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5. **TITLE:** ASSESSMENT OF THE LIVELIHOOD IMPLICATIONS OF PROTECTED AREA POLICIES IN ARUSHA NATIONAL PARK, TANZANIA

6.0 An overview

This study aims to assess the livelihood implications of the Protected Areas (PAs) Policies in Arusha National Park (ANAPA). This section details issues related to the study's background, the research problem statement, the research objectives, and the research questions. The section further elaborates on the significance of the study and the relevant literature that has been reviewed to inform the proposed study.

6.1 Background to the Research Problem

Protected areas (PAs) are crucial for biodiversity conservation and ecosystem services, including protecting food and water supplies, regulating weather patterns, and generating income from tourism (Chape et al., 2008). PAs cover nearly 17% of the earth's surface (WWF, 2024). This coverage shows an increase of 2% from the 2017 report, which indicates the coverage of about 15% of terrestrial ecosystems (Mukul & Rashid, 2017). Despite their importance and increased coverage, many PAs face challenges due to poor governance, the nature of the guiding policies, and inadequate funding; that is why international policies, such as the Convention on Biodiversity and Convention on International Trade in Endangered Species of Wild Fauna and Flora, emphasize the need for PAs financing and consideration of local livelihoods (Dlamini & Masuku, 2013). For instance, the Nagoya Protocol: Adopted in 2010 as part of the CBD framework, focuses on access to genetic resources and the fair sharing of benefits from their utilization. It stresses the importance of involving local communities in decision-making processes regarding resource use, thereby directly linking their livelihoods with biodiversity governance (UNEP, 2010).

The policies governing resource accessibility and utilization within Protected Areas (PAs) significantly influence residents' livelihoods. These policies dictate how resources can be accessed and used, impacting human activities and conservation efforts. Strict policies tend to adversely affect local livelihoods, while more lenient policies can enhance them (Mukul & Rashid, 2017). However, the tension between conservation goals, rights, and needs of residents raises critical questions about equity, access, and sustainable development. Research indicates that while PAs can enhance biodiversity and ecosystem services, guiding policies may also restrict access to vital resources, leading to economic hardships for communities reliant on these ecosystems. Furthermore, the effectiveness of participatory governance models in mitigating negative impacts remains a contentious issue, as many communities report inadequate involvement in decision-making processes. Understanding these dynamics

is essential for developing policies that balance conservation objectives with the global livelihood needs of affected populations.

In Europe, policies guiding PAs considerably impact local populations surrounding national parks (Jarv, 2016). They lead to benefits and costs to local communities, with variations in how these impacts are distributed and a relationship between perceived impacts and support for the protected area (McGinlay et al., 2023). For example, policies guiding South Caucasus PAs across Azerbaijan, Armenia, and Georgia impact local livelihoods through land use restrictions, but tourism could help settle conflicts and increase incomes (Schott, 2016). Also, Hohe Tauern National Park in Austria and Eifel National Park in Germany show that these policies can contribute to regional sustainable development by investing in tourism revenue generated from PAs (McGinlay et al., 2023). However, the experience of most PAs in the Philippines reveals that policies that guide access to resources improve the economic status of communities near protected areas. At the same time, restriction delays lead to negative perceptions from local people (Chechina et al., 2018).

In Asia, studies have shown that policies guiding PAs affect adjacent households in numerous ways. For example, policies guiding Qilianshan National Park in China significantly affect local communities by restricting access to natural resources, leading to economic challenges for residents traditionally relying on these resources for their livelihoods. Conservation measures often limit activities such as grazing and logging, prompting a shift towards alternative income sources like eco-tourism. While these policies aim to protect biodiversity and promote sustainable practices, they can also create tensions between conservation goals and the needs of local populations, necessitating careful management to balance ecological preservation with community welfare (Zhang et al., 2021).

Policies for protected areas in Africa aim to conserve biodiversity and promote sustainable development, but they can negatively impact local communities by restricting access to essential natural resources. However, effective conservation initiatives that involve community participation can lead to economic benefits through eco-tourism and resource management programs Mbaiwa (2018). For example, in Ngamiland, PA, Botswana reveals that CBNRM allows local communities to manage and benefit from wildlife resources, leading to increased income through eco-tourism and sustainable hunting practices. However, restrictions on land use, access to resources, and safari hunting ban policy have created tensions between conservation goals and the needs of local people, particularly when wildlife

encroaches on agricultural lands or poses threats to livestock. Overall, while these policies can enhance economic opportunities for local communities through sustainable practices, they also necessitate careful management to mitigate conflicts arising from conservation efforts (Blackie, 2019).

The policies governing PAs in East Africa, such as Alitash National Park in Ethiopia, are designed to conserve biodiversity and protect natural resources, which can significantly impact the livelihoods of local communities. These policies often restrict access to land and resources that local people traditionally rely on for agriculture, grazing, and fishing. For instance, in Nechsar National Park, restrictions on fishing in Lake Chamo have limited the income of local fishermen. At the same time, regulations against livestock grazing within park boundaries have affected pastoralist communities. Additionally, conservation initiatives have promoted eco-tourism as an alternative livelihood; however, this shift requires investment in infrastructure and training that may not be readily available to all community members. Consequently, while these policies aim to preserve ecological integrity, they have created tensions between conservation goals and the economic needs of adjacent populations (Agitew, 2016).

Experience in Tanzania demonstrates that various policies governing resource accessibility and utilization in protected areas (PAs), including the National Parks police of 1994, the Wildlife Conservation Act of 1974, the National Wildlife Policy of 1998 & and 2007, significantly impact both local livelihoods and conservation programs in multiple ways (Mbise et al., 2021). Some of these policies restrict local residents' access to essential resources such as land, firewood, and grazing areas. This can create misunderstandings between protected area managers and local communities, leading to negative perceptions. For instance, communities near the Makao Wildlife Management Area in Meatu District, Simiyu, face limited access to subsistence resources, resulting in conflicts over resource use with TANAPA. (Lwankomezi et al., 2021). The restrictions disproportionately impact low-income households, as they have fewer livelihood options. Consequently, these limitations heighten the vulnerability of PAs to unauthorized resource exploitation, including logging, poaching, and forest encroachment by local residents seeking essential resources for their livelihoods (Wilfred, 2016).

