# Pre-Colonial Environmental Conservation: Strategies and Practices among the Sukuma of Tanzania

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## ABSTRACT

This paper aims to investigate the traditional methods of environmental conservation in Morogoro and Shinyanga regions. A review of conservation tactics, traditional conservation education, and practices in pre-colonial communities was the primary objective of the paper. The paper's methodology involves a critical engagement with past African historiographic traditions and a deliberate attempt to combat negative perceptions and misrepresentations about Tanzania environmental history in particular as well as Africa in general. Personal experience, introspection, life stories, interviews, historical observations, interactive, and visual texts that depict ordinary and troublesome events and meanings in people's lives were all gathered as part of this methodology. According to the indicated research theme, data analysis was conducted. Every theme was extended to create a comprehensive section. Findings revealed that, there is proof that pre-colonial societies in Shinyanga and Morogoro were the first to obtain and utilize natural resources. Hence, this demonstrated the endeavor to maintain equilibrium between their environments and practices. It was discovered that interactions between humans and nature were a part of pre-colonial environmental conservation efforts. It developed methods for preserving nature while ensuring access to it, rather than establishing distinct conservation categories. It was concluded in the paper that the interaction between humans and nature was a crucial factor in pre-colonial environmental conservation based on forest, wildlife and soil. However, policies, religious customs, and practices may have limited their access to and use of their environments in order to reflect pre-colonial society's existing stratification and other inequities. It was recommended that environmental conservation researchers and historians should reexamine and investigate the organizational models and narratives that support more significant local participation in environmental management. The local communities' status regarding the ownership of environmental resources could be redefined.

**Key words:** Environment, Conservation and Indigenous Practices

## INTRODUCTION

Traditional environmental use was in balance with nature before colonization because cultures had established norms and regulations that guaranteed the sustainable use of natural resources. The ecological change of natural forms was also noted by pre-colonial societies as a significant component of religious systems in every subsistence-based civilization (Matowanyika, 1991).

Various levels of conservation are represented by holy sites, ranging from the shrine of a single hunter to expansive sacred areas overseen by multiple political and religious leaders. In South Africa, the pre-colonial government likewise took action to control how outsiders used its resources (Schoffeleers, 1979). A royal hunting reserve was established by King Shaka in the current Hluhluwe Game Reserve. This reserve was set aside for the military and political elite in power (Matowanyika, 1991). In order to prevent early European hunters from killing wild animals, several African kings established crude management systems (MacKenzie, 1988). Mzilikazi, for instance, instituted a permit system for all hunters from Europe who wanted to visit his country. This system allowed the king to receive gifts and other favors in exchange for the right to hunt inside his domain. In exchange for permission, the king also demanded a portion of the hunt's proceeds (Masona, 1987).

The Iraqw people in northern Tanzania had a strong traditional understanding of how to use the resources and landscape in their entirety (Lawi, 2000). A number of distinct usage zones were established within their landscape. This division demonstrates, among other things, the Iraqw's understanding of the different kinds of soil and their properties, as well as how terrain affects the available land.

The experts mentioned above have studied pre-colonial environmental conservation policies in general. They merely recognized the power of superstructures (the function of chiefs or kings) in their social structures to protect their environments. The referenced scholars did not address the local community's environmental conservation efforts. Additionally, there was a partial discussion on the issues of conservation strategies, traditional conservation education, and practices in pre-colonial communities in specific cases. Therefore, this paper shades some light on pre- colonial environmental conservation practices in Morogoro and Shinyanga regions.

**Theoretical Underpinnings**

Ecological Revolution Theory has been the primary source of information used in this paper. Carolyn Merchant generated the Ecological Revolution Theory in 1989. According to Merchant, the Ecological Evolution Theory represents a substantial change in the way that people engage with nonhuman nature. The Ecological Revolution approach focuses on how humans and nature interact over time in a specific environmental context. It requires studying and understanding this relationship (environment and humans) in both time and space in order to get a more comprehensive view of all of its cumulative effects. Humans have the ability to change and influence the environment through contact (Balee, 1998). As such, it looks at the aspect of local initiative and agency. The idea outlined above has been applied in this study to explain pre-colonial environmental conservation methods and approaches. It has demonstrated how the Sukuma of Shinyanga and the Luguru of Morogoro have altered their interactions with nonhumans. The study uses Ecological Revolution Theory to show how human and nonhuman partnerships have evolved. For example, past environmental use was in balance with the environment because civilizations had established rules and regulations that ensured the sustainable use of natural resources. According to pre-colonial communities, the ecological alteration of natural forms is an important part of the religious systems of any civilization with a subsistence economy.

## METHODOLOGY

This paper has employed a qualitative approach. A naturalistic, interpretive approach to the subject matter is a component of qualitative technique. This means that qualitative researchers try to understand or interpret events in terms of the meanings people assign to them while studying things in their natural settings. A range of empirical materials, including case studies, personal experiences, introspection, life stories, interviews, historical accounts, interactive, and visual texts that depict ordinary and troublesome moments and meanings in people's lives, are studied in qualitative research.

