife primarily as a source of hardship, which undermines their willingness to cooperate with conservation efforts (Rust & Marker, 2013; Lyamuya et al., 2014). Conversely, communities tend to have a positive perception when they have benefited from job creation, share tourism revenues, or receive social services from conservation projects (Børresen et al., 2023). Yet, these outcomes are not uniform; for instance, while Kideghesho (2010) draws attention to enduring resentment from land-use conflicts in the western Serengeti corridor. Keane et al. (2019) reported instances in which WMAs have slightly enhanced household income, indicating that governance processes and equity in participation govern the perceptions of the people.

Tanzania has abundant biodiversity and has allocated over 40% of its land as protected areas. However, majorities of the protected areas have been declared through the forcible eviction of local communities, some of whom had lawful land tenure (Bluwstein, 2017). Having been forcibly uprooted from ancestral land, the local community refused to surrender or endorse the government's plans of conserving their areas for wildlife conservation (Mbise & Sosiya, 2023). The conflict arises due to lack of compensation for the land lost, and the government never consulted the affected community prior to conservation plans being drawn (Dickman, 2010; Lwankomezi et al., 2023). Attitudes, thoughts, and feelings influence how the people behave towards wildlife and may be decisive for

the future of wildlife management and conservation (Keane et al., 2019; Carter et al., 2014; Børresen et al., 2023).

Existing studies across Tanzania provide valuable but incomplete insights into the role of community attitudes. Research in Rungwa and Loliondo reveals that perceptions are shaped by immediate livelihood costs such as crop damage and predation (Hariohay et al., 2018; Lyamuya et al., 2014), whereas research in Tarangire illustrates how retaliatory killings of lion's seed from very concrete frustrations with conservation governance (Felix et al., 2022). However, these studies tend to overlook the lingering historical grievances of eviction and power disparities salient in Makao and therefore tend not to systematically investigate whether socio-demographic factors such as education, household size, or employment condition conflict experiences in shaping attitudes. Therefore, not much is known about the attitudes of local communities residing in the Makao Wildlife Management area. The Makao Wildlife Management Area connects the Maswa Game Reserve, Ngorongoro Conservation Area, and Serengeti National Park (Lwankomezi et al., 2021b). This makes it a crucial and environmentally sensitive region within northern Tanzania's diverse Serengeti Ecosystem.

This article examines local communities' attitudes towards wildlife conservation in Makao WMA. The following objective were addressed in this paper (i) to assess human-wildlife conflict awareness among local in the study area, (ii) evaluate determinants for local people's attitude toward wildlife conservation in the study area. In evaluating determinants for local people's attitude, the following hypothesis are addressed (i) power disparity, crop damage, and wild animal attacks negatively influence people's attitudes toward wildlife conservation, and (ii) education level, family size, age, and economic activities positively influence local people's attitudes toward wildlife conservation. The article will foster a positive attitude towards wildlife conservation among local communities.

2.0 THEORETICAL FRAMEWORK

The paper is based on the Social Exchange Theory that dynamics of stability and social change resulting from the interaction transactions between different groups (Homans 1961). The theory states that people enter into relationships basing on their subjective views on the costs and benefits and the various alternatives available to them (Homans 1961). Social interaction is framed by the social exchange theory as an exchange activity where individuals weigh the rewards and costs of each potential

opportunity (Overskeid 2018). Out of all the alternatives with equal costs, people prefer those with higher rewards, whereas when the reward level is the same, the alternative with the least cost is preferred (Clark and Taplin, 2012). Thus, the theory holds that people respond to policies and interventions based on their own expectations for particular outcomes (Brest 2010). This holds that attitudes toward conservation are dependent upon perception.

According to the theory, people's attitudes are accountable given that its assumptions are embedded in human nature and rational dynamics, where people want good outcomes out of situations and avoid negative experiences from the same. Local communities are also rational decision-makers, weighing benefits and costs (Homans 1961; Overskeid 2018). This theory is relevant because community evaluation varies along time and from individual to individual, reflecting a person's preferences and contextual factors (McCleery 2009). Hariohay et al. (2018) point out that relationships existing around protected areas are of mutual dependence, in which actions from one party influence the other. This theory implies that attitudes influence, in various forms, people's collective actions, which themselves influence wildlife conservation (Ostrom 2000). The perception of fairness in conservation comes in when policies, laws, and park management are legally and practically performing equal distribution of benefits. Therefore, according to Hariohay et al. (2018), attitudes are influenced by a variety of factors such as group size, age, household expertise, and perception of parks, wildlife, and rules guiding them. Highlighting conservation dynamics, the communities bordering conservation areas bear the costs of conservation-right from crop raiding to displacement and restricted access to resources (Ngo et al., 2019; Lwankomezi et al., 2021a; Raycraft, 2023). These suggests that social exchange in and around protected areas is not always balanced and that local communities perceive the relationships with wildlife depending on whether there is a balance between their contributions and gains from conservation (Cropanzano and Mitchell, 2005). To capture that local attitude aspect, this study concentrates on local experiences and practices in Makao Wildlife Management Area.

3.0 MATERIALS AND METHODS

3.1 Study Area

Makao WMA located in Meatu District and serves as a link between the Maswa Game Reserve and the Serengeti National Park between 3°21'30.8"S 34°51'11.3"E (Figure 1). It extends over an area of 780 km2 and covers seven villages (Sapa, Mbushi, Iramba Ndogo, Mangudo,

Jinamo, Mwabagimu, and Makao) in the northern Serengeti ecosystem. Makao WMA is bounded by the Serengeti National Park to the north, Ngorongoro Conservation Area to the east, Maswa Game Reserve to the northwest, and Kakesio escarpment on the west. The area of Makao WMA is largely inhabited by the Sukuma, Datoga, and Nyaturu tribes. Agriculture and pastoralism are the cornerstones of the economy of Makao WMA-member villages. Makao WMA experiences a climate dictated by bimodal rainfall, with rain falling between 700 mm in the southern region and 900 mm in the north. The rainy seasons mostly begin in November and end in December. The rivers in Makao WMA are seasonal, with water levels dropping gradually from north to south. Rocky hills and flat plains characterize this landscape with typical black cotton and sandy loam soils (URT, 2012).

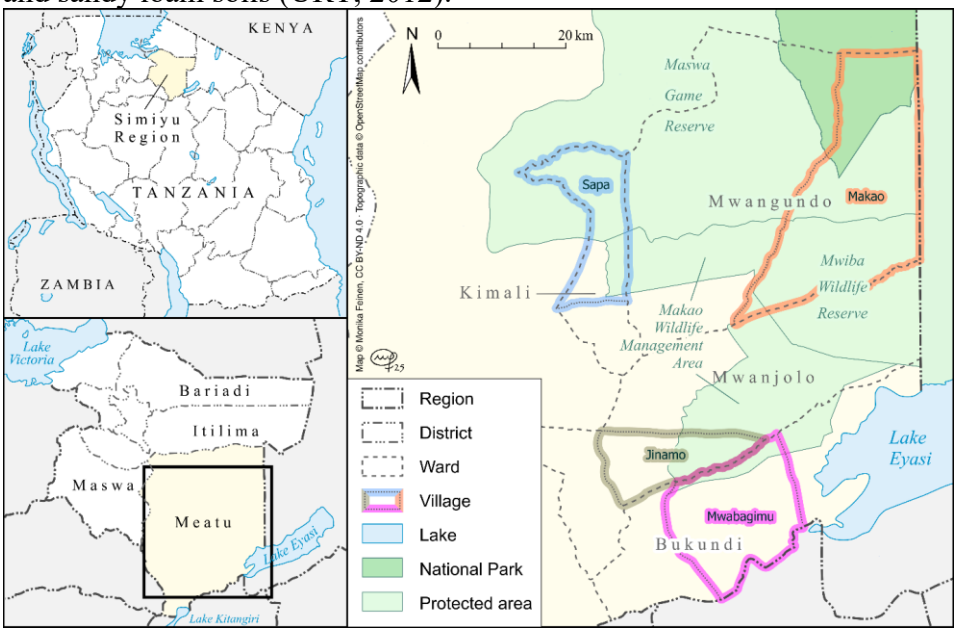

Figure 1. *The study villages in Makao WMA*

3.2 Data collection

Four villages (Makao, Mwabagimu, Jinamo, and Sapa) were selected from Makao WMA through a random selection process. The reason behind employing a random sampling technique in selecting these four villages was to ensure an equitable opportunity for each village to be included in the study. A total of 363 respondents were interviewed using a semi-structured questionnaire. The respondents included the heads of households selected randomly from each village; the number of respondents from each village was as follows: Makao (95), Mwabagimu (95), Jinamo (91), and Sapa (82). The names were gathered from the

village chairs' household register, and in each study village, a random number generator (http://stattrek.com/Tables/Random.aspx) was used to create random numbers of households to be surveyed.

The questionnaire assessed the local community's attitudes toward wildlife. The attitude was evaluated by four measurements forming the 'attitude determinant' (a) local access to resources, (b) local coexistence with wild animals, (c) local capabilities, and (d) benefit-sharing. Descriptive statistics were used to obtain the mean, median, and percentage. To verify the uniformity of the data entry, a frequency run was conducted for all variables to identify any incorrect values that may have been entered. Chi-square tests were used to determine the relationship of the variable under study, and statistical significance was set at p values < 0.05. Later, the linear logistic regression method was employed to determine the most effective predictors of attitude using the Statistical Package for the Social Sciences (SPSS) version 21. The linear logistic regression equation is indicated in equation 1.

$$Yi = \beta o + \beta_1 X_1 + \beta_1 X_1 \ldots\ldots + \beta_k X_k + \varepsilon \quad \text{.....Equation 1}$$

Where:

- X1, X2,…,Xk = predictor variables
- β1, β2,…,βk = regression coefficients

This study obtained ethical clearance from the Open University of Tanzania, the Tanzania Wildlife Authority (TAWA), the Meatu District Council, and the Makao WMA. Written consent was provided to all respondents before the collection of data. Data collection proceeded after all respondents had signed the consent forms. Voluntary participation was ensured, and confidentiality of processes, including the names of all respondents, was guaranteed. Proper acknowledgment of sources was provided

4.0 RESULTS

4.1 Household Characterization

Results showed that some important demographic information about study participants was revealed. The sample was skewed by the numbers, with 65.5% respondents being males while females represented only 34.5% (Table 1). Despite a gender disparity in the study area, no evidence was found to suggest that males and females have different attitudes toward wildlife conservation. A number of respondents (21%) had no formal education. Most had only primary education (69.4%), so conservation approaches should be developed in such ways that are easily

comprehensible and accessible to people having low education levels. A minority were educated at college (2.1%) and secondary (7.5%) levels.

Table 1: *Demographic Characteristics of Respondents (N = 363)*

Variable	Category	Frequencies (n)	Percentages (%)	Interpretation
Gender	Male	238	65.5	The sample was dominated by males; however, there was no significant difference in attitudes toward wildlife conservation between males and females.
	Female	125	34.5	
Education Level	No formal education	76	21.0	A notable portion lacked formal education, emphasizing the need for simplified conservation awareness programs.
	Primary education	252	69.4	Most respondents had only a basic education.
	Secondary education	27	7.5	Few had completed secondary education.
	College and above	8	2.1	Very few attained tertiary education.
Household Size	1–4 members	98	27.0	Smaller households were less common.
	5 or more members	265	73.0	The majority had large households, which may increase their dependence on natural resources.
Age Group (Years)	18–28	83	22.8	Younger participants were fewer in number compared to the older groups.
	29–48	121	33.4	Represented a substantial middle-aged category.
	49 and above	159	43.8	Older respondents formed the largest age group.
Primary Livelihood Activity	Livestock keeping	165	45.5	Livestock keeping was the dominant livelihood, reflecting reliance on natural resources.
	Crop cultivation	158	43.4	Crop farming was also a major source of livelihood.
	Wage labour	23	6.4	Few were engaged in wage employment.
	Others (small trade, craft, etc.)	17	4.7	Minor livelihood activities supplement incomes.

Source: Field data, 2022

Moreover, the results indicated that two-thirds of the households have a family size of more than five members, while only 27% of all respondents stated that their households have members ranging from 1 to 4. This has implications for wildlife conservation strategies, since larger households

may require more resources, and consequently their environmental impacts may be higher. Furthermore, 43.8% of all respondents were 49 years and older, while 33.4% were in the age category of between 29 and 48, an aspect to consider in engaging different age groups in the development of conservation strategies since different age categories may have diverse attitudes and perspectives towards wildlife conservation. Livestock keeping took the lion's share of livelihood activities, with 45.5% of respondents practicing it. Around 43.4% of respondents were involved in crop cultivation as a main livelihood activity, and only 6.4% of respondents practiced wage-labour as the main livelihood activity across all study villages. Thus, the utmost majority of the local populations in the WMA were smallholder farmers and livestock keepers heavily dependent on natural resources for livelihood.

4.2 Human-wildlife conflict awareness

Human-Wildlife Conflicts (HWC) were very well known to local communities in all the study villages, with an average of 90% ± 2 people knowing that HWC existed in their villages (Table 2). In this study, higher awareness was observed among the people of Mwabagimu and Makao, with 92.6% and 90.5% recorded, respectively, signifying that community members were more considerate of wildlife, maybe due to their closeness to wildlife corridors and conservation programs. The slightly lower awareness levels in Sapa (87.8%) and Jinamo (89.0%) may be due to the lack of contact with conservation education programs or fewer encounters with wildlife. Nearly 10% of the respondents in the different villages stated that they did not know or were unsure about HWC, indicating that the majority of residents have a good understanding of the conflict, its causes, and the species involved. Large community awareness of human-wildlife conflict provides a solid basis for participatory conflict containment and coexistence methods. There is a need to convert awareness into practical measures, such as improved reporting, community hunting, and education on the least harmful measures.

Table 2: *Local awareness of Human–Wildlife Conflict by village*

Awareness of Human–Wildlife Conflict	Makao (n = 95)	Mwabagimu (n = 95)	Jinamo (n = 91)	Sapa (n = 82)	Mean (%)	SD
Aware of HWC in their area	86 (90.5%)	88 (92.6%)	81 (89.0%)	72 (87.8%)	**90.0**	**2.0**
Not aware / Uncertain	9 (9.5%)	7 (7.4%)	10 (11.0%)	10 (12.2%)	**10.0**	**2.0**

Source: Field data, 2022

4.3 Determinants for local people's attitude toward wildlife conservation in the study area

Local community attitude determinants were used as dependent variables along with explanatory variables (Table 3). Power disparity among wildlife stakeholders had a negative influence on attitudes toward wildlife (β = -0.137). This suggests that significant imbalances in power or influence among different groups of people involved in wildlife management lead to negative attitudes toward wildlife. A wild animal attack negatively influences attitudes toward wildlife (β = -1.014), suggesting that when people are attacked or harmed by wild animals, it can lead to negative attitudes toward wildlife. This occurs when local communities feel that they have suffered significant physical or emotional harm due to the attack. Crop damage negatively influences wildlife attitudes (β=- 1.245), implying that when wild animals destroy crops or other agricultural resources, they cultivate negative feelings toward wildlife, particularly when local communities acknowledge that their livelihoods or economic well-being are jeopardized by wildlife. These negative attitudes undermine conservation efforts and further thwart support for conservation initiatives.

On the other hand, communities with secondary and college education hold more positive views toward wildlife, thus suggesting that education may create the pattern of their attitudes toward wildlife (P=0.000). People aged 18-28 had a positive attitude towards wildlife (β = 1.388). In contrast, people aged 29 and above were less positive toward wildlife (*P = .817), suggesting that individuals above 29 may have had more negative experiences, which could lead to a more* negative attitude. People practicing crop farming and livestock keeping had less positive opinions toward wildlife, suggesting that peoples' sentiments varied based on the type of livelihood they engaged in. Furthermore, employed individuals were more positive towards wildlife, while an increasing family size had a negative influence on their attitude towards wildlife (Table 1).

Table 3: *Determinants for local people's attitude toward wildlife conservation*

			Statistical tests	
Independent variables	β	**SE**	**Wald Chi-square**	**p-value**
Intercept	4.861	.49	52.456	.002
[Gender=1] Male	1.823	.395	.327	.632
[Gender=2] Female	0[b]	.	.	.
[Age=1] 18-28	1.388	.604	5.285	.000
[Age=2] 29-38	.733	.594	0.521	.817
[Age=3] 39-48	1.21	1.031	0.301	.701
[Age=4] Above 48	0[b]	.	.	.
[Education=1] Informal	-2.776	.944	.642	.992
[Education=2] Primary	1.216	2.152	1.065	.001
[Education=3] Secondary	1.415	2.023	4.651	.000
[Education=4] College	0[b]	.	.	.
[Income=1] Livestock Keeping	.593	.805	1.995	.875
[Income=2] Crop cultivation	.655	.670	2.828	.743
[Income=3] Employment	.303	.560	.043	.003
[Income=4] Petty Trade	0[b]	.	.	.
[Family Size=1] 1-4	-.137	.319	.184	.668
[Family Size=2] Above 4	0[b]	.	.	.
[Power disparity=1] Yes	-2.147	.244	9.365	.002
[Power disparity=2] No	0[b]	.	.	.
[Crop damage=1] Yes	-1.245	.288	.723	.004
[Crop damage=2] No	0[b]	.	.	.
[Wild animal attack=1] Yes	-1.014	.292	.002	.001
[Wild animal attack=2] No	0[b]	.	.	.

a. The reference category is Good.
b. This parameter is set to zero because it is redundant.
c. A positive value of beta indicates the positive influence of the attitude, while a negative value indicates the negative influence of the attitude.

Source: Field data (2022)

5.0 DISCUSSION

5.1 Human-wildlife conflict awareness

Local communities show complete understanding of human-wildlife conflict (HWC) which proves that conflict exists as a real-life problem throughout the Makao WMA landscape. People now widely understand wildlife conflicts because they regularly encounter wildlife and experience multiple wildlife conflicts which matches the characteristics of

areas that have wildlife migration routes and common resource areas. The residents of Mwabagimu and Makao show elevated awareness because their locations near wildlife migration paths and their involvement with conservation programs lead to more wildlife interactions and better access to conservation information. The slightly lower awareness levels in Sapa and Jinamo can be attributed to decreased wildlife encounters and decreased participation in conservation education programs which demonstrate how awareness initiatives do not affect all areas equally. Only a few participants remained unclear about HWC. High awareness levels by themselves do not guarantee that people will manage conflicts successfully or take actions that benefit conservation (Advani, 2023). The conversion of awareness into action requires functional systems which include easy-to-use reporting channels, community-based crime prevention programs and training programs that teach people to handle situations without using force. The research results indicate that conservation programs need to shift from basic information sharing to active community involvement which teaches people practical skills to protect HWC while making their knowledge useful for damage reduction and safety improvement and conservation goal support.

5.2 Determinants for local people's attitude toward wildlife conservation

The present study suggests that power disparity, crop damage, and wild animal attacks have a negative impact on people's attitudes toward wildlife conservation, thereby confirming the first hypothesis. Local communities that had borne the costs of conservation often viewed wildlife conservation negatively. Those who faced greater price increases were more likely to oppose wildlife conservation than those who were less affected. For example, two families in Jinamo village lost about 30 hectares of maize farms due to an elephant raid. The loss of livelihood-sustaining resources eroded their support for wildlife conservation. The result supports the findings by Hariohay & Røskaft (2015), who argued that most constraints faced by livestock and crop farmers were associated with wildlife and were deemed conservation-induced expenses.