Current policies governing Arusha National Park (ANAPA), including policies accompanied by the National Parks Ordinance of 1959, the Wildlife Conservation Act of 1974, the Marine Parks and Reserves Act of 1994, national policies for national parks in Tanzania from 1994, the National Wildlife Policy of 1998, the Revised Wildlife Policy of 2007, and various international conventions such as CITES, CBD, CMS, and Ramsar, have evolved from colonial to post-colonial times. These policies have had significant impacts on wildlife conservation and local livelihoods. The ongoing post-independence policies that marginalized local communities prompted TANAPA and ANAPA to implement the Community-Based Wildlife Management (CBWM) initiative, including the 'Parks as Neighbors' Program (Ujirani Mwema) and Wildlife Management Areas (WMA). These efforts aimed to balance conservation with rural development by creating buffer zones and wildlife corridors (Songorwa, 2004; Hitchcock & Shauri, 1999).

The CBWM improved anti-poaching patrols as part of community conservation efforts, leading to significant economic benefits for local villages from wildlife resources (Lee et al., 2023). These benefits include tourism revenue spurring infrastructure development, such as roads, dispensaries, schools, and job opportunities for small business owners (Mehenya & Chacha, 2020). Additionally, Mamaida (2023) notes that nearby villages to ANAPA have experienced positive impacts through livelihood opportunities, including small businesses catering to tourists, driven by the growth of towns like Olkung'wado and Ngarenanyuki, where the ANAPA headquarters is situated.

Research indicates that increased biodiversity in ANAPA has resulted in policy change, forcing the expansion of wildlife migratory corridors and negatively impacting nearby communities' livelihoods (Mtenga, 2023; Sulle et al., 2024). Evidence from Lee (2023) shows that since ANAPA is unfenced, wildlife can leave the park and invade surrounding areas, threatening local livelihoods. Species such as elephants, warthogs, and buffaloes often interact with livestock, while spotted hyenas have been known to attack goats and sheep, leading to significant economic losses for residents (Maleko et al., 2012). A study encompassing three national parks along the Tanzania-Kenya border—Arusha National Park, Kilimanjaro National Park, and Amboseli National Park—found that wildlife encroachment, particularly by elephants, poses a serious threat to the livelihoods of adjacent communities (Sanare et al., 2023).

6.2 Statement of the Research Problem

Arusha National Park is renowned for its rich biodiversity and scenic landscapes, attracting both tourists and researchers. However, governing policies have predominantly prioritized conservation efforts as a major goal over the needs of local communities; this has led to restrictions that limit local people's access to vital resources, such as land for agriculture, subsistence resources, and materials for construction, to mention some. These restrictions have led to diminished economic opportunities, exacerbated poverty levels, and social discontent among communities historically relying on these resources for their sustenance and well-being. Despite the intention of conservation efforts to protect biodiversity and promote ecological integrity, the lack of equitable benefit-sharing mechanisms has exacerbated tensions between park authorities and local residents. This study aims to critically evaluate how these policies affect the livelihoods of surrounding communities, exploring both the direct impacts on resource access and the broader socio-economic consequences. This research will contribute to a more nuanced understanding of sustainable conservation practices that balance ecological goals with human welfare by identifying gaps in policy implementation and community engagement.

6.3.0   Research Objectives

This section detail's main objective and three specific objectives of this study

6.3.1   General Objectives

The general objective of this study is to assess the implications of protected area policies on livelihoods in order to strike a balance between conservation and the livelihood of surrounding communities.

6.3.2 Specific Objectives

  i. To evaluate protected area policies operating in Arusha national park
  ii. To investigate perceptions of community toward protected area policies in Arusha national park
  iii. To examine livelihood impacts of protected area policies to local community in Arusha national park

6.4 Research Questions

    i. What are the protected area policies operating in Arusha National Park?

   ii. What are community perceptions toward protected area policies in Arusha National Park?

 iii. What are the livelihood impacts of protected area policies on the local community in Arusha National Park?

6.5 Significance of the study

This study will contribute to the existing body of knowledge about natural resource governance and people's livelihoods by assessing how PA policies influence local economies, employment opportunities, and access to resources. This will be achieved through collecting data on income sources, employment rates, resource access and utilization patterns to identify the influence of these policies on local people's livelihood. Additionally, the research seeks to provide policymakers with empirical evidence regarding both the positive and negative consequences of PA policies for communities that depend on natural resources, thereby aiding in more effective policy adjustments. Furthermore, the study will address sustainable development goals, particularly Goal 1 (No Poverty) and Goal 15 (Life on Land). It highlights that sustainable management of natural resources can alleviate poverty for local populations and emphasizes the need to protect ecosystems while ensuring their sustainable use, as many rural communities rely on these ecosystems for their livelihoods.

6.6 Scope of the study

This study is limited to assessing the impact of Protected Area policies on the livelihoods of communities surrounding Arusha National Park in the Arumeru District. It aims to balance conservation efforts and local livelihoods by assessing existing policies, exploring community perceptions, and analysing the benefits these policies have provided to residents over the past 30 years. This timeframe allows for observing trends in biodiversity, long-term ecological and socio-economic changes, and shifts in local economies while aligning with the typical duration of policy impacts and accommodating natural fluctuations and human development pressures. The research will involve a sample of 99 households from three villages: Ilkrimun and Olkug'wado in Ngarenanyuki ward and Kilinga in Songoro ward. Further, the study is guided by the Sustainable Livelihood Framework (SLF).

6.7 Literature review

This sub-section details the definition of key terms, the theories and models, and the conceptual framework guiding this study. Furthermore, theoretical and empirical literature reviews are chronologically explained hereunder.

6.7.1. Definition of Key Terms and Concepts

6.7.1.1 Protected Areas

Protected areas are defined as the land or sea area especially dedicated to protecting and maintaining biodiversity and natural and culturally associated resources (IUCN, 2015). Each protected area may have different categories, such as national parks, wildlife reserves, and conservation areas, which vary degrees of restrictions on resource use. In this study, the definition by IUCN is used to provide a framework for understanding the specific regulations and management strategies that govern these regions.

6.7.1.2. Natural Resources

Natural resources are defined as limited physical or virtual entities from nature that humans can utilize for various economic, aesthetic, scientific, and cultural purposes, and they include biotic, abiotic, renewable, and non-renewable resources (Ress, 1985). This study utilizes Ress's definition to clarify the specific resources relevant to the livelihoods of local communities around Arusha National Park and their dependence on natural resources.

6.7.1.3 Local livelihood

Refers to how individuals or households in a specific community secure necessity, such as food, water, shelter, and clothing (Chambers & Conway). It encompasses the activities, assets, and access that define how people earn a living within their local context. Defining local livelihood is crucial for understanding the resources and activities essential for the survival and prosperity of local communities around Arusha National Park and their interaction with protected area policies.