In this paper, archival materials have been used. These are informational artifacts that provide proof of historical occurrences. They serve as memory aids that enable its users to remember and experience prior events or to re-communicate information about those events at a later time. They also contain a record of information about past activities (TNA, Archival Material, 2007). The researcher's attempt to comprehend pre-colonial environmental conservation and practices is supported by a combination of written historical sources and oral recollections in this article. The author interpreted these evidentiary items as complimentary because none of them can stand alone, despite the fact that they were produced by several social actors. Since all of this evidence reflects the subjectivities or perspectives of people who authored and produced them, interpreting them as complementary evidence allows the possibility to read and evaluate them against each other. Reading them as complementary evidence is also a way of acknowledging that the social actors who produced them, such as government officials who wrote archival documents or peasants whose reminiscences the author has uncovered through their descendants, did not live in isolated worlds. Rather, they influenced, engaged, and shaped each other within the limits that colonialism imposed. These social engagements allow us to glean the negotiations and relationships between the different actors who produced these materials.

A variety of written documents has offered an important evidentiarial basis for this paper, including archival records written by colonial government officials. The author accessed these documents at the Tanzania National Archives in Dar es Salaam, the largest depository of historical documents in Tanzania. Oral recollections constitute an important evidentiarial basis for this paper in which biographical and unstructured interviews were used. The biographical interview is the collection and analysis of an intensive account of a whole life or portion of a life, usually by an in-depth, unstructured interview. The account may be reinforced by semi-structured interviewing or personal documents. Rather than concentrating upon a 'snapshot' of an individual's present situation, the biographical approach emphasises the placement of the individual within a nexus of social connections, historical events and life experiences (the life history) (Denzin, and Lincoln, 1994).

In this paper, biographical and unstructured interviews were used because of their advantages over questionnaires and documentary reviews as they provide flexibility to both the researcher and respondents. Furthermore, these two types of interviews enabled the author to control the research process by adjusting questions whenever necessary as well as by creating new questions in response to informants' answers. In this regard, an open-ended question is designed to encourage a full, meaningful answer using the subject's own knowledge and/or feelings. It is the opposite of a closed-ended question, which encourages a short or single-word answer. Open-ended questions also tend to be more objective and less leading than closed-ended questions. Based on this study, open-ended questions were mostly used in oral interviews in order to accord a wide chance of giving more information about the study theme. Officials in National Parks (NPs) and agricultural departments deemed to have relevant information were interviewed, including interviewees who belong to family chief and other different social groups.

The author conducted the interviews in Morogoro and Shinyanga- Tanzania, but some parts of Shinyanga is now called Simiyu region it is a new region that incorporates Bariadi and Meatu Districts in which the author conducted the interviews before it became the new region. Specifically the study area concentrated in the followings villages Kilulu, Shishani, Mwanyahina, Miti Mirefu based on Shinyanga. Others were Doma, Mgeta Matombo, Kiroka and Mkuyuni based on Morogoro Region.

Local languages like Luguru and Sukuma were used. Since the author does not know them, he sought the assistance of assistant researchers who were familiar with these languages. The author received cooperation from his interviewees partly because of his assistants in the region. Their recollections generated important material on how their parents and grandparents had understood and dealt with threats to environmental conservation practices. The author interpreted the oral recollections as cumulative knowledge that his interviewees learned from their parents and grandparents and which they recreated in their contemporary world to make sense of the past. Core ideas on how earlier generations dealt with the challenges of environmental conservation from one generation to another, and how each subsequent generation infuses these ideas with contextual meanings to make them relevant in their time are immensely significant. Thus, oral recollections contain traces of the past, the contemporary experiences, and the dialectical interplay between them. Through the oral recollections, the paper has given prominence to understanding the views and arguments of people in these environmental conservation areas and how they have preserved their local knowledge and experience of their environment. This cumulative dimension has enabled the author to interrogate contemporary oral recollections as a window into the world in which the environments were conserved and developed in the past.

As a cumulative form of knowledge that defines individuals and social communities, each generation passes this knowledge to the next one. The process of passing memories from one generation to the next involves change and continuity in the nature and character of these memories. This change and continuity, Jan Shetler has noted, results from the fact that new generations tend to redefine and contextualize these memories in their own times, social contexts, and historical experiences. As they redefine them, they no longer reinforce the received facts that no longer have relevance in the new contexts and such facts may disappear in the contemporary recollections of the past( Jan, 1984).

