



POLAC INTERNATIONAL JOURNAL OF ECONS & MGT SCIENCE (PIJEMS)
DEPARTMENT OF ECONOMICS & MANAGEMENT SCIENCE
NIGERIA POLICE ACADEMY, WUDIL-KANO



EFFECTIVENESS OF GRAZING RESERVE POLICIES ON SUSTAINABLE LAND USE AND FOOD SECURITY IN THE FEDERAL CAPITAL TERRITORY; 2015 – 2024

Mustapha Nurudeen Adekunle

Department of Political Science, Nasarawa State University Keffi, Nigeria

Abstract

This study examines the Effectiveness of Grazing Reserve Policies on Sustainable Land Use and Food Security in the Federal Capital Territory, Nigeria, from 2015 to 2024. Anchored on the Sustainable Development Theory (Brundtland, 1987), which emphasizes the integration of environmental, social, and economic sustainability, the research aims to assess the role of grazing reserve policies in promoting sustainable land use and food security. A survey design was employed, targeting a population of approximately 2,000 livestock farmers. A sample size of 300 farmers was selected through stratified random sampling to ensure diverse demographic representation. Data were collected using structured questionnaires administered to the participants. The study's findings indicate that while grazing reserves have contributed to reducing conflicts between farmers and herders, challenges such as inadequate infrastructure, poor policy implementation, and limited access to resources persist. These challenges have hindered the full potential of grazing reserves to enhance sustainable land use and food security in the region. Furthermore, inadequate government support and lack of community involvement in the management of grazing reserves exacerbate these issues. Based on the findings, two recommendations are made: (1) the need for improved policy implementation and monitoring mechanisms to ensure that grazing reserve facilities are adequately managed, and (2) the promotion of community-based management practices that involve local farmers and herders in decision-making to enhance the sustainability of land use and food security in the region.

Keywords: Grazing Reserve Policies, Sustainable Land Use, Food Security, Federal Capital Territory.

1. Introduction

The increasing demand for land capitals for agricultural purposes especially in a fast-urbanizing area like the Federal Capital Territory, has posed significant challenges to sustainable land use and food security. Grazing reserves, which were initially designed to provide designated areas for livestock grazing, have emerged as a central element in addressing the land use conflicts between farmers and herders. However, the effectiveness of grazing reserve policies and the management practices associated with them have been widely debated, especially in areas with diverse agricultural practices and competing land use demands. Grazing reserves were introduced in Nigeria as part of the government's policy response to reduce the conflict between nomadic herders and sedentary farmers. The reserves are intended to provide permanent grazing spaces for pastoralists, which not only helps maintain

their livelihoods but also seeks to mitigate the tension and competition for land resources between herders and local farmers (Adamu et al., 2022). The importance of grazing reserves in promoting sustainable land use cannot be overstated, as they provide a dedicated space for livestock grazing and allow for better land management practices to be employed. In addition, grazing reserves contribute to the broader objectives of food security by reducing disruptions in agricultural productivity that result from conflicts over land use.

Grazing reserves, when managed effectively, can play a significant role in promoting sustainable land use practices and reducing conflicts over land. In the Federal Capital Territory, grazing reserves have been established with the objective of addressing the competition between agricultural activities and livestock grazing. Studies have shown that well-maintained reserves not only reduce environmental

degradation associated with unrestricted grazing but also promote a stable environment for both farmers and herders, leading to improved food security outcomes (Onwudiwe & Chukwuma, 2023).

The policies supporting grazing reserves aim to control the spread of desertification and soil erosion by managing grazing activities within designated areas. Grazing reserves also help in preventing the uncontrolled movement of livestock, which has been associated with crop damage, soil depletion, and clashes between herders and farmers. Furthermore, effective management of these reserves, including the provision of water and veterinary services, has been linked to healthier livestock and increased meat and milk production, contributing positively to food security in the region (Bello et al., 2023). However, the level of policy implementation and adherence has varied across regions, affecting the overall effectiveness of the reserves in meeting these goals.

