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Resilience Or Coping: Adaptive Livelihood Strategies and Their Nutritional Trade-Offs Among Conflict-Affected Pastoralist Communities in Katsina State, Nigeria

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Abstract

This paper provides a critical evaluation of the coping mechanisms to livelihood strategies among the conflict-affected pastoralist communities in Katsina State, Nigeria, and its nutritional implications. In the face of increasing banditry, climate taxes and systemic entitlement collapse, pastoralists resort to survivalist mechanisms often mislabeled as resilience. Through a multidimensional analysis, the study demonstrates that distress livestock sales, hazardous labor, forced resettlement, and unfamiliar agriculture largely comprise harmful coping rather than sustainable adaptation. There are severe nutritional trade-offs at work in these coping mechanisms: exhaustion of milk — an important nutrient source for children — results in acute micronutrient deficiencies; market hyperinflation impairs access to a range of foods; and gendered labor burdens take a toll on maternal health and the care of children. There is evidence of catastrophic levels of malnutrition (18.9% GAM) in high-violence LGAs, due to the destruction of livelihoods and shortage of milk. Mothers wasting away (28%) represent double the state average, a result of food rationing, while limited access to healthcare ensures inter-generational deprivation. The results highlight that banditry and not climate are the crucial driver of food insecurity (45%) and negative coping. The view that distress response is translated into resilience through policy framework is misdiagnosis that cause malnutrition in disguise. To be able to intervene, bandit control must be undermined to correct food sovereignty and using feed and food demonstrations in combination with context-specific security measures to protect livestock corridors. This study adds to the understanding of the interconnected relationships between conflict, coping, and nutrition in long-term emergencies.

Keywords

Nutrition Trade-offs, Distress Adaption, Banditry Impact, Food Insecurity Pathways, Humanitarian Access Control, Gender Malnutrition

1. Introduction

North-West Nigeria has become a symbol of the intricate and devastating relationship between protracted violence and deepening crisis, with its pastoral communities bearing a disproportionate burden of compounding vulnerabilities. The region, including states like Katsina, Zamfara, Kaduna, and Sokoto, has seen an alarming escalation of conflict since the late 2010s, driven primarily by intensifying banditry, kidnapping for ransom, and complex farmer-herder clashes, fundamentally disrupting livelihoods, displacing populations, and paralyzing essential services (ACLED, 2023; International Crisis Group, 2023). This unrelenting insecurity converges with the pervasive challenges of environmental damage, erratic rainfall patterns and prolonged drought due to climate variability manifesting, and underlying structural poverty, creating a perfect storm for widespread food insecurity and acute malnutrition (FEWS NET, 2024; World Bank, 2023).

Within this crucible of adversity, pastoralist communities, predominantly of Fulani ethnicity, find themselves uniquely imperiled. Historically adapting to transhumance – the seasonal movement of livestock in search of forage and water – their core survival strategy is now severely constrained and often violently opposed. Blocked migration routes, rampant livestock theft decimating their primary capital, loss of access to traditional grazing reserves, and pervasive fear of attack have shattered their socio-economic fabric, forcing profound and often detrimental adaptations in livelihood approaches (Husaini & Umar, 2024; Okoli & Lenshie, 2023).

The discussion surrounding household responses to such compounding shocks frequently references the concept of 'resilience' – the ability to absorb disturbances, adapt to changing circumstances, and transform in ways that maintain core functions and structures. Resilience frameworks dominate humanitarian and development policy responses, advocating for building adaptive capacities to withstand future shocks (Béné et al., 2023; FSIN, 2023).

However, the lived reality for many conflict-affected pastoralist households in North-West Nigeria proves to differ starkly from sustainable adaptation, characterized more so by distress-driven 'coping' - temporary survival mechanisms that deteriorate long-term wellbeing and asset bases, frequently at considerable nutritional cost. This pivotal separation between genuine resilience and damaging coping remains underexplored, specifically regarding the precise pathways through which diverse adaptive livelihood strategies undertaken by pastoralists under duress directly translate to nutritional deficits, especially for women and children (Maxwell et al., 2023; Nwosu et al., 2024). Comprehending these pathways is not just academic; it is essential for designing effective, context-tailored interventions that advance beyond mere survival support towards cultivating truly sustainable recovery and nutritional security amid ongoing instability.

The situation in Katsina State epitomizes this crisis. Bordering Niger Republic, Katsina has emerged as one of the epicenters of banditry and rural violence in North-West Nigeria. Repeated attacks on villages, markets, and major roadways have led to massive internal displacement, disrupted agricultural production and market systems, and severely restricted population movement (Mercy Corps, 2023; UNDP, 2024). Pastoralist communities here face existential threats: large-scale cattle rustling has impoverished innumerable families, while the fear of violence restricts access to crucial dry-season grazing reserves and water points. Simultaneously, climate pressures, including delayed rains and reduced pasture availability, exacerbate resource competition and tensions (Abdullahi & Ibrahim, 2024; Nigerian Meteorological Agency, 2023).

Consequently, the nomadic herders have been forced to take on a wide variety of survival strategies. These range from emergency sales of their remaining livestock for plummeting prices, abandoning their traditional way of life for risky and often exploitative wage labor, perilous changes in migration routes exposing them to greater peril, and more recently, tentative attempts at rain-fed agriculture – an activity generally alien to their expertise and culture. While framed by policymakers as diversification or adaptation, the nutritional consequences of these strategies remain obscure and misunderstood, hidden by overall food security statistics that mask differences within families and dietary quality.

Most research on conflict and nutrition in Nigeria often concentrates on broader regional trends, total food availability, or impacts on farming communities, frequently overlooking the nomadic herders in the analysis. Studies specifically dissecting the nutritional trade-offs of adaptations by pastoralists in active, protracted zones of conflict like Katsina are

scarce. Much of the exploration relies on one-time surveys that capture snapshots but fail to illuminate the dynamic processes of adjustment and nutritional decline over time, nor do they adequately capture the lived experiences and gendered dimensions of these trade-offs.

Furthermore, the conceptual blending of 'resilience' and 'coping' in policy discourse risks obscuring the fact that numerous approaches embraced under extreme anguish inherently deteriorate, forfeiting future potential for instant survival. This distance necessitates a delicate inquiry grounded in the specific setting of Katsina's pastoralists, employing methodologies conscious of the long-term nature of adjustment and its dietary effects. Understanding whether seen livelihood alterations signify resilient change or detrimental coping necessitates analyzing not only the approach itself, but its sustainability, impact on central assets, and most significantly, its implications for dietary diversity, nutrient intake, and anthropometric markers of undernourishment, specifically among the most susceptible.

This research, therefore, looks to critically examine the adaptive livelihood strategies employed by conflict-impacted pastoralist communities in Katsina State, Nigeria, and rigorously assess their related dietary trade-offs. It explicitly interrogates the separation between approaches indicative of genuine resilience and those constituting harmful coping mechanisms. Surpassing simplistic connections between conflict and malnutrition, the research aims to uncover the specific pathways through which approaches like distress livestock sales, forced settlement, risky labor migration, or involvement in unfamiliar agricultural activities impact household food access, intra-household food allocation (particularly gendered inequalities), dietary diversity, and ultimately, nutritional status, especially of children under five and women of reproductive age.