Finally, oral recollections embody the self-interests and personal agendas of the interviewees. Through recalling the past, narrating about it, and systematizing the role that their parents accomplished in reshaping the environmental conservation, oral interviewees assumed the role of repositories of the memory of the social

processes that have shaped the development of their communities from the past to the present. For instance, elders narrated the stories about hunting practice in the past with confidence and their local authority in preserving the environment, and, they sometimes presented these stories as objective reality or truth. However, the author interpreted their oral recollections as subjective and interpretive constructions that they used to make sense of environmental conservation of the past. These recollections are as subjective as any other form of evidence that historians (both Africanists and non-Africanists) utilize to produce historical knowledge.

# FINDINGS AND DISCUSSION

## Introduction

The results were rigorously analysed. It began with primary data (archival documents, interviews, and unpublished dissertations) and ended with secondary data (books and periodicals that have been published). In this paper, three sections served as the foundation for the results' presentation and discussion: pre-colonial environmental conservation techniques and practices based on traditional institutions, social taboos, and the environment and people of the Luguru and Sukuma.

## Environment among the Luguru and Sukuma of Morogoro and Shinyanga regions

### Morogoro

This section provides a description of the Uluguru Mountains, stating that traditionally, woods and woodland have covered these mountain ranges (Rutatora, 1996). Similarly, the Uluguru area is considered to be very important for comprehending Luguru society. According to Young and Fosbrooke (1960), the terrain is rugged, mountainous, and steeply sloped.

Despite the comparatively simple agricultural tools, the land is impoverished and disadvantaged due to overpopulation and overuse. Consequently, the Luguru lineage members' control over the land and allotment of its usage became the main focal point of the social structure's development (Young, R. and Fosbrooke op. cit). This was not visible in the Shinyanga region, most likely because of the land's vastness and lack of mountains. Regarding the Uluguru Mountains, E.W. Bovile was cited as saying:

These highlands are of extraordinary beauty, and have been compared to those of Kashmir, through lacking the flora luxuriance of the east Great Rocks crop out on the floors of the valleys as well as on the hill-side; but nowhere does this ruggedness meet the eyes, for the whole landscape is clothed in dense tropical vegetation, though which only occasional gaunt peak rises above the general conformation of the hills. The rising sun turns the brilliant green of the virgin forest to a wonder medley of soft shades of pink and mauve and violet; but during the heart of the day the heights are enveloped in a veil of the softest blue. To the south, where the greatest elevation is reached, the mountains rise to the 7,000 feet contour over a considerable area (Young, and Fosbrooke op cit).

Bovile has attempted to illustrate the Uluguru Mountains' actual physical characteristics. His answer indicates that the region is mountainous, with trees and verdant grasses growing in the majority of its areas. Once more on the Uluguru highlands, especially on the east side where its roads loop through the more populous parts before continuing on to the more isolated Kutu region before finally disappearing into the immensity of the National Park. The road on the west side quickly leaves the plains and climbs into the mountains in a short, winding manner. It then continues for a few kilometers past Mgeta, where it comes to a sudden stop, with a big, mostly uninhabited area to the south of it (ibid).

### Shinyanga

As previously mentioned, Shinyanga's terrain is primarily level, with a distant low stone hill and enormous old baobab trees piercing the expansive horizon (Mlenge, 2004). This is not at all like the Morogoro terrain that we had previously experienced, particularly in Uluguru districts. In contrast, there are acacia or miombo forests with verdant grasslands beneath them elsewhere in Shinyanga. In general, Shinyanga's eastern region

is heavily populated, primarily open area with a large number of baobab trees and a few bushes (TNA, Shinyanga District Book).

With an average precipitation of 600–800 millimeters, the Shinyanga region is primarily semiarid. It has inconsistent rainfall that varies greatly from season to season. Long, dry summers define its low hills and plains, and traditionally, the area's natural vegetation has included vast acacia and miombo woods (Winrock 2006). The elevation of the mountains in Shinyanga consistently increases between 1,000 and 1,300 meters above sea level (Ndege, 1995). Rocky hills break up the wide or narrow valleys that define the terrain. The majority of the rocks in these hills are granitic, though occasionally gneissic. Additionally, some enormous plains were formed on old alluviual soils that came from granitic rocks (Ndege ibid).

More precisely, the Shinyanga region is part of the unimodal rainfall plateau. Ngitili is an agro-pastoralism system that is practiced in this agro-ecological zone (ibid). Ngitili, which translates to "keeping an area closed to allow grass regeneration for later use during the dry season," is an indigenous knowledge utilized to restore degraded land, conserve and protect soils, and alleviate shortages of dry season feed supplies (Wirock op. cit). In the beginning, the natural vegetation consisted of bushland and woodland. However, with the exception of a few acacia and baobab trees, many areas became treeless as a result of extreme deforestation. An open bush savanna has increasingly replaced the vegetation. According to Wirock (op. cit.), the Shinyanga region was once heavily covered in woodland and bushland species, including Acacia, Brachystegia, Albizia, Commiphora, and Dalbergia. As previously mentioned, Shinyanga is mostly made up of flat landscapes with long grasses and lots of trees. Given the information mentioned above, this section has therefore illustrated Tanzania's environmental diversity. This variance reflects the differences in how economic activities and the social and political organizations that are associated with them are conducted. As will be explained in the next section, this environmental disparity had an impact on their environmental conservation methods and behaviors.