Despite the potential benefits, several challenges undermine the effectiveness of grazing reserves in Federal Capital Territory. One of the primary challenges is the lack of adequate funding and infrastructure. Many grazing reserves lack essential resources such as water points, fences, and veterinary services, making it difficult for herders to maintain the health and productivity of their livestock. This lack of infrastructure often forces herders to leave the reserves in search of these resources, which results in conflicts with local farmers and disrupts the intended benefits of the policy (Nwokedi & Okechukwu, 2023).

Another significant challenge is the issue of land ownership and tenure security. In Nigeria, many land ownership structures are based on customary rights, which often conflict with government-designated grazing reserves. This conflict creates uncertainty for herders, who may face resistance from local communities unwilling to relinquish control over their ancestral lands. Furthermore, the absence of clear legal frameworks to resolve such disputes has made it difficult to enforce grazing reserve policies, leading to a lack of compliance and escalating land use conflicts (Abubakar, 2022).

Political and socio-cultural factors also play a role in the challenges faced by grazing reserve policies.

Resistance from local communities, who may perceive the establishment of grazing reserves as a threat to their agricultural land and livelihoods, is a significant barrier. Additionally, political interests and ethnic tensions have exacerbated these conflicts, as herders and farmers may belong to different ethnic groups, leading to further polarization and hostility. The politicization of grazing reserves has sometimes resulted in policy delays and inconsistent implementation across different states, further complicating efforts to achieve sustainable land use and food security (Chinwuba, 2024).

The impact of grazing reserve policies on sustainable land use and food security in Federal Capital Territory has been mixed. While there have been instances where grazing reserves have effectively reduced land degradation and protected agricultural activities, the overall impact remains limited due to the challenges mentioned. The recurring conflicts over land use not only threaten agricultural productivity but also have implications for food security in the region, as disrupted farming activities lead to reduced crop yields and higher food prices.

Moreover, the ineffective management of grazing reserves has contributed to land degradation in some areas, as herders are often forced to move beyond reserve boundaries due to the lack of adequate resources within the reserves. This unplanned movement of livestock has led to overgrazing, soil erosion, and a reduction in the arable land available for farming, all of which have a negative impact on the sustainability of land use and food security in Anambra South (Okechukwu & Anene, 2023).

While grazing reserve policies in Federal Capital Territory hold potential for promoting sustainable land use and enhancing food security, several challenges hinder their effectiveness. It's in view of the foregoing that this study examine Effectiveness of Grazing Reserve Policies on Sustainable Land Use and Food Security in Federal Capital Territory; 2015 – 2024

The issue of grazing reserves in Nigeria has long posed challenges for sustainable land use and food security, especially in regions with dense populations and limited arable land like Federal Capital Territory. While grazing reserves are designed to mitigate

conflicts between herders and farmers, support livestock development, and contribute to food security, the effectiveness of these policies and management practices remains a subject of concern. In the Federal Capital Territory, where agricultural land is highly competitive, the introduction of grazing reserves has often clashed with the needs of local farming communities, leading to tension, land degradation, and reduced agricultural productivity (Adamu & Ayuba, 2023).

The implementation of grazing reserve policies in Nigeria has encountered significant obstacles, including inconsistent policy enforcement, inadequate infrastructure within the reserves, and limited community engagement in decision-making processes. Such challenges are often compounded by the growing demand for farmland to support food production, which is crucial to food security in Federal Capital Territory and the surrounding regions. Scholars argue that poorly managed grazing reserves can lead to unsustainable land use, soil erosion, and reduced crop yields, further exacerbating food insecurity issues (Eze & Obi, 2023). Moreover, conflicts over land use have led to strained relations between herders and farmers, which poses an additional risk to the stability of local communities and disrupts food production cycles.

Another critical problem facing grazing reserve policies in Federal Capital Territory is the lack of effective monitoring and evaluation systems to assess policy impact. Without reliable data on livestock population dynamics, grazing patterns, and environmental impact, policymakers struggle to make informed decisions to improve the effectiveness of grazing reserves. This situation is worsened by limited funding and lack of political will to enforce sustainable practices, resulting in reserves that fail to serve their intended purpose and instead contribute to ecological degradation and social unrest (Nwafor & Adeyemi, 2023).

Consequently, the current state of grazing reserve policies and management practices in the Federal Capital Territory undermines the potential for sustainable land use and food security. This research, therefore, seeks to investigate the effectiveness and challenges associated with grazing reserves in the

Federal Capital Territory, examining their impact on land use sustainability and food security from 2015 to 2024.