6.7.1.4 Protected Area Policies (PAPs)

These are legal or other effective means used to manage and protect geographical spaces for long–term conservation of nature, ecosystems, and cultural values (Abukari & Mwalyosi, 2020). Protected area policies can be implemented at various levels according to the guidelines outlined in the Convention on Biological Diversity (CBD, 1992). This definition is utilized in the study to evaluate the impact of policies on community well-being and local

livelihoods, particularly regarding restrictions that may affect traditional practices near protected areas like Arusha National Park.

6.7.2. Theoretical Literature Review

This study will be guided by the Sustainable Livelihood Framework (SLF). This theory will guide the study by examining the livelihood implications of protected area policies in Arusha National Park (ANAPA) to achieve the intended objectives.

6.7.2.1 Sustainable Livelihoods Framework (SLF)

The Sustainable Livelihoods Framework (SLF) is a participatory approach developed in the 1990s that highlights the role of various assets in shaping livelihoods and their vulnerability to external influences such as policies and environmental changes. The assets are categorized into five types known as the elements of SLF: natural capital are resources provided by nature; human capital are skills and knowledge of individuals; social capital is networks and relationships; physical capital is infrastructure and tools for production; and financial capital are financial resources available to individuals or communities (Chambers & Conway, 2022). The strength of SLF lies in its practical analysis of rural livelihoods by examining various forms of capital, vulnerability contexts, livelihood strategies and outcomes, and regulations governing resource access.

Therefore, applying the Sustainable Livelihood Framework (SLF) to assess the livelihood implications of Protected Area (PA) policies in ANAPA allows for a structured analysis of the study's objectives. Firstly, researchers will evaluate the PA policies within ANAPA by utilizing the Policies and Institutions variable. Secondly, through the **Livelihood Assets** variable, insights will be gathered on how these policies affect various assets that contribute to residents' livelihoods specifically natural, human, social, physical, and financial capital by assessing their access to resources and economic opportunities. Lastly, using the **Outcomes** variable enables researchers to understand residents' concerns and perceptions regarding these policies by identifying potential trade-offs between conservation goals and community needs, thereby facilitating a more inclusive dialogue that can inform policy adjustments to enhance ecological sustainability and local well-being. The framework poses a weakness due to insufficient consideration of power dynamics. To address this, researchers will incorporate a representative sample in the assessment process, ensuring that diverse perspectives and experiences are included in the evaluation.
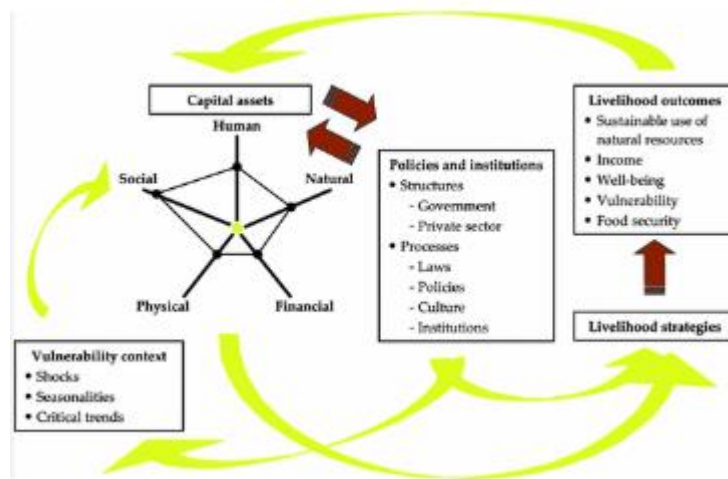
Figure 1.0: Sustainable Livelihood Framework

Source: DFID (1999).

6.7.3. Empirical Literature Review

6.7.3.1 Policies operating in Protected Areas

Protected areas are governed by a complex framework of international agreements, national legislation, and local regulations aimed at conserving biodiversity and ecosystems. At the global level, key policies include the Convention on Biological Diversity (CBD), which emphasizes the establishment and management of protected areas as a critical strategy for biodiversity conservation. The CBD encourages countries to create a network of protected areas that cover at least 17% of terrestrial and 10% of marine environments by 2020. However, many nations are still working towards these targets (UNEP, 2020). Additionally, the International Union for Conservation of Nature (IUCN, 2015) provides guidelines for classifying protected areas based on their management objectives, which helps standardize approaches across different regions. The UNESCO World Heritage Convention also plays a significant role by designating sites of outstanding universal value that require protection due to their cultural or natural significance. Furthermore, regional agreements such as the Ramsar Convention on Wetlands focus specifically on wetland conservation, highlighting the need for tailored approaches to different ecosystems. These policies collectively aim to balance ecological integrity with sustainable use, engaging local communities in conservation efforts while addressing challenges such as climate change and habitat loss (UNESCO, 2015).

Protected areas in Africa are governed by various framework of policies that aim to balance biodiversity conservation with socio-economic development (Mbiwa, 2018). These policies are often shaped by international agreements, such as the Convention on Biological Diversity, and regional frameworks like the African Convention on the Conservation of Nature and Natural Resources. National governments typically develop specific legislation that outlines the establishment, management, and funding of protected areas, including national parks, wildlife reserves, and community conservancies. The effectiveness of these policies is influenced by various factors including governance structures, community involvement, and funding mechanisms. For instance, many countries have adopted participatory approaches that engage local communities in conservation efforts, recognizing their role in sustainable resource management (Azevedo et al., 2024). However, challenges such as poaching, land-use conflicts, and climate change continue to threaten these areas. Additionally, there is an increasing emphasis on integrating ecological networks across borders to enhance connectivity between protected areas and improve resilience against environmental changes (Sanare et al., 2023).

Tanzania's policies governing protected areas are primarily framed within the context of biodiversity conservation, sustainable development, and community involvement. The National Policies for National Parks of 1994, the National Parks Act of 2002, and the Wildlife Conservation Act of 2009 are foundational legal frameworks that establish guidelines for the management and protection of national parks, game reserves, and wildlife management areas. These laws emphasize the importance of conserving Tanzania's rich biodiversity while recognizing local communities' rights and roles in conservation efforts. The government has adopted a participatory approach, encouraging local communities to engage in tourism and resource management to benefit economically from conservation initiatives. Additionally, Tanzania is a signatory to various international agreements, such as the Convention on Biological Diversity (CBD), which influences its national policies by promoting integrated approaches to conservation that balance ecological integrity with socioeconomic needs (URT, 2015). Recent strategies also focus on addressing challenges such as poaching and habitat loss through enhanced law enforcement and community-based conservation programs. Tanzania's protected area policies reflect a complex interplay between environmental sustainability, economic development, and social equity.