Power disparity among wildlife stakeholders negatively affects the attitude toward wildlife, implying that in cases wherein power dynamics are unequal, those potential or actual stakeholders in the unsatisfactory side may well develop negative attitudes toward wildlife since they feel that their views and interests are hardly represented or considered. Kajembe et al. (2016) noted that unequal power distribution and influence can result in the erosion of trust and cooperation among stakeholders,

which, in turn, negatively affects wildlife conservation activities. When people feel that the imbalance of power is severely disturbing, their positive attitudes toward wildlife conservation in Makao WMA are substantially hindered, as revealed by the study. According to Social Exchange Theory (Homans, 1961; Cropanzano & Mitchell, 2005), the disparity exists because conservation costs are borne by local households while governance activities are represented by few. Indeed, prior studies have shown that the community loses its legitimacy and cooperation when local communities are excluded in decision-making processes and when benefits are distributed asymmetrically in Tanzania (Kideghesho, 2016; Kajembe et al., 2016; Bluwstein, 2017). Dickman (2010) contends that concerns with social justice often in fact take precedence over ecological concerns in the organization of conservation conflicts. Our findings support those from Keane et al. (2019), who found that WMAs function well when governance systems provided opportunities for active community participation.

In the Makao WMA, the People felt they were never heard or involved in few decisions. The Authorized Association (AA), acting on the interest of government authorities, violated the local communities' right to full participation in the governance of Makao WMA. The outside players were such as investors, the Wildlife Division, and District game officers-they wielded too much power-because they denied the local community the basic right to participate. Hence, all decisions regarding the operations of the WMA were in the hands of external actors. As a result, this led to a bunch of problems, with diminished participation in wildlife management and this study found power imbalances and power struggles in three areas: conflict over revenues from investments; conflict over management of operations; conflict over access and utilization of resources by less privileged community members. Kiwango (2017) supports this by stating how power centralization has led to the shifting of decision-making processes to a broader arena of stakeholders with different interests, thereby affecting local attitudes toward wildlife conservation.

It shows that if crop damage occurs, there emerge negative wildlife attitudes in the study area; in the area, buffaloes and elephants were the major crop-damaging animals. Maize fields sustained the most damage. Results show that growing crops near WMAs has led to a significant increase in crop damage on village land, which has them in negative attitudes. This was demonstrated by respondents near Makao WMA being victimized by elephants raiding their crops. The findings concur with Advani (2023) and Hariohay et al. (2018), where distance from protected

areas is among the factors that influence wildlife attitudes of local communities. Cultivation occurring near the boundaries of protected areas increases the likelihood of elephants raiding crops. The present study indicates that destruction of crops by wild animals constituted the single most important cause of conflict across whole villages and, consequently, breeding an eroding negative attitude towards wildlife. The present study shows that the annual cost of crop damage by wildlife exceeds Tsh 1,150,000 per household. It shows that an average of Tsh 13,168.27 is gained as benefits per person per household per year for local communities residing in Makao member villages. This means local communities incur roughly 90 times as much cost for crop damages as they realize in benefits, thereby intensifying local poverty and projecting negative sentiments on wildlife conservation. According to Raycraft (2023), crop damage by African elephants (Loxodonta africana) disrupts local acceptance of elephants and conservation efforts, thereby calling for immediate solutions.

Further results indicated that households whose crop damaged crops endorse less conservation. This is in line with what Social Exchange Theory predicted, that whenever tangible costs were perceived to outweigh benefits, there was less support (Ostrom, 2000). A myriad of SSA studies mirror our findings: while crop raiding lessens tolerance to elephants and other wildlife in Tanzania and Kenya (Lyamuya et al., 2014; Hariohay et al., 2018; Raycraft, 2023). Rust and Marker (2013) signal that economic losses lower tolerance levels for coexistence with carnivores in Namibia. Jew and Bonnington (2011) suggest, however, that tolerance may vary across socio-demographic groups. While reinforcing the centrality of livelihood security in shaping conservation attitudes, our work advances the literature by providing effect sizes, shedding light on the magnitude of impact in relation to governance and other variables.

Wild animal attack has a negative influence on attitudes toward wildlife. Incidents of human-wildlife conflict involving predator animals were evident in the study area. There were reported cattle attacks by predators in Jinamo and Mwabagimu villages, which provoked local communities' retaliatory killing of problem animals, leading to conflicts with conservation authorities. For example, a local community with a lot of livestock may have more instances of negative interaction with PAs through trespass of their livestock into the conserved areas. The present study indicated that livestock keepers stayed with fines and arrests when they were found with their livestock grazing illegally in PAs. The results tend to say that the household that had the loss occasioned by depredation

of wild animals had a more negative attitude toward wildlife conservation than their counterpart. Negative experiences with wildlife lead to fear, anger, or resentment towards those involved, be it animals or wildlife; these sentiments are what create negative attitudes towards the wildlife themselves. The results correspond with those of Rust et al. (2011), who found that owners of cattle lost to predatory wild animals opposed wildlife conservation in the Selous Game Reserve.

Local community was hurt and given lifelong disabilities after being attacked by hyenas at night. For example, 45 cases of injury by wild animals were reported in the study villages, resulting in five deaths. This caused the retaliatory killing of wild animals. The current study indicates that elephants, leopards, and lions frequently injure local communities, although these incidents are not reported to officials. Additionally, local communities are commonly attacked by poisonous snakes, which they consider a normal occurrence. This is in line with Felix et al. (2022) that human attacks can render wildlife vulnerable to poaching, retaliatory killings, and habitat fragmentation. Muriuki et al. (2017) indicate that in Tanzania and Kenya, retaliatory killing has threatened the persistence of wildlife populations, where the number of wildlife killed by humans exceeds the number of livestock killed by wildlife.

Attacks by wild animals on either humans or livestock were also found to be determining much less positive attitudes. These findings align with others that highlight personal risk as a significant factor in hostility toward conservation (Felix et al., 2022; Muriuki et al., 2017). According to Dickman (2010), when wildlife threatens safety, emotional responses of fear and anger combine to create stronger agnti-conservation feelings than do feelings of economic loss. Somewhat similar results are documented by Lyamuya et al. (2014), whereby negative attitudes are described to occur among Maasai herders in northern Tanzania following the depredation of livestock, while Advani (2023) highlights the shaping of vulnerability assessments through direct risks. Our study accepts and expands upon these findings by integrating wild animal attacks, crop damage, and governance parameters into one fully specified predictive model to clarify their relative weight in explaining conservation attitudes.

Results reveal that education, family size, age, and economic activities positively influence local communities' attitudes towards wildlife conservation. This might be attributed to people who have completed at least a secondary and college education and may have had more opportunities to learn about wildlife, leading them to develop a more

positive view of it. Results corroborate those of other studies by Lyamuya et al. (2014) and Ngo et al. (2019). Education is one of the strongest predictors of a positive attitude, as primary, secondary, and tertiary levels of schooling all significantly increase the odds of being in favor of conservation. This substantiates the Social Exchange Theory's hypothesis regarding the influence of knowledge on reevaluating perceptions in terms of costs and benefits (Overskeid, 2018). While Børresen et al. (2023) find that education leads to increased biodiversity awareness and tolerance toward conservation policy in Tanzania, Hariohay et al. (2018) and Keane et al. (2019) see the same in other WMAs. Similarly, Mir et al. (2015) find that education tends to generate positive perceptions toward wildlife in similar settings. Obradović et al. (2023), however, warn that education could also engender opposition, as local communities may be empowered to challenge conservation injustices. Our results echo the majority of works that argue for the existence of mostly positive relationships while adding some nuances by showing graded "dose-response" effects sharply delineated across schooling levels—an extension rarely, if ever, empirically assessed within WMA contexts.

The findings suggest that local communities with employment had a more positive attitude than those without employment. The possible explanation might be that as people face unemployment, they are forced to increasingly resort to the natural resources from the PA as alternative sources of income and hence might find themselves engaging in actions that go against conservation. Alternatively, these findings were confirmed by Børresen et al. (2023) and Keane et al. (2019).

According to the findings, the relationship between livelihood creates an environment for conservation, with wage labor being pro-conservation, while farming and livestock keeping are held unimportant once the relevant governance and conflict variables are controlled for. This partly contradicts in the literature, with farming and herding having been consistently associated with negative perceptions given that there is an increased exposure to conflict (Lyamuya et al., 2014; Rust & Marker, 2013). Dickman (2010) and Kideghesho (2010) argue that subsistence livelihoods further increase vulnerability to wildlife losses, while Keane et al. (2019) argue that diversified or non-agricultural income streams affect: That is to say it works against the vulnerability. However, our results suggest a more conditional role of livelihood. In contrast to farming and livestock, which lose significance once direct conflict and governance are put into consideration, wage labor remains positively associated with conservation. This methodological consideration helps

explain why livelihood variables have produced conflicting results in past research. The present investigation confirms that higher education tends to improve society's attitude toward conservation, but sometimes it is in fact working against conservation. For instance, most resistance was generated within the study system by educated persons who had very little to lose from conservation interventions. Similarly, Obradović et al. (2023) found that highly educated people residing within protected areas tended to oppose community conservation initiatives within their domains.

The decrease in family size had a positive influence on wildlife conservation in Makao. This is because an increase in population is more likely to lead to increased pressure on natural resources. For instance, high population growth leads to high demand for cultivation, settlements, and grazing land. The results suggest that population growth in the study area has increased pressure on natural resources. Local communities require land for farm cultivation and grazing to generate income. The findings suggest that increased population pressure on wildlife is driving up the demand for bushmeat hunting in the study area. Hoffmann (2022) supports the assertion that population growth increases the demand for game meat and other animal products, leading to resource depletion. He further argues that because human population increase is inevitable around protected areas, conservationists must guide human interactions with nature in cultural landscapes of which humans are integral. The population is estimated to be 15,000 in the study villages (URT, 2022), with the local community practicing agriculture and livestock keeping as their primary livelihood strategy.

Respondents aged 18-28 years had a positive disposition toward wildlife. In contrast, those 29 and older have tended to develop negative attitudes, implying that those over 29 years might have had more negative experiences that engender in them a more negative attitude. On the other hand, the study suggests that respondents older than 29 years share the properties of owning land and livestock, which may have triggered negative interactions with wildlife. The notion can, therefore, be linked to the works of Hariohay et al. (2018) and Mir et al. (2015), who argue that older communities that depend on livestock and agriculture for sustenance often clash with conservationists over pasture and farmland usage. These conflicts have instead exacerbated the anti-conservation sentiments in the local communities.

Conservation obtained a support almost four times more from younger respondents aged 18 to 28. Because younger people have fewer assets

built up and are exposed to different livelihood conditions, the incidence of damage caused by wildlife to them is lower, and thus conservation is more favored by them (Jew & Bonnington, 2011; Hariohay et al., 2018). Mir et al. (2015) draw a similar inference, noting that tolerance was higher among younger respondents from South Asia. In contrast, Keane et al. (2019) say there are generational differences among Western Muslims in Tanzania. Hoffmann (2022) associates these trends to general demographic pressures: older farmers with larger landholdings being more exposed to conflict costs and the younger respondents being more flexible. Our results corroborate the foregoing while drawing attention to an NGO-relevant split: youth seem more willing to engage in conservation partnerships, but older groups remain rather resistant, thereby calling for age-sensitive interventions.

6.0 CONCLUSION AND RECOMMENDATION

The present study has revealed a range of perspectives on local attitudes towards conservation, aligning with the findings of previous studies conducted in other protected areas. Power disparity, crop damage, and wild animal attacks negatively influence people's attitudes toward wildlife conservation. This indicates that these factors can create a sense of hostility and resentment towards conservation efforts among local communities. Accordingly, a level of participation by and equitable benefit sharing with communities from conservation activities must be introduced, thus closing the gap between communities and conservation efforts for their co-existence. Further, education level, family size, age, and economic activities possess a positive influence on the attitude of local communities toward wildlife conservation. Essentially, this infers that such factors constitute very important elements toward shaping a positive attitude to the cause of wildlife conservation. According to the present study, as experiences evolve, with bearing of the costs associated with co-existence with wildlife continuing, gradually negative attitudes begin developing within the community, and thus the community itself begins acting in ways that go against wildlife conservation. Thus, the co-existence of wildlife and humans can be promoted and accepted through understanding local attitudes-a task to be done by proper planning and education so that local communities near wildlife habitats learn to co-exist and appreciate wildlife around them.

Community attitudes towards conservation are influenced by the balance between the costs that communities must bear and the benefits they receive, with local governance having the greatest impact on community attitudes. Using the Social Exchange Theory framework for analysis, it is

clear that communities not only consider the benefits of conservation but also weigh the costs (both tangible and intangible) against the benefits they are likely to receive or those they have already received. The negative effects of crop destruction and attacks by wild animals on local communities confirm the SET theory, which states that recurrent losses in livelihood lead to a reduction in the community's willingness to support conservation. The role of power disparity as a negative predictor is indicative of the fact that conservation is not only assessed in terms of costs but also in terms of fairness, reciprocity, and legitimacy. The governance failures that either exclude or marginalize local voices undermine the perceived fairness of the 'exchange' between conservation and the community, thereby increasing resistance, even where some benefits are present. On the other hand, the positive effects of education, youth, and wage labor suggest that, through increased capabilities and opportunities, the perception of conservation as beneficial is also enhanced. The varying impact of education suggests that knowledge and awareness increase the perceived value of conservation benefits. At the same time, the younger respondents and those with wage-based livelihoods experience fewer losses and have greater adaptability in their approach towards conservation.

The study's findings have important practical implications. Firstly, the need for governance reform is paramount. Closing the power gap requires institutions that give the community the right to be heard in the decision-making process and ensure that benefits are shared transparently. Participatory budgeting, equitable representation in WMA management boards, and clear accountability structures could be some of the mechanisms that can be used to reduce the perception of unfairness. Secondly, sharing the benefits must be done in a way that is both transparent and fair. Areas most affected by wildlife conflicts should receive no less than what they generate in tourism revenues and conservation-linked projects. Thirdly, ensuring that education and youth participation are done strategically is of utmost importance for the future. Educational initiatives that enhance the community's conservation literacy, combined with targeted training programs that engage young people in conservation roles, can provide a source of ongoing support. Lastly, efforts to reduce conflict must be prioritized through measures such as providing financial assistance for crop protection technologies, forming a team that can rapidly respond to wildlife incursions, and implementing compensation schemes that are timely and easily accessible. All these measures can effectively cut down the ecological costs that currently hinder the acceptance of conservation.

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Coaching and Mentorship: A tool for Accelerating Tourism Development in Tanzania

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Abstract
The tourism sector in Tanzania, largely composed of small and medium-sized enterprises, faces persistent challenges, including high business failure rates, limited managerial skills, inadequate access to finance, and low service quality. Despite the sector's significant contribution to employment and economic growth, structured coaching and mentorship programs remain limited, restricting opportunities for skills development, innovation, and competitiveness. This study examines the role of coaching and mentorship in promoting tourism development in Tanzania, with objectives to assess awareness and experience, identify skills gaps, explore barriers and opportunities, and propose a context-appropriate framework. A mixed-methods approach was employed, combining surveys, interviews, and document review to collect data from tourism business operators and key industry stakeholders. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data underwent thematic analysis. Findings reveal low awareness and limited participation in formal mentorship programs, pre-entry skill deficiencies among entrepreneurs, a shortage of professional mentors, fragmented coordination among stakeholders, and insufficient financial resources, yet there is strong willingness among youth- and women-led enterprises to engage in coaching initiatives. Based on these results, the study proposes a structured, inclusive coaching and mentorship framework emphasizing practical skill transfer, service quality, innovation, and alignment with industry standards. It recommends institutionalizing well-funded, coordinated mentorship programs to enhance managerial competence, workforce development, and enterprise competitiveness, thereby fostering inclusive, resilient, and sustainable tourism growth in Tanzania.

Keywords: *Tourism, Coaching, Mentorship, MSMTEs, Tanzania, Competitiveness*

1.0 INTRODUCTION

Coaching and mentorship are increasingly recognized globally as effective strategies for strengthening human capital, improving service

quality, and addressing leadership and talent management challenges in tourism, a sector characterized by high staff turnover and fragmented organizational structures (Gannon et al., 2021). Grounded in social capital theory, these developmental relationships foster cross-organizational networks that support individual career development and organizational continuity. Empirical evidence further shows that coaching and mentorship enhance innovation, creativity, and career progression among tourism stakeholders (Eissner & Gannon, 2018).

In Tanzania, coaching and mentorship are particularly relevant for youth empowerment and employment, given the dominance of micro, small, and medium tourism enterprises (MSMTEs). These enterprises play a key role in absorbing young workers, although their capacity is shaped by internal factors such as experience and access to capital, and external factors like recruitment practices (Lesseri, 2022). Structured coaching and mentorship programs can strengthen youth employability and entrepreneurial skills, especially in rural and community-based tourism (CBT) contexts, where entrepreneurial knowledge and ongoing mentorship have been shown to support poverty reduction and sustainable livelihoods (Mungure & Kalwani, 2025).

Several initiatives in Tanzania demonstrate the practical application of coaching and mentorship in tourism, including sustainability training programs for tour operators and community actors (Purnomo & Purwandari, 2025), youth-focused schemes such as Tanzania Youth Tourism and the Tui Care Foundation in Zanzibar (Munthali, 2025; Baum & Robinson, 2024), and CBT initiatives like the Cultural Tourism Programme and Tengeru Cultural Tourism Programme (Labadi et al., 2021; Swai, 2015). Professionalization efforts, including the Kilimanjaro Porter Assistance Project and capacity-building programs such as Catalyste+ and the Sida–UDSM initiative, further illustrate the benefits of mentorship for service quality and enterprise development (University of Dar es Salaam, 2025). However, these initiatives remain largely localized and project-based, underscoring the need for coordinated, sector-wide coaching and mentorship strategies to achieve broader and more sustainable impacts.

The emphasis on coaching and mentorship in Tanzania's tourism sector is driven by persistent skills gaps, weak managerial capacity, and high staff turnover, particularly among micro, small, and medium-sized tourism enterprises (MSMTEs) (Lesseri, 2022). Although Tanzania is endowed with rich natural and cultural tourism resources, many operators and

employees lack the entrepreneurial, managerial, and service-oriented skills required to compete effectively. Coaching and mentorship offer structured and context-specific mechanisms for skills development, knowledge transfer, and experiential learning, helping tourism businesses, workers, and community stakeholders improve performance and service quality.

This rationale is further strengthened by the sector's reliance on youth participation, community-based tourism, and its broader economic importance. Young people and community actors often lack practical skills, professional networks, and exposure to industry standards, gaps that mentorship programs can address through guidance, innovation support, and career development (STTA Kenya, 2024). Given tourism's significant contribution to employment, GDP, and foreign exchange earnings, investing in human capital through coaching and mentorship is critical for long-term sustainability, reduced business failure, and inclusive growth (Bykova et al., 2024).