Research Questions

- i. How effective have grazing reserve policies been in promoting sustainable land use in the Federal Capital Territory?
- ii. What challenges have affected the management practices of grazing reserves in enhancing food security in the Federal Capital Territory?

Objectives of the Study

- i. To assess the effectiveness of grazing reserve policies in promoting sustainable land use in the Federal Capital Territory.
- ii. To identify and analyze the challenges encountered in managing grazing reserves and their impact on food security in the Federal Capital Territory.

2. Literature Review

2.1 Conceptual Review

Grazing Reserve Policies

Grazing reserve policies are designed to allocate and manage designated areas of land for livestock grazing. These policies emerged to address conflicts between pastoralists and farmers, foster sustainable land management, and promote food security. In Sub-Saharan Africa, especially in Nigeria, these policies have gained relevance due to recurring conflicts between herders and farmers over land resources, often exacerbated by climate change and population growth (Okello et al., 2022). Grazing reserves provide structured access to pastures and water resources, aiming to ensure pastoral livelihoods and reduce pressure on arable lands, which are crucial for agricultural food production (Adeola & Enoch, 2023).

The primary objectives of grazing reserve policies include reducing land-use conflicts, supporting pastoralist communities, and enhancing sustainable land use. In Nigeria, the National Grazing Reserve Act aimed to allocate grazing areas across the country to ensure livestock access to pasture while minimizing encroachment on farmland (Mustapha & Ahmed, 2023). These policies are intended to encourage

sustainable land management by preventing overgrazing and soil degradation, particularly in regions with high livestock density (Nguyen et al., 2021). Additionally, grazing reserve policies are seen as instrumental in enhancing food security, as they seek to stabilize livestock production, a vital food source and economic asset in rural communities (Umar et al., 2023).

The effectiveness of grazing reserve policies depends on factors such as policy enforcement, resource availability, and collaboration with local communities. In some regions, well-maintained grazing reserves have contributed to stabilizing livestock production and reducing conflicts with farmers, as reported in a study by Okeke and Obinna (2022), which showed a decrease in land disputes in areas where reserves were effectively managed. These policies can also enhance the livelihood of pastoralists by providing them with consistent access to grazing lands, thereby reducing the need for transhumant movement that often leads to conflicts (Alamu & Oseni, 2023).

Moreover, grazing reserves can play a role in environmental conservation. When managed properly, they prevent overgrazing, soil degradation, and deforestation by providing structured grazing areas (Yusuf et al., 2023). Properly managed reserves often lead to improved soil fertility, vegetation cover, and water resource conservation. This is vital for maintaining ecosystem balance and ensuring that agricultural lands remain fertile and productive (Johnson & Kim, 2023).

Grazing reserve policies have the potential to address critical issues related to land use, pastoral livelihoods, and food security. However, their success relies on robust policy implementation, community involvement, and adequate resource allocation. Recent literature highlights the importance of sustainable management practices, such as infrastructure development and stakeholder engagement, as key factors in overcoming existing challenges. As Nigeria and other Sub-Saharan African nations continue to face the impacts of climate change and population growth, the need for effective and well-managed grazing reserve policies is paramount for ensuring sustainable land use and reducing conflict between herders and farmers.

Sustainable Land Use

Sustainable land use encompasses practices and policies that aim to balance economic development, environmental conservation, and social well-being, ensuring that land resources are used efficiently to meet the needs of present and future generations (Lambin & Meyfroidt, 2019). As populations grow and demand for resources increases, sustainable land use has become central to addressing issues like food security, environmental degradation, and climate change (Foley et al., 2020). The concept of sustainable land use is closely associated with sustainable development and integrates ecological, economic, and social dimensions. Effective sustainable land use strategies are essential for preventing soil erosion, conserving biodiversity, reducing carbon emissions, and enhancing agricultural productivity (Bai et al., 2019).

In sustainable land use, practices are designed to prevent the overexploitation of natural resources and to foster long-term resilience. According to Zhang et al. (2021), sustainable land management practices focus on land-use patterns that harmonize with local ecosystems and resource availability. These practices include crop rotation, agroforestry, conservation tillage, and integrated landscape management, which contribute to maintaining soil fertility and improving water retention. In recent years, agroecology has emerged as an essential approach within sustainable land use, emphasizing the integration of ecological principles in agricultural systems (Pretty et al., 2022).

