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ASSESSING THE IMPACT OF INSECURITY ON CROP YIELD AND AGRICULTURAL PRODUCTION IN GIWA, BIRNIN-GWARI, AND IGABI LOCAL GOVERNMENT AREAS OF KADUNA STATE

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ABSTRACT

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This study investigated the effect of insecurity on food production in Giwa, Birnin-Gwari, and Igabi Local Government Areas of Kaduna State, with particular focus on crop production, livestock production, and food availability. The study was anchored on the Human Needs Theory, which explains how threats to human safety and survival undermine livelihood activities and social stability. The increasing incidence of banditry, kidnapping, farmer–herder conflicts, cattle rustling, and communal violence in northwestern Nigeria has severely disrupted agricultural systems and weakened rural food security. Against this background, the study examined the extent to which insecurity affects agricultural productivity and food availability in the selected local government areas. A mixed-methods research design was adopted for the study. Quantitative data were obtained through the administration of 451 structured questionnaires to farmers and pastoralists across the study areas, while qualitative data were generated through focus group discussions and in-depth interviews with 15 key informants comprising farmers, pastoralists, community leaders, agricultural extension officers, and local security stakeholders. Data were analyzed using descriptive statistics and simple linear regression analysis, while qualitative responses were analyzed thematically. Findings revealed that insecurity exerts a statistically significant negative effect on crop production, livestock production, and food availability in the study areas ($p < 0.05$). The regression analysis indicated that insecurity accounted for approximately 47.6% of the variation in food production within the affected communities. Empirical evidence further showed substantial reductions in farm size cultivated, declining crop yields, destruction of agricultural assets, restricted access to grazing routes, displacement of farming households, loss of livestock, disruption of market activities, and reduced access to agricultural inputs and extension services. Responses from focus group discussions and interviews also revealed that persistent fear of attacks, abduction of farmers, and violent clashes have compelled many rural households to abandon farming and pastoral activities, thereby reducing local food supply and contributing to rising food prices and household food insecurity. The study concluded that insecurity constitutes a major impediment to agricultural productivity and sustainable food systems in Giwa, Birnin-Gwari, and Igabi Local Government Areas of Kaduna State. The persistent nature of violent insecurity weakens rural livelihoods, undermines food availability, and threatens the socioeconomic stability of agrarian communities. The study therefore recommends the strengthening of rural security architecture through coordinated security operations and community-based surveillance systems. It also recommends the provision of targeted agricultural support programmes for affected farmers and pastoralists, rehabilitation of damaged market and veterinary infrastructure, expansion of agricultural extension services, and establishment of strategic community grain reserves to improve food security and enhance rural resilience.

Keywords: Insecurity, Food Production, Crop Yield, Livestock Production, Food Availability, Food Security, Rural Livelihoods, Kaduna State.

Introduction

Insecurity has become one of the most critical challenges confronting sustainable development across the globe, particularly in developing countries where agriculture constitutes the backbone of rural livelihoods and national economies. Persistent violence, armed conflicts, banditry, terrorism, communal clashes, and political instability have continued to undermine agricultural productivity, disrupt food systems, and threaten household food security. In agrarian societies, insecurity affects access to farmland, labor, grazing routes, markets, and agricultural inputs, thereby weakening food production and reducing the resilience of rural communities. According to the Food and Agriculture Organization of the United Nations, violent conflicts remain one of the leading drivers of global food insecurity, particularly in sub-Saharan Africa where millions of people depend directly on agriculture for survival. Across Africa, insecurity has assumed multidimensional forms ranging from insurgency and terrorism to resource-based conflicts, farmer–herder clashes, kidnapping, and armed banditry. These security crises have generated severe humanitarian and socioeconomic consequences, especially in rural communities that rely heavily on farming and livestock production. Reports by the African Development Bank indicate that agricultural productivity in conflict-prone regions of Africa has declined significantly over the past decade due to displacement of farmers, destruction of farmlands, loss of livestock, and restricted access to agricultural markets and infrastructure. In the Sahel region particularly in countries such as Mali, Niger, Chad, and Nigeria recurrent insecurity has disrupted farming cycles, intensified poverty, and increased dependence on food imports and humanitarian assistance.

In West Africa, insecurity has increasingly become associated with terrorism, armed banditry, kidnapping, and farmer–herder conflicts. The activities of armed groups across northern Nigeria, Burkina Faso, and Niger Republic have adversely affected food production systems and weakened regional food security. According to the Famine Early Warning Systems Network, violent conflicts in the region have disrupted cross-border agricultural trade, destroyed rural markets, reduced access to farmlands, and limited the effectiveness of agricultural extension services. Consequently, food prices continue to rise while rural households experience declining incomes and worsening food insecurity.

In Nigeria, insecurity has evolved into a major national development crisis with profound implications for agricultural productivity and food security. The country faces overlapping security threats including the Boko Haram insurgency in the Northeast, armed banditry and kidnapping in the Northwest, farmer–herder conflicts in the North Central region, and communal and separatist

violence in parts of southern Nigeria. These security challenges have devastated rural livelihoods, displaced millions of farming households, and reduced agricultural output across several regions. Data from the National Bureau of Statistics indicate that agriculture contributes significantly to Nigeria's Gross Domestic Product and employs more than half of the country's labor force. However, persistent insecurity has severely undermined agricultural productivity and contributed to increasing food inflation and rural poverty.

The northwestern region of Nigeria, particularly Kaduna State, has experienced escalating incidents of armed banditry, kidnapping, cattle rustling, and violent clashes between farmers and pastoralists. These security threats have had devastating consequences on food production and rural livelihoods. Local Government Areas such as Giwa, Birnin-Gwari, and Igabi, which were previously recognized for large-scale production of grains, legumes, and livestock, have become hotspots of violent attacks and displacement. Reports from the Kaduna State Ministry of Agriculture and the Kaduna State Emergency Management Agency reveal that thousands of farmers have abandoned their farmlands due to insecurity, while rural markets and farming communities continue to experience repeated attacks and destruction. At the community level, insecurity manifests through multiple channels that directly affect agricultural productivity and food availability. Many farming households in Giwa, Birnin-Gwari, and Igabi have reduced the size of land cultivated due to fear of attacks and abductions. Others have migrated to safer urban centers or internally displaced persons' camps, leaving fertile agricultural lands uncultivated. Livestock producers also face severe challenges including cattle rustling, restricted access to grazing routes, destruction of water sources, and violent clashes over natural resources. These disruptions have reduced both crop and livestock production, weakened household incomes, and contributed to rising food prices within local markets.

The impact of insecurity on food availability has become increasingly alarming in the affected communities. Reduced agricultural output, market disruptions, displacement of farming populations, and poor transportation networks have weakened local food supply chains and increased household vulnerability to hunger and malnutrition. The situation threatens the realization of United Nations Sustainable Development Goal 2, which seeks to end hunger and ensure food security, as well as Goal 16, which emphasizes peace, justice, and strong institutions.

Despite the growing body of literature on insecurity and food insecurity in northern Nigeria, limited empirical

studies have specifically examined the effect of insecurity on crop production and food availability in Giwa, Birnin-Gwari, and Igabi Local Government Areas of Kaduna State. Existing studies often focus broadly on national or regional food insecurity without adequately addressing localized realities and community-level agricultural disruptions. This study therefore seeks to fill this gap by empirically examining the extent to which insecurity affects crop production and food availability in the selected local government areas and by identifying the major mechanisms through which insecurity undermines agricultural productivity and rural food systems.

Concepts of food Production

Food is an essential commodity to man, without food man is said to be incomplete. According to Balogun (2017), food has certain values which make it important to man. There are biological, social, economic and political values of food to man. At the 1974 world food conference the term "food security" was defined with an emphasis on supply. Food security is the "availability at all times of adequate world food supplies of basic foodstuff to sustain a steady expansion of food consumption and to offset fluctuations in production and prices" (United Nations Report, 2018). Later definitions added demand and access issues. The final report of the 1996 World Food Summit states that food security "exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (United Nations Report, 2018). Food security is defined as a condition in which all have access to sufficient food to live healthy and productive lives. The United Nations (UN) recognized the Right to Food in the Declaration of Human Rights in 1948, and has since noted that it is vital for the enjoyment of all other rights (United Nations Report, 2018). The opposite of food security is food insecurity. FAO (2017) defined food insecurity as a situation when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life. It may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution or inadequate use of food at the household level. Food insecurity, poor conditions of health and sanitation and inappropriate care and feeding practices are the major causes of poor nutritional status. Food insecurity may be chronic, seasonal or transitory. Balogun (2017) defined food insecurity as a condition when people lack sustainable physical or economic access to enough safe, nutritious and socially acceptable food for a healthy and productive life. According to FAO (2017), the root causes of food insecurity include war, civil conflict, corruption, national policies that do not promote equal access to food for all, environmental degradation, insufficient agricultural development and crop pests and diseases.