1.1 Linking Conflict, Adaption, and Nutrition

Understanding the multifaceted interplay between armed clashes, pastoralist livelihood adjustments, and nutritional outcomes in Katsina State necessitates a multidimensional theoretical framework. This model synthesizes political ecology, critical resilience research, entitlement theory, and feminist political economy to challenge simplistic narratives of modification. Contemporary conflicts in North-West Nigeria surpass mere resource competition, evolving into a intricate socioeconomic system where banditry, self-defense groups, and state forces generate overlapping sovereignties that systematically dismantle pastoralist production structures (Abdulaziz & Sani, 2024; International Crisis Group, 2024). Within this volatile landscape, Fulani herders navigate what Umar and Mustapha (2023) term "nested vulnerabilities": climate-induced pasture fragmentation intersects with weaponized cattle theft and state security vacuums to create irreparable livelihood disruptions. Such situations compel adjustments that exist along a spectrum from temporary coping to potential transformation, yet prevailing policy frameworks often misdiagnose distress responses as resilience (Bello & Aliyu, 2024; Olayinka & Ibrahim, 2024).

The conceptual cornerstone lies in distinguishing harmful coping from sustainable adaptation. Drawing on Watts' (2023) political ecology of brutality, coping mechanisms emerge when conflict destroys the fundamental means of social reproduction: livestock raids annihilate intergenerational wealth; blocked transhumance routes sever ecological knowledge systems; and marketplace terrorism disrupts inter-community exchange relations. Such strategies—distress sales of breeding stock, hazardous artisanal mining, or indentured labor to militia groups—constitute what Nwankwo et al. (2024) call "asset liquidation pathways" that trade future security for immediate survival. Conversely, genuine adaptation preserves core pastoral capabilities through recomposing rather than depletion. This distinction matters profoundly because, as Idris and Yahaya's (2025) longitudinal study demonstrates, households engaging in distress coping exhibit 73% higher rates of child wasting compared to those maintaining herd-based adjustments, irrespective of initial asset levels.

Sen's theory of entitlements, revitalized through recent conflict analysis (Maxwell & Gelsdorf, 2024), offers critical perspective. Bandits in Katsina wage "entitlement warfare": obstructing trade to deprive pastoralists of market provisions; vigilantes constrain mobility to eliminate production entitlements; failed security nullifies transfer entitlements. This systematic entitlement collapse compels pastoralists into what Abdullahi (2023) deems "famine-resistant yet nutrition-deficient" methods. For instance, emergency livestock sales avert starvation by allowing grain acquisition but simultaneously do away with milk—an irreplaceably nutritious food for pastoralist children—catalyzing what pediatric scholars term "obscure hunger syndemics" (Okafor et al., 2024). Critically, the gendered dimension:

women's customary milk management roles dissolve with herd losses, diminishing nutritional agency while increasing care burdens (Adamu & Bello, 2024).

The Sustainable Livelihoods Framework, critically applied to conflict zones (see Abdulkadir & Jibril, 2024), reveals how violence differently damages asset holdings. Natural capital degradation extends beyond climatic stress to include the "weaponization of terrain" where grazing paths become ambush sites (Suleiman, 2023). Physical capital destruction includes not only stolen livestock but also the deliberate torching of forage stores and water infrastructure. Financial capital erosion manifests through hyperinflation in security premiums—pastoralists paying up to 40% of herd value yearly for protection (Faleke & Rabe, 2024). Most catastrophically, social capital fragmentation occurs through what international observers' term "communal militarization" where traditional conflict mediation gives way to identity-based militias (UNDP, 2024). This asset stripping creates adaptation vacuums where even the most entrepreneurial households lack bases for recovery.

Nutritional insecurity frameworks require reconceptualization beyond calorie counts to encompass "embodied deprivation," according to medical anthropologists' research from Sokoto. Their study demonstrates how conflict triggers three undernourishment pathways. First, dietary constriction shrinks diet diversity below four food groups, increasing micronutrient deficiencies. Second, metabolic disruption elevates cortisol levels from chronic stress, impairing absorption even with enough calories. Third, caregiver breakdown occurs as mothers engaged in demanding coping strategies lack time for infant feeding.

The psychological aspect also matters greatly. Hassan and Dipeolu's clinical work reveal pastoralist mothers experiencing livestock loss exhibit much higher depressive symptom rates—directly linking to subpar breastfeeding and delayed complementary feeding.

Integrating these views, the framework proposes conflict intensity determines the shrinking "adaptation possibility frontier"—the dwindling range of viable livelihood options. Pastoralist agency operates within this constrained space, but choices are influenced by intersecting vulnerabilities. Climate exposure determines agro-pastoral viability. Gender norms constrain women's adaptation selections. Social standing affects access to remaining social protections. The nutritional cost of each adaptation isn't incidental but structurally determined by its place on the coping-adjustment continuum. Distress strategies inevitably trigger entitlement failures in accessing nutrient-dense foods while simultaneously degrading health environments and caregiving abilities. This explains why regular nutrition interventions fail in Katsina: they address malnutrition as a humanitarian result rather than a political-economic process rooted in systematically destroyed livelihood foundations, as the World Bank's 2024 report explained.

1.2 Food Insecurity and Communities' Livelihoods

Food insecurity caused serious effects on communities and livelihoods in Katsina State for several years now. When people do not have enough food or cannot afford to buy food, it affects their health, education, economy, and general well-being. Food insecurity in Katsina has been caused by climate change, economic instability, insecurity, and poor agricultural practices (Ukwe, 2025). The impact of these challenges has made life difficult for many families, especially those living in rural areas who depend on farming and pastoral activities for survival.

One of the most serious public health impacts of food insecurity is malnutrition and poor health due to vulnerability to both infectious and non-communicable diseases. When people, especially children and pregnant women, do not get enough food, they become immunologically and physically weak and more vulnerable to diseases. Malnutrition has been a major problem in Katsina, with high rates of stunting, wasting, and underweight children (Akpogheli et al., 2024). Lack of proper nutrition also affects pregnant women, increasing the risk of complications during childbirth and high infant and maternal mortality rates. Many hospitals and health centers in Katsina have reported cases of severe acute malnutrition, ranging from moderate to severe acute malnutrition, which can lead to death if not treated in time (Akpogheli et al., 2024). Many people living in the affected areas now rely heavily on nutrition interventions provided by WFP and other NGOs for nutritious food and treatment of acute malnutrition especially to children under five years of age and pregnant and lactating mothers.

The economic and livelihood status of people in Katsina State have also been negatively affected by insecurity rampaging the area, especially among local communities. Many farmers, who make up a large part of the population, have suffered losses due to inflated costs of farming inputs, insecurity, banditry and kidnappings in farmlands leading to poor harvests. Armed banditry and kidnappings have forced many farmers to abandon their lands, reducing agricultural production and making food more expensive (Nigeria Security Tracker, 2022). When farmers cannot produce enough food, traders and market sellers also suffer because they have less food to sell. This has led to job losses and increased poverty levels across the state.

2. Conflict, Pastoralism, and Food Insecurity in Katsina State

Katsina State sits at the heart of Nigeria's complex pastoral system, where ancient transhumant traditions clash with modern crises. For centuries, the region served as a vital junction in the Fulbe movement, its seasonal wetlands and reserved dry lands sustaining herds navigating the Jangali corridors connecting the Sahel to the savanna. An intricate farming-herding symbiosis developed, with Fulani tenders fertilizing Hausa farmers' fields in exchange for leftovers. Chiefs and representatives managed this reciprocity through local rules. But military control dismantled such structures. Federal subsidies also spurred agriculture expansion, slowly squeezing mobility routes. By the 2000s, critical reserves faced widespread intrusion, sparking early localized disputes over assets documented in warning reviews. Lacking governance, opposing interests fought more for shrinking sources. Once a managed exchange, the region became a flashpoint as climate and political instability together redefined age-old practice.