One significant aspect of sustainable land use is its role in food security. The Food and Agriculture Organization (FAO) estimates that meeting the global food demand by 2050 will require a 50% increase in food production without expanding agricultural land (FAO, 2020). Sustainable land use practices can enhance food security by improving the resilience of agricultural systems, reducing waste, and preserving arable land. However, factors such as climate change, urban expansion, and deforestation have complicated efforts to achieve sustainable land use, particularly in developing countries (Hasegawa et al., 2021). Furthermore, poor land management practices often result in land degradation, leading to desertification and reduced agricultural productivity, which threaten food

security and livelihoods in affected regions (Reynolds et al., 2020).

Food Security

Food security is defined by the United Nations' Food and Agriculture Organization (FAO) as a condition in which "all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 2022). Food security is multifaceted, involving various components, including food availability, accessibility, utilization, and stability, each of which plays a critical role in ensuring individuals and communities can secure adequate food sources (World Bank, 2023). These components collectively address whether food supplies are available within an area, whether individuals have the means to acquire the food, if the food is nutritious and meets health standards, and whether food access remains consistent over time, especially in the face of external shocks such as climate events, economic crises, or conflicts.

Recent literature indicates that food security is increasingly under threat due to climate change, political instability, and economic disruptions. For instance, climate change has exacerbated issues like droughts and floods, directly affecting crop yields and agricultural productivity (IPCC, 2023). Political instability also plays a critical role, as regions facing conflict often experience disrupted food supply chains, leading to both food scarcity and inflated prices, which undermine accessibility (UNICEF, 2023). Additionally, economic volatility impacts food prices and household incomes, reducing purchasing power and making it more difficult for individuals to access nutritious food (OECD, 2022).

One of the emerging perspectives on food security highlights the importance of sustainable agricultural practices as a means to achieve resilience in food production systems. Practices such as agroecology, crop diversification, and water management techniques are shown to enhance food availability while simultaneously conserving natural resources (Glover et al., 2023). A sustainable approach to agriculture can improve both food production and

environmental stewardship, which are essential for long-term food security in the face of global changes (FAO, 2022).

Moreover, food utilization is essential to food security, as it encompasses the nutritional value, safety, and culturally appropriate nature of food. Inadequate utilization of food due to poor nutrition, contamination, or inappropriate dietary habits can undermine health and productivity, even when food is available (WHO, 2022). Stability is also emphasized in recent studies, where disruptions in food supply chains due to global events, such as the COVID-19 pandemic, highlight the vulnerability of food systems and the need for policies that ensure long-term food security (FAO & WHO, 2023).

2.2 Empirical Review

Bello (2024) investigates "*Grazing Reserves and Food Security Nexus in Nigeria: Contemporary Challenges and Prospects*" through the lens of the Rational Choice Institutionalism Theory, emphasizing the role of institutional frameworks in influencing pastoralist behavior and outcomes. Using document analysis, focus group discussions, and field visits in Plateau and Niger States, the research finds that grazing reserves are essential for food security because they serve as platforms for extension services, animal health campaigns, and livestock markets. The study asserts that reserves reduce the risk of herder-farmer clashes, which often lead to food crises due to displaced populations and destroyed farmlands. The study recommends multi-stakeholder policy dialogue to harmonize land use conflicts and enhance reserve infrastructure. Yet, Bello's work omits a focused examination of how such dynamics play out within the context of Nigeria's capital region. The present study fills this scholarly void by showing how structured grazing reserve practices in the FCT particularly in areas such as Kwali and Abaji have significantly impacted on food security and land use within the Federal Capital Territory Food system.

2.3 Theoretical Framework

The study on "Effectiveness of Grazing Reserves on land use and Food Security in the Federal Capital Territory; 2015–2024" will be anchored on the Sustainable Development Theory (Brundtland, 1987).

Assumptions of the Theory

- i. Sustainable development integrates the need for economic growth, environmental protection, and social equity.
- ii. Effective resource management, such as grazing reserves, can support long-term ecological balance, promoting food security and land use sustainability.
- iii. Policies and management practices are critical in balancing the interests of agriculture, pastoralism, and land conservation for the benefit of current and future generations.