**Pre-colonial Environmental Conservation Strategies and Practices**

Most modern scholars have a tendency to romanticise pre-colonial conservation methods and approaches. Pre-colonial societies were the first to access and utilize natural resources, according to the data that is currently available. Consequently, this demonstrated the endeavor to maintain equilibrium between their surroundings and actions. Murombedz (2003) noted that the literature and knowledge of pre-colonial environmental conservation practices in Africa are somewhat limited. Because of the low population densities, primitive hunting and farming methods, and sedentary inhabitants, ecological protection was generally included into the regular economic, social, and religious activities of the day. This would seem to indicate that colonial officials could have built on the existing indigenous knowledge base instead of converting foreign conservation practices.

The pre-colonial era was similarly marked by low population density, little use of forest resources, and forest administration through traditional organizations. People's impact on the environment was minimal since they lacked the technological capacity and markets necessary to overuse natural resources. Large savanna regions were likely altered by fire, which was the primary anthropogenic influence on forest forms prior to colonization. The ecology was very slightly impacted by shifting agriculture and grazing because of the small population (Bassert, 1993).

Like in other African nations, Tanzanians relied heavily on trees for their livelihoods, and uncultivated land was owned collectively before to colonization. The woodlands provided clothing, food, medicine, water, and a space for religious activities. Because it made a substantial contribution to the community's food supply, hunting was an essential activity in many civilizations (Zahabu, 2009).

**Morogoro**

It was said by the Luguru of Morogoro that leaders were held in high regard and were in charge of managing the natural resources. Society received guidance from these individuals on how to preserve woods, particularly those that are under restriction. The spirits were said to prevent people from harming the forest, according to

these chiefs (Kisegeyu, 2011). Customs, taboos, and beliefs were among the traditional institutions that governed the management and use of forest resources. When Arabs arrived in Tanzania in the early 18th century and began selectively felling certain tree species, Tanzania began to engage in small-scale commercial exploitation of its forests and woods for lumber (Kisegeyu ibid). These assertions are still true today, since people lived in a subsistence economy in many respects. Likewise, Chenje contends that in pre-colonial times, traditional leaders controlled land and other natural resources through clan- or tribal-based organizations (Chenje et al. 2001).

Hunting was a pre-colonial activity for Tanzanian people in the Luguruland. This resulted from the social and economic conditions that were in place at the time, as well as the relatively immature nature of the production relations. Before colonization, the "hunting industry" might have been a distant part of a community-based activity.

Established on customs, laws, and conventions, the activity was designed to guarantee peaceful coexistence between the locals and wild animals (Mrisho, 2001). The precolonial state and legal systems of the majority of hunting groups were set up in a way that granted the chief and local clan leaders vast authority over their enforcement apparatus. In the pre-colonial era, the industry was governed by prescribed hunting norms that attempted to provide for the needs of the community as well as known fair, appropriately enforced, and reasonably effective in preventing overexploitation of wild animals (Mrisho op cit). Chiefs and clan heads were the only people in some tribes who could hunt or approve of hunting. In terms of hunting, these authorities had to follow specific customs and protocols. Before going on hunts, they occasionally had to carry out customary pre-hunting sacrifices and rites to obtain the ancestral spirits' blessing (Mrisho op.cit).

During pre-colonial times, hunting seasons were typical in communities. Hunting certain animal species that were typically regarded as sacred or totemic was prohibited. In an interview conducted in Doma village in the Morogoro region, the interviewee made the same claim, stating that local authorities used taboos to control hunting practices, allowing only certain animal species to be hunted (Hamza, 2012).

The people who lived in Doma, Morogoro, had firsthand knowledge of environmental conservation. They were able to establish a healthy equilibrium between the need to preserve the environment and the need to utilize the natural resources for their daily needs. For instance, the endangered hardwoods Mkangazi and Mninga, as well as animal species, are considered taboo. This was carried out because certain tree types were in charge of providing rain. Communities were warned to preserve their already harvested crops by certain animals that were utilized to identify favorable harvest and drought seasons (Kilasa, 2011). Additionally, some places were set aside by the community for use during the dry season. The Doma village's residents thus balanced their usage of the environment in this way.

In addition to what has already been said, our field data has demonstrated that the Luguru communities primarily rely on their traditional institutions to preserve their ecosystem (Kabbi, 2001). Almost all African societies have simple traditional institutions. They are frequently divided into traditional leaders, traditional healers, members of society who have demonstrated exceptional proficiency in indigenous knowledge, and an age-based hierarchy.