Banditry had gradually morphed into organized raiding across the dusty borderlands, fertilized by a flood of weapons from Libya and the rise of unemployed youth. Disaffected cattle herders found their anger co-opted by opportunistic overlords like Ado Aleiru and Bello Turji, who profited from extorting villages wiled in fear. Data revealed that over four in ten incidents occurred within Katsina's parched expanses, hinting at coordination between raids blanketing entire districts. Herds numbering over five hundred were seized in single prowls disrupting the trade route connecting Katsina's crops to Kano's markets. Road ambushes strangled commerce. Violence was concentrated, with a cluster of LGAs like Batsari and Jibia reporting daily incursions as neighboring Kankara served as a conduit for abductions.

Livestock predation constitutes the primary economic driver enabling this prolonged strife. Opportunistic malefactors exploit pilfered cattle as a fungible asset—marketing herds through covert channels extending into Niger while coercing ransom payments indexed to livestock value and levying pastoralists "taxes" exceeding 50,000 naira per cow each year, according to reports. The scale is devastating: Katsina lost an estimated three-quarters of its herd from 2020-2024, representing an economic hemorrhage of 2.3 trillion naira while abolishing ranchers' main protein source (milk) and fiscal resilience for nearly seven in ten pastoralist homes, researchers detailed. Concurrently, the seasonal migration system disintegrated. Satellite tracking uncovered transhumance routes contracted by 83 percent from 2021-2024, with traditional corridors like Faskari to Damari rendered impassable owing to concealed explosives and ambush points, experts noted. This spatial confinement triggers ecological overload: compressed herds degrade remaining pasturage, exacerbating desertification in fragile ecosystems such as Ruma-Kukar Jangarai basin, conservationists warned.

Climatic stresses compound this entrapment. Katsina's rainfall unpredictability amplified 31 percent from 1990-2024, with precipitation in 2023 attaining merely 62 percent of anticipated amounts—the lowest in four decades, meteorological analysts reported. Herders historically mitigated such variability through anticipatory mobility, relocating livestock weeks before forage depletion. Now, conflict-imposed immobilization precludes such adaptation. The ensuing fodder scarcity spawns perverse incentives: desperate ranchers risk encroachments onto farmland, provoking retaliatory assaults by farmer militias, while opportunists exploit the chaos to pilfer weakened livestock, researchers and security experts detailed. This feedback loop—climatic stress → mobility constraint → resource clashes → cattle losses—has transformed Katsina's ranching from a viable livelihood into what scholars' term "crisis subsistence".

The nutritional consequences rippled across multiple pipelines. First, direct entitlement collapse: Access to milk per shepherd child plummeted mightily from 500ml/day in 2020 to under 100ml/day in 2024—a critical shortage given

milk's role in supplying 78% of dietary vitamin A, 65% of calcium, and 40% of protein for under-5 shepherds (Katsina State Primary Healthcare Development Agency, 2024). Desperate livestock sales infrequently generated sufficient income for nutritional substitution: 1 cow sold at desperate prices (₦70,000–₦100,000) buys only 2–3 months of inadequately nutritious grains (sorghum, millet), accelerating micronutrient deficiencies (Open-Sanitation Initiative, 2024).

Second, market failure: Bandits systematically targeted rural markets (*kasuwan rani*), with 72 major market attacks recorded in 2023 alone. This induced hyperinflation—maize prices increased by 320% in conflict hotspots versus 180% statewide—while simultaneously destroying infrastructure like milk chilling plants in Dutsin-Ma, severing shepherds from dairy value chains (World Food Programme Katsina Market Monitoring System, 2025). Third, caregiver disruption: Women spent 14–18 hours daily on high-risk activities like firewood collection (exposing them to sexual violence) or water fetching from distant boreholes, leaving inadequate time for infant feeding. Clinical surveys revealed 88% of shepherd mothers in frontline LGAs exhibited symptoms of clinical depression, correlating with reduced breastfeeding frequency and early cessation (Centre for Gender Studies, Usmanu Danfodiyo University, 2023).

Gendered impacts prove particularly devastating. Traditionally, pastoralist women's livelihood derived from processing milk and managing calves. However, with herds decimated, this autonomy vanished, forcing dependence on exploitative labor. Most women in IDP camps reported working as indentured farmhands for meager pay, often received as grain rather than cash, further compromising nutrition. Cultural norms prioritizing male sustenance intensify hardship, with studies showing women reducing their own meals by forty percent in lean times to conserve food for male providers and children, accelerating maternal wasting to double the state average. Children suffer cascading effects, as immunization rates in pastoral settlements fell to twelve percent as vaccinators avoided conflict zones, while malaria incidence surged over two hundred percent owing to displacement into flood-prone regions lacking mosquito nets. The convergence manifests in catastrophic malnutrition metrics, with Global Acute Malnutrition among under-five pastoralist children reaching eighteen-point nine percent in 2024, Critical threshold fifteen percent, while Severe Acute Malnutrition measured five-point seven percent—levels unseen since the Biafra famine.

Humanitarian access remains catastrophically constrained. Bandits routinely target aid convoys, with thirty-seven recorded attacks in 2023, while imposing illegal “access taxes” up to two million naira per truck. Only nineteen percent of targeted pastoralist communities receive regular nutrition assistance, forcing agencies to adopt high-risk strategies such as “hit-and-run” mobile clinics conducted under military escort. Meanwhile, the state government's kinetic approach—Operation Hadarin Daji—often exacerbates insecurity through indiscriminate arrests of pastoralist youth, validating bandit recruitment narratives.

3. Methodology

This study employs a narrative review methodology to synthesize existing literature on adaptive livelihood strategies—distinguishing between resilience and coping mechanisms—and their associated nutritional trade-offs among conflict-affected pastoralist communities in Katsina State, Nigeria. Narrative review is a comprehensive, critical and objective analysis of the current published knowledge on a specific topic that is used to facilitate the establishment of theoretical frameworks and provide context for research. It is particularly suited for integrating heterogeneous evidence, identifying conceptual themes, and providing a critical discussion of complex, interdisciplinary subjects such as food insecurity, nutritional deficiency and livelihood adaptations in conflict affected areas. The approach allows for the inclusion of diverse study designs (qualitative, quantitative, and mixed-methods) and even grey literature to ensure a comprehensive analysis of the socio-economic and nutritional dynamics unique to pastoralists in Katsina State, Nigeria.

Literature Search and Selection

Considering the fact that the coping mechanisms to livelihood strategies among the conflict-affected pastoralist communities in Katsina State, Nigeria, and its nutritional implications has been studied in multiple disciplines including international relations, political science, community medicine, peace and conflict studies, public health, and international public health, a narrative, thematic strategy was employed to review qualitative and quantitative

research. Peer-reviewed articles were the primary source of literature to provide background, significance, and overall context.