The main objective of this study is to assess the application of the coaching and mentorship in the tourism sector in Tanzania. Specifically, the study aims to: (i) determine the current level of awareness and experience with coaching and mentorship among MSMTEs in Tanzania; (ii) identify skills gaps and capacity needs among MSMTEs in the country; (iii) determine the key barriers and opportunities for implementing coaching and mentorship in the tourism sector; and (iv) Suggest ways of conceptualizing a context-appropriate coaching and mentorship framework for tourism development in Tanzania.

On the other hand, the study was guided by a couple of research questions, including: (i) What is the current level of awareness and experience with coaching and mentorship among MSMTEs in Tanzania? (ii)What skills gaps and capacity needs exist among MSMTEs? (iii) What are the key barriers and opportunities for implementing coaching and mentorship in the tourism sector? and (iv) How can a context-appropriate coaching and mentorship framework for tourism development in Tanzania be conceptualized?

2.0 THEORETICAL AND CONCEPTUAL FRAMEWORK

2.1 Theoretical review

The theoretical review highlights coaching and mentorship as critical human capital development strategies that enhance skills, service quality, innovation, and sustainability in the tourism sector. Drawing from human

capital theory and social capital perspectives, coaching and mentorship are shown to facilitate knowledge transfer, experiential learning, leadership development, and network building across tourism systems (Baum, 2015; Morrison, 2013; Garavan et al., 2020). These approaches are particularly relevant in tourism, an industry characterized by fragmented structures, high labor mobility, and skills-intensive service delivery. However, theory also emphasizes persistent structural constraints, including limited financial resources, shortages of qualified mentors, weak institutional frameworks, and poor monitoring mechanisms, which undermine program effectiveness (Rogerson & Rogerson, 2020; Ladkin & Weber, 2011). Additionally, theoretical work underscores the growing importance of aligning mentorship with digital transformation and contextual needs, warning that mismatches between mentor expertise and sectoral demands can reduce impact (Buhalis & Amaranggana, 2015; Blackman et al., 2016).

Empirical evidence from both international and Tanzanian contexts demonstrates that coaching and mentorship significantly contribute to tourism enterprise development, youth employment, community empowerment, and sector competitiveness. Studies from Kenya, South Africa, Rwanda, Thailand, and Australia show that mentorship improves managerial capacity, service standards, sustainability practices, and market access for tourism MSMEs and community-based tourism initiatives (Achuti et al., 2025; Rogerson, 2007; Procknow, 2017; Chaiyakot et al., 2023; Scherrer, 2020). In Tanzania, empirical findings reveal that MSMTEs dominate the tourism sector and play a vital role in youth and women's employment, yet face challenges related to informality, limited access to capital, and skills mismatches (Rhou et al., 2016; Lesseri, 2021; Tryphone & Mkenda, 2023). Evidence also shows that despite the presence of numerous tourism training institutions, weak industry linkages limit skills relevance (Mirondo, 2021). Across studies, mentorship initiatives though impactful are often localized, project-based, and constrained by financial, cultural, and technological barriers, highlighting the need for structured, scalable, and context-sensitive coaching frameworks to support the long-term growth and resilience of tourism MSMTEs (Stone & Nyaupane, 2018; Xiang et al., 2021).

2.2 Conceptual framework

Figure 1 presents the coaching and mentorship conceptual framework, in which the independent variables constitute the inputs that initiate and shape developmental outcomes among employees. These include the quality of coaching, frequency of coaching sessions, and the competence

of the coach, all of which determine the level of guidance, feedback, and performance support that employees receive. Similarly, the quality of mentorship, duration of the mentorship relationship, and the industry expertise of the mentor influence the depth of career guidance and psychosocial support provided to mentees. In addition, organizational support, such as the availability of training policies, resources, and a conducive learning environment, plays a crucial role in shaping the effectiveness of coaching and mentorship programmes. These independent variables collectively determine the strength and direction of developmental interventions within organizations, especially in skill-intensive sectors such as tourism.

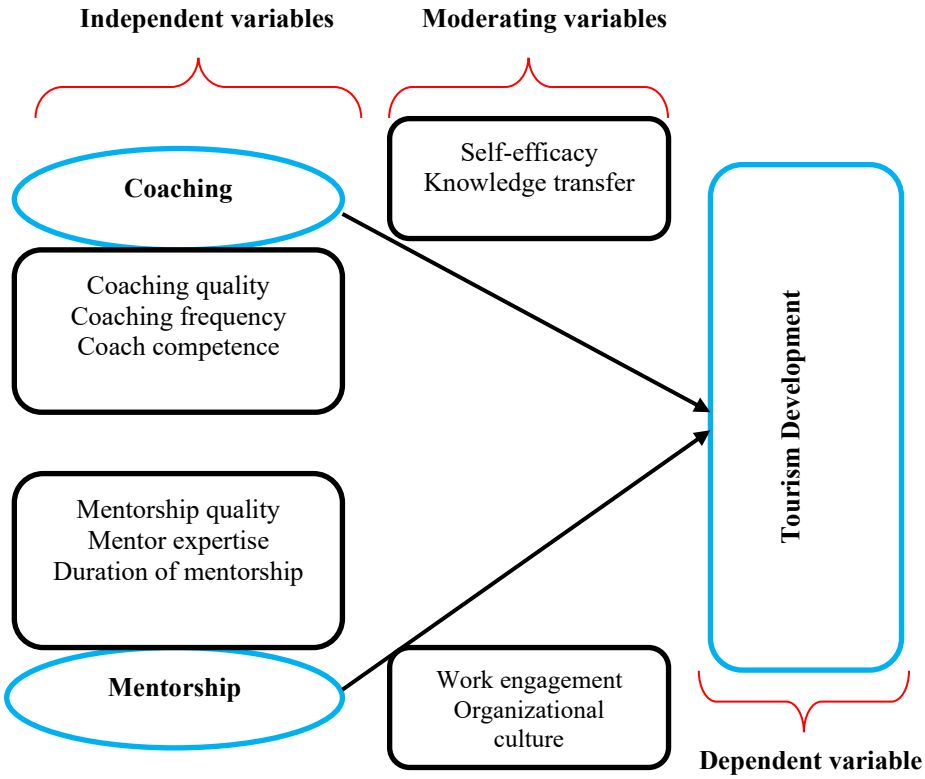

Figure 1: *Coaching and mentorship conceptual framework*
Source: Author's construct, 2025

Briefly, tourism development is conceptualized as the dependent variable that improves through effective coaching and mentorship interventions, reflected at the individual level by enhanced skills, competencies, motivation, confidence, and career progression, and at the sectoral level by improved service quality, productivity, employee retention, and innovation (Baum, 2015; Garavan et al., 2020). The framework assumes

that consistent, high-quality coaching and mentorship strengthen employee engagement and competence, translating into better organizational performance and competitiveness in the tourism industry. However, the effectiveness of this relationship is shaped by intervening and moderating variables such as organizational culture, employee readiness to learn, time availability, management support, and the nature of tourism work, which influence how strongly coaching and mentorship affect outcomes and explain variations in results across different tourism contexts (Morrison, 2013; Rogerson & Rogerson, 2020).

3.0 MATERIALS AND METHODS

This study employed a mixed-methods research design, integrating both quantitative and qualitative approaches to comprehensively examine the role of coaching and mentorship in advancing tourism development in Tanzania. The mixed methodology was chosen to capture measurable outcomes alongside subjective experiences, such as perceptions and attitudes, which are critical in understanding coaching and mentorship dynamics (Creswell & Plano Clark, 2018). By combining quantitative and qualitative data, the study enables triangulation of findings, enhancing the validity, depth, and robustness of the analysis.

A purposive and stratified random sampling strategy was adopted to ensure both depth and representativeness. Purposive sampling targeted key informants with direct knowledge of tourism operations and mentorship programs, including business owners, managers, and industry experts, providing rich and sector-specific insights (Morse, 2012). Stratified random sampling was used to proportionally include micro, small, and medium tourism enterprises (MSMTEs) across regions such as Arusha, Kilimanjaro, Dar es Salaam, and Zanzibar, thereby reducing sampling bias and improving comparability across enterprise categories (Etikan et al., 2016; Creswell & Poth, 2018). A total of 252 respondents were selected from over 2,000 MSMTEs, ensuring a balanced and informative sample.

Data collection combined structured questionnaires, semi-structured interviews, and document analysis to gather quantitative and qualitative evidence. Quantitative data, analyzed through descriptive and inferential statistics, including correlation and regression, explored relationships between coaching practices and enterprise performance. Qualitative data were subjected to thematic content analysis following Braun and Clarke's six-phase framework, allowing identification of recurring themes, challenges, and best practices in mentorship implementation (Braun &

Clarke, 2006). Ethical standards were rigorously maintained, including informed consent, confidentiality, and voluntary participation, while reliability and validity were reinforced through pre-testing and triangulation of multiple data sources (Denzin, 1978; Lincoln & Guba, 1985).

4.0 RESULTS AND DISCUSSION

4.1 Age Groups of MSMTEs Operators

Figure 2 shows that the majority of were youth 18-35 years (43.3%), followed by adults 36-60 years (41.3%), and elderly owned tourism businesses (14.7%). There was also child headed tourism businesses below 18 years (0.8%). The dominance of youth operated tourism businesses resembles the findings by Lesseri (2021), arguing that youth comprise the largest share of wage-earning staff in the tourism operations.

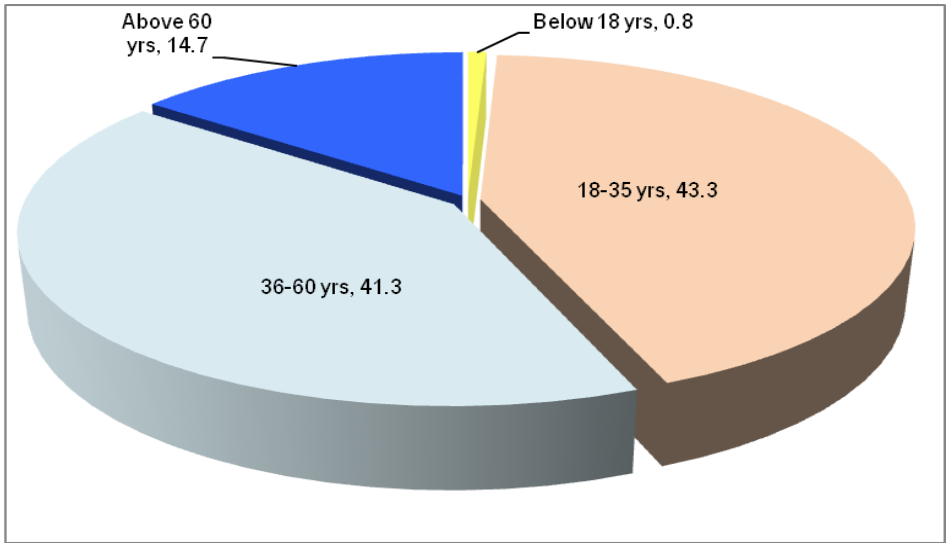

Figure 2: *Distribution of MSMTEs by age group*

4.2 Awareness on Coaching and Mentorship among MSMTEs

This study reveals that, despite the Tanzania tourism sector's rapid growth and increasing competitiveness, majority of travel and tour operators, tour guides, accommodation establishments, food and beverages providers, meetings, incentives, conferences, and exhibitions (MICE) organizers, and several other tourism value-chain actors, continue to rely on traditional business approaches, with limited awareness of how structured coaching and mentorship can enhance managerial skills, service quality, innovation, and enterprise sustainability. This lack of familiarity is partially explained by a lack of exposure to professional

development programs, a lack of industry-wide awareness of the advantages of coaching, and a lack of connections between tourism businesses and organizations that create capacity. Because of this, the majority of operators lose out on chances to enhance employee performance, implement new technology, and bolster strategic decision-making elements, all of which are critical for prospering in a fast-paced tourism sector.

> "*I have been in the travel and tour operations for the past 30 years here in Tanzania. I have never experienced coaching and mentorship among the peer companies. We actually see each other as rivals and business competitors. Generally, allow me to say that we are not familiar with coaching and mentorship in our operational practices*" (Tour Operator, Arusha)

This idiom illustrates a natural tendency toward mentorship-like relationships within small tourism businesses, where information sharing ought to take place throughout the nation's tourism industry. This draws attention to the gap that has the potential to greatly improve professional growth in the industry.

4.3 Willingness to Participate in Coaching and Mentorship

According to this survey, willingness to participate in coaching and mentorship within Tanzania's tourism sector is generally high, particularly among micro, small, and medium tourism enterprises (MSMTEs) seeking to improve business performance, service quality, and competitiveness in an evolving market. The majority of travel and tour operators, tour guides, accommodation establishments, food and beverages providers, meetings, incentives, conferences, and exhibitions (MICE) organizers, and community-based tourism actors acknowledge that coaching and mentorship could help address skill gaps in digital marketing, customer service, financial management, product diversification, and sustainability standards. Conversely, the study observes that, despite this positive perception, participation remains constrained by limited awareness of available programs, high training costs, inconsistent access to qualified mentors, and the absence of structured industry-wide mentorship platforms. Younger entrepreneurs and women-led tourism enterprises show especially strong interest, driven by a desire for professional growth and improved market access. Overall, the sector demonstrates significant willingness, which could be unlocked through affordable, accessible, and industry-coordinated coaching and mentorship initiatives.

4.4 Possession of Tourism Business Skills before Entering into Business

This study reveals that the majority of tourism employees and entrepreneurs, especially owners of micro-small and medium tourism enterprises, enter the industry without adequate managerial skills, business development knowledge, customer care training, or innovation capacity. Without mentorship and coaching from experienced professionals, they struggle to adapt to changing market dynamics, digital trends, and international service standards.

In addition, the research found that the majority of prospective tourism entrepreneurs enter the sector with limited formal training in core areas such as hospitality management, digital marketing, financial planning, customer service, and sustainable tourism practices. Similar studies on tourism entrepreneurship such as Ntshangase and Ezeuduji (2025) indicated that, inadequate pre-entry skills often lead to poor business planning, weak branding, ineffective product development, and inability to respond to market dynamics, particularly in the highly competitive safari, beach, and cultural tourism segments. Furthermore, this study has discovered that entrepreneurs who possess foundational skills before launching operations demonstrate stronger business growth, maintain higher service standards, and adapt more effectively to technology-driven trends such as online bookings, social media promotion, and dynamic pricing.

> "*As a country, we have a serious problem of the skills gap between the requirements in the market and what is taught in the training institutions, not only in the tourism industry but also in other economic sectors. To be very specific, our tourism landscape, which is mainly dominated by MSMTEs, pre-entry skills training through vocational colleges, tourism training institutions, incubators, and mentorship programs is badly needed for addressing the problem of business failure, enhancing professionalism, and promoting sustainable tourism development*" (A retired chairperson for Tourism Confederation of Tanzania).

4.5 Skills Gap between Classroom and Tourism Market

The study found the gap is also evident in vocational and higher learning institutions, where practical training and industry linkages are often limited. As a result, new graduates lack exposure to real-world industry challenges. Furthermore, formal mentorship programs led by tourism

associations, government agencies, or private sector networks remain fragmented and underfunded.

> "*Last year, our hotel hired 2 university graduates (1 food & beverage officer, and another housekeeping & laundry officer) to support us in some operations, especially during peak season, which runs from June through September. I am not saying they failed to cope with the duties they were assigned to, but they really proved that what is taught in the classroom differs from the requirements of the industry*" (A five-star accommodation facility Manager, Arusha)

The skills gap issues in the Tanzania's tourism sector are cited by the majority of scholars. Mhando (2016), reported that Tanzania has a growing number of graduates from tourism, hospitality, and related fields, many lack the practical and entrepreneurial skills required by employers. Mhando notes that, the discrepancy often results in graduates being unprepared for the dynamic and service-oriented nature of the tourism industry.

4.6 Inadequate Coordination of the Efforts

Weak inter-agency collaboration, limited information sharing, and fragmented planning processes create overlaps, inconsistencies, and competition instead of synergy. The study establishes that policies and strategies are sometimes developed at the national level without full alignment with regional and local tourism priorities, leading to gaps in implementation. Additionally, private-sector actors, especially MSMTEs, are not always fully engaged in decision-making platforms, reducing the relevance and uptake of policy initiatives. This lack of coordinated mechanisms reduces the efficiency of resource use, slows innovation, weakens marketing efforts, and undermines the country's ability to deliver a unified tourism brand. Strengthening coordination through integrated planning frameworks, joint stakeholder platforms, and clear communication channels is therefore essential for unlocking the full potential of Tanzania's tourism sector.

The problem of inadequate coordination among the MSMTEs is acknowledged by the Ministry of Natural Resources and Tourism ([MNRT], 2021), that limited stakeholder coordination is a major barrier to effective tourism governance. MNRT's strategic plan identifies inadequate inter-agency collaboration, poor information-sharing systems, and inconsistent monitoring mechanisms as key issues affecting resource management and tourism promotion. It emphasizes that improving

collaboration between government bodies, private-sector associations, and local communities is essential for strengthening destination branding, improving visitor experiences, and enhancing revenue generation.

> "*Majority of the businesses here in Zanzibar, do not talk to each other in the fear of revealing secrets of operations. We are actually rivals and competitors, and that is how it has always been*" (Restaurant Operator, Urban Unguja).

4.7 Inadequate Professional Mentors for Coaching and Mentorship

This survey observed that the majority of tourism businesses, especially micro-small and medium-sized firms, struggle to find experienced professionals who can guide employees and entrepreneurs in developing essential skills. The shortage of skilled mentors is partly a reflection of the broader skills gap in the sector, where a large proportion of tour guides and hospitality staff lack advanced training or formal education in tourism management. This gap limits the ability of businesses to offer high-quality services and stifles opportunities for professional growth among local staff.

Furthermore, the study found that tourism training institutions in the country often lack the capacity to provide structured mentoring programs, and where such programs exist, they are usually limited to major urban centers or popular tourist destinations. This leaves many rural areas and emerging tourism hubs underserved. Additionally, many tourism organizations have unclear career pathways, reducing motivation for employees to seek professional growth and diminishing the perceived value of mentorship. Without a formal structure or incentives, senior professionals are less likely to invest their time in coaching junior staff, which exacerbates the shortage of mentorship opportunities.

Similarly, the study notes that without adequate professional guidance, staff may not acquire the necessary skills to provide high-quality services, which can affect the overall competitiveness of Tanzania as a tourist destination. Career growth opportunities remain limited, leading to high turnover rates and the loss of talented individuals to other sectors or countries. Moreover, communities and youth who could benefit from tourism-driven economic development may be left behind, limiting the inclusive growth potential of the sector. Addressing this shortage requires a combination of formal mentorship programs, strengthened training institutions, public-private partnerships, and innovative approaches such as virtual mentorship to extend the reach of experienced professionals to underserved areas.

> "*Our hotel has been looking for someone who could coach some of our staff on anti-money laundering and fraud, which is done electronically, without success. We resolved to hire a person from South Africa*" (Accommodation Operator, Arusha).

The lack of professional mentors for coaching and mentorship in the tourism sector was also revealed by Sanga (2020), in their research on skills development in Tanzania, arguing that there is a serious mismatch between what training institutions produce and what the tourism and hospitality industry requires. They discovered that many graduates lack the competencies needed by employers, such as practical and soft skills.