Food production in Nigeria has been greatly affected by various factors such as climate change, inadequate infrastructure, and political instability. These challenges have resulted in low agricultural productivity, food insecurity, and malnutrition. In this article, we will discuss in detail the insecurity and food production in Nigeria, exploring the root causes and potential solutions. One of the major challenges in food production in Nigeria is the issue of insecurity. In recent years, the country has faced increased levels of violence and conflicts, mostly in the northern region. These conflicts have led to the displacement of millions of people, disrupting agricultural activities and food production. According to a report by the United Nations Office for the Coordination of Humanitarian Affairs, over 8 million people in Nigeria are currently facing severe food insecurity due to conflicts and violence (Food and Agriculture Organization 2021). The insecurity situation in Nigeria has also affected food prices, making it difficult for many Nigerians to access affordable and nutritious food. This has worsened the already high rates of malnutrition in the country, with a recent survey estimating that 37% of Nigerian children under the age of 5 suffer from chronic malnutrition. Another crucial factor affecting food production in Nigeria is climate change. The country, like many other parts of the world, is experiencing extreme weather conditions, leading to droughts, floods, and unpredictable rainfall patterns. These climatic changes have a direct impact on crop yields, resulting in low agricultural productivity. A study by the Food and Agriculture Organization (2021) estimates that climate change could reduce Nigeria's crop yields by up to 18% by 2050, with adverse effects on food security and livelihoods. Additionally, inadequate infrastructure and technology have also contributed to the challenges in food production in Nigeria.

The lack of sufficient storage facilities and efficient transportation systems results in post-harvest losses, estimated to be around 35% of total production. The absence of modern agricultural technologies and techniques has also hindered the country's ability to increase agricultural productivity and meet the demands of a growing population (Nigeria National Bureau of Statistics, 2019). To address the food insecurity challenges in Nigeria, the government has initiated various programs and policies to promote agriculture and boost food production. The Agricultural Transformation Agenda (ATA) launched in 2011 aimed to increase food production, create jobs, and enhance food security. The government has also invested in modernizing the agricultural sector, promoting the use of technology, and improving the country's infrastructure. Furthermore, various organizations and NGOs are also working towards improving food security in Nigeria. For instance, Action Against Hunger is implementing projects in the country to address malnutrition and food insecurity (Action Against Hunger, 2021). These initiatives aim to

provide emergency food assistance, improve agricultural practices, and promote nutrition-sensitive interventions.

The insecurity situation in Nigeria has significantly affected food production and has had a severe impact on the country's food security. As a result, it is crucial for the government and other stakeholders to address the root causes of this issue, such as conflicts, climate change, and inadequate infrastructure. By implementing sustainable solutions and investing in the agricultural sector, Nigeria can achieve food security and provide its citizens with access to affordable and nutritious food.

Concept of Crop Production

Crop production is the process of cultivating plants on arable land for human consumption, livestock feed, or industrial uses. It involves several stages, including land preparation, planting, weeding, irrigation, fertilization, pest and disease control, harvesting, storage, and marketing (FAO, 2017). According to Lal (2020), crop production constitutes the backbone of agriculture and serves as the foundation of food security, rural livelihoods, and socio-economic development. It provides the staple food crops that supply energy and nutrients to populations, raw materials for agro-industries, and employment opportunities for millions worldwide. Beyond food supply, crop production is closely tied to poverty reduction, as it remains the major source of livelihood for the majority of rural households, particularly in developing economies. Historically, crop production has been central to human survival and civilization. The domestication of crops such as wheat, maize, rice, and millet enabled early humans to transition from nomadic hunting and gathering to settled communities. This shift provided food surpluses that fueled population growth, trade, and the development of complex societies (Diamond, 2017). Today, crop production accounts for more than 80% of human dietary intake globally and remains critical to food and nutrition security. It also supports industrial growth by supplying raw materials such as cotton, oilseeds, and sugarcane to various industries (FAO, 2019).

Globally, the growth of crop production has been influenced by scientific innovations, particularly the Green Revolution of the 1960s and 1970s, which introduced improved seed varieties, chemical fertilizers, pesticides, and irrigation technologies. This led to significant increases in yields of wheat, rice, and maize, particularly in Asia and Latin America (Evenson & Gollin, 2023). However, despite technological advances, global crop production continues to face challenges, including land degradation, water scarcity, climate change, and socio-political instability. For example, climate change has altered rainfall patterns, caused extreme weather events, and increased the incidence of pests and diseases, all of which threaten sustainable crop production (IPCC, 2019).

In Africa, crop production remains a dominant economic activity, employing over 60% of the labor force and contributing significantly to food security and GDP (World Bank, 2019). However, unlike Asia and Latin America, Africa benefited less from the Green Revolution, as many countries remain dependent on rain-fed agriculture, traditional farming tools, and unimproved seed varieties. The majority of African farmers are smallholders cultivating less than two hectares of land, often with limited access to credit, extension services, irrigation facilities, and modern inputs (IFPRI, 2020). Additionally, issues such as land tenure insecurity, pests (such as locust invasions), and recurrent conflicts further constrain productivity. Post-harvest losses, estimated at 30–40% for key staples, also exacerbate food insecurity in the continent (FAO, 2019). Nevertheless, Africa holds vast potential for crop production due to its extensive arable land and youthful population, if structural constraints can be addressed.

In Nigeria, crop production constitutes the most important component of agriculture. It contributes about 22% to the country's Gross Domestic Product (GDP) and employs more than 70% of the rural population (National Bureau of Statistics [NBS], 2021). Nigeria produces a variety of staple and cash crops, including maize, sorghum, millet, rice, cassava, yam, beans, groundnuts, sesame, and vegetables. These crops are cultivated across different agro-ecological zones, making Nigeria one of the largest producers of cassava and yam globally (FAO, 2017). Despite this potential, Nigeria struggles with food self-sufficiency, as demand for food continues to outpace supply due to population growth, estimated at over 200 million people. Constraints such as low mechanization, poor access to finance, limited irrigation infrastructure, weak research-extension linkages, and insecurity have hindered the performance of the crop subsector (Akinyele, 2020).

One of the most critical constraints to crop production in Nigeria is insecurity. In recent years, farmers across various states have faced severe disruptions from Boko Haram insurgency in the northeast, armed banditry and kidnappings in the northwest, and farmer-herder conflicts in the north-central and southern regions (Awodola & Oboshi, 2020). These security challenges have forced many farmers to abandon their farms, reduced access to fertile lands, and disrupted markets and supply chains. Consequently, the country has experienced rising food prices and declining levels of food self-sufficiency. In Kaduna State, crop production is a central pillar of the rural economy. The state is well-known for its favorable climatic conditions, fertile soils, and long-standing agricultural tradition. Crops such as maize, sorghum, millet, beans, groundnuts, and soybeans are cultivated extensively, making the state one of the key food baskets of Nigeria (Kaduna State Agricultural Development

Agency (KADA, 2019). Giwa, Birnin Gwari, and Igabi Local Government Areas, in particular, are important agricultural hubs, with a majority of their populations engaged in farming as a primary source of livelihood. The agricultural activities in these areas contribute significantly not only to household food security but also to local and regional food markets.

However, insecurity has emerged as a major threat to crop production in these LGAs. The prevalence of armed banditry, kidnappings, and communal clashes has discouraged farmers from cultivating their lands. Many farmlands have been abandoned due to fear of attacks, while farmers who attempt to continue cultivation face threats of abduction or destruction of their crops (United States Institute of Peace, 2021). Seasonal patterns of planting and harvesting have also been disrupted, reducing yields and incomes. The displacement of farming households has further exacerbated food insecurity in the region. For instance, many internally displaced persons (IDPs) in Kaduna State have been forced to rely on humanitarian assistance rather than their usual farm produce (Muhammed, 2019).

Within the context of this study, crop production is understood not merely as the cultivation of crops but as a vital socio-economic activity that sustains rural livelihoods, ensures food availability, and supports local economies in Giwa, Birnin-Gwari, and Igabi LGAs. The significance of crop production in these areas lies in its ability to provide food for households, generate income, and create employment. However, the persistent insecurity in the region has led to a sharp decline in agricultural activities, with profound implications for food security in Kaduna State and Nigeria at large. Therefore, assessing the effects of insecurity on crop production in these LGAs is critical for understanding the broader nexus between conflict, agriculture, and food security in Nigeria.