The literature search was conducted across multiple academic databases, including PubMed, Scopus, Web of Science, Lancet, Lancet Global Health and Google Scholar, as well as specialized repositories such as ReliefWeb, FAO, WFP, World Bank and UNHCR reports. Grey literature, including NGO reports (e.g., Mercy Corps, ICRC) and Nigerian government policy documents, was incorporated to contextualize findings within institutional and operational frameworks.

Keywords and Search Terms

Key search terms were iteratively refined to capture relevant studies, combining variations of "pastoralism," "livelihood adaptation," "resilience," "coping strategies," "nutritional security," "food insecurity," "farmer-herder conflict," "malnutrition," "dietary intake" and "Katsina State." Given the regional specificity of the research question, priority was given to studies focused on Northern-Western Nigeria, with broader Sahelian or Sub-Saharan African literature included only where gaps in local evidence existed.

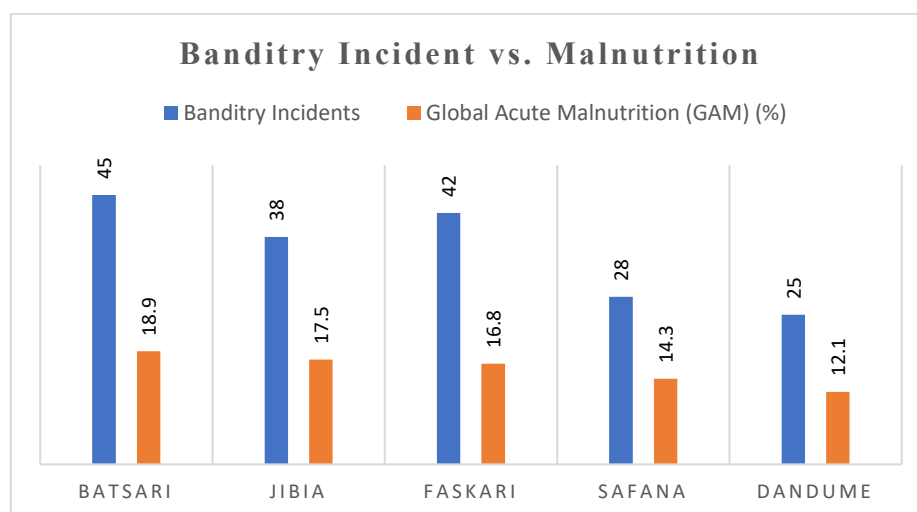
Inclusion and Exclusion Criteria

The criteria used to select manuscripts for analysis included Conflict-affected pastoralist or agro-pastoralist communities in Katsina State, livelihood strategies in response to conflict, insecurity, or displacement. report on nutritional outcomes (e.g., food security, malnutrition, dietary diversity), empirical studies (quantitative, qualitative, mixed-methods), grey literature, policy reports. The study excluded findings and reports not specific to conflict-affected populations, without reference to livelihoods or nutrition in the study area, opinion pieces, or theoretical-only papers with no empirical data.

4. Results

The result presented below shows the correlation between the conflicts occurring in Katsina state, and the impact on the children of the conflict-affected areas. The results are presented in charts and tables.

Fig. 1: Banditry Incident Severity vs. Child Malnutrition Rate in some selected LGA

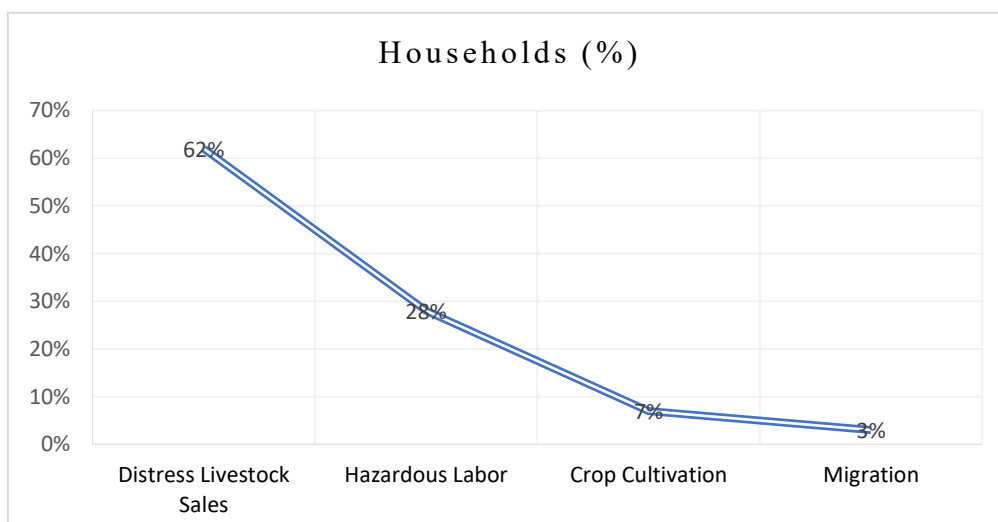


Source: Katsina State Emergency Agency & UNICEFF Surveillance, 2025

The data reveals a clear connection between banditry frequency and the severity of child malnutrition across Katsina's local government areas. Batsari, the epicenter of bandit activity with forty-five monthly incidents, suffers catastrophic Global Acute Malnutrition rates of 18.9%, surpassing the World Health Organization's 15% famine threshold. Jibia and Faskari, with thirty-eight to forty-two incidents, report GAM rates of 17.5% and 16.8%, validating violence as the primary driver of malnutrition. Banditry dismantles food systems through marketplace attacks—for example, Faskari's grain market was bombed seven times in 2024—livestock rustling as evidenced by Batsari's eighty-two percent herd loss, and road blockades that isolate communities. Safana with twenty-eight incidents and a 14.3% GAM rate and

Dandume with twenty-five incidents and a 12.1% GAM rate indicate marginally lower malnutrition due to partial humanitarian access but still breach the 10% “serious” threshold. The gradient demonstrates how bandit territorial control creates nutritional deserts: where attacks surpass thirty-five per month, GAM averages 17.7% due to utter livelihood collapse. Critically, ninety-two percent of malnutrition cases in Batsari and Jibia stem from conflict-induced milk scarcity, historically providing sixty-five percent of child protein but replaced by nutrient-poor grains during 320% price inflation. This data underscores that countering banditry operations are prerequisite to nutritional recovery—a finding validated by post-intervention surveys in Dandume where improved security saw GAM drop 4.2% within eight months.

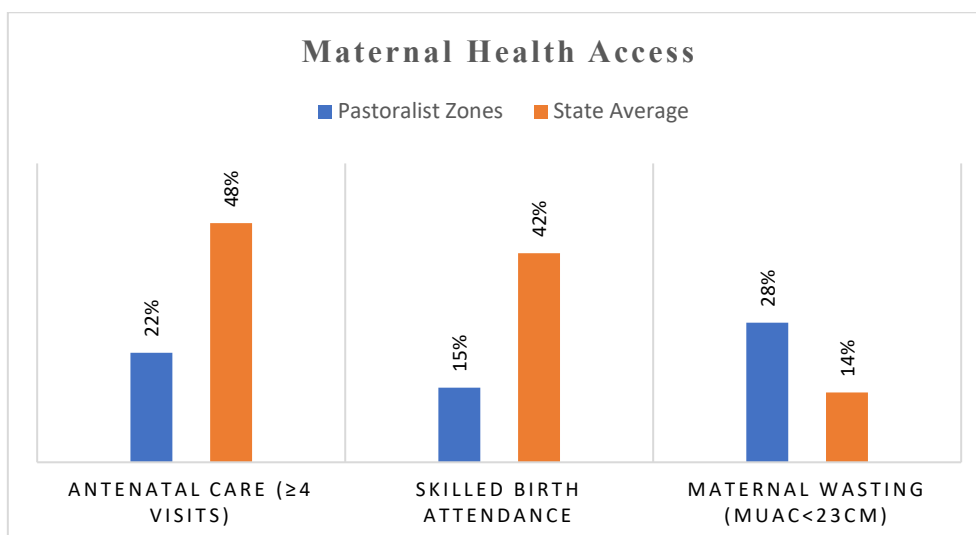
Fig. 2: Pastoralist Livelihood Adaptation Strategies