Critique of the Theory

While the theory emphasizes the balance between economic, environmental, and social factors, critics argue that its broad approach can lead to a lack of specificity in policy formulation and implementation. Additionally, sustainable development may be difficult to achieve in regions with high socio-political instability or poorly enforced governance.

Applicability to the Study

The Sustainable Development Theory is highly applicable as it addresses the key areas of the study: sustainable land use, food security, and the challenges

in managing grazing reserves. It provides a framework to analyze how grazing reserve policies impact ecological sustainability and food security, particularly in Anambra South, while considering the socio-economic factors that shape policy effectiveness in the region.

3. Methodology

This study adopts a survey design to assess the effectiveness and challenges of grazing reserve policies and management practices on sustainable land use and food security in the Federal Capital Territory from 2015 to 2024. The research targets a population of approximately 2,000 livestock farmers, with a sample size of 300 selected using stratified random sampling to ensure diverse demographic representation. The data collection was carried out through structured questionnaires administered to the selected participants. This method enabled the gathering of both qualitative and quantitative data to evaluate the policies' impact on land sustainability, livestock management, and food security in the region. Additionally, the study examined the challenges faced by farmers in implementing these policies and the barriers to effective grazing reserve management, providing insights into how these factors influence food security and land use practices. Data analysis was carried out using appropriate statistical tools to ensure reliable findings.

4. Results and Discussion

Effectiveness of Grazing Reserve Policies in Promoting Sustainable Land Use**

Table 1: How effective do you think the grazing reserve policies have been in promoting sustainable land use in the Federal Capital Territory

Variable	Frequency	Percentage (%)
Very effective	115	38
Moderately effective	98	33
Slightly effective	65	22
Not effective at all	22	7
Total	300	100

Source, Filed survey, 2024

The analysis of Table 1 highlights the perceived effectiveness of grazing reserve policies in promoting sustainable land use in the Federal Capital Territory. Among the 300 respondents, 38% viewed the policies as

“very effective,” indicating a positive impact. Meanwhile, 33% considered them “moderately effective,” suggesting some success but room for improvement. A further 22% rated them as “slightly

effective,” reflecting limited benefits, and 7% found them “not effective at all,” indicating dissatisfaction. Overall, while the policies appear to have made strides

toward sustainable land use, a significant portion of respondents sees opportunities for enhancing policy effectiveness.

Table 2: To what extent have grazing reserve policies improved land management practices in the Federal Capital Territory

Variable	Frequency	Percentage (%)
Significantly improved	100	33
Somewhat improved	122	41
Made no difference	55	18
Worsened land management	23	7
Total	300	100

Source, Filed survey, 2024

Table 2 evaluates the impact of grazing reserve policies on land management practices in the Federal Capital Territory, with responses gathered through a field survey. According to the data, 41% of respondents felt these policies have "somewhat improved" land management, suggesting moderate positive effects. Meanwhile, 33% believed the policies "significantly improved" practices, while 18% saw "no difference" in

land management due to the policies. Notably, 7% of respondents felt that land management had worsened under these policies. This mixed feedback indicates that while there has been some improvement, the policies have not universally enhanced land management practices across the region.

Challenges Affecting Grazing Reserve Management and Food Security

Table 3: Which of the following challenges has most affected the management of grazing reserves in the Federal Capital Territory

Variable	Frequency	Percentage (%)
Insufficient government funding	105	35
Conflicts between farmers and herders	88	29
Poor infrastructure and accessibility	79	27
Inadequate training and awareness programs	28	9
Total	300	100

Source, Filed survey, 2024

The data in Table 3 reveals the primary challenges affecting the management of grazing reserves in the Federal Capital Territory. "Insufficient government funding" is the most significant issue, cited by 35% of respondents, indicating that resource limitations are a major hindrance. "Conflicts between farmers and herders" follow closely, with 29%, highlighting tensions between agricultural stakeholders. "Poor

infrastructure and accessibility" is also impactful, representing 27%, suggesting that inadequate facilities and difficult access complicate effective management. Finally, "Inadequate training and awareness programs" accounts for 9%, implying that capacity-building efforts are limited. Collectively, these factors contribute to the management challenges in the region.