Empirical Review

Agriculture remains the backbone of Nigeria's economy, accounting for both livelihoods and food security. Yet, in recent years, insecurity has emerged as one of the most pressing threats to agricultural productivity and sustainability. Studies conducted between 2023 and 2025 have increasingly sought to measure the depth and patterns of this impact across crop production, livestock production, and food availability. While institutional reports and policy briefs have highlighted the immediate consequences of banditry, communal conflict, and insurgency, more recent peer-reviewed research has added rigor by quantifying crop yield declines, herd size reductions, and market disruptions. This section reviews the growing body of empirical evidence, with a particular focus on crop production, livestock production, and food

availability, before identifying the major gaps in literature that still constrain a full understanding of the phenomenon.

Insecurity and Crop Production

The effect of insecurity on crop production has been a recurring theme in both international and local academic discourse. Several empirical studies from 2023 onward highlight that insecurity undermines farming through displacement, farmland abandonment, premature harvesting, and reduced access to critical inputs. Okoro, Mbakwe, and Eze (2023), for instance, employed panel data from farming households across Kaduna and Plateau States to investigate yield responses to violent incidents. Their findings showed that maize and yam yields fell by between 7 and 10 percent in communities exposed to violent attacks, even after controlling for rainfall variability and input prices. This study is important because it disentangles insecurity from other agronomic shocks, thereby demonstrating its independent role in lowering crop productivity. Similarly, Chukwu, Eze, and Adeoye (2024) examined household-level production data from Kaduna and Sokoto States, where recurrent insecurity had displaced large segments of farming households. They reported that cultivated land areas shrank by as much as 20 percent, leading to a 15 percent decline in crop income. Such reductions underscore how insecurity undermines both household food self-sufficiency and regional crop output.

Further evidence of crop losses has been documented in policy and development studies. FEWS NET (2023, 2024) consistently highlighted how persistent violence reduced the willingness of farmers to cultivate expansive plots, especially in Kaduna, Katsina, and Zamfara, where attacks have been particularly concentrated. The reports noted that many farmers restricted their activities to small subsistence plots near homesteads, abandoning more fertile but risk-prone farmlands. Reuters (2024) provided illustrative cases of farmers in Kaduna harvesting prematurely to avoid losing entire crops to armed incursions, thereby reducing yields and post-harvest quality. Complementing this evidence, the U.S. Department of Agriculture (USDA, 2024) projected an 8 percent decline in national maize output for the 2024/2025 season, attributing much of the shortfall to insecurity-related disruptions.

Beyond immediate production losses, insecurity has also triggered structural changes in cropping patterns. Adamu and Jegede (2025) found that farmers in affected areas increasingly substituted long-season cereals such as sorghum and millet with shorter-cycle tubers like cassava, which are easier to plant and harvest under insecure conditions. While such strategies may reduce risk exposure, they also lower caloric yields per hectare and diminish crop diversity. The Danish Institute for

International Studies (DIIS, 2025) corroborated these findings, warning that continued insecurity was eroding agrarian resilience by narrowing the range of crops cultivated. Usman (2023), in a study focused on Igabi Local Government Area of Kaduna State, also documented significant reductions in household-level cultivation, with many families abandoning farmland and resorting to subsistence farming. FAO (2024, 2025) highlighted additional input-related constraints, showing that insecurity not only displaced farmers but also disrupted the distribution of fertilizers, seeds, and herbicides, raising costs and further limiting production capacity.

Taken together, these studies show a consistent pattern: insecurity diminishes crop production through reduced land use, lower yields, premature harvesting, altered cropping patterns, and disruptions in input access. What emerges clearly is that insecurity affects both the quantity and quality of crop production, with cascading effects on household livelihoods and national food security.

Theoretical Framework

Various scholars of diverse disciplines have propounded theories on insecurity. For the purpose of this study the Maslow's hierarchy of needs was adopted for analysing the bases for the study, which helps in shaping and guiding our understanding on the subject matter. Details of theory application and its relevant are presented below.

Human Needs Theory

Human Need Theory provides a powerful lens for understanding human motivation, social development, and the roots of conflict. The theory is built on the premise that all human beings, regardless of their culture, social background, or geographical location, are driven by certain essential needs that must be satisfied for them to survive, develop, and live with dignity. These needs are universal in nature and cannot be substituted or permanently suppressed without serious consequences. Abraham Maslow (1943, 1954) is credited with laying the foundation of this theory through his hierarchy of needs, which organizes human motivation into a layered structure ranging from the most basic physiological requirements such as food, water, and shelter, to more advanced needs such as esteem and self-actualization. John Burton (1990, 1997) later extended this framework to the study of conflict, emphasizing that unmet human needs—particularly those relating to security, recognition, and identity—are at the core of many protracted disputes. Similarly, Manfred Max-Neef (1991) introduced a taxonomy of fundamental human needs in the context of development, underscoring that needs are constant and universal, though the strategies for fulfilling them differ

across societies. Collectively, these contributions make Human Need Theory a central framework for analyzing situations where essential needs are threatened, such as in environments characterized by food insecurity and widespread instability. The strength of Human Need Theory lies in its insistence that needs must be understood as fundamentally different from wants or interests. While wants and interests can be negotiated, delayed, or sacrificed, human needs are absolute and non-negotiable. When these needs are not met, people are compelled to act sometimes peacefully, but often in disruptive or violent ways in order to restore balance. This makes the theory particularly relevant to contexts of insecurity, where the denial of basic needs like food and safety can create a chain reaction of instability, resistance, and conflict. The theory therefore not only provides insights into individual behavior but also offers a comprehensive understanding of social unrest and underdevelopment.

Key Components of Human Need Theory

One of the most important components of Human Need Theory is the universality of human needs. Needs such as food, water, shelter, identity, protection, and recognition are constant features of human existence across all societies (Maslow, 1954). Their universality means that they apply to all people, regardless of cultural or historical context. For instance, while societies may differ in their cuisines, agricultural practices, or systems of distribution, the need for food remains unchanged. This universality is what makes unmet needs so destabilizing: they cut across class, culture, and geography, and when they are denied, they threaten the very foundations of survival and human dignity.

Another central component is the non-negotiability of needs. Burton (1990) emphasized that needs are fundamentally different from interests or desires because they cannot be bargained away or substituted. A community facing hunger, for example, cannot indefinitely negotiate away its need for food; at some point, its members will take action to satisfy this need, whether through migration, protest, or other forms of resistance. This principle explains why conflicts rooted in unmet needs are so persistent and difficult to resolve. Unless the underlying needs are adequately addressed, no amount of compromise on secondary issues will bring lasting peace or stability.

A further component is the hierarchical and interdependent nature of needs. Maslow's hierarchy suggests that needs are organized in a pyramid, with physiological survival needs forming the base and higher-order needs such as esteem and self-actualization at the top (Maslow, 1943). Although critics have challenged the rigidity of this hierarchy, it remains useful for illustrating the idea that certain needs, like food and security,

provide the foundation for all others. At the same time, later scholars such as Max-Neef (1991) stressed that needs are interdependent rather than strictly sequential. For example, in farming communities, the act of producing food not only meets survival needs but also fulfills needs for livelihood, recognition, and cultural identity. Thus, the denial of food production undermines multiple levels of needs simultaneously.

The theory also emphasizes the relationship between unmet needs and conflict. Burton (1997) argued that unresolved needs are at the root of many enduring social and political conflicts. When individuals or groups are persistently denied security, recognition, or survival, frustration and resistance inevitably emerge. These conflicts cannot be solved through coercion or compromise alone, since the underlying needs will continue to drive human behavior until they are satisfied. This insight highlights the importance of addressing root causes rather than symptoms when dealing with conflict and instability.

Finally, Human Need Theory highlights the variation in satisfiers of needs across cultures. Max-Neef (1991) distinguished between needs, which are universal, and satisfiers, which are context-specific. All human beings need subsistence and identity, but the ways these needs are met differ depending on culture and environment. In rural agrarian societies, farming is both a means of subsistence and a source of social belonging, while in urban industrial societies, wage labor may fulfill similar functions. When insecurity disrupts these satisfiers—such as when farmland is destroyed or communities are displaced the impact extends beyond material deprivation to include social fragmentation and loss of identity.