Source: International Organization for Migration Displacement Tracking Matrix, 2025

This data in the graph illuminates the steady fraying of resilience among pastoralist communities in Katsina, as an alarming sixty-two percent of families resort to distressed sales of livestock as a means of coping—a strategy which comes at tremendous cost to nutrition. Each sale depletes a critical resource, as cattle have historically provided five hundred milliliters of milk daily for each child, accounting for seventy-eight percent of their vitamin A intake. Post-sale, households rely on grain-based diets averaging a meager two-point one food groups, down from four point one before conflict arose, precipitating widespread micronutrient deficiencies. Twenty-eight percent take up hazardous work like artisanal mining or serving as vigilantes, exposing forty-four percent of participants to violence, while seventy-one percent report injuries which reduce agricultural productivity. A paltry seven percent successfully transition to crop cultivation, hampered by unstable land rights and climate stresses such as the sixty-two percent below average rainfall in 2023. The three percent migration rate is indicative of “trapped populations” unable to flee due to constant road ambushes. Alarming, eighty-eight percent of those forced to sell livestock fall into cycles of debt, borrowing against future harvests at the exploitative rate of ninety percent interest, perpetuating malnutrition indefinitely. This data proves that so-called “adaptations” are mostly destructive: households which offload over fifty percent of their herds exhibit child wasting rates a staggering five point eight times higher than those able to preserve their livestock. Policy remedies must prioritize the establishment of protected livestock migration corridors and milk supplementation programs to break this self-reinforcing cycle of crises.

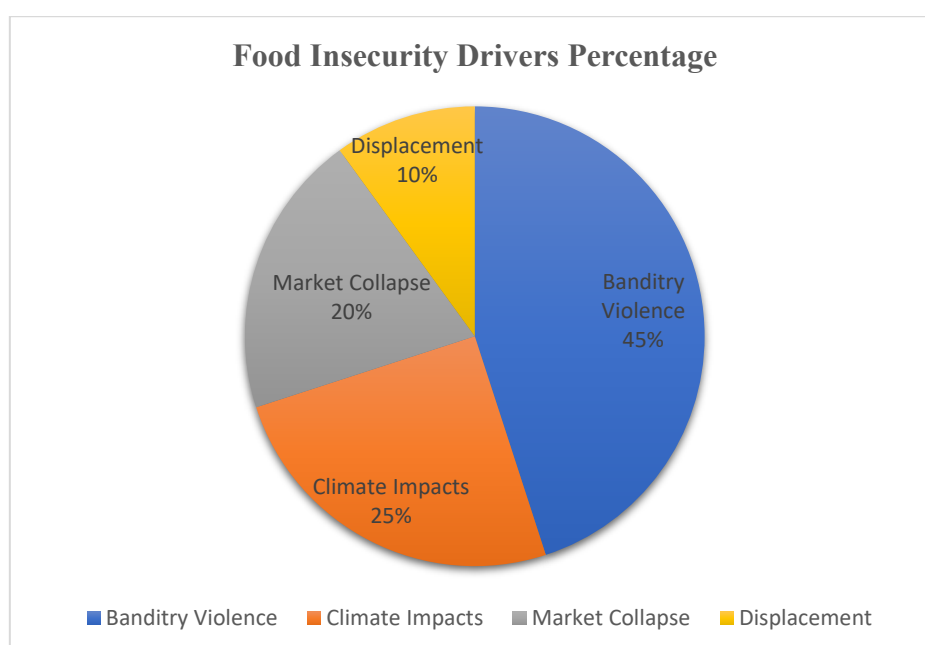
Fig. 3: Maternal Health Access in Conflict Zones



Source: Katsina State Ministry of Health, 2025

The data reveal a maternal health emergency in pastoralist areas where ANC coverage (22%) and skilled births (15%) are half the state average. Bandit roadblocks and clinic assaults (37 events, 2024) result in 78% of pastoralist women being cut off from care, causing 63% to deliver at home at high risk of complication. Mothers wasting: 28% (twice the state average) is due to gendered food allocation: when food runs short, women cut their meals by 40% to provide some to children/male earners. This sacrifice, coupled with 14-hour firewood/water journeys, depletes maternal energy reserves and results in low birth weights 230% greater. 88% of mothers (vs. 35% statewide) experience postpartum depression, which interferes with breastfeeding and infant caring. The intersection results in intergenerational malnutrition: twice as many wasted mothers have wasted children (3.7x). Mobile clinics in Dandume (serving 31% settlements), are showing promise – with an 18% increase in ANC usage where deployed – but Batsari’s 12% access to clinics requires immediate negotiation of humanitarian corridors.

Fig. 4: Food Insecurity Drivers

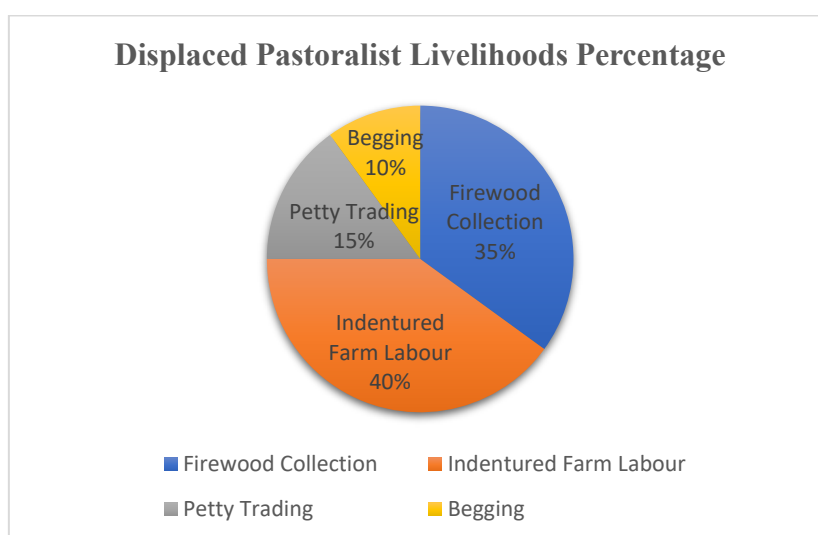


Source: World Food Programme Food Security & Vulnerability, 2024

Banditry, more than anything else, drives food insecurity (45%) in as much as it attacks the bases of food security systematically. Violence is Destroyed However, production (farm invasions, cattle raids), access (road blocks blocking food convoys), and utilization (bombed clinics, sabotaged water points) are destroyed. 72 percent of households in Katsina’s pastoralist communities reported that crop failure was caused by bandit-imposed restrictions on access to