The policies governing protected areas in Arusha National Park, Tanzania, are primarily shaped by national legislation, international agreements, and local management strategies aimed at biodiversity conservation and sustainable tourism. The Tanzanian government enforces the Wildlife Conservation Act of 2009, which provides a legal framework for protecting wildlife and habitats within national parks. This act emphasizes the importance of conserving biodiversity while allowing for regulated tourism activities that can contribute to local economies. Additionally, Arusha National Park is managed by the Tanzania National Parks Authority (TANAPA), which implements specific management plans that focus on habitat preservation, anti-poaching measures, and community engagement initiatives to ensure that local populations benefit from conservation efforts (ANAPA, 2020). Furthermore, international conventions such as the Convention on Biological Diversity influence policy frameworks by promoting sustainable practices and encouraging participatory approaches in park management. These policies collectively aim to balance ecological integrity with socio-economic development, ensuring that both wildlife and local communities thrive.

6.7.3.2 Perception of local communities toward Protected Area Policies

At a global level, the perceptions of local communities regarding PA policies play a crucial role in determining conservation outcomes. Research conducted in Europe indicates that these perceptions are influenced by several factors, including governance structures and the economic and environmental benefits associated with PAs. While some communities hold favorable views toward PAs, others face conflicts arising from exclusionary management practices and interactions with wildlife. For instance, residents near Kure Mountains National Park in Turkey view these policies favorably due to their economic benefits and recreational opportunities (Belkayalı et al., 2016). Similarly, the perceptions of people living adjacent to Sumava National Park in the Czech Republic improved over a decade, attributed to the park's climate regulation and recreational functions resulting from effective guiding policies (Gorner et al., 2012). Conversely, negative perceptions often arise from restrictions on resource use and a lack of local awareness regarding these policies (Ayivor et al., 2020).

Research on local communities' perceptions of protected area (PA) policies in Africa reveals a mix of positive and negative views. In Ghana, studies indicate that both rural and urban communities generally have favorable attitudes toward PA policies, attributing this positivity to the benefits seen in environmental regulation and biodiversity conservation (Afriyie et al.,

2022). Similarly, in Ethiopia, most respondents supported wildlife governance policies in Guji National Park, recognizing their effectiveness in resource zonation that facilitates local access (Tessema et al., 2010). Additionally, residents near Alitash National Park view PAs positively because they provide natural resources that enhance and influence their livelihoods (Agitew, 2016).

However, negative perceptions regarding wildlife conservation stem from policies such as the ban on safari hunting in Northern Botswana, which has reduced tourism benefits for local communities. This situation has fostered negative attitudes towards conservation efforts and contributed to an increase in poaching activities (Mbaiwa, 2018). Similarly, a disparity exists between protected area managers and local communities in South Africa due to conflicts over resource access and benefit-sharing policies (Thondhlana & Cundill, 2017).

In Tanzania, studies on PA policies show varied experiences among local communities. Some communities report positive impacts, while others have negative perceptions. For instance, in Tarangire National Park, approximately 40% of respondents noted beneficial effects on their livelihoods due to PA policies (Abukari & Mwalyosi, 2020). Similarly, in Udzungwa Mountain National Park, locals recognize livelihood benefits such as limited resource access to resources (Mhache, 2023). However, local communities near the Makao Wildlife Management Area in Simiyu exhibit negative attitudes toward PA policies due to restricted access to subsistence resources, resulting in conflicts with TANAPA (Lwankomezi et al., 2021). Additionally, the establishment of Kitulo National Park has negatively impacted local livelihoods by policies excluding communities from decision-making processes. Similarly, the expansion of Ruaha National Park has fostered negative perceptions among residents of Usangu Plains as new policies have compelled a shift from agriculture to tourism activities (Mung'ong'o et al., 2023).

Local perceptions of PA policies have evolved in ANAPA since Tanzania's independence. Following independence, local communities viewed these policies negatively due to top-down management reminiscent of the colonial era. However, after ratifying the National Wildlife Policy in 1998, which included initiatives like the Ujirani Mwema program that involved local participation in conservation, perceptions shifted positively. This change was accompanied by various benefits for the community, including improvements in social services such as schools, roads, and dispensaries. Establishing Wildlife Management Areas (WMAs), including buffer zones and wildlife corridors, aimed to balance conservation with

rural development, reflecting a positive attitude (Songorwa, 2004; Hitchcock & Shauri, 1999).

However, local perceptions have shifted negatively due to these policies' failure to manage wildlife populations. This mismanagement has significantly increased wildlife numbers, leading to farm encroachment and economic losses from livestock attacks by hyenas and elephant crop raiding (Lee et al., 2023; Sanare et al., 2023). Consequently, this study aims to investigate current local perceptions regarding Protected Area (PA) policies in ANAPA.

6.7.3.3 Livelihood Implications of Protected Area Policies to local people

Globally, PA policies can provide significant advantages to local communities while meeting conservation goals. Research in southeastern Australia indicates that these policies facilitate increased housing development, business expansion, and enhanced local government revenue by effectively managing funds generated from tourism activities within PAs (Heagney et al., 2015). Evidence from the South Caucasus region, encompassing Azerbaijan, Armenia, and Georgia, demonstrates that revenue from tourism linked to PA policies has been instrumental in funding social services such as improved roads, healthcare facilities, recreational areas, and business growth in neighboring communities (Schott, 2016). Additionally, nature-based tourism in many European PAs creates job opportunities, generates income, and fosters business development for residents (Thapa et al., 2022).

However, some studies indicate that PA policies can lead to economic stagnation in local communities. For instance, Qilianshan National Park in China has caused displacement and restricted access to resources for nearby residents, resulting in a loss of livelihood strategies (Peng et al., 2022). Additionally, research in Germany shows that PA policies may promote regional sustainable development, but their effects on community livelihoods are difficult to substantiate (Getzner, 2010).