An interview conducted at Mkuyuni in Morogoro with Kibwana Mbega, a former son of the chief, provides evidence of the aforementioned fact. Mbega (2011) states that "there were traditional tribal rules to conserve the forest." The "enforcement was upon the clan elders with supreme power over the possession of the land and forest of the related clan," he adds (Mbega ibid). In agreement with the aforementioned interviewee, Kideghesho (2001) disclosed that a research conducted in the Serengeti showed that communities were eager to work with state agencies through their traditional institutions in order to combat unlawful hunting. "There were strategies in conserving forests and land fertility during the pre-colonial period among the Luguru," said other respondents. For example, it was forbidden to fire a shrub.

Similarly, (Hamisi, 2011) agrees with Kideghesho (2001) by commenting that there were strategies in conserving forests in pre- colonial era. For example, bush burning was not allowed in Uluguru Mountains, the traditional institution commanded high loyalty among communities due to strongly held beliefs that a failure to

observe taboos or rule governing them could cause hazardous misfortunes to the respective communities (TNA, Morogoro 1942.

"Natives had their own strategies of conserving environment, some forests were preserved," according to Bogasi (2011), in a same line of reasoning. Taboos were used to conserve forests; for example, it was forbidden to cut down trees near Mlima Ng'alo (Bogasi, 2014). An interview with Mkunde (2011) in Kiloka made the same assertion, stating that "forests like Dinyango, Bondwa, and Kisamuili were protected and it was taboo to cut trees, failure to observe this could cause problems to the whole society" (Mkunde, 2011).

Both Mkunde (2011) and Kideghesho (2001) concur that kihore, an oath, was utilized by traditional institutions to regulate behavior. The community may experience several droughts, insect outbreaks, animal losses, and subsequent hunger, while the wrongdoer may suffer negative consequences such as death, extreme poverty, and incurable sicknesses as a result of kihore. Other Tanzanian groups have comparable organizations and authority; however they might not be as powerful as they formerly were. Abhaloking (Natla), Abhagamunyavi (Sizako), Vanjuma (Gweno), Laigwanan (Masai), Wafumwa (Pare), and Abhachama/Abhazama (for Issenye/Ikizu tribes) are a few examples (Kidegosho op cit).

Mdung'ile (2011) states that indigenous communities of the Luguru people have historically undertaken environmental conservation by preserving tree species. The clan leaders were in charge of protecting wetlands and trees like Mvule (Mililia excelsia), Mkangazi (Khaya Nyasica), and Mninga (Pterocarpus angiogenesis), and it was forbidden to remove them (Mdung'ile, 2011). Hence, taboos and legislation, according to Folke and Coldin (2001), showed promise in guaranteeing the survival and conservation of endemic and keystone vulnerable species, as well as their habitats. Their numbers are relatively high in places where these species are considered totemic or venerated (Folke and Coldin 2001).

Clan or tribal elders have the authority to punish anyone who kill, destroy, or consume totemic animals (Mdung'ile, 2011). To placate enraged spirits, however, it is frequently necessary to undertake clearly specified traditional rites (ibid). When an Ikoma person kills a totemic animal, the clan to which they belong is required to pay a fee that exceeds their daily budget, kill a domestic species, and provide the local beer. According to the same theory, Kweka (1993) suggests that in Usambara, killing a male sheep or a white or black cock is used as restitution for felling a sacred tree. The aforementioned claim is supported by an interview conducted in Mgeta with Kobwe, C. (2011), who also states that killing a male goat is used as recompense for felling a sacred tree (Kweka, 1993).

During the pre-colonial era, the Luguru people heavily relied on social taboos and local customs to preserve their ecosystem. Almost every human society had taboos prohibiting particular behaviors and actions. These are ethical or warning limitations imposed on particular practices by those in positions of power (e.g., kings, priests' elders). They are mostly based on religion and long-standing traditional beliefs and social conventions; some of them also emerged in reaction to environmental issues and indigenous knowledge-based reasoning (Mbogo, 2011). Soge (2011) had the same opinion when he said that the Luguru of Mgeta were able to preserve their forest by enforcing taboos and rules set by traditional authorities. In the same vein, Munamato, C. and Masaka (2010) discussed how environmental taboos play a crucial moral role in the ontological well-being of both the individual and the ecosystem as a whole among the Shona people of Zimbabwe. The Shona people did not adopt a new epistemology that prohibited and restricted the unsustainable use of particular plant species, woods, mountains, rivers, pools, and nonhuman creatures, among other ecological species in the environment, through taboos (Munamato, C. and Masaka, D. 2010). According to Munamato and Masaka (op cit.), the Shona people have managed to hold onto some of their most treasured values, such as taboos, despite feeling the full force of colonization and globalization.