4.8 Inadequate Financial Resources for Coaching and Mentorship

This research found that the majority of tourism institutions, especially the government bodies and private sector actors, often operate under tight budgets, limiting their ability to implement comprehensive mentorship programs. It was further discovered that, although the bilateral and multilateral donor agencies, international non-governmental organizations (INGOs), and national non-governmental organizations (NGOs) occasionally support capacity-building initiatives, these are often project-based and unsustainable over the long term. Likewise, the dominance of foreign professionals in senior management positions in some tourism businesses, such as accommodation establishments and travel and tour operators, confines the availability of local intellectuals for aspiring Tanzanian tourism professionals. As a result, young employees and community-based entrepreneurs often lack access to guidance that could help them advance in the sector.

Several scholars have reported the problem of inadequate financial resources for coaching and mentorship, particularly among micro, small, and medium tourism enterprises (MSMTEs). Ngalesoni et al. (2020), in their study on the effectiveness of mentoring programs for women entrepreneurs in Babati District, found that while mentorship positively influenced business empowerment and decision-making, limited access to financial resources significantly constrained the ability of women to fully benefit from such programs. The study emphasized that without sufficient funding, entrepreneurs could not sustain or expand the skills and guidance gained through mentorship initiatives. Likewise, Mbowe (2021) revealed that although mentoring improved business knowledge and operational skills, many enterprises lacked the financial capacity to implement the recommended strategies or scale their businesses. The scholar notes that

the lack of financial support not only hinders the effectiveness of mentorship but also limits long-term business growth, highlighting the interdependence between financial resources and mentorship outcomes.

4.9 Experience and demand for coaching and mentorship in tourism sector

This research establishes that the apparent skills gap in the industry has further driven the need for structured mentorship programs. Several local tourism businesses struggle with a shortage of qualified managers and operational staff, as well as gaps in soft skills such as leadership, communication, and strategic planning. While higher education institutions, including universities and technical colleges, provide formal training, there is often a mismatch between the skills imparted and the practical demands of the tourism sector. Mentorship and coaching programs, therefore, serve as critical interventions to bridge this gap, offering practical guidance and experience-based learning that cannot be fully captured through classroom education alone. The same aspects were mentioned by the Tanzania Commission for Universities ([TCU] (2024) and The Citizen (2023). This study found that the majority of the tourism entrepreneurs, especially those running micro, small, and medium tourism enterprises, have limited exposure to structured mentorship programs. The majority of the operators in the tourism sector rely on informal peer learning or on-the-job experience rather than formal coaching mechanisms.

4.10 Proposed coaching and mentorship framework for Tanzania

Figure 3 presents the proposed framework for coaching and mentorship in Tanzania's tourism sector for enhancing the capacity, professionalism, and competitiveness of tourism enterprises. This framework requires six consecutive steps, starting from the design and plan of the programme and ending with the graduation and follow up of the programme.

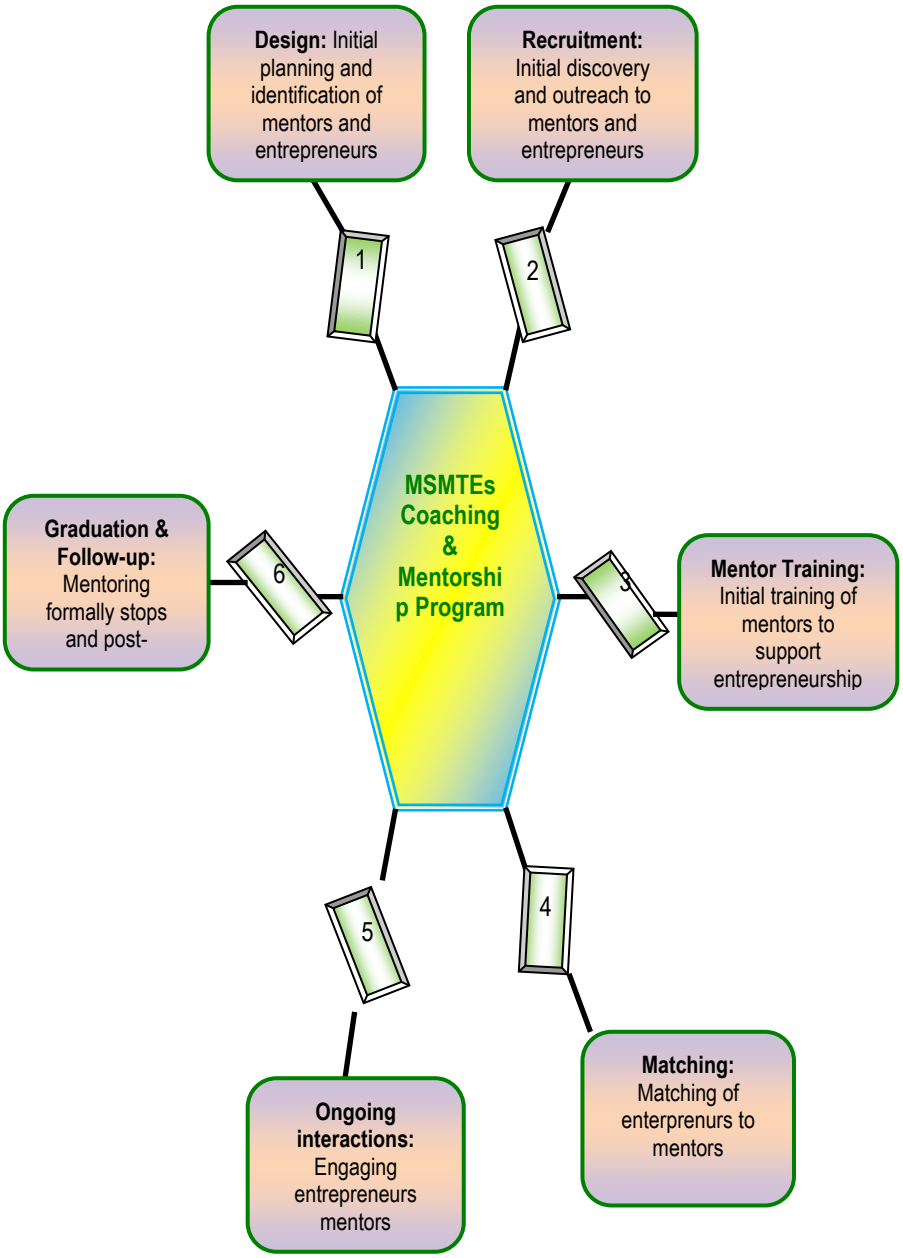

Figure 4: *Coaching and mentoring process*
Source: Author's construct (2026)

With a focus on micro, small, and medium-sized tourist enterprises (MSMTEs), the framework is intended for managers, employees, business owners, and aspiring entrepreneurs. Transferring practical knowledge and skills, enhancing service quality and company management, encouraging innovation, supporting sustainable and community-based tourism

practices, and bridging the gap between formal education and the real-world needs of the tourism industry are the main goals.

Many stakeholders must actively participate in order for this framework to be implemented effectively. While tourism boards like the Tanzania Tourism Board (TTB) and Zanzibar Commission for Tourism (ZCT) are crucial in organizing mentorship programs and certifying participants, the government, in particular the Ministry of Natural Resources and Tourism, provides funding support and policy guidance. Mentors, training sessions, and industry expertise are shared by private sector players such as hotels, tour operators, tour guides, MICE organizers, arts and crfats, hunting firms, and travel agencies. While educational institutions connect theoretical knowledge with real-world applications, non-governmental organizations and development partners provide financial support and technical assistance. Lastly, MSMTEs and local communities actively engage in mentorship programs, putting newly acquired skills to use and offering constructive criticism for ongoing development.

The framework places a strong emphasis on creating structured mentoring and coaching programs that are adapted to the demands of the industry. One-on-one counseling, group mentoring for peer learning, and virtual coaching for companies in remote locations are all examples of coaching and mentoring. Business management, providing exceptional customer service, sustainable tourism practices, digital capabilities for operations and promotion, and adherence to regional and global tourist standards are important areas of attention. Experience, professional accomplishments, familiarity with Tanzanian tourism regulations, and effective coaching and communication abilities are taken into consideration when choosing mentors and coaches. To guarantee that women and young people participate meaningfully, gender balance and inclusivity are given top priority.

While mentees are evaluated to determine knowledge gaps, business difficulties, and growth potential, coaches should receive training in adult learning principles, communication tactics, and mentorship methodologies. A sector-wide needs assessment is the first step in the systematic implementation process, which then carefully matches mentors and mentees according to sector and experience. In order to monitor learning outcomes, difficulties, and advancements, mentoring sessions—which include both in-person and virtual interactions—are regularly held and recorded.

To guarantee efficacy, monitoring and evaluation are integrated into the structure. Enhancements in customer happiness, revenue growth, job creation, and service quality are examples of key performance indicators. The curriculum is continuously improved by gathering feedback from mentors and mentees. Integration with current tourist initiatives, sponsorship from the commercial sector, and accreditation or certification for mentees who finish the program are ways to encourage sustainability. In order to facilitate continuous information exchange and peer support throughout the industry, a mentorship network should be developed. The framework's ultimate goal is to achieve quantifiable results, such as improved service delivery, higher MSMTEs' revenue and growth, increased youth and women's involvement in tourism entrepreneurship, and the development of a culture of ongoing professional development, coaching, and learning. The framework aims to improve the overall competitiveness and sustainability of Tanzania's tourist industry by methodologically connecting mentors, stakeholders, and tourism businesses.

5.0 CONCLUSION AND RECOMMENDATIONS

Conclusively, this study demonstrates that coaching and mentoring are not peripheral interventions but central mechanisms for strengthening organizational performance, human capital development, and competitiveness within the tourism sector in Tanzania. Through haphazardly addressing the persistent skills mismatch between formal education and industry demands, coaching and mentoring enhance service quality, managerial effectiveness, and strategic decision-making across tourism enterprises. The findings further illustrate that these interventions are particularly vital for MSMTEs, where they foster resilience, innovation, and inclusive participation of women and youth, key pillars of sustainable tourism development.

This study contributes to theory by extending human capital and organizational learning perspectives to the context of tourism in emerging destinations, such as Tanzania, demonstrating how structured coaching and mentoring function as dynamic capability-building tools rather than ad hoc support mechanisms. Furthermore, the findings provide evidence to support the integration of formalized coaching and mentorship frameworks into national tourism development strategies, emphasizing their role in long-term sectoral growth and global competitiveness. In addition, the study highlights the need for coordinated mentorship programs linking industry experts with emerging professionals, closer

collaboration between higher education institutions and tourism firms, and targeted capacity-building initiatives for MSMTEs.

In view of these findings, the study recommends the institutionalization of inclusive, well-funded, and industry-aligned coaching and mentoring programs within the tourism ecosystem in Tanzania. Priority should be given to leadership development, enterprise-level skills in digitalization, financial management, and sustainable practices, and mentorship models that deliberately support women, youth, and marginalized groups. Such measures will not only enhance firm-level performance but also contribute to a more resilient, equitable, and sustainable tourism sector in the country.

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Environmental and Socio-Economic Impact Assessment of Tourism Operations in Tanga District Tanzania

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Abstract
There is limited understanding of the impact of environmental and socio-economic aspects along beaches in Tanzania especially in Tanga District. The coastal beaches of Tanga District are experiencing an increase in tourism activities, which has generated both environmental challenges and socio-economic opportunities. Through mixed research methods, this paper revealed that, the primary tourism activities along the beaches of Tanga District are accommodation operations, snorkeling and scuba diving, sport fishing, boat trips, paddle boarding, beach camping, cultural beach walks, windsurfing, and swimming. These activities contribute to employment creation and revenue generation but also pose environmental risks, including increased solid waste, marine ecosystem disturbances, coral reef degradation, marine pollution, coastal erosion, and degradation of mangrove ecosystems. Social consequences experienced include cultural shifts, land-use conflicts, marginalization of local communities, increased risk of social vices, pressure on local culture and lifestyle, displacement and loss of land, seasonal income instability, and rising living costs. Although stakeholders recognized both positive and negative outcomes, few key strategies such as regular beach clean-ups, environmental education, coral reef protection, improved waste management and pollution control, and stronger community participation were identified as essential, yet their implementation remains not effective. The study concludes that sustainable beach tourism in Tanga District beaches require stronger community participation, improved waste and ecosystem management, including planning processes, and wider adoption of ecotourism practices.

Keywords: *Tourism operations, Socio-economic impacts; Coastal environment; Sustainability; Tanga District, Tanzania.*

1.0 INTRODUCTION

Tourism is among the fastest-growing economic sectors, contributing to over 10% of the world Gross Domestic Product (GDP) and generating employment and income opportunities in many developing nations (United Nations World Tourism Organization [UNWTO], 2022). Coastal and beach destinations remain the most visited tourist sites, accounting for nearly 80% of all global tourist activities (United Nations Environment Programme [UNEP], 2021) While tourism enhances economic growth, it simultaneously creates problems including solid waste generation, pollution, ecosystem degradation and sociocultural transformations (Baloch et al*.,* 2023). Recognizing these dual impacts of tourism, international bodies including the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Environment Programme (UNEP), and the United Nations World Tourism Organization (UNWTO) have emphasized the integration of Environmental and Social Impact Assessments (ESIA) into tourism development frameworks to balance growth with sustainability.

Across Africa, coastal tourism contributes substantially to national Gross Domestic Product (GDP), yet it is increasingly linked to environmental pressures and social disruption. Countries such as South Africa, Kenya, Egypt, and Morocco have established Environmental and Social Impact Assessment (ESIA) systems for tourism-related developments; however, enforcement remains inconsistent due to institutional weaknesses and economic constraints (African Ministerial Conference on the Environment (AMCEN), 2022). In East Africa, coastal destinations along the Western Indian Ocean particularly Kenya, Tanzania, and Mozambique are recognized as biodiversity-rich areas and cultural heritage hotspots. Nevertheless, existing research indicates that ESIA practices in the region often prioritize short-term environmental concerns while overlooking long-term ecological and social implications (Chirikure et al*.,* 2024). Furthermore, limited community participation, inadequate baseline data, and weak monitoring mechanisms are continuing hindering effective ESIA implementation (Western Indian Ocean Marine Science Association (WIOMSA), 2023).

Less is known about the impact of environmental and socioeconomic aspects resulting from tourism operations on the beaches in Tanga district in Tanzania. Majority of scholars have attempted to study the impact of environmental and socioeconomic aspects resulting from tourism operations on the beaches across the world (Khan, 2017; Krelling et al. 2017; Enríquez and Bestard, 2020; *Garcés-Ordóñez* et al. 2020). Khan

(2017) examined the impacts of tourism activities on the environment and sustainability of Pattaya beach in Thailand. The study's findings demonstrated that Pattaya Beach in Thailand is affected by tourism. The beneficial effects of tourism raise the socioeconomic standing of the local populace and the nation. Enríquez and Bestard (2020) measured the economic impact of climate-induced environmental changes on sun-and-beach tourism. The study's findings demonstrate tourists' favorable readiness to pay to lessen the effects of climate change and offer proof of choice heterogeneity across people with various travel and socioeconomic characteristics. Additionally, the effect of tourism on marine trash pollution on Santa Marta beaches in the Caribbean region of Colombia was investigated by Garcés-Ordóñez (2020). The study found that plastics are the most prevalent sort of litter, and that tourism is a major source of litter. The study also found that all beaches were impacted by tourism, causing litter pollution. Krelling et al. (2017) explored the differences in perception and reaction of tourist groups to beach marine debris that can influence loss of tourism revenue in coastal areas. In the worst-case situation, it was shown that over 85% of beachgoers would avoid going to the beach, and the majority would go to a nearby state beach. Additionally, it was discovered that stranded litter might potentially cut local tourism revenue by 39.1%.

There is limited literature on the environmental and socioeconomic impact resulting from tourism activities. Mushi and Kangalawe (2020) studied the climate change impacts on coastal resources used as tourist attractions and the vulnerability of coastal tourism in Bagamoyo District. Kinyondo and Pelizzo (2020) researched the socioeconomic impact of tourism in Tanzania. According to their research, there is a trade-off between the economic benefits and the environmental issues that a flourishing tourism industry could cause, even though it could be more successful and draw more visitors. On the other hand, Lange (2015) studied tourism in Zanzibar with an emphasis on the incentives for managing the coastal environment sustainably. According to the report, coastal communities are under a lot of strain due to the quick development of tourism infrastructure along the coast and a population growth rate of more than 3%. Additionally, Lange (2015) demonstrates that while comparatively little of the economic benefits from tourism have gone to local populations, access to the beach and sea has been severely restricted in some local settlements, leading to a loss of livelihoods. The researcher also found that both natural and human factors significantly deteriorate the marine and coastal environments.

Despite the existing literature, not much has been done to evaluate how tourism activities affect the socioeconomic and environmental elements of Tanzanian beaches, particularly in the Tanga district. This gap highlights a pressing problem: as tourism expands, striking a balance between economic benefits, environmental preservation, and community well-being becomes increasingly difficult (Nyaupane et al., 2018). Without robust impact assessments, stakeholders lack the evidence base to design effective management strategies, leaving fragile coastal ecosystems and community livelihoods vulnerable to unchecked tourism growth (International Council on Monuments and Sites (ICOMOS), 2022). This study addresses the research gap by conducting a comprehensive environmental and socioeconomic impact assessment of tourism operations along the beaches of Tanga District. Specifically, it examines the types of tourism activities taking place, evaluates the social and environmental consequences, explores stakeholder perceptions, and assesses the effectiveness of current management practices. By doing so, this study aims to provide evidence-based recommendations to support sustainable coastal tourism development in Tanzania.

2.0 THEORETICAL AND CONCEPTUAL FRAMEWORK

2.1 Theoretical Framework

Theories provide a critical lens for analyzing how tourism operations influence both the environment and society. This study is anchored on two major theories; Social Exchange Theory (SET) and Sustainable Tourism Theory. The SET was developed by Ap (1992) and suggests that residents' support for tourism depends on the perceived balance between the benefits and costs associated with tourism activities. Communities tend to support tourism when there are economic gains and benefits such as employment, income, and improved infrastructure. Conversely, opposition often arises when negative impacts such as cultural disruption, overcrowding, and environmental degradation outweigh perceived benefits. In the context of Tanga District, where beach tourism is rapidly growing, this theory is particularly relevant for understanding community perceptions and attitudes toward tourism development.

In contrast, the Sustainable Tourism Theory highlights how tourism must satisfy present demands without jeopardizing the capacity of future generations to satisfy their own (World Commission on Environment and Development [WCED], 1987; Hunter, 1995). It promotes striking a balance between cultural preservation, environmental preservation, and economic progress. In coastal regions like Tanga District, where delicate ecosystems like mangroves and coral reefs coexist with growing tourism

demands, this hypothesis is crucial. It emphasizes how crucial community involvement, conservation efforts, and responsible planning are to the long-term viability of beach tourism. These theories work together to direct this study's evaluation of the potential and difficulties that Tanga's tourism industry presents to the environment and residents.