Experience in Africa shows that PA policies can accelerate benefits to local communities, although these benefits often do not fully compensate for the costs incurred by residents (Amin & Koné, 2015). Research conducted in various PAs, including northern Madagascar (Vezina et al., 2020), KwaZulu-Natal in South Africa (Wessels, 2017), Buhoma Mukono in Uganda (Ahebwa, 2013), Kitulo National Park in Tanzania (Mung'ong'o et al., 2023), and Maranga Forest Reserve in Mbulu, Tanzania (Sewando, 2024), has shown that PAs generate revenue from tourism. This revenue supports social services such as roads and wells for

residents while also achieving conservation objectives. Additionally, evidence from Alitash National Park in Ethiopia demonstrates that natural resources provided by PAs benefit and influence the livelihoods of local communities (Agitew, 2016). Despite their benefits, evidence shows that protected area (PA) policies in Africa have not effectively addressed widespread rural poverty. For instance, in Ngamiland, Botswana, the prohibition on wildlife hunting has adversely affected local communities by reducing employment and income from community-based organizations (Blackie, 2019). Similarly, in the Sengwa Wildlife Area (SWA), Zimbabwe, PA policies restrict local community access to natural resources, disrupting their livelihood strategies (Mahakata & Muboko, 2023).

In Tanzania, studies indicate that protected area (PA) policies have led to numerous benefits for local communities, including improved employment opportunities, ecotourism prospects, and enhanced social services (Mheche, 2023). Evidence from Saadani National Park demonstrates that these PA policies have contributed to advancements in community social services such as schools, dispensaries, and wells; however, individual households have not experienced economic gains (Mbise et al., 2021). However, some local communities adjacent to PAs experience economic stagnation due to restricted resource access. For instance, the expansion of Ruaha National Park has led to the abandonment of agricultural practices among residents in Usangu Plains (Sirima, 2013). Similarly, communities near the Makao Wildlife Management Area in Simiyu face limited access to subsistence resources, resulting in conflicts over resource use with TANAPA (Lwankomezi et al., 2021).

In ANAPA, the experience shows that PA policies have contributed to livelihood benefits for local people adjacent to the park, including control of tourism revenue, which triggered the advancement of infrastructures like roads, dispensaries, and schools as well as employment opportunities to small-business holders (Mehenya & Chacha, 2020). Other evidence reports that adjacent villages to ANAPA have positively impacted livelihood benefits such as small business development due to tourism and the growth of towns like Olkung'wado and Ngarenanyuki center, where the ANAPA headquarters is located (Mamaida, 2023). Despite the benefits provided by PA policies, local villagers continue to face challenges from wildlife encroachment, particularly from elephants, which have severely impacted their livelihoods. This issue arises from ineffective policies regarding human-wildlife interactions (Sanare et al., 2023). The unfenced status of ANAPA allows wildlife to leave the park and invade surrounding communities, leading to the destruction of crops. Additionally, there is

evidence that hyenas frequently attack livestock such as goats and sheep, resulting in significant economic losses for these local communities (Lee et al., 2023).

6.7.4 Research Gap

In recent years studies about Protected areas (PAs) in ANAPA such as Mahenga & Chacha (2020) studied "economic implications of tourism in ANAPA," Mtenga (2023) studied "impacts wildlife migratory corridors blockage," Lee et al. (2023) studied "Factors for the decline of Maasai giraffe in ANAPA," Sulle et al. (2023) studied "Man-made glades for zebra" not only that but also Mamaida (2023) studied "Impacts of tourism development on community livelihood" all of these studies have been concentrating on quantifying the rates of wildlife population, tourism related impacts and significant challenges that face PAs due to human activities, limited finance, unauthorized resource use such as logging, poaching, and forest invasions by local people. This has led to insufficient information on how policies that govern PAs in ANAPA have impacted the livelihoods of the local people. That is why this study aims to fill the gap.

Moreover, research conducted in Arusha National Park carried distinct objectives and employed different research approaches and data collection methods about what they intended to achieve. This distinction has triggered a methodological gap; this study will use qualitative and quantitative approaches to blend with this gap and achieve its objectives.

6.7.5 Conceptual Framework

A conceptual framework is a set of comprehensive concepts and ideologies taken from an appropriate field of inquiry and is used to structure a subsequent demonstration (Grant & Osanloo, 2014). The conceptual framework for this study (Figure 1.1) has been adapted and modified from the work of Woodhouse et al. (2018). The original work studied "Social impacts of protected areas by exploring evidence of trade-offs and synergies" in South Africa and Namibia, has been modified to intertwine policies operating in PAs, perception of the local people towards these policies, and livelihood implications of PA policies on local people's livelihood.

Box 1 indicates PA policies operating in ANAPA, such as National Policies for National Parks of 1994, National Parks Act of 2002, National Wildlife Policy of 1998, Wildlife Conservation Act of 2009, CBD, and CITES. These policies are designed to conserve