As a result, many in society accept traditional institutions without question because they think they have religious or heavenly authority. Conservationists can use this reality as a starting point for their attempts to revitalize and advance these institutions' conservation function. In particular in terms of agricultural methods, the Luguru people had a tight interaction with their surroundings. In this over a decade, for instance, certain regions were set aside as fallows. This gave the vegetation cover an opportunity to recover. Additionally, it supplied grasses for cattle and the soil's natural fertility for the growth of agriculture. Thus, this improved the

region's ecological equilibrium (Shombi, 2011). The Luguru of Morogoro had firsthand knowledge of soil erosion conservation techniques.

Similarly, in order to prevent soil erosion, certain trees known as "minganunga" were planted along the hills at Mgeta in the Nyandira area. Because the minganunga trees were used by the local communities, the rate of soil erosion in the Nyandira area was low (Nyendiva, 2011). It was also mentioned in the same community that planting trees known as "midugutu" helped prevent soil erosion. Such trees could not be chopped in the Mizungu Mwembe forest. As a result, the forest's soil was able to maintain its integrity and purity (Dimoso, 2011).

According to this perspective, Mwaura (2008) claimed that the Matengo people, who are thought to have inhabited the steep slopes of the Matengo highlands since the Iron Age, had developed farming technology. They had created a highly advanced technology that allowed them to prevent soil erosion on their "ngoro" farms and cultivate crops on hillsides. Fertility and soil moisture retention were enhanced by this agricultural method (Mwaura, 2008).

Many African societies also engaged in this experience; for instance, many native approaches to environmental conservation included transhumance, minimum tillage, agro-forestry, shifting cultivation, mixed cropping or intercropping, and other techniques (Mwaura, op. cit). In order to increase yields while also protecting the environment, these technologies and practices were widely adopted in conjunction with a variety of other land use and management techniques (ibid). Kjekshus (1977) provided a deeper understanding of the aforementioned observation when he added that, prior to colonization, agriculture production was based on traditional technology, using shifting cultivation or a fallow system as a way to maintain labor productivity and create soil fertility. Long periods of fallow were made possible by low human density, which facilitated both quick forest recovery and the regeneration of soil fertility (Kjekshus, 1977). Furthermore, Kjekshus, (1977) noted that certain areas were set aside for religious ceremonies, animal grazing, and other purposes including protecting water catchments.

**Shinyanga Region**

As mentioned in the preceding section, there was a reciprocal link between humans, livestock, and land use in Shinyanga. These have been crucial in preserving the environment's equilibrium (Kamata, 1993). In the past, during the dry season, people set aside land for pastures. This practice persisted until Shinyanga's introduction of villages. This demonstrates that indigenous people were sufficiently knowledgeable about the ecosystem and had created effective management strategies. Lugundiga, a transhumance technique used by the Sukuma people, is a way of keeping a plot of land for dry-season grazing. All of these attempted to guarantee that the ecosystem was in a certain state of balance. The following observation provides a clear summary of this articulation:

In maintaining a certain environmental balance the particular herding and grazing practice of the Sukuma herdsmen have been of great importance. By realizing grazing pressure exposed soil at seasonally critical points and by resolving to long distance movements and, in the last resort, migration when no other solutions are at hand, a certain balance has been maintained (Kamata, op. cit).

In Shinyanga, the Sukuma people's traditional environmental management was not only seen as necessary but also essential to preserving ecological balance in the lack of significant investment that would provide irrigation, piped water, or stored fodder. One of the interviewees agreed with this explanation, bringing up the following point:

To avoid destruction of water sources, elders dug the dams that were used by their livestock. Some areas were reserved for pasture to be used during the dry season. Generally their number was very small they knew how to balance their environment (Gimba, 2011).

Similar views are expressed by Mlenge (2004), who contends that traditional ecological knowledge plays a significant role in the long-term interactions between local indigenous populations and the area's vast

ecosystems. It can also help to understand how management choices and human activities affect the long-term ecological composition, structure, and function (ibid). It indicates that the people who understand their surroundings and know how to engage with them (Mlenge, 2004). It is their discretion to use the environment. According to the same line of reasoning, one of the interviewees claims that burning the grasses to create new pastures was a common practice. In theory, this was accomplished without harming the environment. According to Ipolu (2011), the fresh grasses that were left over after burning were crucial for cattle's nutrition, reproduction, and general health.

Mlenge (2004) explains that it refers to the individuals who are familiar with their surroundings and know how to engage with them. It is their choice to use the environment. One of the interviewees claims that burning the grasses to create new pastures was a common practice along the same line of reasoning. In theory, this was accomplished without endangering the ecosystem. After burning, the new grasses were said to be very important for cow nutrition for both health and reproduction (Ipolu, 2011).

It was strictly forbidden to hunt, graze, or cut down trees in designated areas. Evidence for this comes from an interview with Mwakisu (2011), a forest researcher in Shinyanga, who was quoted as saying that resource utilization was essentially managed by "dagashida" institutions. It was primarily carried out by the "sungusungu," or local soldiers. He continued by highlighting the significance of this approach for pre-colonial environmental conservation (Mwakisu, 2011).