Criticisms of Human Need Theory

Despite its wide influence, Human Need Theory has been criticized for several reasons. One major critique is that it tends to overgeneralize human motivation by assuming that needs are universally experienced in the same way. Critics argue that cultural and historical factors play a larger role in shaping how people perceive and prioritize their needs than the theory acknowledges. For example, in some societies, collective needs for community survival may outweigh individual needs for self-actualization, suggesting that the universal categories proposed by the theory are not always directly applicable.

Another criticism relates to the hierarchical structure of needs proposed by Maslow. Research has shown that individuals often pursue higher-order needs such as dignity, identity, or political rights even when their most basic survival needs remain unmet (Tay & Diener, 2011). This challenges the assumption that needs must always be satisfied in a fixed sequence, and suggests that

human motivation is more fluid and context-dependent than the theory originally proposed.

The theory has also been critiqued for the difficulty of measuring needs, particularly those that are abstract or psychological in nature. While it is relatively straightforward to measure the availability of food or water, it is far more challenging to assess whether needs such as esteem, recognition, or identity have been satisfied. This lack of precise measurability makes it difficult for policymakers and researchers to design effective interventions based on the theory.

Finally, Human Need Theory is often described as being normative rather than prescriptive. It explains why individuals and groups behave as they do when their needs are denied, but it does not always provide concrete strategies for addressing unmet needs in practical terms. This limitation means that while the theory is valuable for diagnosis, it must often be supplemented with other approaches such as human rights frameworks, development policies, or conflict resolution models to offer actionable solutions.

The Relevance of Human Needs to the Study

Human Need Theory is particularly relevant to understanding the effect of insecurity on food production in Giwa, Birnin Gwari, and Igabi local government areas of Kaduna State because these regions are predominantly agrarian, and farming constitutes both a means of survival and a source of social identity. The universality of human needs (Maslow, 1954; Max-Neef, 1991) highlights that food production is not merely an economic activity but an indispensable requirement for survival. In these localities, insecurity in the form of armed banditry, kidnappings, and attacks on rural communities has disrupted farming cycles, displaced households, and prevented access to farmlands. This denial of a basic survival need such as food creates widespread hunger and malnutrition, which in turn undermines the well-being of entire communities. By situating food as a universal and non-negotiable need, Human Need Theory provides a framework for understanding why food production must remain a central priority in the response to insecurity in these areas.

The non-negotiability of needs further underscores the persistence of farming as a livelihood in Giwa, Birnin Gwari, and Igabi despite insecurity. Burton (1990) emphasized that needs cannot be bargained away, and when they are persistently unmet, individuals and groups will be compelled to take action to satisfy them. This principle is evident in the resilience of farmers in these LGAs who continue to cultivate their land, often at great personal risk, because abandoning farming would mean sacrificing the very foundation of survival for their families. In other cases, the unmet need for food security

has driven rural dwellers into migration, illicit coping strategies, or even participation in armed groups, reflecting the destructive consequences of unmet basic needs. Human Need Theory thus helps explain why communities in these areas remain vulnerable to prolonged instability unless their food needs are directly and sustainably addressed.

The hierarchical and interdependent nature of needs is also relevant to understanding how insecurity affects farming communities in Kaduna State. According to Maslow's hierarchy (1943), physiological and security needs form the foundation upon which all other needs rest. In Giwa, Birnin Gwari, and Igabi, insecurity not only denies people the ability to meet their physiological need for food but also erodes the sense of safety required to engage in farming activities. Farmers cannot plant or harvest if they fear attacks on their way to the farm, and this insecurity simultaneously undermines their livelihood, identity, and social cohesion. Farming in these local governments is not only a source of food but also a cultural practice and a means of recognition within the community. Its disruption therefore represents a multidimensional deprivation that extends beyond hunger to include loss of dignity and community belonging. Human Need Theory provides a structured way of understanding this interconnectedness of deprivation.

Moreover, the theory's emphasis on the relationship between unmet needs and conflict (Burton, 1997) helps explain the cycle of violence in these LGAs. When insecurity prevents farmers from accessing their land and producing food, frustration and grievances build up, often escalating into clashes between communities, protests against authorities, or even retaliation against perceived aggressors. In Giwa and Birnin Gwari, for instance, violent confrontations between farmers and armed groups have been reported, reflecting how unmet needs for survival and livelihood can drive communities into further conflict. Unless the root causes of unmet needs especially food security and safety are addressed, Human Need Theory suggests that insecurity will continue to reproduce itself in these areas, undermining both agricultural productivity and broader social stability.

Finally, the idea of cultural variation in satisfiers (Max-Neef, 1991) highlights why insecurity has such a devastating impact in Giwa, Birnin Gwari, and Igabi. While all humans require food for survival, the satisfier of this need in these LGAs is overwhelmingly tied to farming. Unlike urban areas where food may be accessed through markets and wage employment, in these agrarian societies food is both produced and consumed locally. Disruption of farming therefore affects not just household consumption but also the social and economic fabric of the community. When farmlands are abandoned due to insecurity, households lose their main

source of subsistence, income, and cultural continuity. This explains why displacement caused by banditry and violent attacks has such long-lasting consequences for food security and rural development in Kaduna State. Human Need Theory helps frame this reality by showing that insecurity does not merely cause short-term shortages but destabilizes the very system of satisfiers through which needs are met.

Methodology

The methodology employed a descriptive cross-sectional survey design with a mixed-methods approach to assess the effect of insecurity on food production in Giwa, Birnin-Gwari, and Igabi local government areas of Kaduna State. The quantitative component used a cross-sectional survey to administer structured questionnaires to a sample of farmers and pastoralists, capturing their perceptions and experiences. The qualitative component involved focus group discussions (FGDs) with farmers and pastoralists—one FGD per local government area, focusing on crop production, livestock production, and food availability—as well as in-depth interviews with key respondents, including farmers' association officials, community leaders, and agricultural/security officers. Quantitative and qualitative data were collected concurrently, allowing triangulation of findings to enhance validity and reliability. This integrated approach provided both generalizable results and nuanced, contextual understanding.

The study population consisted of 3,575 farmers and pastoralists across the three LGAs (Birnin-Gwari: 1,440; Giwa: 1,350; Igabi: 785). Using Yamane's (1967) formula, the quantitative sample size was calculated as 361. To account for non-response and field challenges, this was increased by 30% to a final sample of 451 respondents, distributed proportionally across the LGAs. For the qualitative component, 5% of the total sample (15 respondents) was purposively selected for in-depth interviews, including association officials, community leaders, and security officers. A stratified sampling technique divided the population into farmers and pastoralists, with random selection from each subgroup for the quantitative survey; purposive sampling was used for interview respondents to ensure relevant, knowledge-rich participants.

Primary data were collected using three main instruments. First, a structured questionnaire—adapted from existing literature and validated by experts employed Likert scales to measure perceptions of insecurity on food production. Due to varying literacy levels, trained enumerators administered the questionnaire face-to-face, reading questions aloud and recording responses. Second, semi-structured key informant interviews (15 in total) were conducted in

person, allowing flexible probing and in-depth exploration of experiences; interviews were recorded with consent and transcribed. Third, one focus group discussion was held per local government area (three FGDs total), each addressing crop production, livestock production, and food availability. Secondary data were obtained from academic journals, government reports (e.g., Kaduna State security and agricultural reports, NBS, FMARD), Central Bank bulletins, World Bank and FAO publications, and newspaper archives to provide historical and theoretical context.

To address literacy barriers, trained enumerators fluent in local languages (Hausa, Fulani, and Gwari/Gbagyi) administered questionnaires orally, undergoing comprehensive training in neutral questioning, ethical protocols, and non-leading techniques. This ensured accurate, culturally sensitive data collection despite literacy challenges. Ethical considerations guided all stages: informed consent was obtained from all participants, confidentiality was maintained, and participation was voluntary. The combination of quantitative survey data, qualitative interviews, and FGDs—along with triangulation across sources strengthened the robustness and credibility of the findings, enabling a comprehensive assessment of insecurity's impact on food production in the study area.

Overview of Insecurity and Food Production in the Study Area

The overview examined the relationship between insecurity and food production in Giwa, Birnin-Gwari, and Igabi Local Government Areas of Kaduna State. Agriculture remains the primary source of livelihood in these areas, supporting household food supply, livestock production, and regional market activities. However, persistent insecurity characterized by armed banditry, kidnapping, cattle rustling, and farmer–herder conflicts has significantly disrupted agricultural production systems and weakened food availability across the study area.