biodiversity while impacting the livelihoods of surrounding communities. Local people often perceive these policies as restrictive, limiting their access to natural resources vital for their subsistence, such as grazing land, cultivation areas, and water sources, as indicated in box 2. However, these policies also have recognized benefits, including eco-tourism opportunities that can provide income and employment for residents, as shown in box 3. Overall, while protected area policies can pose challenges to traditional livelihoods, they also offer potential pathways for economic development through sustainable practices that align conservation goals with community needs, as indicated in box 3.
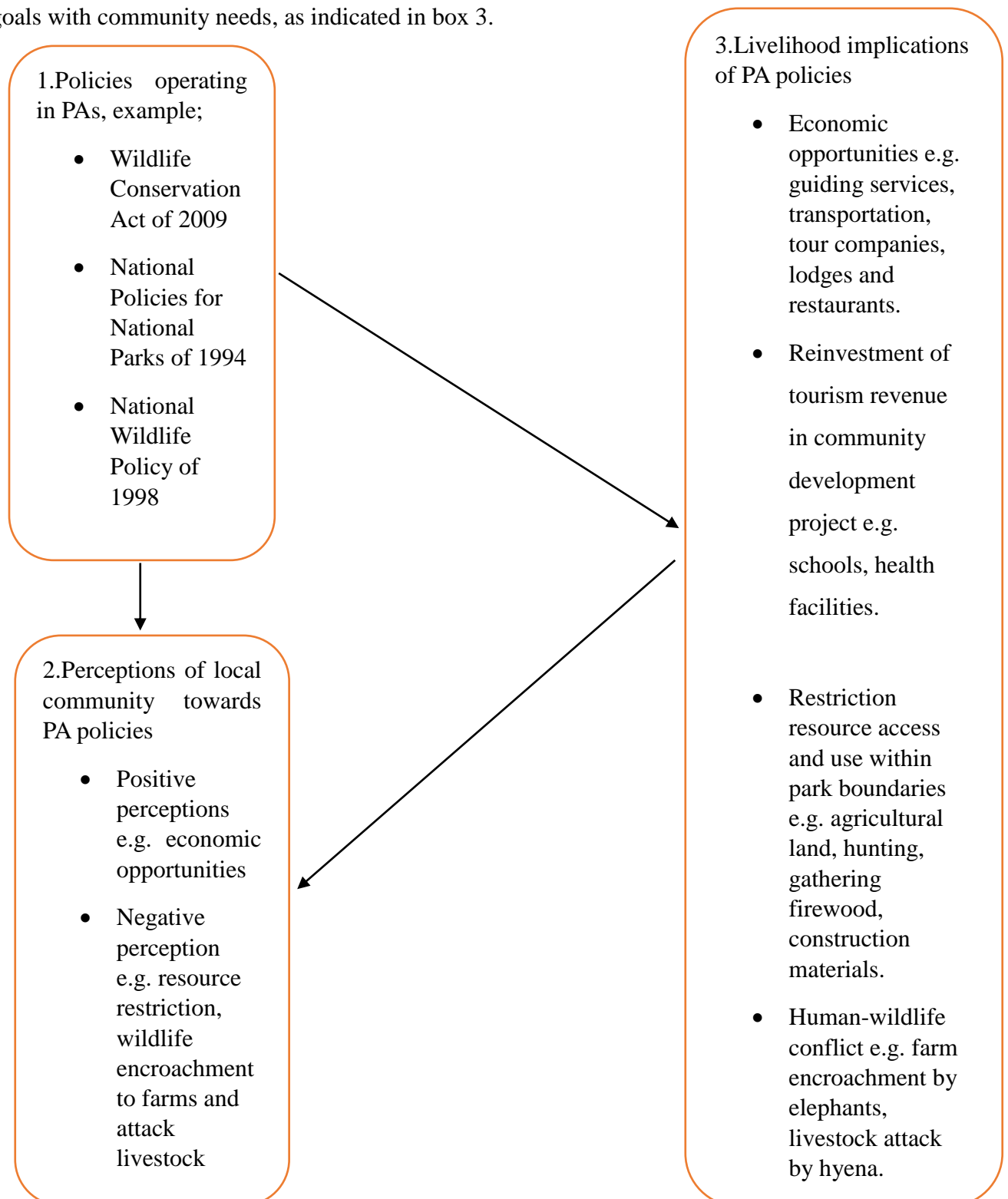
1.Policies operating in PAs, example;

- Wildlife Conservation Act of 2009
- National Policies for National Parks of 1994
- National Wildlife Policy of 1998

2.Perceptions of local community towards PA policies

- Positive perceptions e.g. economic opportunities
- Negative perception e.g. resource restriction, wildlife encroachment to farms and attack livestock

3.Livelihood implications of PA policies

- Economic opportunities e.g. guiding services, transportation, tour companies, lodges and restaurants.
- Reinvestment of tourism revenue in community development project e.g. schools, health facilities.
- Restriction resource access and use within park boundaries e.g. agricultural land, hunting, gathering firewood, construction materials.
- Human-wildlife conflict e.g. farm encroachment by elephants, livestock attack by hyena.

Figure 1.1 depicts the livelihood implications of PA policies on adjacent local communities. **Source:** Adapted from Woodhouse et al. (2018).

7. 0 RESEARCH METHODOLOGY

This section presents the research methodology, which covers the description of the study area, justifications for selecting the study area, the research design, research approach, sampling procedures, sample frame and size, types and sources of data, data collection methods, data analysis, and presentation methods.

7.1.0 Description of the Study Area

The study will be conducted in Arusha National Park, in the Arumeru District of the Arusha Region. The park spans 552 square kilometers in the northern circuit. It hosts diverse wildlife, such as giraffes, buffaloes, zebras, and various monkey species, making it a favored spot for walking and canoe safaris. The Wameru and Waarusha ethnic groups and immigrant populations, such as the Maasai and Chagga tribes, inhabit the park. Agriculture and livestock are the main economic activities (Mahenya & Chacha, 2020). The district is divided into 25 wards, with two wards bordering the park selected for this study: Ngarenanyuki to the north and Songoro to the south. Ngarenanyuki includes Olkun'gwado and Ilkrimun, while Songoro comprises six villages: Sura, Kilinga, Songoro, Malala, Ushiru, and Urisho.

The study focuses on three villages adjacent to a park for analysis: Ilkrimun and Olkun'gwado from Ngarenanyuki and Kalinga from Songoro. Ilkrimun was chosen due to its socioeconomic context involving agriculture, livestock, and tourism, which allows for evaluating the impacts of protected areas on local livelihoods. Olkug'wado village is selected for its proximity to the park and ethnic diversity. In contrast, Kalinga village is chosen for its wildlife richness and potential human-wildlife conflicts, both aiding in assessing livelihood implications related to protected areas policies.
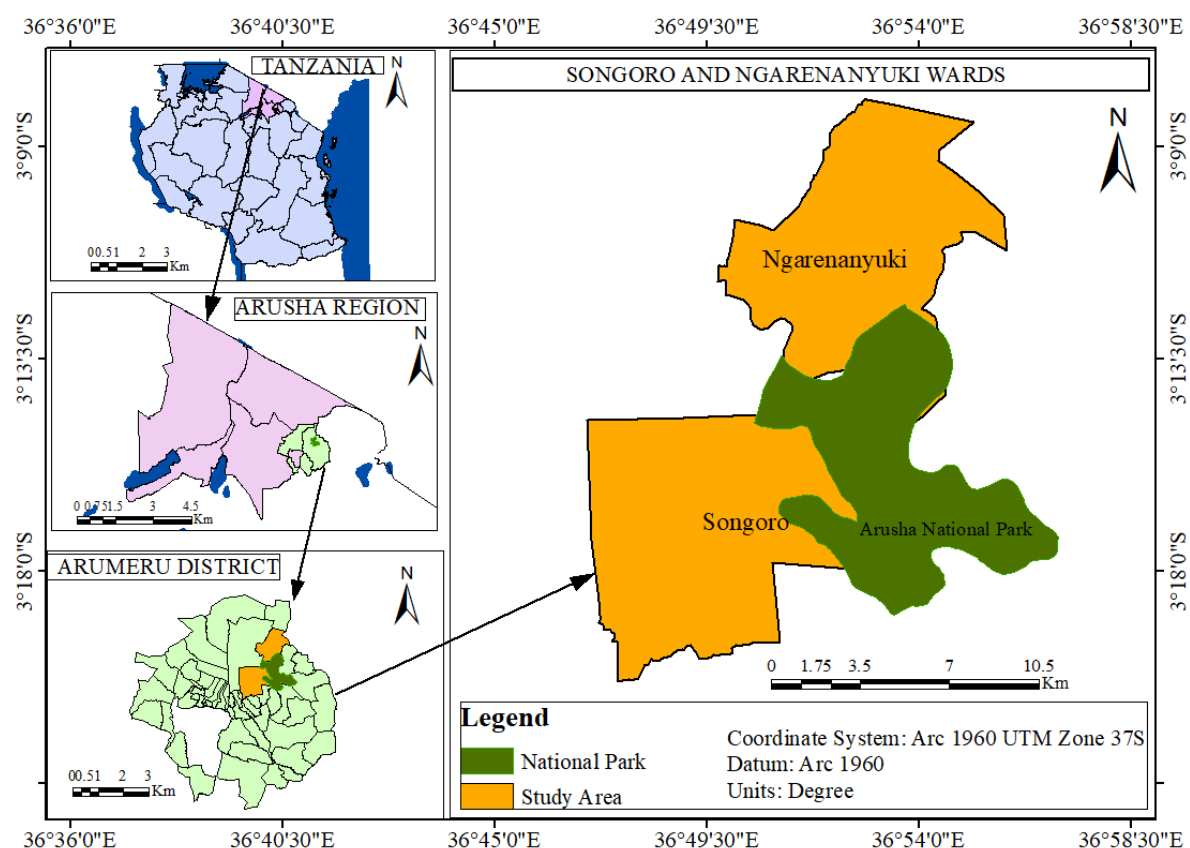
Figure1.0 A map of the study area (Arusha et al.)