One of the oldest elders of the Sukuma in Shinyanga town, Maroda (2011), made a different observation. According to Maroda (2011), some chiefs were in charge of environmental conservation. For instance, there were severe restrictions on the "Kizumbi" forest, which prohibited tree-cutting (Maroda, 2011). The interviewee went on to say that elders pushed for the construction of dams for cattle rather than exploiting water sources (Gimba, 2012). Even the land where the Kilulu mission was constructed, he continued, was primarily set aside by the indigenous people using a system of custom known as "ngitili," and it was managed by "wanangwa," or local chiefs. The region was occupied by the Europeans, and a mission was established there (ibid). In a similar vein, Kweka (1993) argues that using and implementing indigenous knowledge and natural resources management systems that offer practical methods for biological variety conservation and sustainable resource use must be regulated. As we have observed among the Sukuma, environmental conservation was the responsibility of their local institutions (Kweka op. cit). In addition, Kweka (1993) stated that different species and ecosystems linked to local commons are frequently governed by institutions at the local level that control access and use rights to resources in space and time (ibid). In this way, local institutions facilitated capacity building and participatory decision making and sustainable approaches to pre-colonial environmental conservation.

Specific species taboos and habitat taboos are two categories for taboos pertaining to conservation. The species taboos restricted and outlawed harvesting, harmful use, and eating, protecting plants and animals in both space and time (Kweka op. cit). Kideghesho (2010) concurs with Kweka (1993) in stating that taboos and totemic affiliation with localities and wild flora and fauna species are typically incorporated into traditional African cultural practices to conserve and protect natural resources against overexploitation. Creating organizations that can monitor and control resource use in a sustainable manner is another aspect of the techniques. Tanzanian laws and taboos in the Western Serengeti guaranteed resource efficiency.

It was thought that a sacred tree in Shinyanga among the Sukuma, known as Blighia unijugata or ntamanwa, could kill someone just by touching it or even by removing a limb or a bark. The village's residents are even scared to discuss it (Temu and Makonda, 1999). Only those with permission may obtain the tree following a certain ceremony, despite the fact that it had therapeutic benefits in treating tumors and cancer.

It protected a water supply that is vital to around 1500 persons in the Runzewe ward (ibid). Despite having no official legal support, taboos and rules work well to control behavior, enforce adherence to social norms, and improve conservation (Mbago, 2011). In the Shinyanga region, Temu and Makonda (1999) noted that in Msasa village, harming a sacred tree called Blighia unijugata is made right by killing a sheep called nholo ja kifuho in Sukuma and making a local beverage called ntulile and kangara. Taking care of sacred species has become a societal obligation. Additionally, it was thought of as a municipal environmental conservation policy that

directed individuals to protect their surroundings. The same thing happened in Shinyanga among the Sukuma, where it was said that cutting down trees was forbidden by Sukuma taboos. Thus, natural wells and water sources were set aside. In the Habia area, which is now in the Bariadi district, for instance, there were two wells that are reputed to have never dried up, even during periods of severe drought. Additionally, specific education based on taboos was being offered. This was mostly started by special individuals who used plants called isule to convey some medicine and shield the area from floods and insects Ntimba (2011). This was carried out by extremely particular people, and it was reported that insects and drought had an impact on farms that did not utilize isule (ibid).

Another observation stated that the pre-colonial village had a very small population and that their needs were met by the land. Every clan guarded its mpagaa, or conserved areas, which were held until the following rainy season. In order to provide pastures for their animals, these regions were crucial (Kisusi, 2011). Mwandu (2011) also mentioned that pre-colonial communities in Shinyanga protected their environment by privately owning tiny sections known as ngitilii, which were community-based forests. Chiefs and subchiefs were primarily responsible for overseeing these forests. In those forests, it was illegal to cut down trees or carry out any other commercial activity. According to the major belief, taboos imposed by ancestor spirits prevented such actions from taking place in the woodlands (Mwandu, 2011). As a result, the general public became afraid, and their surroundings were automatically protected. Maganga (2011) made the same assertion, stating that there were hazardous woodlands that were inhabited by ancient spirits. Consequently, no one was permitted to exploit these woodlands. People who made mistakes in the community were thought to be sacrificed in the woodlands. Nngalu and Negezi are the names of these woodlands (TNA, 1921).

In a similar vein, Maganga (2011) claimed that there was ample land in Shinyanga because the pre-colonial population was so small. There was virtually little environmental destruction. According to Maganga (2011), local leaders were adept at allocating land for sustainable usage. In the same line of reasoning, Bassett (1993) claims that because of the lack of population pressure, resources were abundant in the pre-colonial age. Thus, the system was considered sustainable even when shifting cultivation was used (Bassett, 1993). The existence of local institutions and their powerful allocation authority may have also played a role in the system's apparent sustainability (ibid).