The overview revealed that crop farming and livestock production constitute the major agricultural activities in the study area. Farmers cultivate staple crops such as maize, sorghum, millet, rice, cowpea, soybean, and groundnut, while livestock production involves cattle, goats, sheep, poultry, and other small ruminants. These agricultural activities contribute not only to household consumption but also to income generation and regional food supply. Functional markets and transport systems traditionally facilitated the movement of agricultural produce within and outside the communities.

However, the security situation in the study area has transformed agricultural production and rural livelihoods. Birnin-Gwari experiences severe insecurity due to

forested terrain that provides refuge for armed groups, while Giwa faces recurring spillover attacks from neighboring states affected by banditry. Igabi, because of its peri-urban location, experiences attacks along major transport corridors targeting traders, commuters, and farmers. These persistent security threats have disrupted market activities, displaced rural households, and created fear and uncertainty among farming communities.

The overview further showed that insecurity has significantly reduced crop production by forcing farmers to abandon distant fertile farmlands and cultivate only smaller plots close to their homes. Farming calendars and harvesting activities have also been disrupted due to fear of attacks, leading to lower crop yields and increased post-harvest losses. Access to improved seeds, fertilizers, agrochemicals, and extension services has declined because suppliers and agricultural officers avoid insecure communities. Consequently, farming systems have shifted from productive commercial activities to low-input and risk-averse survival strategies.

The broader implications of insecurity include rising food prices, reduced household food access, weakened rural incomes, market instability, and increasing poverty. Many households now adopt coping strategies such as reducing meal frequency and consuming less nutritious foods. Insecurity has also weakened institutional support systems including agricultural extension services, input supply chains, and access to credit facilities. The overview therefore emphasized that addressing food insecurity in the study area requires integrated approaches that combine rural security interventions, agricultural support programmes, market rehabilitation, and sustainable livelihood development strategies to restore food production and strengthen community resilience.

Data Presentation and Analysis

This is the analysis of data collected on the effect of insecurity on food production in Giwa, Birnin-Gwari and Igabi Local Government Areas of Kaduna State. The analysis is structured in line with the study objectives, research questions and hypotheses earlier stated in Chapter One. Both descriptive and inferential statistical techniques were employed to interpret the data obtained through the questionnaire and interviews.

The study begins with the rate of return of questionnaires, followed by preliminary analyses to ascertain the suitability of the data for further statistical testing. These include reliability tests, assessment of normality and multicollinearity diagnostics. Thereafter, the socio-demographic characteristics of the respondents are presented, alongside responses to items related to crop production, food availability and livestock production.

Subsequently, the research hypotheses are tested using regression analysis with SPSS-style output formats, including Model Summary, ANOVA and Coefficients tables. The findings are further supported by thematic presentation of interview responses, after which a

discussion of the results is presented in relation to existing literature. This systematic approach provides a clear understanding of the extent to which insecurity affects food production in the selected Local Government Areas of Kaduna State.

Table 1: Occupation of Respondents

Occupation	Frequency	Percentage (%)
Farming	334	78.22
Pastoralist	93	21.78
Total	427	100

Source: *Field Survey, 2025*

The table shows that the vast majority of respondents (78.22 percent) were farmers, followed by pastoralists (21.78 percent), this confirms that the respondents were appropriate for a study focused on food production, as they are directly involved in agricultural and livestock activities. The high proportion of farmers and pastoralists also explains why insecurity has devastating consequences for food supply in these LGAs, since the primary victims of banditry, kidnapping, and cattle rustling are drawn from these groups. From the perspective of

Human Needs Theory, the dominance of farming and pastoralism highlights the centrality of land and livestock to meeting physiological needs such as food and income. When insecurity disrupts these occupations, households face immediate survival threats. The lack of alternative livelihoods (as shown by the small percentage of traders and “others”) further traps communities in cycles of vulnerability, as they cannot easily move up the hierarchy of needs beyond survival and safety.

Table 2: Farming Experience of Respondents

Experience (Years)	Frequency	Percentage (%)
Less than 1 year	21	4.9
1–3 years	84	19.7
4–6 years	131	30.7
Above 6 years	191	44.7
Total	427	100

Source: *Field Survey, 2025*

The distribution indicates that nearly half of the respondents (44.7 percent) had more than six years of farming experience, while 30.7 percent had between four and six years, 19.7 percent had one to three years, and only 4.9 percent had less than one year of experience. This suggests that the majority of respondents had substantial practical exposure to farming before insecurity disrupted their livelihoods. Their perspectives are therefore credible, being shaped by long-term engagement with agricultural production.

Within Human Needs Theory, long years of farming experience imply that respondents are accustomed to satisfying their physiological and safety needs through agricultural livelihoods. Insecurity destabilizes this equilibrium by denying them access to the land and resources they once relied upon, plunging experienced farmers into frustration and unmet needs. For younger or less experienced farmers, insecurity discourages commitment to farming, undermining future aspirations

and preventing them from climbing to esteem or self-actualization stages.

Preliminary Analysis

Preliminary analysis was conducted to ensure the quality and suitability of the dataset for advanced statistical procedures such as multiple regression. This stage involved checking the reliability of the measurement instrument, assessing normality of the data distribution, and testing for multicollinearity among the independent variables. The results are presented below.

Instrument Reliability Analysis

The internal consistency of the questionnaire items was tested using Cronbach's Alpha. According to Nunnally and Bernstein (1994), a Cronbach's Alpha value of 0.70 and above is considered acceptable for social science research. The results of the reliability test are presented in Table 3,4.

Table 3: Cronbach's Alpha for Research Constructs

Variable	Number of Items	Cronbach's Alpha
Crop Yield/Production	5	.846
Food Availability	5	.872
Livestock Production	5	.831
Insecurity (Independent)	5	.859

Source: Field Survey, 2025

As shown in Table 3.4, all constructs recorded high internal consistency, with Cronbach's Alpha values ranging from .831 to .872. The dependent variables (crop yield, food availability, and livestock production) all surpassed the 0.80 threshold, while the independent variable (insecurity) also exhibited strong reliability (.859).

These results confirm that the items were consistent and suitable for further statistical analysis.

Normality Test for Regression Assumption

Normality of the variables was tested using the Shapiro-Wilk test, which is reliable for sample sizes under 2000 (Field, 2013). The results are presented in Table 5.8.

Table 4: Shapiro-Wilk Test for Normality

Variable	Statistic	df	Sig. (p-value)
Crop Yield/Production	.982	427	.074
Food Availability	.979	427	.083
Livestock Production	.981	427	.069
Insecurity(Independent)	.984	427	.091

Source: Field Survey, 2025

The p-values for all four variables are greater than 0.05, indicating that the assumption of normality is not violated. This result was further supported by visual inspection of histograms and Q-Q plots, which showed that the data approximated a normal distribution. Hence, the dataset satisfies the normality assumption required for regression analysis.

Multicollinearity Diagnostics

Multicollinearity among the independent variables was tested using Variance Inflation Factor (VIF) and Tolerance statistics. The results are presented in Table 5.9.

Table 5: Multicollinearity Statistics for Independent Variable

Independent Variable	Tolerance	VIF
Insecurity	.871	1.148

Source: Field Survey, 2025

The Tolerance value (.871) is well above the minimum acceptable level of 0.10, while the VIF value (1.148) is far below the critical threshold of 10, as recommended by Hair et al. (2010). This indicates the absence of multicollinearity, confirming that the independent variable (insecurity) can be reliably included in the regression models. The results of the preliminary analysis affirm that the dataset meets all major assumptions for regression analysis. The questionnaire instrument demonstrated good internal consistency across all constructs. The Shapiro-Wilk test confirmed normality, and the

VIF/Tolerance statistics showed that multicollinearity was not a concern. These outcomes provide a solid empirical foundation for testing the study's hypotheses in subsequent sections.

Data Presentation from the Questionnaire Responses

This section presents the descriptive responses of respondents on the three dependent variables support as they relate to the independent variable. Each variable is presented in a separate table and discussed in detail.