Source: TANZANIA-2022 PHC-SHAPEFILE (URT, 2022)

7.1.3 Justification for Selection of the Study Area

Arusha National Park (ANAPA) is purposely selected as the study area for the following two primary reasons: firstly, numerous studies have been conducted in ANAPA over 30 years; however, there is inadequate information regarding the livelihood implications of protected areas on local communities, indicating a critical gap in understanding how these conservation efforts affect those who live nearby. Secondly, in recent years, the park has faced distinct challenges related to conservation and human-wildlife conflict, such as land use changes due to wildlife migratory corridor's blockage and encroachment, which led to the loss of livelihood of the people; these threats are now pronounced (Mtenga, 2023; Sanare et al., 2023). Therefore, an investigation into how the livelihood of the local people has been impacted is necessary for ANAPA.

7.2 Research Design

This study will adopt a single case study holistic research design. This type of research design is studied within a single bounded place and specific time, unlike multiple case study designs, which are bounded by more than a single place and different time frames (Gustafsson, 2017). This type of research design answers how and is more used when a researcher has little control of the events. In this design, the unit of analysis is always a case, where ANAPA will be a case study for this research. This design allows a mixed research approach. Therefore, researchers will utilize this design by applying a concurrent mixed approach, which enables the use of both qualitative and quantitative methods for data collection simultaneously to analyze the impacts of protected area policies on local communities around Arusha National Park, focusing on economic, social, and cultural dimensions through various data collection techniques. The design is adequate for an in-depth understanding of a particular phenomenon as it supports integrating qualitative and quantitative data, strengthening data validity and reliability.

7.3.0 Sampling Frame and Sample Size

7.3.1 Sampling frame

A sampling frame lists every element in your population (Tortora, 2019). This study's sample frame is the two selected wards surrounding Arusha National Park, with Olkug'wado, Ilkrimuni, and Kalinga villages as a unit for analysis.

7.3.2 Sample Size

The sample size for this study is obtained from three villages located in the two selected wards. By using the Yamane formula of 1967 with a confidence level of 90%, the sample size is calculated as follows

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

Where,

n= the sample size

N = the size of the population

e= the error of 10 percentage points

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

$$n = \frac{14299}{1+14299(0.1^2)}$$

$$n = \frac{14299}{1+14299(0.01)}$$

$$n = \frac{14299}{143.99}$$

n=99.3

number of sample size=99

Table 1.1: Proportional allocation of the samples across the study villages

Wards	Villages	Total household	Sample	% of the total sample
Ngarenanyuki	Olkug'wado	9211	64	64.6
	Ilkrimuni	867	6	6.06
Songoro	Kilinga	4221	29	29.4
Total		14299	99	100

7.4 Sampling Procedures

Sampling refers to selecting a subset of elements from a larger group of subjects (Schwarzbauer & Jovančićević, 2020). This study will utilize both non-probability and probability sampling methods. Non-probability sampling, which does not use randomness to select a subset from a population, will incorporate purposive sampling. In contrast, probability sampling guarantees that every unit in the population has a known, non-zero chance of selection through controlled randomness, enabling researchers to draw inferences about the population from sample data; under this category, simple random sampling will be used to select respondents.

7.4.1 Purposive Sampling Technique

Purposive sampling is a non-probability technique used in qualitative research to select informants based on their knowledge or expertise in a specific domain (Andrade, 2020). This technique will be used to obtain key informants, particularly ANAPA officials, local government leaders, and village executive officers. These informants will be selected based

on their working positions, adequate knowledge, and experiences to enable the researcher to acquire in-depth data on the context of livelihood implications of protected area policies to local communities adjacent to ANAPA. The composition is distributed in Table 1.2 based on selected wards and villages, two ward executive officers, one from each ward, three village executive officers, one from each town, and three local government officers, one from each selected village, and finally, 10 ANAPA officials from the park headquarters.

Table 1.2: Key informants

Key informants	Number of participants
Ward executive officer	2
Village executive officer	3
Local government leader	3
ANAPA officials	10
Total	18

7.4.2 Simple Random Sampling

Simple random sampling is a fundamental method in survey research where each unit in a population has an equal probability of being selected (Aityan, 2022). The strength of this technique is that it ensures the sample is representative of the entire population, minimizing biases that could skew results. In assessing livelihood implications related to protected area policies, this approach is crucial for understanding how PAs affect different population segments, including livelihood strategies. A total number of 99 respondents will be randomly selected from the three villages using the following formula.

$$N = Nh / N \times s \text{ whereby}$$

Nh = Proportional sample of households in each village

s = Total number of households in the study area

n = Number of households in each village

N = sample size of the households who will be selected in the study

olkug'wado $= \dfrac{9211}{14299} \times 99$

=64

Ilkirimun $= \dfrac{867}{14299} \times 99$

=6.02

Kalinga $=\frac{4221}{14299} \times 99$

=29

7.5.0 Methods of Data collection

This study will employ the following methods for data collection; in-depth interview, field observation, household interviews and systematic review of existing documents also known as documentation review as explained below.