2.2 Conceptual Framework

The conceptual model for this study integrates insights from SET and Sustainable Tourism Theory to examine the impacts of tourism operations in Tanga District. In this framework, tourism operations including beach hotels, fishing tours, swimming, and other recreational activities serve as the independent variables. These activities interact with mediating factors such as stakeholder perceptions, management strategies, and the enforcement of tourism and environmental policies. The outcomes of these interactions are the dependent variables, which include both environmental impacts (pollution, waste accumulation, habitat disturbance, and biodiversity loss) and socioeconomic impacts (employment creation, income generation, cultural change, and conflicts over resource use). The model emphasizes that the extent and direction of tourism impacts depend not only on the scale of tourism activities but also on the effectiveness of governance structures and management practices. Figure 1 presents a theoretical model, which emphasizes the importance of evaluating tourist operations using a comprehensive methodology that concurrently considers social, economic, and environmental factors. This study offers a comprehensive framework on how Tanga District tourism may be made more sustainable through better administration, increased community involvement, and enforcement of policies.

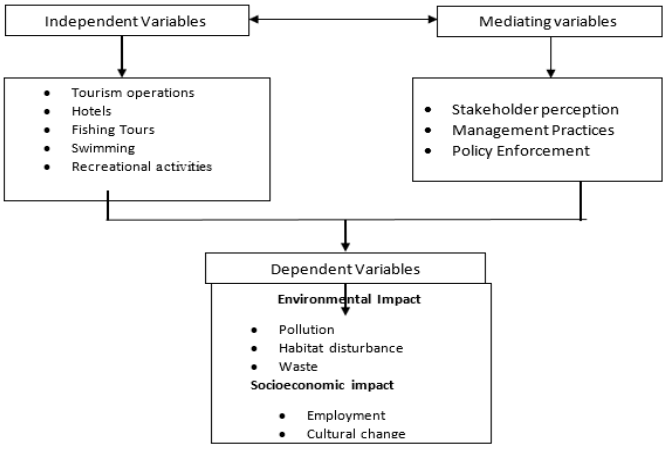

Figure 1: *Conceptual framework for the study*
Source: Researcher constructs, 2025

2.3 Empirical Research Gap

Globally, several studies have shown that coastal tourism contributes significantly to environmental stress. Gössling (2002) identified that beach tourism leads to biodiversity loss, pollution, and the overuse of natural resources. Similarly, Davenport and Davenport (2006) found that unsustainable coastal tourism practices contribute to shoreline erosion, coral reef degradation, and poor waste management. More recent research by Seraphin, Sheeran, and Pilato (2018) highlights the problem of over-tourism, which causes overcrowding, freshwater shortages, and declining tourist satisfaction in many popular coastal destinations. These global findings underline the importance of implementing sustainable practices in emerging destinations such as Tanga District.

Regionally within Africa, coastal tourism has emerged as a key economic driver but has also generated ecological and cultural challenges. Mbaiwa (2015), studying Botswana's tourism sector, noted that while tourism created jobs and stimulated local economies, it also resulted in cultural commodification and environmental degradation. Akama and Kieti (2017), focusing on Mombasa, Kenya, found that coastal communities benefited from employment in hotels and tour operations, yet tourism activities caused negative impacts such as beach encroachment, poor waste management, and declining fish stocks linked to recreational demand. These findings show a clear trade-off between the economic benefits and environmental costs of coastal tourism.

In Tanzania, most of the existing literature focuses on Zanzibar. Anderson (2013) documented that tourism created substantial income-generating opportunities but also contributed to beach pollution, habitat disturbance, and conflicts over land use. Muhanna (2017) noted that poor waste management and unregulated coastal development continue to threaten the sustainability of Zanzibar's tourism sector. Similarly, Gössling and Schulz (2015) highlighted that while Zanzibar's tourism increased foreign exchange earnings, it also generated excessive demand for freshwater, deforestation for hotel development, and growing inequality between residents and investors. Mohammed (2016) further pointed out that weak institutional enforcement exacerbates these challenges, leaving many communities vulnerable to negative impacts. Despite this body of knowledge, literature on Tanga District is still scarce. Tanga's beaches, including Pangani, Ushongo, and Saadani, are emerging destinations attracting both domestic and international tourists. However, empirical studies documenting the environmental and social impacts in this region are limited. In 2020, anecdotal reports from the Ministry of Natural

Resources and Tourism [MNRT] suggest persistent challenges such as beach littering, sand mining, overfishing driven by tourist demand, and limited community involvement in tourism decision-making processes (MNRT, 2020). This indicates a clear research gap, as the growing tourism industry in Tanga has not been adequately studied in terms of its environmental, social, and economic consequences.

3.0 MATERIALS AND METHODS

This study employed a mixed-methods and cross-sectional design, integrating Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) principles to examine tourism impacts along the Tanga coastline. Six beach sites were selected through stratified purposive sampling to represent varying tourism intensities. A sample size of 200 respondents was used, comprising 120 household surveys, 35 key informant interviews, and 45 participants in focus group discussions. Additional data were gathered through field observations, transects, quadrats, photography, and participatory mapping. Secondary information was obtained from policy documents, environmental reports, and academic literature.

Quantitative data were coded and analyzed using SPSS to generate descriptive statistics and comparative assessments, while environmental measurements were summarized using observational rankings. Qualitative data from interviews and FGDs were analyzed thematically using NVivo to capture community perceptions, governance challenges, and environmental concerns. Participatory maps were digitized to illustrate sensitive and degraded areas. Combining these approaches enhanced the validity, reliability, and depth of the study, providing a comprehensive understanding of the socioeconomic and environmental effects of tourism operations in Tanga District.

To contextualize the field findings, Tanga City Council reports, National Environmental Management Council (NEMC) recommendations, tourism arrival statistics, and land-use plans were reviewed alongside relevant EIA guidelines and marine conservation strategies to frame the policy environment. Quantitative survey data were coded and analyzed using descriptive statistics, with tables and charts illustrating environmental indicators across the three beach categories. Qualitative data from observations and interviews were examined through thematic content analysis, using iterative coding to identify patterns in perceived impacts, governance challenges, community participation, and tourism practices, with themes triangulated across respondent groups to enhance analytical

rigor. Ethical standards including informed consent, confidentiality, voluntary participation, and respectful engagement with local beach communities were strictly observed, and all necessary approvals were obtained from tourism authorities and local government before data collection.

4.0 RESULTS

4.1 Demographic Characteristics of the Respondents

The demographic profile of the respondents is provided in this section. Knowing these features is crucial because they give background information about the sample and aid in interpreting the findings considering the socioeconomic and personal characteristics of the respondents. The demographic variables considered include sex, education level, occupation, and duration of residence in the study area.

4.2 Gender of the Respondents

The findings in Figure 2 shows that majority of the respondents were males (56.4%) while female were 43.6%. These results indicate that men were slightly more represented in the study sample than women.

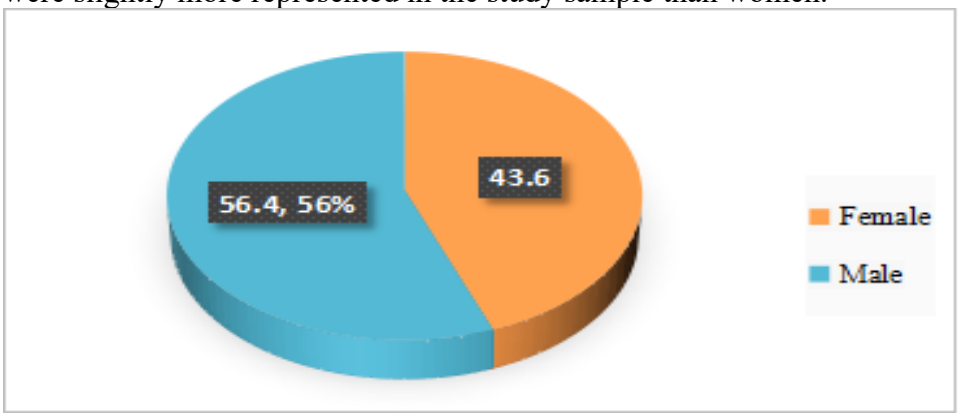

Figure 2: Distribution of respondents by gender

4.3 4.3 Education Level of the Respondents

Figure 3 shows that, majority of the respondents had attained secondary education and college/university level (33.8% each), followed by primary education (22.5%). A smaller proportion had informal education (7.5%) and other forms of education (10.4%). This indicates that most respondents were fairly educated, with a strong representation of secondary and higher learning levels.

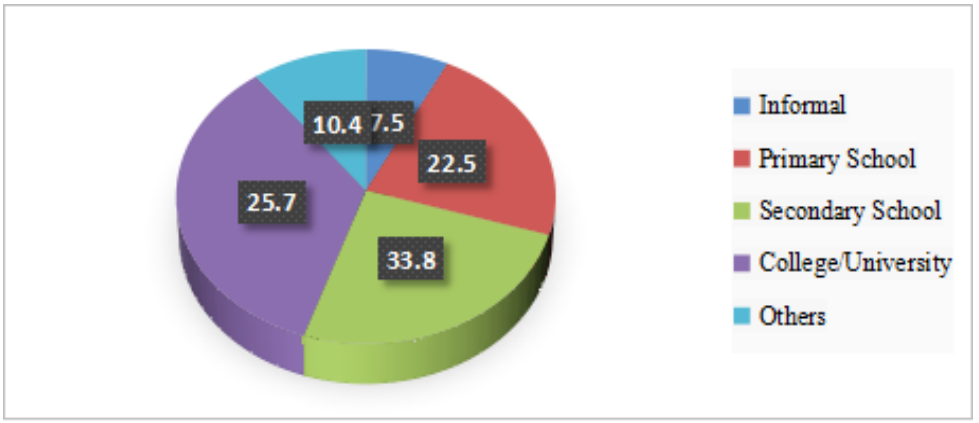

Figure 3: *Distribution of respondents by education level*

4.4 Respondents by Occupation

Figure 4 indicates that the largest proportion of respondents were engaged in business activities (25.6%), followed closely by fishermen (24.1%). Farmers accounted for 20.3% of the respondents, while tourism operators represented 16.9%. The smallest group fell under the "Others" category, making up 13.1% of the respondents. This distribution shows that the study area has a diverse economic base, with business and fishing being the dominant sources of livelihood among participants.

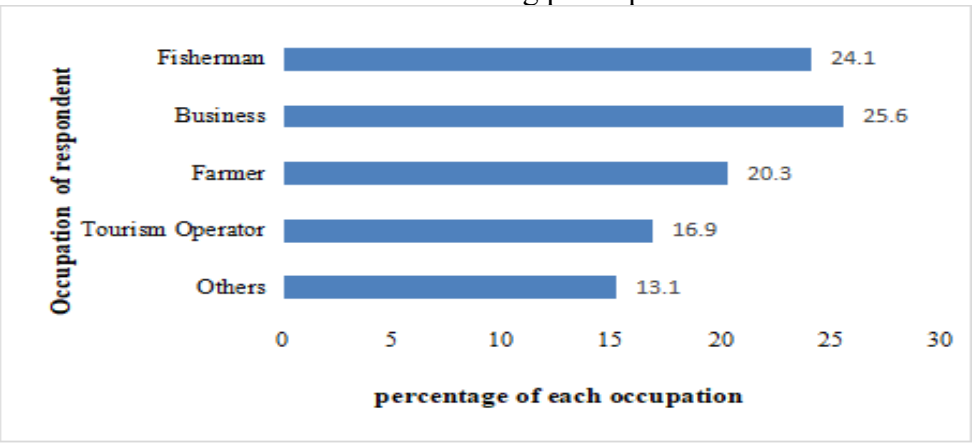

Figure 4: *Respondents by Occupation*

4.5 Respondents by Duration of Residence

Figure 5 indicate indicates that most of the respondents had lived in the area for 6–10 years (25.5%), followed by 11–15 years (22.2%). A smaller proportion reported residence duration of 0–5 years (19.3%), 16–20 years (17.3%), and over 21 years (15.7%). This shows that most respondents had medium-term settlement experience in the study area.

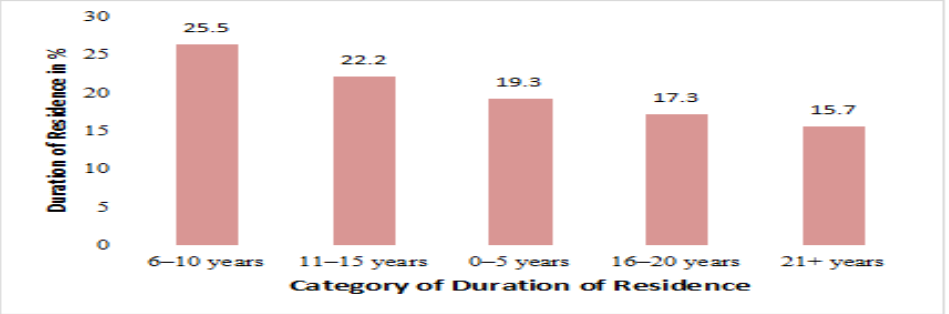

Figure 5: *Respondents by Duration of Residence*

4.6 Tourism Operations Taking Place Along the Beaches in Tanga District and the Associated Environmental and Social Effects

This part of the study presents the primary tourism activities taking place along the beaches in Tanga District and examines their observable environmental and social effects. Specifically, it highlights the main operations currently conducted, followed by environmental and social impacts analysis on local communities.

4.6.1 Primary tourism operations currently taking place along the beaches in Tanga District

Figure 6 shows that the most common tourism operations along Tanga's beaches are swimming (20.4%) and beach hotels (18.6%), followed by Resort (15.2%). Fishing tours account for 12.7%, while cultural tourism and boat tours make up 9.4% and 9.3%, respectively. Snorkeling or diving contributes 9% of activities. A small portion (2.8%) involves other activities like beach games and nature walks. These results highlight a variety of beach-related tourism activities, with a strong focus on water-based recreation and accommodation services.

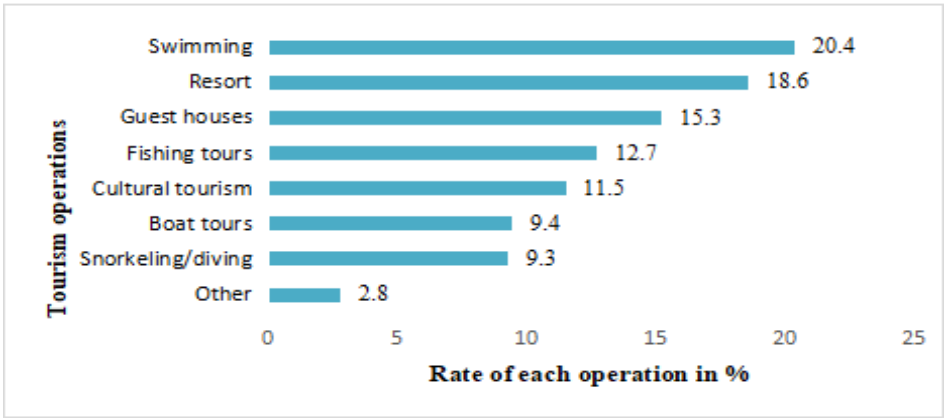

Figure 6: *Primary tourism operations currently taking place along the beaches in Tanga District*

4.6.2 Environmental effects of tourism activities along the beaches in Tanga District

Figure 7 presents the most prevalent environmental effects caused by tourism activities along the beaches of Tanga District which are mangrove destruction and disturbance of marine life, each accounting for 21.3% and 21.2% respectively. These findings were followed by coastal erosion (16.6%) and water pollution (17.3%). Increased waste (litter) was reported by 10.4 % of respondents, while noise pollution accounts for 9.1%. A small proportion of respondents (4.1%) indicated that there were no environmental effects caused by tourism activities.

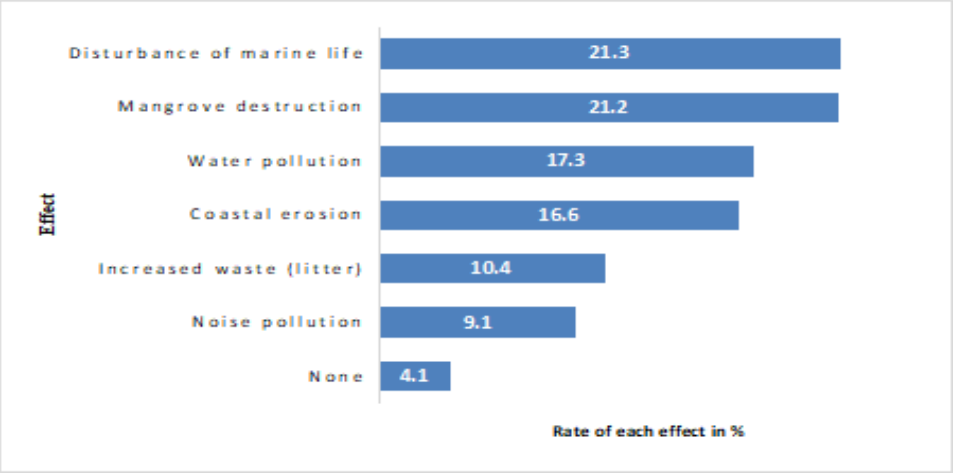

Figure 7: *Environmental effects of tourism activities along the beaches in Tanga District*

4.7 Social Effects of Tourism Activities along the Beach in Tanga District

Figure 8 show that, the most significant social effect of tourism activities along Tanga's beaches is the creation of employment opportunities, reported by 24.3% of the respondents. This is followed by income generation at 20.5%, and migration or influx of people at 13.3%. Cultural changes account for 13.2% of the responses, while land conflicts and increased cost of living represent 10.5% and 10.1%, respectively. A smaller percentage (7.1%) indicated other social issues such as crime increase or overcrowding. These findings highlight that while tourism contributes positively to local livelihoods through jobs and income, it also brings about socio-cultural and economic pressures on the local communities.

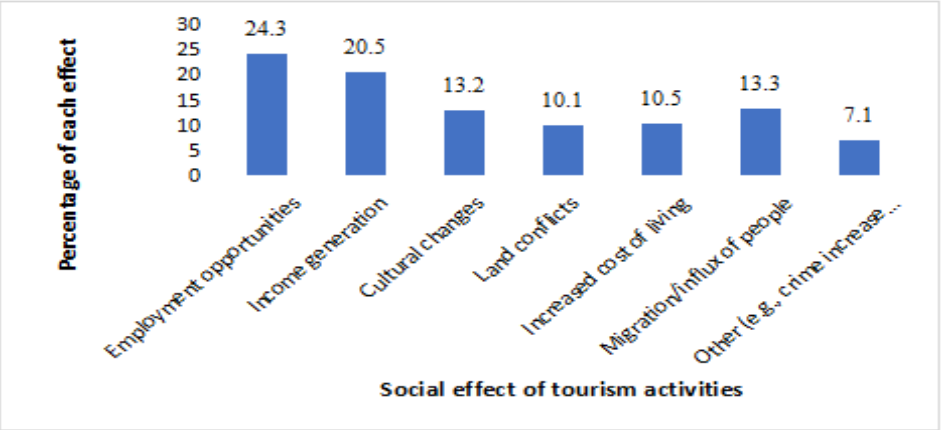

Figure 8: Social effects of tourism activities along the beaches in Tanga District

4.8 Local stakeholders' perceptions and awareness regarding tourism's environmental and social impacts along the beaches in Tanga District

Figure 9 shows that the most recognized benefit of tourism by local stakeholders is job creation, with 28.3% of the respondents acknowledging that tourism creates employment opportunities for local people. This is followed by concerns over increased waste and pollution (22.4%) and improvements in local roads and services (18.2%). Additionally, 13.1% of stakeholders noted the loss of traditional culture because of tourism development. Other concerns include overcrowding and land conflicts (9.4%) and the negative impact on marine life and coastal areas (8.6%). These results suggest that while local stakeholders appreciate the economic contributions of tourism, they are also aware of its environmental and cultural drawbacks.