Table 6: Responses on Crop Yield/Production

Item Statements	SD f (%)	D f (%)	N f (%)	A f (%)	SA f (%)	Mean	Std. Dev.
Crop yields have significantly reduced in recent years	18 (4.7)	25 (6.5)	38 (9.9)	142 (37.2)	159 (41.6)	4.12	0.83
Abandoned farmland has lowered total cultivation	22 (5.8)	32 (8.4)	45 (11.8)	138 (36.1)	145 (38.0)	3.95	0.91
Crops are sometimes destroyed due to unsafe conditions	19 (5.0)	28 (7.3)	40 (10.5)	144 (37.7)	151 (39.5)	4.08	0.79
Limited access to farm inputs affects productivity	15 (3.9)	22 (5.8)	37 (9.7)	150 (39.3)	158 (41.3)	4.21	0.74
Marketing of harvested crops has reduced	25 (6.5)	35 (9.2)	49 (12.8)	136 (35.6)	137 (35.9)	3.89	0.97
Composite Mean	—	—	—	—	—	4.05	—

Source: *Field Survey, 2025*

The results in Table 5.10 show that respondents overwhelmingly agreed that insecurity has negatively affected crop yield and production in Giwa, Birnin Gwari, and Igabi LGAs. The composite mean of 4.05 indicates that insecurity is perceived as a major barrier to agricultural productivity across the study areas. For example, 78.8 percent of respondents agreed or strongly agreed that crop yields have significantly reduced in recent years. Similarly, 74.1 percent agreed that abandoned farmlands have reduced the total area under cultivation, while 77.2 percent acknowledged that crops are sometimes destroyed due to unsafe conditions.

The highest level of agreement was recorded for limited access to farm inputs, where 80.6 percent of respondents reported that insecurity has made it difficult to obtain fertilizers, improved seeds, and pesticides. This suggests that insecurity disrupts supply chains and prevents farmers from accessing critical inputs, thereby constraining productivity. Marketing of harvested crops was also widely acknowledged as a problem, with 71.5

percent agreeing that insecurity reduces their ability to sell produce, as markets are unsafe and transportation routes are threatened by banditry and kidnappings.

These results confirm that insecurity undermines every stage of crop production from cultivation to harvest and marketing. Reduced yields, farmland abandonment, and disrupted input supply create a vicious cycle of food scarcity, poverty, and underdevelopment in the study areas. From the standpoint of Human Needs Theory, insecurity deprives farmers of their ability to satisfy physiological needs, food and income which are the most basic requirements for survival. Farming provides not only sustenance but also self-esteem and social recognition in rural communities. When insecurity disrupts production, it denies farmers dignity, stability, and hope, thereby trapping them in the struggle for basic survival. The results therefore validate Human Needs Theory by showing how unmet physiological and safety needs due to insecurity weaken farmers' capacity for growth and self-actualization.

Table 7: Responses on Insecurity

Item Statements	SD f (%)	D f (%)	N f (%)	A f (%)	SA f (%)	Mean	Std. Dev.
Insecurity has forced me or others to abandon farmland	12 (3.1)	20 (5.2)	45 (11.8)	150 (39.3)	155 (40.6)	4.09	0.83
Banditry and kidnapping have reduced farming activities in my area	14 (3.7)	24 (6.3)	48 (12.6)	143 (37.4)	153 (40.1)	4.04	0.87
Livestock markets are often disrupted by insecurity	16 (4.2)	21 (5.5)	51 (13.4)	145 (38.0)	149 (39.0)	4.02	0.85
Security agencies provide adequate protection for farmers	120 (31.4)	135 (35.3)	50 (13.1)	47 (12.3)	30 (7.9)	2.30	1.12
I feel unsafe going to my farm or grazing areas	10 (2.6)	19 (5.0)	41 (10.7)	146 (38.2)	166 (43.5)	4.15	0.81
Composite Mean	—	—	—	—	—	3.72	—

Source: *Field Survey, 2025*

The results presented in Tables indicate that insecurity has had an overwhelming effect on agricultural productivity and rural livelihoods in the study areas. The high composite mean score of 3.72 suggests that respondents largely perceive insecurity as a major impediment to farming, livestock marketing, and overall safety within their communities.

The first item shows that 79.9 percent of respondents agreed that insecurity has forced them or others to abandon farmland. This is a critical finding because land is the primary asset for most rural households. Abandoning farmlands due to fear of attacks or abductions directly undermines food security, reduces household income, and increases poverty levels. In areas like Birnin Gwari, entire communities have been displaced, and vast tracts of farmland have been left uncultivated for several years. This not only lowers individual household production but also reduces aggregate agricultural output, thereby affecting food supply in local and urban markets. The second item reinforces this reality, with 77.5 percent of respondents agreeing that banditry and kidnapping have reduced farming activities. Bandits frequently target farmers on their way to the fields or during harvest seasons, extorting ransom, stealing crops, or forcing households to abandon agriculture altogether. This aligns with findings from empirical studies (Okoli & Ugwu, 2019; Abubakar, 2020), which reveal that insecurity is among the leading causes of declining agricultural productivity in northern Nigeria. The fear of abduction or violent attacks has thus reshaped rural livelihoods, discouraging farming and increasing reliance on humanitarian aid.

Similarly, 77 percent of respondents agreed that livestock markets are often disrupted by insecurity. These disruptions have profound economic consequences because livestock markets serve as hubs for trade and income for farmers, pastoralists, and traders. Market closures or disruptions reduce household earnings, increase food prices, and discourage reinvestment in agriculture. The implication is that insecurity extends beyond individual households, weakening entire value chains and local economies. On the fourth item, however, responses were strikingly different. A majority of respondents (66.7 percent) disagreed that security agencies provide adequate protection for farmers, reflected in the low mean score of 2.30. This lack of trust in security agencies suggests that government interventions are perceived as weak, sporadic, and largely ineffective. In many cases, security personnel are

either absent in rural areas or arrive only after attacks have occurred. The absence of preventive security measures leaves farmers vulnerable and reinforces feelings of abandonment by the state.

The final item shows that 81.7 percent of respondents feel unsafe going to their farms or grazing areas. This is perhaps the clearest indicator of the severity of insecurity. When rural households lose the confidence to access their farms the foundation of their livelihoods, the ripple effects are devastating. Reduced farming activity leads to food shortages, higher market prices, and increased poverty levels. This outcome directly threatens the sustainability of rural communities and exacerbates internal displacement.

From the standpoint of Human Needs Theory, these findings highlight that insecurity fundamentally disrupts the fulfillment of basic physiological and safety needs. Food production, an essential physiological need is curtailed when farmers abandon land or reduce agricultural activity. Safety, another core need, is undermined when individuals feel threatened by banditry, kidnapping, and violence. Without safety, rural households cannot pursue higher-level needs such as social belonging, esteem, or self-actualization. Instead, they remain trapped in cycles of fear, vulnerability, and deprivation. The low trust in security agencies further reflects a breakdown in institutional support systems. According to Human Needs Theory, unmet needs produce frustration, alienation, and conflict. In this case, the inability of the state to provide protection contributes to widespread resentment and loss of faith in government structures. This situation not only hampers agricultural production but also undermines long-term peace and stability in Kaduna State.

Test of Hypotheses I and II

In this section, the two hypotheses formulated and tested using simple linear regression analysis. The regression analysis examines the effect of insecurity (independent variable) on each of the dependent variables: crop yield/production, food availability, and livestock production. The analysis was conducted using SPSS software, and the results are presented in standard SPSS output format with detailed interpretation.

Hypothesis One

H₀1: Insecurity has no significant effect on crop yield/production in selected LGAs of Kaduna State.

Table 8 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.671a	.450	.448	.301

a. Predictors: (Constant), Insecurity
(SPSS v25 Output)

Table 9 ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	47.103	1	47.103	346.284	.000b
Regression:					
Residual	57.897	425	.136		
Total	105,000	426			

a. Dependent Variable: Crop Yield/Production

b. Predictors: (Constant), Insecurity

(SPSS v25 Output)

Table 10 Coefficients

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
1 (Constant)	4.215	.089		47.36	.000
Insecurity	−0.562	.030	−.671	−18.61	.000

Dependent Variable: Crop Yield/Production

(SPSS v25 Output)

The model summary shows that insecurity has a strong negative relationship with crop yield in the selected LGAs ($R = 0.671$). The R Square value of 0.450 indicates that insecurity alone explains 45% of the total variation in crop yield/production. In social science research, this is considered a very high explanatory power, highlighting insecurity as one of the most important determinants of crop production in Kaduna State.

The ANOVA table reinforces this conclusion, with an F-statistic of 346.284 and a significance value of $p < 0.001$. This means the regression model is highly significant and not due to chance.

The coefficients table further confirms that insecurity significantly reduces crop yield. The unstandardized coefficient ($B = -0.562$, $t = -18.61$, $p < 0.001$) indicates that for every one-unit increase in insecurity, crop yield decreases by 0.562 units. This large negative coefficient reflects the devastating impact of insecurity on agricultural productivity.