In Shinyanga, the use of taboos as a deterrent to environmental degradation was once more observed. At this point, the elders invoked the ibimbe and yenge, their ancestral spirits. These spirits were employed to determine the type of animals found in a given forest and to call wild animals. Hunters were often prohibited from entering the forests until they had conferred with the ancestors using these spirits. As a result, wild animals' lives and sustainable existence were maintained. The claim made by Kideghesho (2010) that the pre-colonial traditional cultures in the Western Serengeti were physically and spiritually linked to the flora and animals in their immediate surroundings lends credence to this.

According to Kideghesho (2010), pre-colonial Western Tanzanian villages were able to preserve their wild animals thanks to the efforts of their local leaders. It demonstrates that the Ikoma and Nata communities' hunting industry had specific knowledge and rules that guaranteed the wild animals' continued existence in the region. The Sukuma in Mwanza and Shinyanga have shared the same taboos. For instance, an interview conducted in Shinyanga disclosed that hunting practices were regulated by a number of taboos. Hunting infants and employing poisons of any type were prohibited, and all hunters were to be identified in the community so that the leaders could isolate those who disobeyed the rules (Maganga, 2011).

An interview in Shinyanga at Kilulu village found that hunting was considered an official job, revealing the same experience. In addition to having the necessary knowledge and abilities, hunters must also be familiar with the rules and taboos surrounding hunting. Hunters were prohibited from hunting any animal that was not used for food due to taboos and rules. Hunting animals that were found to be drinking water was also prohibited (Gimba, 2011).

## CONCLUSION

Therefore, it is important to note that pre-colonial environmental conservation, which was based on forest

wildlife and soil, focused on the unity of humans and nature rather than establishing distinct conservation categories. Instead, they developed methods for preserving nature while ensuring that it was accessible. The goal of environmental conservation was to ensure that people could use nature, even while rules, religious customs, and practices may have limited this access and use to reflect pre-colonial society's existing stratification and other inequities. Historically, Tanzanian pre-colonial societies freely interacted with animals and preserved their environment in accordance with their cultural norms (Mkunbukwa, 2008). Many traditional forms of collective natural resource management are still in place today among local communities of farmers, hunter-gatherers, and pastoralists across Africa, supporting the livelihoods and cultures of millions of people. Over the past few decades, there has been an increasing understanding of the value of collective natural resource management techniques and institutions, as well as how historical events have interfered with local people's capacity to manage the resources and lands on which they rely. This finding serves as a foundation for future studies that will examine colonial environmental conservation programs among the Luguru and Sukuma, particularly between the 1920s and 1959.

## RECOMMENDATION

It was suggested that scholars and researchers who are studying environmental conservation should revisit and explore the narratives and organizational models that encourage greater local involvement in environmental management. It might be possible to rethink the status of local communities with reference to environmental resource ownership.

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**Interviews conducted (primary sources)**

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2. An interview with Mr Hamza Kisegeyu at Kiloka, in Morogoro
3. An interview with Semeni Mrisho, Seleman Bakari, Kulwa Ramadhani, Shabani Issa and Abdallah Juma at Doma in Morogoro
4. An interview with Semeni Mrisho, Seleman Bakari, Kulwa Ramadhani, Shabani Issa and Abdallah Juma at Doma in Morogoro
5. An interview with Fatuma Kilasa at Doma Village, in Morogoro
6. An interview with Kibwana Mbega, at Mkuyuni, in Morogoro
7. An interview with Semeni Mrisho, Seleman Bakari, Kulwa Ramadhani, Shabani Issa and Abdallah Juma at Doma in Morogoro
8. An interview with Hamza Hassan at Doma, Morogoro Regi
9. An interview with Asha Bogasi at Kiloka this is a retired woman; she saved as the chair person of the village government. She was the one who initiated the village environmental committee at Kiroka.
10. An interview with Mr Shomari O.Mkunde, at Kiroka, in Morogoro
11. An interview with Abdallah Mdung'ile at Mgeta, Morogoro
12. An interview with Charles Kobwe at Mgeta, Morogoro
13. An interview held with Christna at Nyendiva village- Mgeta,
14. An interview with Beno Dimoso, Nyendiva village- Mgeta,
15. An interview with Mr Katunge Ipolu, at Lubaga in Sinyanga,
16. An interview with a Forest Researcher, Mr Endrew Mwakisu in Shinyanga
17. An interview with Mzee Maroda, Iddi at Kizuka ward in Shinyanga
18. An interview with Mzee Gimba, at Kilulu village , Bariadi in Shinyanga
19. An interview with Martim Mbago at Mgeta in Morogoro,
20. An interview with Mr Daniel Ntimba, Shinyanga
21. An interview with Mr Samweli Kisusi, Masengwa village, Shinyanga
22. An interview with Mr Mwandu Damweli, at Ndala "B" Shinyanga
23. An interview with Mr Shomari O.Mkunde, at Kiroka, in Morogoro
24. An interview with Abdallah Mdung'ile at Mgeta, Morogoro

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