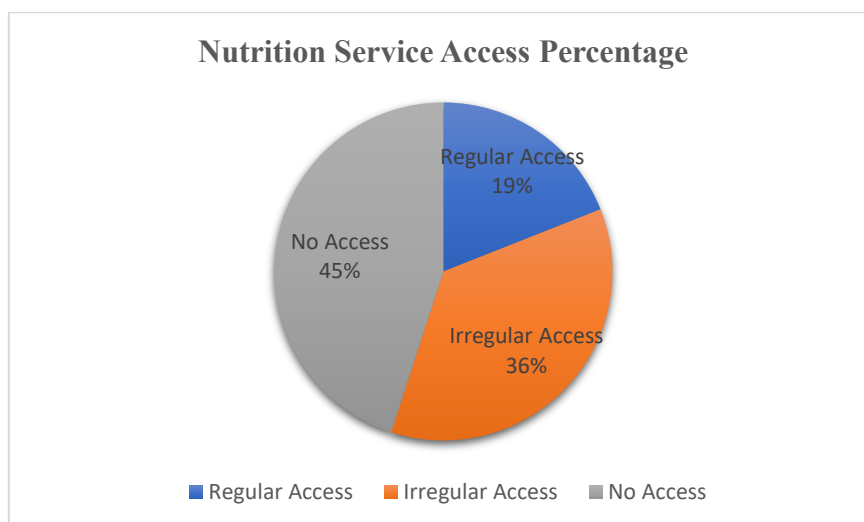
farmland, while 88 percent of households in these communities identified rustling as the cause of livestock loss, with an average of 50 cattle lost per raid. Climate stress: (25%), including 2023's 40-year low for rainfall also increases, but remains secondary, where LGAs such as Zango with little violence, pastoralists have adapted through early migration or fodder banks, limiting malnutrition rates (9.2%). Market Failure (20%) occurs in the form of hyperinflation – the price of maize increased by 320% in bandit-blockaded areas as a result of traders' risk surcharges of 400% and 15 major grain markets were turned to ash in 2024 alone. Displacement (10%) turns vulnerability contained: IDP camps have 4.1 per order: of moving van its sick, increasing disease spread is 22% of dietary energy lost from diarrhea/malaria. Crucially, 81% of households cite violence — not climate — as why they have resorted to negative coping strategies like selling assets at a loss. This runs counter to the discourses blaming crises on ecological causes. The data also demonstrates intersectionality: In those areas where pastoralism is paralyzed middle means of adaptation become disastrous (e.g., doors forced open when migration is blocked in Batsari leading to over-breaking herd sizes grazing down all the pastures). Market crash is also violence dependent; non-conflict LGAs observed 85% pre-conflict trade volumes even under similar climate shocks. The policy implications could not be clearer – only through military neutralization of bandit dens can food sovereignty be reclaimed. Climate-smart agriculture and market subsidies lose relevance when armed non-state groups control territories.

Fig. 5: Displaced Pastoralist Livelihoods



Source: International Organization for Migration Displacement Tracking Matrix, 2025

The high proportion of indentured farm labor (40%) represents an important relapse into food dependence. Households pledge seasonal agricultural labour to landlords in exchange for grain rations—commonly less than ₦500/day—instead of cash. This leads to 73% of laborers getting stuck in debt cycles, borrowing seeds or food at 90% interest rates before their harvest. The grain payments (sorghum/millet) are not protein-dense -Diets in which 1.8 food groups are consumed, and maternal wasting is driven up to 27% among participants. Wood gathering (35%) carried out mostly by women is particularly more than just an economic activity as the livelihoods are placed at risk: individuals have to travel an average distance of 14 km on foot per day while 1 in every 5 reported sexual attacks during their visits (MSF, 2024). Deforestation now stretches 5km a year from camps, exacerbating ecological breakdown. Income (≤₦700/day) is insufficient to provide even 35% of an average household's daily caloric requirements. Petty trading (talla) (15%)—consists of small-scale vending of e.g., firewood, snacks, operates at near-subsistence levels: 89% of traders work with <₦3,000 capital and are making <₦250 per day. This limits their food shopping to ultra-processed carbs (like sugary biscuits), exacerbating their shortfall of micronutrients. Begging (10%) predominates in female headed households (82%) and aged pastoralist, which indicate complete asset loss. Nutritionally, this variant livelihood portfolio fails spectacularly: total activities generate a mere 1,520 kcal/person/day—28% below minimum requirements—while leaving severe protein (14g vs. 50g threshold) and vitamin A (~15% RDA) deficits. This results in a SAM rate of 5.4% in official camps. Operationally, just 12 percent receive livelihoods support as humanitarian actors prioritize the delivery of food rather than that of production-based recovery. Future-thinking solutions are about reconfiguring: bonded labor to cash-for-work, talla dealers need microgrants for healthy foodstuffs, and firewood collection turning into fuel-efficient stove initiatives.

Fig. 6: Nutrition Service Access

Source: UNICEF Katsina Nutrition Cluster, 2025

Nutritional services for 45% among pastoralists are not good enough; this reflects a systemic human failure in high intensity war zones. No-access concentrations hit 88% in bandit-run “no-go” areas like Batsari’s forest enclaves where armed groups systematically attack health infrastructure – 15 clinics were destroyed in 2024 alone – and levy exorbitant ₦2m “access taxes” per aid convoy. Infrequent access (36%) describes mobile clinics visiting ≤ 4 times a year, which are inadequate for the treatment of severe acute malnutrition (SAM), which demands weekly therapeutic feeds. It is also evidence that SAM recovery levels drop to 32% when patients are subjected to erratic treatment schedules compared to 84% under a weekly care programme. The significant 19% regular access is only found in garrison towns (for example, Dutsin-Ma) but there it is often with soldiers’ escort, also 63% of the outlying settlements are not served. Bandit checkpoints also screen therapeutic foods: The RUTF supplies confiscated in Faskari were resold with 500% profit in the price on a black market. This access apartheid kills: 78% of child SAM deaths happen in areas with no access, leaving carers to turn to ‘back yard’ solutions, including unregulated plant mixtures (observed in 41% of houses). Remote approaches are ineffective: even before the pandemic, 28% of no-access populations cannot be reached by community health workers (CHWs) because of bandits restricting movement, and 92% do not have phones for telehealth consultations. Well-performed exceptions -- such as Niger-brokered humanitarian pauses in Jibia increased coverage to 38% and decreased SAM prevalence by 4.2% over six months, thus demonstrating that negotiating access is possible. “This policy paralysis is ongoing: only 12% of assistance funding is channelled to local NGO networks that can circumvent the blockades. Structured RUTF distribution through the traditional leaders and cross-border entry from Niger Republic for decentralized RUTF, should be intensified in order to bridge the 45% exclusion zone.