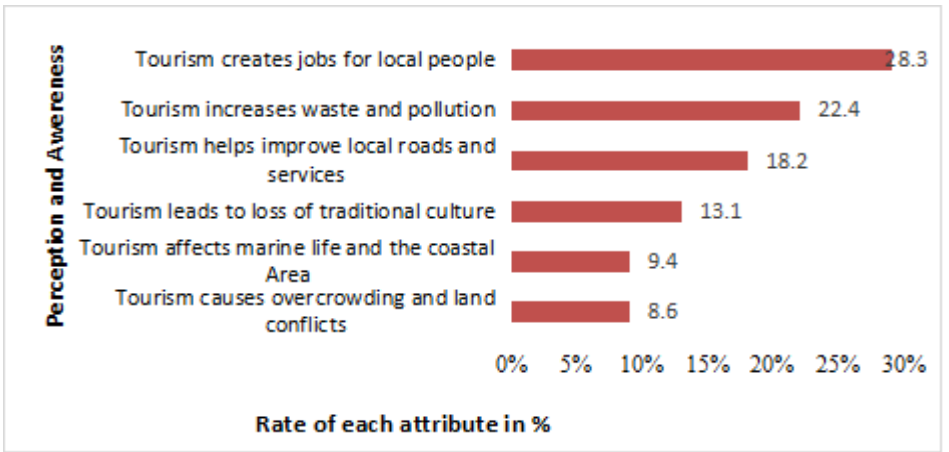

Figure 9: *Perceptions and awareness regarding tourism's environmental and social impacts along the beaches in Tanga District*

4.9 Environmental and social management practices employed by tourism operators and local authorities in Tanga District

Figure 10 shows that the most common environmental and social management practice implemented by tourism operators and local authorities is regular beach cleaning and waste collection as indicated by 25.1% of the respondents. More findings from most of the respondents show that the involvement of local communities in tourism management activities (16.3%) and environmental education programs aimed at both tourists and locals (21.2%). Restricted access to vulnerable beach areas scored 14%, while the usage of environmentally friendly infrastructure, such as solar energy and adequate sanitary facilities, accounts for 14.6%. Lastly, the adoption of ecotourism practices represents 8.5% of the responses.

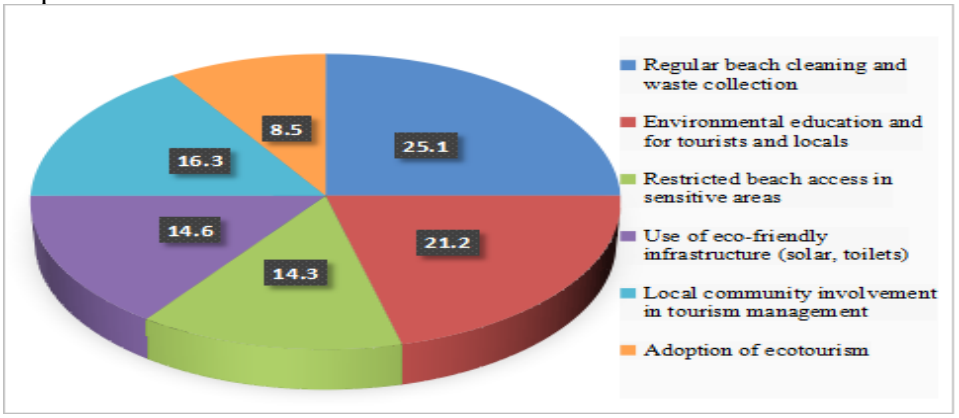

Figure 10: *Management practices employed by tourism operators and local authorities*

5.0 DISCUSSION

5.1 Primary Tourism Operations Taking Place Tanga District

The findings reveal that tourism activities along the beaches of Tanga District are primarily centered around swimming (20.4%) and accommodation services, notably resorts (18.6%) and guest houses (15.3%). These results align with coastal tourism patterns observed in other regions of Tanzania, such as Zanzibar and Bagamoyo, where beach-related recreation and accommodation dominate tourist preferences (Anderson et al., 2019). The notable presence of fishing tours (12.7%) and cultural tourism (11.5%) underscores an emerging interest in experiential and nature-based tourism. However, the relatively low engagement in activities like snorkeling and diving (9.3%) and boat tours (9.4%) suggests either limited marine tourism infrastructure or under promotion of marine biodiversity assets. The diversity of activities points to a moderate level of tourism development, but with significant potential

for sustainable expansion, especially in underutilized sectors like eco-tourism and underwater recreation.

5.2 Environmental Effects of Tourism Activities along the Beach in Tanga

The most pressing environmental effects associated with tourism activities along the beaches of Tanga are mangrove destruction and disturbance of marine life, each cited by 21.3% of respondents. These findings highlight the increasing pressure on coastal ecosystems, particularly on habitats vital for biodiversity and fish breeding. The equal proportions reported for coastal erosion and water pollution (17.3%) further demonstrate the vulnerability of shorelines to unsustainable development, runoff from tourist facilities, and inadequate waste management systems. Increased waste or littering, although lower in frequency at 10%, remains a visible environmental concern that negatively affects aesthetic value and marine health. Additionally, noise pollution reported by 9.1% of respondents can disrupt both human well-being and animal behavior, especially in zones close to hotels, resorts, and entertainment areas. Only a small portion (4.1%) of participants believed tourism had no environmental impact, reinforcing the wide perception of ecological disturbance linked to tourism.

These results align with previous studies, such as those by Ghebremariam et al. (2020), who emphasized the cumulative impacts of unregulated tourism on Tanzania's coastal environments. The destruction of mangroves and marine habitats threatens not only biodiversity but also the livelihoods of coastal communities that depend on healthy ecosystems for fishing, climate regulation, and natural protection from storms. This calls for the implementation of integrated coastal zone management strategies and stricter enforcement of environmental policies to ensure that tourism development is aligned with conservation goals. Despite these ongoing environmental concerns, there are continuing efforts in place by the government, local communities, and conservation groups to protect these critical areas due to their immense importance to the surrounding society.

5.3 Social Effect of Tourism Activities along the Beach in Tanga District

Tourism's socio-economic impacts in Tanga District are mixed. On one hand, the sector contributes positively through employment creation (24.3%) and income generation (20.5%), which is consistent with the broader literature on tourism's role in rural livelihoods (UNWTO, 2022).

On the other hand, negative social outcomes are also evident. Migration and the influx of outsiders (13.3%) introduce new social dynamics, while cultural change (13.3%) suggests potential erosion of traditional practices. Land conflicts (11.1%) and rising costs of living (10.5%) reflect increased competition for space and resources, often associated with tourism-induced gentrification. These findings mirror observations in other coastal regions like Pangani and Mafia Island, where the rapid expansion of tourism has triggered similar tensions (Kombe & Kreibich, 2011). Therefore, while tourism brings economic gains, the need to safeguard cultural heritage and ensure equitable resource access remains paramount.

5.4 Stakeholder Perceptions of Tourism's Environmental and Social Impacts in Beach Areas

Local stakeholders in Tanga District demonstrate a balanced understanding of tourism's benefits and drawbacks. A significant proportion (28.3%) recognized employment creation as a key benefit, affirming the sector's economic importance. Additionally, 18.2% cited improvements in roads and services, indicating that tourism contribute indirectly to local development. However, 22.4% expressed concern over increased pollution, and 13.1% pointed to cultural loss issues. These results reveal the truth of other scholars including (Salazar, 2012). Who's frequently highlighted the that although the tourism has several important remaining with some prone to some areas, include overcrowding, land disputes, and threats to marine life. These findings reveal a nuanced perception among residents and tourism actors: they value the economic opportunities but are also aware of the associated environmental and socio-cultural risks. This dual awareness is crucial for shaping inclusive and sustainable tourism policies, as it reflects a readiness to engage in participatory tourism governance models.

5.5 Environmental and Social Management Practices Used by Tourism Operators and Local Authorities

The results show a commendable range of environmental and social management practices in place, led by regular beach cleaning (25.1%) and environmental education (21.2%). These practices reflect basic but important mitigation strategies for maintaining coastal aesthetics and raising awareness. Local community involvement in tourism management (16.3%) marks progress toward participatory tourism governance, echoing best practices in sustainable tourism frameworks promoted by UNEP and the Ministry of Natural Resources and Tourism. The use of eco-friendly infrastructure (14.6 %) indicates some investment in greener operations, although this percentage suggests there is still room for

broader adoption. Restricted access to sensitive areas (14.3%) and the promotion of ecotourism (8.5%) also demonstrates attempts to conserve fragile ecosystems. These efforts, while notable, would benefit from greater institutional support, technical training, and incentives to encourage wider adoption. Strengthening coordination between tourism operators, local authorities, and conservation actors will be essential to scaling up sustainable tourism management in Tanga's coastal belt.

6.0 CONCLUSION AND RECOMMENDATIONS

This study assessed the environmental and social impacts of tourism activities along the beaches of Tanga District in Tanzania. Findings revealed that tourism provides notable socioeconomic benefits, particularly through employment and income generation. Primary activities such as swimming, beach hotels, and fishing tours dominate the area. However, these activities also contribute to environmental challenges like waste accumulation, water pollution, and mangrove destruction. Social effects such as cultural change, land conflicts, and increased cost of living were also observed. Stakeholders recognized both the benefits and drawbacks of tourism, indicating a balanced awareness of its impacts. Although management practices like beach cleaning and environmental education are in place but these are not uniformly applied. There is still a need for stronger community involvement, investment in eco-friendly infrastructure, and stricter regulation of sensitive areas. Overall, while beach tourism holds great potential for local development, sustainable and inclusive strategies are essential for minimizing its negative consequences and ensuring long-term viability.

To promote sustainable tourism development and minimize the negative environmental and social impacts along the beaches of Tanga District, several measures are recommended. First, waste management systems should be strengthened through regular beach cleaning, the installation of adequate disposal facilities, and strict enforcement of anti-littering regulations to curb environmental degradation. Active community involvement in tourism planning and decision-making is essential to ensure that local voices are respected, and benefits are distributed. The use of eco-friendly infrastructure, including solar energy, sustainable sanitation systems, and green building materials, should be encouraged to reduce ecological footprints. Moreover, environmental education programs should target both tourists and residents to raise awareness on sustainable practices and marine conservation. Supporting eco-tourism initiatives will help diversify tourism products, ease pressure on mainstream activities, and promote environmental stewardship. Finally,

protecting sensitive coastal ecosystems such as mangroves and marine habitats through proper zoning regulations and restrictions on development in fragile areas is critical for safeguarding long-term sustainability.

7.0 AKNOWLEDGEMENTS

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Land Re-Classification and Conflicts Proliferation in Selected Villages of Kasulu District Kigoma Tanzania

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Abstract
This study examined how land re-classification following the de-gazettement of Makere South Forest Reserve has shaped land governance failures and the proliferation of land-use conflicts in Kagerankanda Ward, Kasulu District. Guided by a political ecology framework, the study sought to: analyze how allocation procedures influence community perceptions and conflicts; assess the contribution of boundary ambiguities to land disputes; and examine how unmet livelihood benefits fuel grievances and mistrust toward authorities. A mixed-methods case study design was employed, drawing on household surveys (n=120), key informant interviews, focus group discussions, and documentary reviews. Quantitative data were analyzed using descriptive statistics, while qualitative evidence underwent thematic analysis and triangulation. Results indicate that opaque land allocation procedures, elite capture, and inconsistent implementation of the presidential directive intensified mistrust and competing claims between communities and state agencies. Boundary ambiguities, contradictory maps, and coercive enforcement further escalated tensions, while unmet livelihood expectations particularly employment opportunities deepened perceptions of exclusion. The study concludes that land-use conflicts in the area stem from structural governance failures. It recommends harmonization of boundaries, transparent allocation processes, strengthened accountability mechanisms, participatory planning, and inclusive benefit-sharing frameworks to rebuild trust and enhance equitable land governance.

Keywords: Land Governance, Land Conflicts, Corruption in Land Allocation, Community Participation

1.0 INTRODUCTION

Land reclassification following de-gazettement of protected areas is a deeply political process, involving struggles over access, authority, and resource control. In Africa and the Global South which comprises Latin America, Asia, and Oceania often characterized by lower income levels, emerging economies, and historical marginalization. Such

reconfigurations often intensify rural tensions and social conflicts, disrupting property relations (Cotula et al., 2009). When land previously under state or conservation control is redistributed without transparency or accountability, local communities develop perceptions of dispossession, leading to mistrust and grievances (Peluso & Lund, 2011; Benjaminsen & Bryceson, 2012). Empirical cases from Kenya (Boone, 2014), Mozambique (Gallagher et al., 2019), and Tanzania (Sulle, 2020) show that promised livelihood benefits rarely materialize; instead, outcomes include illegal occupation, violence, and disputes. While scholars agree on the need for transparent governance, debates remain over whether conflicts originate from weak administrative capacity or entrenched patronage networks that favor certain groups.

A second strand emphasizes elite capture and market-driven land governance. Studies from Nigeria (Deininger & Byerlee, 2011), Ethiopia (Cotula, 2013), Malawi (Borras & Franco, 2012), and Cambodia (Alden Wily, 2018) reveal how administrative discretion, high transaction costs, and politically mediated fees systematically exclude the poor and customary land users, privileging elites and external investors. These processes reflect unequal power relations embedded within state institutions, rather than neutral markets. In Tanzania, land allocation practices favor investors over customary landholders, reinforcing inequality and conflict (Olwig, 2019; Benjaminsen & Svarstad, 2021).

A third focus critiques boundary demarcation and enforcement, especially when driven by technocratic approaches. Research from Uganda (West et al., 2006), Rwanda (Schmidt-Soltau & Brockington, 2007) and Tanzania (Neumann, 1998) shows that boundary surveys without local participation undermine livelihoods and provoke resistance. Ambiguous boundaries lead to evictions and coercion, triggering retaliatory encroachment and ongoing conflict (German et al., 2011; Gallagher et al., 2019). While reforms and participatory planning can mitigate conflicts (Ribot & Larson, 2012), scholars warn that unless patronage networks and power asymmetries are addressed, conflicts will persist (Sulle, 2020). The case of Kagerankanda illustrates how de-gazettement, elite capture, and boundary ambiguities interact to sustain land conflicts in Kasulu District. The general objective of this paper was to explore the extent to which land re-classification has influenced land governance failures in Kagerankanda Ward, Kasulu District. This general objectives was achieved by the following specific objectives: (i) to analyses the extent to which land allocation procedures shape community perceptions and conflicts proliferation in the selected study ward, (ii) to assess how

boundary ambiguities contribute to land-use conflicts among land use actors in the study localities and (iii) to examine the extent to which unmet livelihood benefits drive community grievances and mistrust toward district authorities in the land governance in the study area.

2.0 THEORETICAL FRAMEWORK

This study employed Political Ecology as its theoretical framework to address how land re-classification has influenced land governance failures in the study area. Political ecology is an interdisciplinary analytical framework that examines the interactions between political, economic, social, and ecological processes, with particular emphasis on how power relations shape access to, control over, and use of natural resources. The framework emerged in the 1970s and 1980s from the convergence of cultural ecology and political economy, and is commonly associated with scholars such as Eric Wolf, Piers Blaikie, Harold Brookfield, and later Paul Robbins. Blaikie and Brookfield (1987) formally articulated political ecology to explain environmental change and resource degradation by linking local land-use practices to broader political and economic structures, particularly in developing-country contexts. Since then, the framework has been widely applied in studies of land tenure reforms, conservation, agrarian change, and natural resource conflicts across Africa, Asia, and Latin America.

A central premise of political ecology is that access to land and natural resources is mediated by institutions and power-laden decision-making processes that often privilege certain actors while marginalizing others. This premise directly guided the study's analysis of how land allocation procedures shape community perceptions and the proliferation of conflicts in Kagerankanda Ward. From a political ecology perspective, land re-classification is not treated as a neutral administrative exercise but as a political process embedded in district-level authority, legal frameworks, and historical land relations. By examining who controls land allocation decisions, whose interests are prioritized, and how local communities interpret these processes, the framework helped explain how perceived injustices, exclusions, and procedural unfairness generate conflicts and mistrust. Similar applications have shown that bureaucratic land reforms frequently provoke contestation when they undermine customary systems or exclude local participation (Blaikie, 2008; Lund, 2016).

Political ecology also emphasizes spatial control, territorialization, and ambiguity as key drivers of resource conflicts, making it highly relevant

for assessing how boundary ambiguities contribute to land-use conflicts among different land-use actors. Boundaries are understood not merely as technical demarcations but as political constructs shaped by competing claims, historical narratives, and institutional weaknesses. Situating boundary disputes within broader processes of land re-classification, decentralization, and state authority enabled the study to trace how unclear or contested boundaries intensify competition among farmers, pastoralists, and state actors. Existing political ecology scholarship demonstrates that such ambiguities often stem from mismatches between statutory and customary tenure systems, creating persistent governance failures

3.0 MATERIALS AND METHODS

This study employed a mixed-methods case study design to examine how land reclassification following the de-gazettement of protected areas has reshaped governance arrangements, access to land and natural resources, and the emergence of local conflicts in Kagerankanda Ward, Kasulu District. A case study approach was considered appropriate because it allows for an in-depth analysis of complex, context-specific interactions between political, institutional, and socio-ecological processes (Yin, 2018). Consistent with a political ecology framework, the mixed-methods design enabled the integration of qualitative insights on power relations, perceptions, and governance practices with quantitative evidence on land-use change and conflict dynamics (Robbins, 2012; Creswell & Clark, 2018).

Kagerankanda Ward is geographically located at approximately 4°39′36″ South Latitude and 30°40′8″ East Longitude. The ward was purposively selected due to the significant land-use transformations that followed the de-gazettement process, which have intensified tensions between local communities and conservation authorities. These transformations have altered customary land access arrangements and reconfigured institutional authority over land, creating conditions for contestation and conflict (Peluso & Lund, 2011; Benjaminsen & Bryceson, 2012). As such, Kagerankanda provides a critical empirical setting for examining how governance failures and unequal power relations contribute to persistent land-related conflicts in rural Tanzania.

Data were collected from 120 respondents purposively sampled from the target population using different data collection tools such as household surveys, key informant interviews, focus groups, and document reviews. Quantitative data were analyzed with descriptive statistics, while

qualitative data underwent thematic analysis, with triangulation to ensure validity and reliability. Ethical standards, including informed consent and confidentiality, were as well strictly observed.

4.0 RESULTS AND DISCUSSION

The results are presented as answers to the research questions addressed by this study which essentially were concerned with the nature and character of the respondents, ways in which land allocation procedures influences community perceptions and conflicts; examination of the role played by boundary ambiguities in contributing to land-use conflicts among different land use actors and the extent to which unmet livelihood benefits has fostered community grievances and mistrust and conflicts proliferation.