This result aligns with Human Needs Theory, which argues that when the fundamental need for safety is not met, individuals are unable to focus on higher-level needs such as food production, social engagement, or economic advancement. Farmers who fear for their lives cannot devote adequate time, labour, and resources to

farming, resulting in reduced crop production. The abandonment of farmlands due to banditry and terrorism illustrates this dynamic vividly.

Empirically, this finding supports the work of Okoli and Atelhe (2014), who noted that rural banditry has disrupted cultivation patterns in northern Nigeria, and Olanrewaju and Omotosho (2017), who found that insecurity was a major contributor to reduced maize and sorghum production in Kaduna and Zamfara States.

Therefore, H_01 is rejected. The evidence shows that insecurity has a significant and negative effect on crop yield/production in Giwa, Birnin Gwari, and Igabi LGAs.

Hypothesis Two

H_02 : Insecurity has no significant effect on food availability in selected LGAs of Kaduna State.

Table 11 Model Summary**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.642a	.412	.410	.315

a. Predictors: (Constant), Insecurity

(SPSS v25 Output)**Table 12 ANOVA****ANOVA^a**

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	43.124	1	43.124	298.440	.000b
Regression:					
Residual	61.396	425	.144		
Total	104,520	426			

a. Dependent Variable: Food Availability

b. Predictors: (Constant), Insecurity

(SPSS v25 Output)**Table 13 Coefficients****Coefficients**

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
1 (Constant)	4.193	.092		45.57	.000
Insecurity	−0.537	.031	−.642	−17.28	.000

Dependent Variable: Food Availability

(SPSS v25 Output)

The results in Table 5.16 show that insecurity has a strong effect on food availability, with a correlation coefficient of $R = 0.642$. The R^2 of 0.412 means that insecurity explains 41.2% of the variation in food availability across the three LGAs. This suggests that insecurity is not only a determinant of production but also a fundamental driver of food shortages and reduced access to food.

The ANOVA test indicates that the regression model is statistically significant ($F(1,425) = 298.440$, $p < 0.001$). This demonstrates that the relationship between insecurity and food availability is robust and not attributable to random variation.

The coefficient of -0.537 ($t = -17.28$, $p < 0.001$) suggests that higher levels of insecurity significantly reduce food availability. Insecurity leads to higher food prices, reduced variety in local markets, fewer household meals per day, and long-term threats to food sustainability.

Theoretically, Human Needs Theory explains this by asserting that food is a basic physiological need, and insecurity undermines the ability of households to fulfill this most basic requirement. If people are displaced or prevented from farming, food becomes scarce, and the survival of communities is threatened. Empirical studies support these findings. For instance, Audu (2019) found

that insurgency in northeastern Nigeria directly led to higher food prices and scarcity, while Okeke (2020) observed that frequent attacks in rural Kaduna caused a decline in market food supplies and reduced meal frequency among households.

Therefore, H_02 is rejected. Insecurity significantly and negatively affects food availability in Kaduna State.

Decision on Hypotheses

Based on the regression results, the two null hypotheses stated are rejected:

Ho1: Insecurity has no significant effect on crop yield/production in selected LGAs of Kaduna State → Rejected

Ho2: Insecurity has no significant effect on food availability in selected LGAs of Kaduna State → Rejected.

Thus, the study provides strong quantitative evidence that insecurity exerts a significant and multidimensional effect on food production in Giwa, Birnin Gwari and Igabi LGAs of Kaduna State.

Thematic Presentation of Data

The qualitative findings from interviews and focus group discussions (FGDs) are presented under the three major

constructs of the study: crop yield/production, food availability, and livestock production. The responses below are entirely direct quotes from participants, including farmers, pastoralists, community leaders, and agricultural/security officers, representing all three Local Government Areas (LGAs)..

Theme 1: Insecurity and Crop Yield/Production

Participants consistently described how insecurity curtailed agricultural activities, reducing both the size of cultivated land and actual yields. A farmer from Giwa lamented, *"We used to cultivate more than three hectares of maize and sorghum, but for the past three years, I cannot go to the farm without fear. Many of us have left our lands because going to the farm is like risking your life."* Similarly, a farmer in Igabi observed, *"Even when you plant, you cannot guarantee a harvest. Bandits destroy farms, and it discourages investment in fertilizers or improved seeds."* A community leader in Birnin Gwari echoed these sentiments, noting *"People are abandoning farmlands completely. Fertile fields lie empty because farmers fear kidnapping and attacks."*

These individual accounts were elaborated in FGDs. In Birnin Gwari, participants reported, *"We leave our farms for weeks because of the fear of attacks. Sometimes, we only go during the day, and even then, we rush."* In Giwa, some farmers explained the socio-economic toll: *"Some villagers have stopped farming altogether and rely on food donations. It's painful to watch fertile lands go unused."* Likewise, in Igabi, discussants shared that insecurity forces them to reduce cultivated areas: *"Even when we try to farm, insecurity forces us to reduce the land we cultivate. It is risky, and some days we cannot go at all."* These narratives align with broader evidence showing that insecurity reduces agricultural output by deterring cultivation and encouraging farmland abandonment, thus compromising food production (Gbamwuan, 2022). Human Needs Theory suggests that when basic physiological needs such as food and safety are threatened, individuals prioritize immediate survival over productive activities such as farming (Oladipo & Oyinloye, 2022), thus perpetuating low crop yields.

Theme 2: Insecurity and Food Availability

Insecurity also emerged as a major factor disrupting food availability and market dynamics. Interview data indicated that attacks on rural markets and transport routes restrict the flow of produce from farms to consumers. A community leader in Igabi explained, *"Before, you could get yams, beans, and maize in the market at normal prices. Now, food is scarce and very expensive. Even if you have money, you may not find enough because farmers cannot bring their produce out."* A security officer in Birnin Gwari added, *"We escort traders along*

highways, but attacks still happen. This discourages farmers from selling, creating shortages and price hikes." A farmer in Giwa commented, *"Transporting food to markets is dangerous. Many farmers keep their produce at home, which reduces market supply."*

FGD participants highlighted how these disruptions limit food access and affordability. In Giwa, discussants remarked, *"Many of us keep food at home rather than take it to the market. We cannot risk kidnapping or robbery, but this means food doesn't reach buyers."* In Igabi, participants noted that even households with cash cannot rely on markets: *"Even with money, you cannot always buy what you need. Markets are unpredictable because insecurity scares traders away."* In Birnin Gwari, discussants reported that fear of attacks has reduced market days and participation: *"Some markets operate only a few days per week due to fear of attacks, leading to food shortages."*

These qualitative results complement quantitative and country-level analyses showing that insecurity drives food scarcity and price volatility by disrupting food systems (Gbamwuan, 2022; Turk & Thomas, 2023). According to Human Needs Theory, when access to sufficient food is compromised, individuals are unable to satisfy core physiological needs, contributing to food insecurity and social stress.

Discussion of Findings

The findings of this study provide compelling evidence that insecurity exerts a profound negative influence on food production in Giwa, Birnin Gwari, and Igabi Local Government Areas of Kaduna State. Both quantitative and qualitative analyses indicate that insecurity has multidimensional effects on crop production, food availability, and livestock production. These results were supported by interviews with farmers, pastoralists, community leaders, and agricultural officers, as well as by focus group discussions, revealing the complex interactions between human security and agricultural productivity.

The regression analysis showed that insecurity accounts for 47.6% of the variation in food production, a considerable proportion given the multiple socio-economic and environmental factors that typically affect agricultural outcomes. The model was statistically significant, confirming that insecurity is a key determinant of declines in food production. Qualitative evidence from interviews and focus groups corroborated these findings: farmers reported abandoning farmlands, markets were disrupted, and livestock were frequently stolen or sold under duress, highlighting the real-life mechanisms through which insecurity translates into reduced agricultural output.

Crop Production

Insecurity emerged as the strongest predictor of crop production decline. Farmers in Giwa and Birnin Gwari recounted that recurring attacks, banditry, and herder-farmer conflicts forced them to abandon fertile farmlands, resulting in substantial reductions in staple crops such as maize, sorghum, and millet. Agricultural extension officers confirmed that insecurity hampers the timely delivery of improved seeds, fertilizers, and other farm inputs, further reducing productivity. These findings are consistent with Adebayo and Okon (2019), who observed a 40% reduction in maize and sorghum yields in northern Nigeria due to persistent attacks. Similarly, Usman et al. (2022) found that farmland abandonment in Kaduna and Katsina states due to insecurity significantly decreased annual cereal output.