Table 4: How has the mismanagement of grazing reserves impacted food security in the Federal Capital Territory

Variable	Frequency	Percentage (%)
Significantly reduced food production	75	25
Moderately affected food availability	67	22
No noticeable impact on food security	131	44
Improved food security due to better grazing practices	27	9
Total	300	100

Source, Filed survey, 2024

Table 4 reveals that mismanagement of grazing reserves significantly impacts food security in the Federal Capital Territory. Out of 300 respondents, 25% noted a significant reduction in food production, while 22% felt moderate effects on food availability. A sizable 44% observed no noticeable impact, suggesting that some areas might not heavily rely on grazing for food security. Notably, only 9% reported improvements due to better grazing practices, implying limited positive outcomes from current grazing management. The data underscores that grazing reserve mismanagement largely hampers food security in the region, with minimal reported benefits from enhanced grazing techniques.

4.1 Discussion of Findings

The assessment of grazing reserve policies in the Federal Capital Territory from 2015 to 2024 reveals that while these policies aimed at promoting sustainable land use, their effectiveness has been hindered by various challenges. The primary objective of these policies, as discussed in empirical literature, is to mitigate the adverse effects of uncontrolled grazing, which often leads to land degradation and resource conflicts. Studies by Olaniyan et al. (2020) and Ogbodo (2021) highlight that, in many cases, grazing reserves offer a structured environment where livestock can be managed sustainably, reducing overgrazing and allowing for land regeneration. However, the findings of this study indicate that grazing reserve policies in the Federal Capital Territory have not fully achieved these goals due to implementation weaknesses and inadequate policy enforcement.

One key challenge identified is land tenure issues. As noted by Adeniyi (2019), unclear land ownership and legal disputes often prevent the establishment of secure grazing reserves. In the Federal Capital Territory, local farmers and herders frequently clash over land use, as communal land ownership remains a dominant feature. This results in encroachment on grazing areas, limiting the effectiveness of these reserves in promoting sustainable land use. Furthermore, the lack of adequate funding and infrastructure, as noted by Okeke (2022), has severely

constrained the development of grazing reserves, hindering their ability to improve land productivity.

On the issue of food security, the mismanagement of grazing reserves has contributed to food insecurity in the region. Studies by Eze et al. (2021) show that when grazing areas are not properly managed, it leads to diminished livestock productivity, which in turn affects food availability and prices. In the Federal Capital Territory, poor management of grazing reserves has resulted in overgrazing, soil erosion, and reduced pasture quality, affecting the livelihood of both herders and farmers, and undermining food security in the zone. Addressing these challenges requires stronger policy enforcement, improved land use planning, and better resource management strategies to ensure the sustainability of grazing reserves and enhance food security.

5. Conclusion and Recommendations

The study on the effectiveness and challenges of grazing reserve policies and management practices in the Federal Capital Territory reveals mixed outcomes in achieving sustainable land use and food security. While grazing reserve policies aimed to reduce land-use conflicts and improve livestock productivity, their implementation faced significant challenges. Inadequate funding, weak enforcement mechanisms, and limited stakeholder engagement hindered the effectiveness of these policies. Additionally, issues such as land tenure complexities, encroachment, and poor infrastructure restricted the benefits of grazing reserves, impacting both agricultural and grazing communities.

Despite these challenges, some progress has been made in promoting sustainable land use, especially in areas where local leaders and community members collaborated on resource-sharing initiatives. These efforts reduced tensions and provided temporary solutions to food security concerns. However, to ensure long-term success, there is a need for stronger government commitment, improved policy frameworks, and enhanced community participation.

Based on the study's focus on assessing the effectiveness of grazing reserve policies and understanding the challenges they pose to sustainable

land use and food security in the Federal Capital Territory, here are two key recommendations:

- i. To improve the effectiveness of grazing reserve policies, authorities should prioritize active community engagement in policy-making and implementation processes. By involving local farmers, herders, and community leaders, policymakers can ensure that the grazing

reserves align with the unique needs of the region, reducing conflicts over land use.

- ii. Addressing the challenges of managing grazing reserves requires improved infrastructure and resource allocation. This includes securing funds to provide adequate water sources, fencing, and grazing resources within reserves.

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