7.5.1 Document Review

Refers to a widely used method for data collection especially in qualitative research which involves examining written records, images, or artifacts to explore historical data and gain insights into past events (Nilamsari, & Fatimah, 2020). Document reviews are often employed alongside other data collection methods such as interviews and observations (Kayesa, 2018). This method aims to systematically gather secondary data on the livelihood implications of protected area policies globally, with a focus on Africa, East Africa, and Tanzania, by reviewing various documents such as reports from Arusha National Park, conservation programs, evaluations, current policies and governance, local community participation trends, and related articles. The method's strength lies in its ability to gather background information on the topic and study area, enabling the researcher to understand the livelihood implications of protected areas in ANAPA through document review.

7.5.2 Field observation

This study will employ non-participant observation protocol to gather data through observing field activities. Non-participant observation is a research method where the researcher observes a social situation, group, or event without actively engaging in the activities being studied (Lavia et al., 2018). Under this method researcher will use a field notebook and digital recording devices specifically phone to capture photos of intended features to be observed such as grazing areas, buffer zones, agricultural, settlements, water sources, and tourist attractions while evaluating the impact of activities like farming, grazing, hunting,

and tourism on local livelihoods and protected areas. The strength of this method is to facilitate the researcher to observe all aspects in relation to study objectives. However, this method faces criticism for the risk of researchers losing objectivity due to immersion in the culture they study, and since field observations are context-specific (Lavia et al., 2018). To deal with it, researcher will navigate complex interpersonal dynamics and ethical considerations.

7.5.3 In-depth Interviews

This method will use a semi-structured interview guide as a tool for collecting data from key informants. The in-depth interview will be conducted with ANAPA officials, ward executive officers, village executive officers and local government leaders as distributed in composition table 1.2. The strength of this method it offers flexibility to explore emergent topics while following a predetermined structure, typically in a semi-structured format (Eppich et al., 2019). This method extends and formalizes everyday conversation, allowing for a discursive exploration of issues within a guided framework. Therefore, this method is purposely used to gather information about the livelihood implications of protected area policies in Arusha national park (ANAPA) and local community's perception on protected area policies. The weakness of this method is that can introduce bias and subjectivity, potentially compromising data validity and reliability (Hofisi et al., 2014). To deal with it, researcher will navigate complex interpersonal dynamics and ethical considerations.

7.5.4 Household interviews

Under this method researcher will design structured household interview guide focusing on socio-economic status, resource reliance, income sources, recourse use and community perceptions on policies guiding the park. A representative sample of 99 households with diverse demographics will be selected. This method is valuable for detecting substantial changes over time with relatively small sample sizes (Fraval et al., 2018). However, this method faces challenges in data quality and reliability. Issues include respondent selection bias and inconsistencies in reported values (Kumar, 2013). To deal with these weakness research will implement rigorous sampling techniques and statistical adjustments to mitigate biases and improve the representativeness of the survey results.

7.6 Data Analysis

This study employs content analysis for qualitative data related to the third objective and both descriptive and inferential statistical analyses for quantitative data addressing the first two objectives of the study.

Content analysis utilizes coding techniques to interpret and extract meaning from data by creating short phrases and identifying themes through established patterns. Three coding techniques will be used vivo coding, which captures participants' voices to derive themes related to policies operating in ANAPA, livelihood benefits of PA policies, and local perceptions on these policies; emotional coding, which utilizes an emotion wheel to analyze attitudes by identifying emotions in responses such as delight or disgust; and focused coding, which emphasizes frequently occurring data to extract main themes regarding the livelihood implications of PAs. Additionally, qualitative data will be analyzed with the aid of **NVivo** software and presented in form of themes and concepts.

Descriptive statistical analysis uses measures of central tendency and dispersion, such as mean, mode, median, and variance, to evaluate quantitative data on livelihood benefits of PA policies to local communities. Under this analysis, mean and standard deviation will be used where by mean income will help researcher to identify the average income of households affected by PA policies and standard deviation will shows how individual outcomes differ from the average. This analysis is essential for understanding the varying impacts of PAs on local communities. To strengthen findings derived from measures of central tendency, researcher will employ inferential statistical tests particularly **one-sample-t-test** to determine if observed differences are statistically significant or merely due to random variation in order to adds rigor to conclusions drawn about livelihood impacts resulting from PA policies. Finally, quantitative data will be processed with the aid of **SPSS** software and presented in form of frequencies, tables, charts and graphs.

7.7 Research Ethical Considerations

Ethical considerations are essential in research to guarantee that findings are reliable and adhere to established standards. They involve a framework of values and morals that guide scientific inquiry while aligning with legal and socio-economic contexts (Kova, 2023). To uphold ethical standards in this study, researcher will secure necessary approvals, such as a clearance letter from the University of Dar es Salaam and follow protocols from Arusha National Park before data collection. Researcher will also introduce himself to participants, clarify the study's purpose, and ensure voluntary consent for participation. This approach will help to foster integrity in reporting results, ensuring they accurately reflect participant responses without manipulation.

7.8 Validity and Reliability

Validity measures how accurately a test assesses what it is intended to measure, while reliability indicates the consistency and stability of the results produced by an assessment tool (Kova, 2023). Therefore, to ensure both the validity and reliability of data, this study will utilize triangulation by comparing various data collected from each method such as field observations, document analyses, in-depth interviews and household interview for validity. Additionally, researcher will design questions (research tools) based on three specific objectives that are intended to be achieved and proved by research supervisor in order to ensure reliability of the research process.

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BUDGET FOR THE PROPOSED RESEARCH FROM DEC, 2024 TO FEB, 2025

S/N	ITEMS	CALCULATION	SUBTOTAL	TOTAL
1	Research gears	I. Transport fee 500,000 II. Data collection 500,000	500,000/= 500,000/=	1,000,000/=
2	Accommodation & meals	I. Accommodation 20,000 x 90 days II. Meals 10,000 x 90 days	1,800,000/= 900,000/=	2,700,000/=
3	Data analysis	I. Software charges 200,000 II. Internet 100,000	100,000/= 100,000/=	200,000/=
4	Report writing	I. Stationary 200,000 II. Map production 500,000 III. Internet 100,000	200,000/= 500,000/= 100,000/=	850,000/=
5	Others	Extra budget 100,000	100,000/=	100,000/=
	Total			**4,850,000/=**