4.1 Socio-Demographic Features of the Respondents

This study started by analysing socio-demographic features of the respondents such as age, sex, education, and income and occupation as these were important indicators of the respondent's nature of their perceptions, decision-making, and access to resources (Adams & Hutton, 2007) of which its understanding was crucial in the identification of vulnerabilities and power dynamics that contribute to governance issues (Cotula et al., 2009). Results of the data analysis regarding the socio-demographic features of the respondents were as depicted by Table 1.

Table 1: *Socio-demographic features of the respondents*

Data set	N	Minimum	Maximum	Mean	Std. Deviation
Age	121	2	8	5.62	1.490
Sex	121	1	2	1.25	.434
Occupation	121	1	5	1.74	1.196
Education Level	121	1	4	2.02	.632
Marital status	121	1	5	1.44	1.007
Longevity	121	1	8	3.60	2.737
Ethnicity	121	1	3	1.33	.597
Birth District	121	1	10	3.93	3.291

Source: Field data, 2025

Data in Table 1 illustrates that majority of the respondents involved in this study were predominantly native to the area. Their ages ranged from 2 to 8 on a coded scale with a mean score of 5.62 (SD = 1.49), indicating that the majority were mostly adults in mid-productive age groups. Males slightly outnumbered females (mean = 1.25, SD = 0.434) not because males were populous but because of the sampling design employed. Additionally, majority of the respondents were occupationally agro-

pastoralists as farming and herding were dominant displaying a mean score of 1.74 (SD = 1.196). Educational wise, the respondent's majority had only attained basic education the (average score of 2.02 and SD = 0.632) which is normal for the rural communities. Marital status (mean = 1.44, SD = 1.007) also indicates that the majority were married, while the average years lived in the area being 3.60 (SD = 2.737) which again reflect a long-term settlement. Furthermore, ethnicity scores (mean = 1.33, SD = 0.597) indicates the prevalence of limited diversity, with most belonging to the dominant local group though birth districts tended to vary widely (mean = 3.93, SD = 3.291).

In short, the findings indicate that land-use governance failures foster conflict by exposing communities to boundary disputes and tenure ambiguities. Long-term, native residents with strong customary ties rely heavily on farming and herding, making them vulnerable to land disputes. Low education levels limit understanding of formal land systems, allowing powerful actors to exploit institutional weaknesses. Internal competition for land, rather than inter-ethnic conflict, is heightened by unclear access rules. These demographic traits highlight a governance environment marked by weak institutions, poor integration of customary systems, and high land dependence, all contributing to persistent and escalating land-use conflicts. The conclusion aligns closely with other empirical studies (see Boone, 2014; Cotula, 2013) succinctly indicates that long-term settlement, strong customary attachments, and livelihood dependence on farming or herding heighten sensitivity to land reallocations and fuel conflict where governance is weak. Similar researches by Benjaminsen & Svarstad (2021; German et al., 2011) establishes that low education limits communities' ability to engage with formal land-administration systems, widening gaps between statutory and customary tenure and enabling elite capture or administrative manipulation. Overall, the patterns observed by this study are consistent with broader empirical evidence demonstrating that weak, fragmented, or exclusionary land-governance structures systematically intensify land-use conflicts in rural, livelihood-dependent communities (Peluso & Lund, 2011; Sulle, 2020).

4.2 The Political Ecology Settings of the Land Use Conflicts

Documentary records from Kasulu District Council indicate that in 2017 the Government of Tanzania authorized the allocation of 10,012 hectares from Makere South Forest Reserve to the villagers of Kagerankanda ward. This directive was intended to resolve long-standing land pressure and provide space for farming and grazing. However, subsequent

documentation reveals inconsistencies in the implementation. Minutes from district planning meetings show that 5,387 hectares of the allocated land were reabsorbed by the District Council for administrative planning and re-distribution, leaving only fragmented sections accessible to villagers. Parallel correspondence from Tanzania Forest Services (TFS) indicates that the same land continued to be managed as protected forest under GN 718 of 2018, despite the presidential directive.

Village records from Kagerankanda further reveal repeated complaints filed by residents between 2018 and 2023 regarding boundary uncertainty and TFS enforcement actions. Several letters submitted to the Ward Executive Officer describe confiscation of crops, livestock, and farm tools, with villagers requesting clarification on the "true boundary" dividing the reallocated land from the reserve. These documentary grievances align with survey notes from the 2018 boundary demarcation exercise, which indicate incomplete marking and contradictions between maps held by the district and those held by forest authorities. The lack of a unified boundary map led to overlapping claims by TFS, TAWA, district planners, and village leadership.

Key informant narratives provided reinforce the picture emerging from official records. Villagers recount that although they were Promised Land, officers on the ground continued to treat them as "invaders," demanding payments ranging from Tsh 20,000 to 50,000 per acre for access. Some informants reported paying even larger sums up to Tsh 200,000 without receiving an official plot or any receipt. These testimonies, corroborated by village meeting minutes documenting complaints of bribery and extortion, depict a governance environment where environmental regulation becomes a tool for rent extraction rather than protection. Informants also describe episodes of confrontation, including the destruction of TFS camps, which they attribute to accumulated frustration arising from confiscations, arrests, and violence during enforcement operations such as Operation 21 Days.

These accounts paint a big picture of the political ecological condition of the study area that indicates the existences of several elements of state failures that contributed to land use conflicts. Based on this, respondents were asked in multiple responses to provide opinion on who such situation contributed to the conflicts proliferation over resources use in the study area. Analysis of their opinions was as depicted in Table 2.

Table 2: *Respondents perception on land governance issues leading to conflicts*

Conflict Issue	Frequency (n)	Percentage (%)
Farms encroachment	48	40%
Favouritism	36	30%
Trespasses and restricted Pastures	30	25%
Employment	7	5%
Total	**121**	**100%**

Source**:** Field data, 2025

Information presented in Table 2 captures different political ecological issues that define conflicts proliferation in the study area. They range from land allocation and farm encroachments, boundaries ambiguities and corruptive practices and as well as discontent of the local communities arising from unmet livelihood benefits accrued from parting their ancestral land to conservation businesses.

4.3 Impact of Land Allocation Procedures on Community Perceptions

The ambiguous in land allocation procedures experienced in the study localities were presented in the contexts of the farm encroachment. Majority (40 percent) of the respondents involved in this study perceived this problem as the leading cause behind land use conflicts proliferation in the study area. Both the state and the community perceived each other as the intruder. When President Magufuli announced that over 10,000 hectares would be released for community farming, villagers understood this as recognition of their long-standing presence and rights. However, the subsequent reallocation by the district authorities created confusion and resentment. Because boundaries were poorly communicated and enforcement inconsistent, villagers felt that state crackdowns, crop destruction, and livestock seizures were unjust acts of state encroachment on land they believed they had legitimately been granted. Meanwhile, state actors framed continued farming activities as illegal expansion into protected zones, reinforcing their perception of villagers as deliberate encroachers.

These conflicting interpretations deepened mistrust and turned land governance into a cycle of accusations and force. Community members viewed the shifting boundaries, illegal fees, and aggressive policing as evidence that the state weaponized the concept of “encroachment” to exclude them, favour outsiders, and extract rents. Authorities, observing increasing settlement, herding, and farming within the reserve, interpreted

these as deliberate violations threatening conservation. Because the land allocation lacked transparency, participation, and stable demarcation, both sides came to view each other through the lens of encroachment. Thus, farm encroachment is not merely a physical act but a symbol of overlapping claims, procedural failures, and competing narratives of legitimacy in Makere South.

These findings resonate strongly with the findings established by a study conducted by Bhusal et al., (2018) in Nepal's Terai whose results indicated how decades of centralized forest policies, poorly communicated boundaries, and weak enforcement produced cycles of eviction, local resistance, and eventual moves toward community forestry as a way to rebuild trust and clarify rights. Similarly, large-scale analyses done by Pacheco & Meyer, (2022) from the Brazilian Amazon demonstrate that unclear or undesignated public tenure regimes tend to increase land-clearing and conflict, while secure and well-defined tenure reduce unauthorized expansion of the society dynamics like what happened in the study locality when presidential promises were later reinterpreted by local officials. Similarly, recent ethnographic research done by Santini (2025) in Kenya's Maasailand documents how formalization processes and uneven demarcation (e.g., subdivision of communal ranches or reclassification of community lands) generate enclosures, elite capture, and perceptions of state-led dispossession that mirror Makere South's escalation from disputed allocation to policing and mutual delegitimization.

In all cases it is obvious that unclear and inconsistently enforced land allocation procedures turned farm encroachment into a contested symbol of legitimacy, deepening mistrust between the state and community. Poor communication, shifting boundaries, and competing interpretations of rights fuelled a cycle of accusation and conflict, much like cases reported in Nepal, the Brazilian Amazon, and Kenya. Overall, the Makere South experience illustrates how ambiguous tenure systems amplify land use conflicts and undermine cooperative governance.

4.4 Favoritism, Trespasses and Land-Use Conflicts in the Kagerankanda ward

Favouritism in land allocation remains a central driver of land-use conflicts in Kagerankanda Ward. 35 percent of all the interviewed respondents perceived the subsequent reallocation of the land reapportioned following the presidential order by district authorities as

discriminatory and captured by elites. As one farmer, *Mr. Bukuru Mahebhule (KI–03)*, lamented,

> *"We applied for the land Magufuli promised us, but officials gave most of it to people who are not even from our villages."*

Another villager from Mvinza, *Ms. Rehema Kaghorobha (KI–08)*, added,

> *"Some officers kept telling us to pay 'something small' to be considered, but even after paying, we received nothing."*

These accounts were noted to be consistent with the ACT Wazalendo (2023) fact-finding report, which documented allegations of land being allocated to influential outsiders while locals were denied access. Such patterns illustrate how opaque bureaucratic decisions have deepened perceptions of exclusion and intensified local grievances.

Contested trespasses which were in part shaped by unclear boundaries and inconsistent enforcement were noted to have further escalated tensions between communities and conservation authorities. Respondents asserted that their legitimate livelihood activities have been wrongly criminalized due to shifting reserve demarcations. As Mr. Juma Kinyentama (KI–11) stated,

> *"If the President gave us this land why does TFS now arrest us for farming on it?"*

However, analysis of the state documents paints yet a contradictory picture, framing villagers as persistent encroachers. For example, the official report on "Operation Twenty-One Days" (URT, 2014) describes the presence of "invaders" within protected forest zones—a categorization that villagers strongly reject. This divergence between community experiences and state interpretations reflects broader institutional failures in communicating, legitimizing, and enforcing boundaries.

These tensions were thus manifested in severe human rights concerns and violent confrontations. Testimonies reveal patterns of excessive force, arbitrary arrests, crop destruction, and confiscation of livestock. One survivor, Mr. Amos Bubaha Nkuki interrogated by this study had these to say;

> *On 13 October 2021, at around 11 a.m., I was ambushed on my 10-hectare farm in Kagera Village by a group of 12 men of which were five TFS guards and seven were village militia all from Kagerankanda village. They accused me of farming inside the Makere South Forest Reserve; while labourers fled, I was beaten with sticks and clubs until I bled. Thereafter I taken to a nearby farm where I was tortured, forced to pick up burning*

> *coals with my bare hands, step on fire with my bare feet, and repeatedly kicked and insulted. They later left me in severe burns, lasting injuries, and permanent deformities in my fingers and abandoned in the wilderness. They also confiscated my bicycles and phone.*

The respondent further claimed that after being left in wilderness in agony he had to crawled in severe pains until he was rescued by the passing cyclist who helped him reach his home in the village. For five months he survived on traditional treatment, unable to work, and a year later he remained in pain, with burn scars that still triggered fever and chills, relying on the support of local businessman and fellow farmer, Selemani Wandwi, who provided medical care at home. Additionally, analysis of the documentary records also shows retaliatory violence by village members, including the burning of TFS camps and killing of officers in 2022 (ACT Wazalendo, 2023). Such reciprocal violence signals the collapse of trust and demonstrates how contested land claims can escalate into cycles of aggression and counter aggression.

Overall, the findings demonstrate that favouritism in land allocation and contested trespasses are mutually reinforcing drivers of conflict in the study ward of Kagerankanda. The convergence of community testimonies and documentary evidence exposes the consequences of non-transparent land governance, ambiguous boundaries, and coercive enforcement. When residents perceive state institutions as favoring outsiders and criminalizing local livelihoods, while authorities interpret local land use as intentional illegality, land governance becomes a site of mutual delegitimization.

The findings from Kagerankanda Ward illustrate how favouritism in land allocation, ambiguous territorial demarcations, and coercive enforcement mutually reinforce land-use conflict, as villagers perceive post-reallocation processes as elite-captured, exclusionary, and riddled with informal payments, while state authorities frame local land use as deliberate illegality. These dynamics mirror global empirical patterns in which non-transparent land governance generates reciprocal delegitimization and cycles of violence. For example, Benjaminsen and Bryceson (2012) document similar tensions in Tanzanian conservation hinterlands where shifting boundaries and militarized enforcement criminalize local livelihoods; Alden Wily's (2011) cross-country analysis of Africa shows that opaque land adjudication routinely privileges politically connected outsiders, producing grievances over dispossession. Borras et al. (2011), examining land conflicts in Southeast Asia and Latin

America, demonstrate how state-backed land reallocations catalyse community resistance and retaliation when perceived as favouring elites. Taken together, the Kagerankanda case aligns with global evidence showing that when land governance lacks transparency, accountability, and participatory legitimacy, communities and state agents enter spirals of accusation, resistance, and violence that undermine both conservation and local rights.

4.5 Influence of Unmet Livelihood Benefits on Community Grievances and Mistrust

Employment-related conflict arose when community expectations regarding job opportunities connected to conservation, land management, or new agricultural ventures were unmet. Although this factor was only raised by 5 percent of all the respondents was noted by this study to still hold water as the majority of the interviewed key informants were of the opinion that the district's land reallocation—especially its support for large-scale farming by external stakeholders—would have created local employment opportunities. However, when such opportunities did not materialize it contributed to the increased frustration among village residents. This mismatch between expectations and outcomes generated claims of discrimination and further deepened villagers' perceptions of bias.

Employment issues were also tied to broader dissatisfaction with governance processes. Because villagers felt excluded from decision-making regarding land allocations, they expected at minimum to benefit from resulting employment. When outsiders secured both the land and the jobs associated with it, the perception of double exclusion emerged. This fuelled resentment, especially given that local unemployment levels were high and many villagers relied on seasonal or casual labour to sustain their households. As such, the absence of employment opportunities compounded the socio-economic vulnerabilities already caused by land scarcity.

Finally, employment-related grievances also signalled a breakdown in trust between communities and district authorities. Villagers felt that authorities used development narratives to justify land reallocation, even though the benefits did not reach local households. The perceived prioritization of outsiders reinforced the belief that the land governance system operated against rather than for the community. Employment issues thus represented a broader conflict driver rooted in unmet expectations, skewed benefit-sharing, and weakening institutional

legitimacy much as resonated with other empirical conclusions of similar nature across many areas of the world. For example, in Ghana (Amoah, 2025) observed that promised jobs from oil-palm projects rarely materialized, favouring outsiders. Similarly, Ethiopian agro-pastoral regions Gebremeskel et al., (2022) reported that experienced displacement without employment benefits, increased conflicts and vulnerability. A global review indicates that across Africa, Asia, and Latin America, communities lose land while investor projects provide few jobs an act which in turn fuel grievances over exclusion and unequal benefits (Yang & He, 2021). Collectively, these studies demonstrate that employment conflicts are structural outcomes of inequitable land governance, not isolated incidents.

5.0 CONCLUSION AND RECOMMENDATIONS

Based on the above discussion the study concludes that land-use conflicts in Kagerankanda Ward stem from systemic failures in land governance, characterized by inconsistent implementation, overlapping claims, and unclear boundaries due to contradictory maps and institutional claims. These conditions foster uncertainty, coercion, and mutual illegitimacy between the state and communities, resulting in heightened tensions and conflict. Additionally, the research has highlighted that opaque land allocation procedures, favoritism, and inconsistent enforcement of boundaries exacerbate tensions, leading to cycles of mutual delegitimization, violence, and mistrust. Furthermore, unmet livelihood expectations, especially regarding employment from conservation and large-scale farming, deepen grievances and feelings of exclusion, undermining institutional legitimacy.

To address these challenges, it is recommended that state agencies ought to harmonize boundary delineations, communicate a unified land-use plan, and establish participatory governance forums that legally protect community rights and clarify institutional mandates. Addressing these issues requires transparent allocation criteria, audits of past decisions, prosecution of corrupt practices, and the creation of community–state monitoring bodies to rebuild trust. Additionally, state authorities ought to adopt inclusive benefit-sharing frameworks that prioritize local employment, and integrate livelihood programs into land interventions. There is also a need to establish coordinated, transparent, participatory governance reforms that align state actions with community rights and development needs.

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Impact of Micro-Credit on the Productivity of Small-Scale Farmers in Bagamoyo District, Tanzania

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Abstract

This study investigates the impact of micro-credit on the productivity of small-scale farmers in Bagamoyo District, Tanzania. While micro-credit programs have expanded in rural areas to improve financial inclusion, their contribution to agricultural productivity remains poorly understood at the local level. A cross-sectional research design was employed, collecting data from 120 smallholder farmers selected through a multistage sampling technique. Both quantitative and qualitative data were obtained using structured questionnaires, key informant interviews, and focus group discussions. Descriptive statistics and multiple regression analysis were applied to examine the relationship between access to micro-credit, input adoption, and crop yields. The findings revealed that 62% of farmers accessed credit in the past three years, primarily from VICOBA and SACCOS. Credit users reported significantly higher adoption of improved seeds (78%), chemical fertilizers (64%), and hired labor (70%) compared to non-users. Consequently, crop yields were higher among credit users, with maize, cassava, and vegetables showing 35%, 20%, and 38% increases, respectively. Regression results confirmed that micro-credit had a statistically significant positive effect on productivity ($p < 0.05$). Despite these benefits, farmers faced challenges such as high interest rates, delayed loan disbursement, small loan sizes, and limited financial literacy, which constrained the full potential of micro-credit programs. The study concludes that micro-credit contributes positively to smallholder productivity but requires institutional and operational improvements. Recommendations include expanding affordable credit schemes, providing financial literacy training, aligning loan disbursement with cropping seasons, strengthening collaboration with extension services, and developing flexible credit products tailored to smallholder needs.

Keywords: *Micro-credit, Small-scale farmers, Agricultural productivity, Smallholder, Bagamoyo*

1.0 INTRODUCTION

Agriculture plays a central role in global economic development, serving as a primary source of food, employment, and income for millions of people worldwide. Globally, agriculture contributes approximately 4% of total world GDP, but its broader impact is far-reaching, as it supports livelihoods, industrial raw materials, and food security. Despite its relatively lower share in GDP in high-income countries, agriculture remains a crucial driver of poverty reduction and socio-economic development in low- and middle-income nations (Pawlak, 2020).

According to Lowder et al. (2025), in Africa, agriculture is even more critical, accounting for over 15% of the continent's GDP and employing nearly 60% of the labor force. The sector is predominantly smallholder-driven, with farmers relying heavily on manual labor, traditional farming techniques, and rain-fed production systems. Agricultural productivity in Africa, remains lower than global averages due to limited access to modern inputs, technology, infrastructure, and financial services. These constraints restrict the ability of farmers to expand production and meet the increasing food demand arising from population growth (Bjornlund et al., 2020).