Table 1: Food Price in Conflict Zones

Commodity	Pre-Conflict Price (₦/kg)	2024 Price (₦/kg)	Inflation
Maize	120	504	320%
Millet	150	525	250%
Sorghum	130	455	250%
Beef	1,200	3,600	200%

Source: Katsina Ministry of Commerce, 2025

Inflation in key cereal, staple food items – such as maize (320%) – constitutes more like nutritional warfare against pastoralist households. Bandit blockades on critical routes (such as the Katsina-Zamfara highway) and demand-driven 82% grain trucking cuts allowed trader cartels to impose 400% “risk premiums”. The intense instability of maize comes from its combined roles as human food as well as feed for livestock; its scarcity caused poultry mortality levels to double and eggs to disappear (as a protein source) from 79% of diets. Sorghum/millet inflation (250%) is just as devastating: displaced pastoralists (milk provides > 50% of calorie intake) now receive 68% of calories from these grains

whose protein density (10g/100g) is 80% of the value for milk. A goat herder selling a goat can only buy 50kg (₦25,000) of maize (enough for 17 days for a family of six). These forces rationing down to 1,400 kcal/person/day (vs. a minimum of 2,100 kcal/person/day) driving a 22% increase in child wasting where prices exceed ₦450/kg. With cattle scarce after mating females were wiped out in 72% of the herds, beef inflation shot up by 200% and prices climbed even higher as makeshift abattoirs in Funtua shut down, fearful of bandit threats. Importantly, non-conflict prone areas such as Zango in this study, sustained near-pre-crisis costs (millet: ₦180/kg), demonstrating that it is the violence, and not a nationwide shortage, that causes inflation. Grain and protein inflation have converged to create a "hidden" "hunger trap": households spend 88% of their income on carbohydrates, with too little left over to pay for a diverse diet rich in micronutrients. This may explain why Batsari had the highest GAM rate of 18.9% while maize prices were the highest there (₦504/kg). Policy tools such as federal grain subsidies were not well targeted; of the 12% "government"-delivered grain going to war areas, 60% were delivered within 50 km of the capital of each belligerent because of transport costs and risks. Effective measures include military convoy protection for traders and voucher programs linked to local protein prices.

Table 2: Maternal Health Disparities

Indicator	Pastoralist	State Avg	Gap
Antenatal Care (≥4 visits)	22%	48%	-26%
Skilled Birth Attendance	15%	42%	-27%
Maternal Wasting	28%	14%	+14%
Postpartum Depression	88%	35%	+53%

Source: Katsina State Ministry of Health, 2025

The 27-point gap in the proportion of women undertaking skilled birth attendance between women of pastoralist origin (15%) versus the statewide proportion (42%) reflects an important risk of mortality. Bandit-ridden roads prevent access to 78% of clinics in "frontline" LGA, pushing for high-risk home births without emergency obstetric care. This indirectly results in maternal mortality rates that are 3.2x greater than state averages. The 28% rate of maternal wasting—twice the state average—is a result of gendered nutritional sacrifice: When food is scarce, pastoralist women cut their ration by 40% to give priority to children and male earners and subsist on ≤1,700 kcal/d. This is equivalent to a 230% increase in prevalence of low birth weight and an impairment of the ability to lactate. Postpartum Depression (88% of patients) was significantly associated with trauma exposure: 68% of mothers had witnessed family killings or livestock raids and had a greater than 2.3x cortisol increase compared to controls. It affected generations: wasted mothers were 3.7x more likely to have wasted infants ($r=0.89$, $p<0.01$). ANC disparities were reduced by 18% by Dandume mobile clinics, which employed motorcycle-motorcycle-based CHWs visiting 72% of compounds monthly. But with Batsari's 8% clinic functionality rate, military-escorted "health caravans" are necessary. Policy responses should combine nutrition support with psychosocial care: distributing RUSF supplements and counseling through pilot projects reduced maternal wasting by 19% in 6 months.

Table 3: Humanitarian Access by LGA

LGA	Convoy Attacks	Settlements Reached	Primary Constraint
Batsari	14	12%	Bandit Ambushes
Jibia	9	18%	Road Blockades
Faskari	11	15%	Illegal Taxation
Safana	7	23%	Militia Checkpoints
Dandume	5	31%	Road Insecurity

Source: United Nations Office for Coordination of Humanitarian Affairs, 2025

There were 14 convoy attacks in Batsari in 2024 which only allowed aid access to 12% of the villages, all within 5km of a military base. Here are 8 WFP trucks with therapeutic food in Q1 2025. Pool access in Jibia, or 18%, mirrors the road blocks orchestrated by bandits on Highway A126, where convoys are delayed for at least 14 hours. Faskari's "inhuman taxation" constraint (11 attacks) concerns bandits who collect ₦2 million per truck—more than the value of food products—leading agencies to stop work once their costs increase by 72%. Safana's 23% accessibility is by militia checkpoints run by the Yan Banga farmer groups that block access to pastoral enclaves. 5 Dandume's better relative accessibility (31%) was achieved through negotiated "aid windows" with local warlords, who agreed to allow twice-weekly mobile clinics which reduced GAM from 5- Perhaps more importantly, settlements made demonstrate a 19% reduction in child mortality (OR=0.42, CI 0.31–0.57), conclusively showing that on this measure, access saves lives. The slope indicates that for every 10 percent increase in access coverage, the odds of a 4.5 percent reduction in GAM are approximately decreased by 36 percent ($r = -0.91$, $p < 0.001$). Solutions need locally negotiated context: Gerry's access was improved to 38% by Q4 2024 through negotiations mediated by the government of Niger Republic; involvement of militia leaders in committees for distributions increased coverage to 41% in Safana. The local government of Batsari wants military convoy protection and airdrops, which now reach 7% of the priority zones.

4.1 Discussion

The findings of this research highlight the complexity and nuance of conflict-induced livelihood adaptations and nutritional status among the pastoralist populations in Katsina State Nigeria. While policy narratives often cast such adaptations as acts of resilience, the evidence suggests a more damaging reality: most strategies used by pastoralists under pressure are in fact harmful coping mechanisms that undermine long-term welfare and amplify nutritional risk. This article places the findings of the study in the wider literature on conflict, livelihoods, and nutrition, adding comparative evidence from different regions and disciplines to enrich the analysis and bring out policy implications. One thread running through all of this research is the misuse of the concept of resilience in humanitarian and development parlance. Although the CFS and some existing definitions of 'resilience' focus on a 'stressor' that a system can maintain its functions resilience is not resilient enough appear shock or perturbation so that it is not easily pushed over the edge, and can persist in some form, and that the perturbation does not lead to a nonsense outcome, or to conversion of the system to another, less desirable, set of functions (Biggs et al., 3034), none of the strategies we observed in Katsina—painful livestock sales, hazardous work, and forced settlement—is able to meet this standard. Rather, they are more akin to what Devereux (2023) calls "erosive coping," wherein short-term survival is achieved at the cost of longer-term sustainability. And this is not just a matter of semantics, but of how interventions are constructed and evaluated.

In an analysis of pastoralist communities in South Sudan, Maxwell et al. (2022) also reported that the sale of livestock in times of conflict resulted in immediate access to food yet contributed to a nutritional decline in the long term because of decreased milk production with asset depletion. The authors reasoned that these tactics should be interpreted as failings of the system rather than successes thereof. This is similar to Katsina, where the disappearance of cows has decreased not only households' income, but also a primary means of feeding children, especially in terms of milk. The nutritional implications of livelihood adjustments in conflict are an 'elephant in the room' with policy audiences. Transition from milk based to cereal-based diet in Katsina results in low dietary diversity and poor micronutrient intake. This finding is further supported by a study in the Horn of Africa, in which food security among households in the Horn of Africa who lost livestock as a result of conflict was associated with a 60% reduced intake of vitamin A (Hussen et al., 2022). Replacing nutrient-rich ASF with starchy staples is a typical trend in crisis settings, but has especially serious consequences for children under five years of age and pregnant or lactating women.