Within the framework of Human Needs Theory, crop production represents a fundamental physiological need. When farmers cannot safely cultivate land, they are deprived of the ability to secure basic sustenance, which in turn threatens household food security and exacerbates poverty. The repeated exposure to violent threats also undermines psychological well-being, creating long-term disincentives to farming and contributing to cycles of deprivation.

Integration of Findings

Overall, the findings underscore the interconnected nature of insecurity and agricultural productivity. Insecurity reduces crop yields, disrupts food markets, and undermines livestock systems, creating a multidimensional crisis that threatens both subsistence and economic livelihoods. These results corroborate previous empirical evidence and are consistent with Human Needs Theory, which posits that unmet basic needs generate chronic social and economic vulnerabilities. The study therefore indicates that agricultural interventions alone, without addressing insecurity, are unlikely to restore food production or food security in Kaduna State.

Major Findings

The findings of this study indicate that insecurity is a central driver of the observed decline in food production in Giwa, Birnin Gwari, and Igabi Local Government Areas of Kaduna State. The quantitative analysis demonstrated that insecurity alone accounts for 47.6% of the variation in food production, highlighting its dominant role amidst other socio-economic and environmental factors. This statistical significance was reinforced by qualitative evidence, which captured the lived realities of farmers, pastoralists, and community leaders.

Crop production has been severely affected by persistent insecurity. Farmers reported abandoning fertile farmlands due to threats from bandits, herders, and communal violence, leading to substantial reductions in the output of staple crops such as maize, sorghum, and millet. Restricted movement and limited access to essential inputs such as improved seeds, fertilizers, and extension services further exacerbated the decline in yields. These findings align with empirical studies by Adebayo and Okon (2019) and Usman et al. (2022), which documented significant decreases in staple crop yields in northern Nigeria due to conflict and violence. The study illustrates that when farmers are unable to cultivate safely, the most fundamental physiological need—food—is directly compromised, consistent with the predictions of Human Needs Theory.

In terms of food availability, insecurity has disrupted both the supply and accessibility of food in affected communities. Respondents noted that households face soaring prices, diminished dietary diversity, and fewer daily meals. Rural markets, once vibrant, have become irregular or ceased functioning altogether, as traders avoid traveling through high-risk areas. This has resulted in chronic shortages of both locally produced and imported food items, confirming findings from the World Food Programme (2021) that insecurity-driven disruptions in supply chains are a major cause of food shortages in Northern Nigeria. The reduction in food availability not only undermines physiological needs but also erodes the sense of safety and stability that families rely upon to secure adequate nutrition. As such, insecurity not only diminishes the quantity of food accessible but also destabilizes households' capacity to maintain consistent food access over time.

Summary, Conclusion and Recommendations

This study investigated the extent to which insecurity affects crop production and food availability in selected Local Government Areas of Kaduna State, specifically Giwa, Birnin Gwari, and Igabi. The background highlighted that rising incidents of banditry, kidnapping, and rural violence have significantly undermined agricultural productivity in the region. The study focused on three objectives: to assess the impact of insecurity on (i) crop yield and production and (ii) food availability. The Human Needs Theory served as the guiding framework, emphasizing that insecurity threatens both physiological and safety needs, which are essential for human survival and socio-economic stability.

The literature review demonstrated that insecurity consistently undermines agricultural productivity and food security in conflict-prone areas. Previous studies showed that persistent attacks on farmers, destruction of farmlands, and disruptions in rural markets lead to

reduced crop yields, limited food availability, and substantial losses in livestock. These findings underscored the multidimensional nature of food insecurity and highlighted the importance of understanding the interplay between insecurity and agricultural livelihoods.

The study adopted a mixed-methods research design, combining quantitative data collected through structured questionnaires administered to 451 respondents with qualitative insights from 15 purposively selected stakeholders, including farmers, pastoralists, community leaders, and agricultural officers. Focus group discussions and in-depth interviews were used to capture the lived experiences of respondents. The sample size was determined using Yamane's (1967) formula to ensure statistical reliability. This methodological approach allowed for triangulation of data, enhancing the credibility of the findings.

An overview of the study area revealed that the socio-economic, demographic, and security conditions in Giwa, Birnin Gwari, and Igabi significantly influence agricultural practices, market access, and livestock management. The security challenges in these areas directly affect the ability of farmers and pastoralists to maintain regular production and sustain livelihoods.

Data analysis showed that insecurity has a significant negative effect on crop production, food availability, and livestock production. Regression analysis indicated that insecurity accounts for 47.6 percent of the variation in food production, highlighting its critical role in reducing agricultural output. Descriptive statistics revealed that farmlands are frequently abandoned, food prices have risen, markets are disrupted, and livestock losses through theft and forced sales are widespread. Qualitative evidence reinforced these findings, with farmers describing farming as life-threatening, pastoralists reporting major herd losses, and community leaders highlighting the collapse of market systems. These outcomes demonstrate that insecurity disrupts food production, supply chains, and household livelihoods simultaneously.

Specifically, crop production has declined due to farmland abandonment, limited access to improved seeds, fertilizers, and agricultural extension services. Food availability has been reduced, with households reporting fewer meals, higher food prices, and lower dietary diversity. Livestock production has been weakened by theft, restricted grazing movements, and the near absence of veterinary services, undermining both nutrition and economic security for households. Collectively, these findings reveal that insecurity perpetuates cycles of hunger, poverty, and social instability, eroding the resilience of rural communities.

In conclusion, the study established that addressing food insecurity in Kaduna State requires integrated interventions that address both agricultural development and security. Policies and programs must recognize that sustainable crop production, food availability, and livestock productivity cannot be achieved without restoring safety and stability in rural communities. Ensuring the fulfillment of basic human needs is essential for enhancing agricultural productivity, safeguarding livelihoods, and promoting overall community well-being.

Conclusion

The study concludes that insecurity has a severe and multidimensional effect on food production in Giwa, Birnin Gwari, and Igabi LGAs of Kaduna State. Farmers have abandoned fertile farmlands, households are struggling with reduced food availability, and livestock owners have lost herds due to banditry and restricted grazing movements. These outcomes collectively translate into reduced crop yields, higher food prices, and declining household incomes.

From the perspective of Human Needs Theory, these findings emphasize that food and safety are the most fundamental needs that must be met before individuals can aspire to higher levels of development and social fulfillment. In the study area, insecurity denies farmers access to both food security and physical safety, thereby trapping households in cycles of poverty and vulnerability.

It is therefore concluded that unless insecurity is decisively addressed, agricultural production in Kaduna State will remain under severe threat, with dire implications for household well-being, state food security, and national agricultural development goals.

Recommendations

In line with the objectives of this study and the three hypotheses tested, the following recommendations are offered. These are presented in a narrative form to reflect the applied realities of the research and to connect directly to the theoretical foundation.

(i) Crop Yield/Production

The study revealed that insecurity has forced many farmers to abandon their farmlands, thereby reducing crop yield and production. We recommend that the government, in collaboration with security agencies, should intensify efforts to secure farming communities through the establishment of rural security outposts and farmer-protection squads. In addition, community policing initiatives should be strengthened so that local vigilante

groups can complement formal security structures. Beyond physical security, government and NGOs should provide displaced farmers with improved seeds, fertilizers, and mechanized farming tools to restore lost productivity. Access to credit facilities should also be expanded, enabling farmers to return to cultivation without undue financial burden. By safeguarding farming and supporting agricultural input provision, the physiological need for food, as emphasized in Human Needs Theory, will be effectively addressed.

(ii) Food Availability

The findings indicated that food availability in the study areas has been severely constrained, with rising prices, reduced supply, and limited variety of foods in local markets. We recommend that deliberate interventions be put in place to restore food availability. First, secured transportation corridors should be established, allowing farmers and traders to safely move food products to markets. Second, grain reserves and community food banks should be established at local levels to stabilize supply during periods of heightened insecurity. Third, policies should be enacted to subsidize the prices of staple foods, ensuring that vulnerable households have access to adequate nutrition. These measures will not only meet the physiological need for food but also reduce the anxiety and hopelessness caused by scarcity, thereby addressing both the physical and psychological dimensions of Human Needs Theory.

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Appendix IV

Giva Grain Market





Some members of the focus group discussion in Giwa



Some Cattle rearrests from in Giwa



Livestock grazing routes



With Mai Angwan Tashan Ice Mall. Muhammad Community Head (Kuyallo,



Some Focus Group Members from Birning Gwari



Livestock gracing routes



Alhaji Baba Danfangi (Community Head, Sarking Tsohuwar Giwa)



Gracing routes, Giwa



One of the Cattle rearrest in Birning Gwari