According to Wudil et al. (2022), Sub-Saharan Africa exhibits similar trends, with agriculture contributing approximately 25–30% of regional GDP and supporting more than two-thirds of the rural population. Smallholder farmers, who constitute the majority, often face chronic challenges, including low capital investment, poor access to markets, and vulnerability to climate variability. As a result, crop yields are far below potential, limiting both household incomes and national food security. Studies have consistently shown that access to financial services, particularly credit, can significantly improve smallholder agricultural performance by enabling timely purchase of inputs, adoption of improved technologies, and expansion of cultivated areas(Sanka & Makhura, 2025). In Tanzania, agriculture remains the backbone of the economy, contributing around 24% of the country's GDP and providing employment for over 70% of the population, most of whom are rural smallholder farmers. The sector supports national food security, generates export earnings through cash crops such as coffee, tea, and cashew nuts, and provides raw materials for agro-processing industries. Despite its importance, productivity among small-scale farmers in Tanzania is constrained by limited access to capital, modern inputs, extension services, and mechanization. In rural districts such as Bagamoyo, farmers

predominantly rely on rain-fed cultivation and traditional farming methods, which restrict crop yields and income levels(Sawe, 2025).

According to Raphael (2024) Access to micro-credit has been widely recognized as a key mechanism to alleviate financial constraints and stimulate agricultural transformation. By providing small-scale farmers with loans, credit institutions enable them to purchase improved seeds, fertilizers, irrigation equipment, and hire labor, thereby enhancing productivity and farm income. In Bagamoyo District, micro-credit interventions through Savings and Credit Cooperative Societies (SACCOS), Village Community Banks (VICOBA), and microfinance institutions (MFIs) are becoming increasingly common (Lupia & Kagata, 2024). However, empirical evidence on the impact of these financial services on agricultural productivity at the district level remains limited. Understanding the role of micro-credit in enhancing smallholder productivity is therefore critical to inform policy and improve the livelihoods of rural households.

2.0 MATERIALS AND METHODS

2.1 Study Area

The study was conducted in Bagamoyo District, located in the Pwani Region of Tanzania. Bagamoyo lies along the coastal belt, characterized by a tropical climate with bimodal rainfall, which supports the cultivation of maize, cassava, vegetables, and various fruit crops (Moti & Liwenga, 2025). Agriculture is the main livelihood activity in the district, with most households engaged in small-scale farming. The district has witnessed a rapid expansion of micro-credit institutions, including Village Community Banks (VICOBA), Savings and Credit Cooperative Societies (SACCOS), and microfinance institutions (MFIs), making it an ideal location to examine the impact of micro-credit on farm productivity (Mrindoko, 2022)

2.2 Research Design

The study employed a cross-sectional research design to collect both quantitative and qualitative data at a single point in time (Wang & Cheng, 2020). This design was appropriate as it enabled the assessment of the relationship between access to micro-credit and agricultural productivity among small-scale farmers without the need for extended follow-up periods. The cross-sectional approach also facilitated simultaneous collection of information on household characteristics, credit utilization, input adoption, and crop yields, thereby providing a comprehensive

snapshot of the factors influencing farmer productivity within the study area (Zuleika, 2022).

2.3 Sampling Design

A multistage sampling design was employed to obtain a representative sample of small-scale farmers engaged in micro-credit programs. In the first stage, four villages were purposively selected based on the presence of active micro-credit schemes and substantial smallholder farming activity (Enyew & Gobie, 2025). In the second stage, systematic random sampling was used to select 120 small-scale farmers from the chosen villages, ensuring that all eligible households had an equal opportunity to participate while minimizing selection bias. The final sample size of 120 households was deemed adequate for conducting both descriptive and multivariate regression analyses, while also balancing feasibility, time, and resource constraints.

2.4 Data Collection

Data were collected using a mixed-methods approach that combined quantitative and qualitative tools to capture both numerical trends and contextual insights. Structured questionnaires were administered to all sampled households to obtain information on demographic characteristics, farm attributes, access to micro-credit, input usage, crop yields, and household income (Wayessa & Nygren, 2023). In addition, key informant interviews were conducted with village leaders, loan officers, and agricultural extension officers to gather detailed perspectives on credit operations, institutional challenges, and the types of support services available to farmers(Fatch et al., 2021). Complementing these methods, focus group discussions (FGDs) were held with groups of farmers in each selected village to explore their perceptions of micro-credit, the factors influencing loan utilization, and constraints affecting farm productivity. This combination of data collection techniques ensured a comprehensive understanding of both the quantitative outcomes and the lived experiences of small-scale farmers in Bagamoyo District.

2.5 Data Analysis

Data collected from the field were analyzed using both descriptive and inferential statistical techniques to address the study objectives. Descriptive statistics including means, frequencies, and percentages were employed to summarize household characteristics, levels of access to micro-credit, adoption of agricultural inputs, and measures of farm productivity (Shitaye et al., 2025). To assess the effect of micro-credit on productivity, multiple regression analysis was conducted, using crop yield

(kg/acre) as the dependent variable and credit access, input use, farm size, labor availability, and other socioeconomic attributes as independent variables. This analytical approach enabled the study to control for confounding factors while estimating the strength and significance of the relationship between micro-credit and agricultural performance (Bili, 2024). Tables and figures were used to present results in a clear and interpretable manner, allowing for both numerical summaries and visual comparisons between credit users and non-users. Additionally, qualitative data obtained from focus group discussions and key informant interviews were analyzed thematically to enrich and contextualize the quantitative findings.

3.0 RESULTS

3.1 Farmers' Access to Micro-Credit

The findings indicate that a majority of small-scale farmers in Bagamoyo District had access to micro-credit. Out of the 120 respondents surveyed, 74 farmers (62%) reported having accessed micro-credit at least once in the past three years. Among these credit users, VICOBA was the dominant source, serving 33 farmers (45%), followed by SACCOS with 22 farmers (30%), microfinance institutions (MFIs) with 15 farmers (20%), and commercial banks with only 4 farmers (5%) (Table 1). These results highlight the central role of community-based financial institutions particularly VICOBA and SACCOS in providing credit to rural farmers in Bagamoyo District, while formal banking institutions remain marginal due to stringent collateral requirements and unfavorable lending conditions.

Table 1: *Access to Micro-Credit among Farmers*

Source of Credit	Population	Percentages
VICOBA	33	45
SACCOS	22	30
MFIs	15	20
Banks	4	5
Total	**74**	**100**

Source: Research, 2025

3.2 Use of Agricultural Inputs

Access to micro-credit significantly influenced the adoption of agricultural inputs among farmers. Credit users reported higher usage of improved seeds, fertilizers, and hired labor compared to non-users. Specifically, 78% of credit users used improved seeds compared to 42% of non-users, 64% applied chemical fertilizers versus 30% among non-

users, and 70% hired additional labor, significantly higher than the 34% among farmers without credit (Figure 1). These findings suggest that micro-credit relaxes liquidity constraints, enabling farmers to invest in productivity-enhancing inputs that would otherwise be unaffordable.

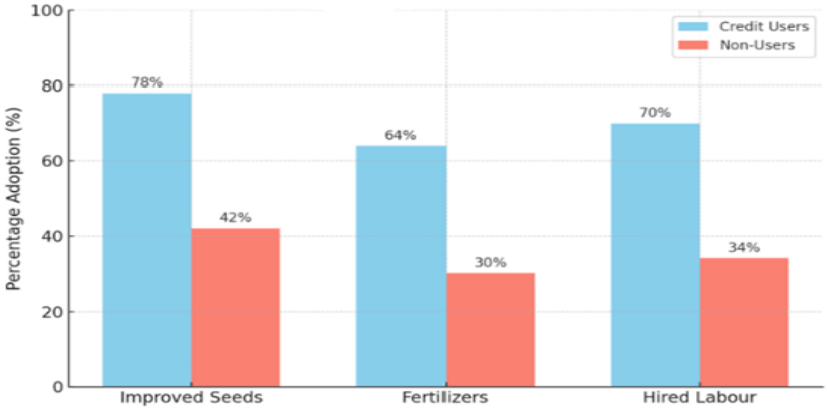

Figure 2: *Input Use by Credit Status*
Source: Research, 2025

3.3 Impact of Micro-Credit on Productivity

The effect of micro-credit on crop productivity was assessed by comparing yields between credit users and non-users. Results indicate that credit users achieved significantly higher yields across all major crops. For maize, credit users produced 1,350 kg/acre, representing a 35% increase compared to non-users who produced 1,000 kg/acre (Table 2). Cassava yields were 2,400 kg/acre for credit users, 20% higher than non-users, and vegetable yields were 1,800 kg/acre, a 38% increase over non-users. Regression analysis confirmed that access to micro-credit had a statistically significant positive effect on productivity ($p < 0.05$), after controlling for farm size, labor, and other socioeconomic factors. These results indicate that access to financial resources facilitates investment in inputs and labor, which directly translates into higher agricultural output.

Table 2: *Crop Yield Comparison (kg/acre)*

Crop	Credit users	Non-users	Percentage increase
Maize	1,350	1,000	35
Cassava	2,400	2,000	20
Vegetables	1,800	1,300	38

Source: Research, 2025

3.4 Challenges in Using Micro-Credit

Despite the positive impact on productivity, farmers reported several challenges that limit the effectiveness of micro-credit. High interest rates,

ranging from 15–30% per loan cycle, discourage borrowing and reduce disposable funds for investment. Delayed loan disbursements often coincide poorly with planting schedules, reducing the timeliness of input application. Furthermore, small loan sizes are frequently insufficient to cover the full cost of necessary inputs for multiple crops or larger plots. Limited financial literacy among farmers, including inadequate knowledge of budgeting, loan management, and record-keeping, further constrains the efficient use of loans. These challenges underscore the importance of improving institutional frameworks and providing farmer training to maximize the benefits of micro-credit program (Kyeyune & Ntayi, 2025).

4.0 MULTIPLE REGRESSION ANALYSIS RESULTS

To determine the effect of access to micro-credit on crop productivity while controlling for other household and farm characteristics, a multiple linear regression model was estimated. Crop productivity (measured in kilograms per acre) was used as the dependent variable.

Table 3: Multiple Regression Results Effect of Micro-Credit on Crop Productivity

Variable	Coefficient (β)	Std. Error	t-value	p-value
Constant	412.65	98.42	4.19	0.000
Access to Credit (1 = Yes)	185.74	54.31	3.42	0.001
Improved Seeds (kg)	0.86	0.31	2.77	0.006
Fertilizer Use (kg)	1.24	0.47	2.63	0.009
Hired Labour (person-days)	3.15	1.12	2.81	0.005
Farm Size (acres)	142.91	36.46	3.92	0.000
Household Experience (years)	4.21	1.87	2.25	0.026

Source: Research, 2025

Table 4: Model Summary

Statistics	Value
R-squared	0.63
Adjusted R-squared	0.60
F-statistic	21.47
p-value (overall model)	0.000
Sample size (N)	120

Source: Research, 2025

4.1 Interpretation of the Regression Output

The regression results show that the model is statistically significant ($F = 21.47$, $p < 0.001$), indicating that the independent variables jointly explain variations in crop productivity. The Adjusted R^2 of 0.60 implies that approximately 60% of the variation in crop productivity among small-scale farmers is explained by the variables included in the model.

4.1.1 Access to Micro-credit

The coefficient for access to credit is positive and statistically significant ($\beta = 185.74$, $p = 0.001$). This indicates that farmers who accessed micro-credit produced an average of 185.74 kg per acre more than those without credit, holding all other factors constant. This suggests that credit enables farmers to purchase essential inputs that enhance productivity.

4.1.2 Use of Improved Seeds

Improved seed usage significantly increases productivity ($\beta = 0.86$, $p = 0.006$). This implies that each additional kilogram of improved seeds increases output by 0.86 kg per acre, highlighting the importance of adopting quality planting materials.

4.1.3 Fertilizer Application

Fertilizer use is also significant ($\beta = 1.24$, $p = 0.009$). Each additional kilogram of fertilizer applied increases crop productivity by 1.24 kg, demonstrating the strong yield response associated with soil nutrient supplementation.

4.1.4 Hired Labour

Hired labour contributes positively to productivity ($\beta = 3.15$, $p = 0.005$). This suggests that increased labour availability enhances timely farm operations, resulting in higher yields.

4.1.5 Farm Size

Farm size has a strong positive effect ($\beta = 142.91$, $p = 0.000$), confirming that larger farms tend to produce more due to economies of scale.

4.1.6 Farming Experience

Farming experience is significant ($\beta = 4.21$, $p = 0.026$), implying that experienced farmers are more knowledgeable in crop management practices, leading to better yields.

5.0 DISCUSSION

5.1 Effect of Micro-Credit Access on Small-Scale Farmers' Investment in Agricultural

In line with the first objective, the findings demonstrate that access to micro-credit significantly enhances small-scale farmers' ability to invest in productivity-enhancing agricultural inputs in Bagamoyo District. Empirical evidence from the study shows that 62% of the sampled farmers accessed micro-credit, predominantly from VICOBA (45%) and

SACCOS (30%), indicating the central role of community-based financial institutions in rural financing.

Statistical comparisons between credit users and non-users reveal substantial differences in input adoption. Specifically, 78% of credit users adopted improved seeds, compared to only 42% of non-users, while 64% of credit users applied chemical fertilizers, more than double the 30% recorded among non-users. Similarly, the use of hired labour was significantly higher among credit users (70%) than non-users (34%). These differences clearly illustrate that micro-credit relaxes liquidity constraints, enabling farmers to make timely purchases of modern inputs that are otherwise unaffordable under cash-constrained conditions(Khan, 2025)(Khan, 2025).

The regression analysis further reinforces these findings, as key input variables—improved seeds ($\beta = 0.86$, $p = 0.006$), fertilizer use ($\beta = 1.24$, $p = 0.009$), and hired labour ($\beta = 3.15$, $p = 0.005$)—were all positive and statistically significant. This suggests that credit-facilitated input use has a direct and measurable effect on farm productivity. These results are consistent with empirical evidence from other developing countries, which shows that access to micro-credit increases farmers' capacity to adopt improved technologies, enhance production efficiency, and improve household welfare (Yu *et al*., 2025).

5.2 Impact of Micro-Credit on Crop Productivity among Small-Scale Farmers

Addressing the second objective, the study establishes a strong and statistically significant relationship between access to micro-credit and crop productivity. Descriptive yield comparisons indicate that farmers who accessed micro-credit achieved substantially higher yields across all major crops. For instance, maize yields among credit users averaged 1,350 kg per acre, representing a 35% increase over non-users, who recorded 1,000 kg per acre. Cassava yields were 20% higher among credit users (2,400 kg/acre) compared to non-users (2,000 kg/acre), while vegetable yields showed the largest gain, with a 38% increase (1,800 kg/acre versus 1,300 kg/acre).

These yield differentials are further validated by the regression results, which show that access to micro-credit increases crop productivity by an average of 185.74 kg per acre, holding other factors constant ($p = 0.001$). The model explains approximately 60% of the variation in crop productivity (Adjusted $R^2 = 0.60$), indicating strong explanatory power.

Additionally, farm size ($\beta = 142.91$, $p < 0.001$) and farming experience ($\beta = 4.21$, $p = 0.026$) were also significant, suggesting that while credit is a key driver of productivity, its impact is amplified when combined with scale advantages and accumulated farming knowledge.

These findings confirm that micro-credit enhances productivity not merely by increasing input use, but also by improving the overall efficiency of farm operations. The results corroborate earlier studies that report a positive and significant relationship between agricultural credit access and farm output, income growth, and food security among smallholder farmers in Sub-Saharan Africa (Ali *et al*., 2025).

5.3 Constraints Limiting the Effectiveness of Micro-Credit Utilization

In line with the third objective, the study identifies several institutional and operational constraints that limit the full productivity gains from micro-credit. Despite the observed positive impacts, farmers reported high interest rates ranging from 15% to 30% per loan cycle, which reduce net returns from agricultural investments and discourage repeated borrowing. Moreover, delayed loan disbursement was frequently cited as a major challenge, particularly when loans were released after the onset of the planting season, undermining timely input application and yield potential (Balana et al., 2022).

Small loan sizes were also identified as a significant limitation, as many farmers were unable to finance the full input requirements for multiple crops or larger plots. These constraints help explain why, despite the significant effect of credit on productivity, some farmers still fail to fully exploit the potential benefits of borrowing. Limited financial literacy further exacerbates these challenges, as inadequate budgeting and record-keeping skills reduce the efficiency of loan utilization (Lu et al., 2024). These findings are consistent with previous research, which emphasizes that the impact of micro-credit on agricultural productivity is highly dependent on loan adequacy, affordability, timing, and complementary support services. Studies have shown that when credit is poorly structured or delivered without technical and financial guidance, its effectiveness in stimulating productivity is significantly reduced (Ali et al., 2025).

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study examined the impact of micro-credit on the productivity of small-scale farmers in Bagamoyo District, Tanzania. The findings provide

strong empirical evidence that access to micro-credit plays a significant role in enhancing agricultural productivity by easing financial constraints and enabling farmers to invest in productivity-enhancing inputs (Ali et al., 2025). Descriptive results showed that 62% of the sampled farmers accessed micro-credit, mainly through community-based financial institutions such as VICOBA and SACCOS, highlighting their importance in rural financial inclusion.

The study further established that access to micro-credit significantly increased the adoption of improved agricultural inputs. Credit users recorded substantially higher use of improved seeds (78%), chemical fertilizers (64%), and hired labour (70%) compared to non-users. These investments translated into higher crop yields, with credit users achieving yield increases of 35% for maize, 20% for cassava, and 38% for vegetables relative to farmers without credit access. Multiple regression analysis confirmed that access to micro-credit had a positive and statistically significant effect on crop productivity, increasing output by an average of 185.74 kg per acre ($p < 0.01$), even after controlling for farm size, labour use, and farming experience.

Despite these positive impacts, the study identified key constraints that limit the effectiveness of micro-credit programs. High interest rates, delayed loan disbursement, small loan sizes, and limited financial literacy among farmers reduce the potential productivity gains from credit use(Balana et al., 2022). The findings therefore suggest that while micro-credit is a critical catalyst for improving smallholder productivity, its impact is highly dependent on the design, timing, and complementary support services associated with credit delivery.

6.2 Recommendations

Based on the findings and conclusions of the study, the following recommendations are proposed. Financial institutions and policymakers should expand access to affordable micro-credit by reducing interest rates and simplifying lending conditions. Lower borrowing costs would enhance farmers' willingness and ability to invest in essential agricultural inputs, thereby increasing productivity and farm incomes. Credit providers should synchronize loan disbursement schedules with agricultural production calendars to ensure timely access to inputs. Early loan release before planting seasons would improve input application efficiency and maximize yield outcomes.

There is a need to integrate financial literacy training into micro-credit programs. Training in budgeting, record-keeping, and loan management would enhance the efficient use of credit and reduce default risks, thereby improving both farmer welfare and institutional sustainability. Strengthening collaboration between credit institutions and agricultural extension officers is essential. Combining financial services with technical guidance on input use, crop management, and modern farming practices would significantly increase the productivity impact of micro-credit. Government and development partners should promote integrated rural financing frameworks that combine credit access with extension services, farmer training, and market support. Such holistic approaches are more likely to generate sustainable productivity gains and contribute to long-term rural development.

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