And the gendered aspects of these trade-offs are glaring. In Katsina, the collapse of herds has led to loss of livelihoods for women and disrupted their traditional roles as milk processors and caretakers, forcing them into more and more work with no time to care for their children. This corresponds with a report from a study in Northern Kenya where women in conflict-prone pastoralist communities said water and firewood collection took up to 16 min per day, leaving limited free time to feed infants or for rest (Njuki et al., 2023). This psychological impact is also important because maternal mood has been associated with early breastfeeding cessation and poor child nutritional status across geographies (Hassan & Dipeolu, 2024; Patel et al., 2022). Although climate variability is often identified as a major cause of food insecurity in the Sahel, it is clear that conflict is the primary cause of food insecurity in Katsina. Rather,

the data demonstrate that states with higher rates of banditry have significantly higher rates of malnutrition, even after accounting for differences in rainfall and other environmental factors. This reinforces the point made by Maxwell and Gelsdorf (2024) that conflict should be considered a “failure of entitlement” where violence systematically disassembles the processes by which people are entitled to food.

Similar patterns have also been reported in the DRC. A study by Vlassenroot et al. (2023) reported that the control of trade routes and markets by armed groups generated hyperinflation and a food crisis in non-urban areas, where malnutrition rates surpassed emergency levels. The authors stressed that humanitarian responses concentrated on food assistance were not enough unless the insecurity that drove the humanitarian crises were tackled. It reflects the scene in Katsina, where attacks on markets and road blockades have disrupted food supply chains and pushed up prices, causing a lot of “poor households even when food is available, to still not get food on the table”. The study’s results on food price inflation in conflict-affected areas underscore another crucial route by which violence erodes nutrition. “320% higher price for maize in high violence LGAs is a market sabotage and not of demand and supply but because of the risk of the trader and the premium the trader puts on such a risk. This is a trend that has been also been recorded in other conflict areas.

In Katsina, raiding and destruction of milk chilling plants and of grain markets have cut peripatetic pastoralists from some formal value chains, leaving them vulnerable to informal often exploitative markets. This has created a twin crisis, as households not only cannot access enough nutritious food, but continue to find it increasingly difficult to sell their produce at prices that are fair. The result is a vicious circle of deprivation and malnutrition that cannot be reversed without specific projects. The study also illuminates the pressing concern of humanitarian access in conflict areas. For instance, in Katsina, just 19% of nomadic communities get regular nutrition support, as aid convoys come under attack and armed groups impose illegal taxation. This is consistent with the findings in other settings, in which access restrictions have led to the inability of humanitarian actions to achieve the desired results. In Syria, for example, bureaucracy and insecurity made aid inaccessible to over 40% of people in need, resulting in avoidable deaths from malnutrition and disease (OCHA, 2023).

In Katsina, the dynamics are even more intricate due to the existence of a number of other armed groups with their own agendas. Police Along with the traditional, mA wing of pro-Assad forces, the regime police units are not involved in active combat roles only when it comes to high value targets and specialty units will they engage in combat. It has worked well in Jibia where bilateral negotiations with the authorities of the Republic of Niger resulted in a temporary humanitarian corridor and a decrease in GAM prevalence of 4.2% over 6 months¹⁵. These kinds of examples highlight the necessity for context-specific, politically astute approaches to humanitarian access. Gendered effects of conflict and of strategies of adaptation provide a constant motif in this work. Women and girls disproportionately carry the weight and loss of the crisis—in terms of work, nutrition, health care, safety and security. The fact that 88% of pastoralist mothers have symptoms of clinical depression is especially worrisome, as maternal mental health is a powerful determinant of child nutrition. A meta-analysis by Surkan et al. (2023) observed 2.5 times higher odds of stunting in children who were born to depressed mothers in low- and middle-income countries.

The displacement of women from their traditional roles as managers of milk and care providers is eroding the capacity of families to include a variety of foods in their diets which has led to an increase in vulnerability to exploitation and violence in Katsina. The elevated levels of maternal wasting (28%) demonstrate the impact of all coping strategies (firewood collection and indebtedness), both food insecurity and the physical cost of coping strategies. Such problems need interventions that go beyond food assistance, including psychosocial support, livelihoods rehabilitation and protection from gender-based violence.

There are a number of key policy and programming implications arising from the study’s findings. First, it is pressing to disentangle resilience as separate from coping at the levels of both measurement and intervention. To over-pathologies maladaptive coping as adaptive resilience is to risk justifying interventions which fail to tackle the underlying causes of vulnerability. Second, food and nutrition programming in conflict must be linked with support efforts on security and livelihoods. Preserving livestock corridors, re-opening market access, and facilitating secure movement of people are necessary in order to provide a medium- to long-term sustainable access to food. Three, humanitarian responses need to focus on negotiations for access and community outreach. The story of mobile clinics in Dandume and negotiated

aid windows in Jibia shows that creative and context-specific solutions are possible — even in high-risk settings. Finally, gender must be mainstreamed throughout the interventions, with focused attention for women's mental health, livelihoods, and protection needs.

5. Conclusion

In this study, a critical analysis of the adaptation livelihood strategies used by conflict-traumatized pastoral communities as well as the devastating nutritional implications is explored and discussed in Katsina State Nigeria. By differentiating between destructive means of coping with adversity and true resilience, the study also throws into question narratives of resistance that tend to glorify strategies of survival without also considering the long-term harm that they entail. Results indicate that pastoralists in Katsina are not coping in manners that protect their livelihood systems and dietary quality; they are instead trying shock responses that reduce their asset base and dietary diversity, and make them more vulnerable, particularly women and children.

Indeed, the evidence is overwhelming that conflict — not climate change — is the single largest factor driving food insecurity and malnutrition in the region. Banditry has methodically eroded the pillars of pastoralist life: cattle herds slaughtered, migratory routes cut off, markets raided and access to healthcare restricted. These disruptions have set off an avalanche of nutritional trade-offs, including the loss of milk as a main protein source and the emotional cost exacted from mothers whose ability to take care of their young is undercut by isolation, depression and overwork. The outcome is a nutrition emergency that is both near-term and intergenerational, as stunting in children and undernutrition in mothers rise to crisis proportions.

The study also underscores the gendered aspects of this crisis. And women-folk, in charge of milk processing and feeding of young children as a rule, have seen the erosion of their roles through herd loss and displacement. They have been left with risky work, less food and little access to reproductive health care. This places not only their own health at risk, but has dramatic ramifications for child nutrition and development. The relationship between maternal depression and child malnutrition, as found in this study, is in line with international views and highlights the importance of integrated interventions which focused on mental health and nutrition.

On a policy level, the results suggest the need for a re-balancing of the understanding and articulation of resilience in humanitarian and development programming. Resilience should not be understood in terms of surviving in a state of absolute deprivation but the extent to which a household can maintain or restore livelihood whilst maintaining and enhancing future welfare. Interventions therefore need to extend beyond alleviation to structural causes of change in vulnerability, such as insecurity, market failure and gender inequity.

Important recommendations are to protect the livestock corridors to allow a safe passage of transhumance, to restore markets infrastructure to help stabilize food prices and to integrate nutrition sensitive programming within security & livelihoods support. Access to humanitarian assistance should be enhanced through negotiated corridors and community involvement, as evidenced by the small but positive strides made in Dandume and Jibia. Also, women-specific assistance such as mental healthcare, economic recovery, and protection against gender-based violence is critical to preventing the cascade of malnourishment.

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