

ASSESSMENT OF FARMERS-HERDERS CONFLICT IN NIGERIA: OPEN GRAZING A TICKING TIME BOMB

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ABSTRACT

This study was carried out to examine Farmers and herders conflict in Nigeria and justification for open grazing system and the effects on Sustainable Development in Nigeria. The system has, in the last few years brought herders and crop farmers into direct conflicts over grazing resources (most times resulting in deaths and wanton destruction of valuables) The conflicts appear to be costing the Country a lot of precious man-hour both in terms of abandonment of farming activities and deaths and is also leading to food shortages, environmental degradation and division among the peoples of the Country. The broad objective of the study therefore is to examine the effects of Open Grazing System on Sustainable Development of Nigeria with particular insight into how it affects food security, economic development, our environment and national integration. The Researchers used the quasi-survey method, comprising of the questionnaire, focus group discussion and content analysis to carry out the study. At the end, it was found out that open grazing system is detrimental to food security, that steady economic development in the country will be hampered if time and resources needed for gainful economic activities are wasted in unnecessary hostilities, that open grazing around physical infrastructure like schools, hospital, highways and on natural vegetation results in environmental degradation and lastly that the foundation of the Country's continued existence as a nation is in serious jeopardy as acrimony pervades the land. The study recommended among others, a ban on open animal grazing and to replace it with ranching system as obtains in advanced societies, a proper implementation of the grazing reserve and stock router policy of the 1960s.

KEYWORDS: Herders, conflict, open grazing, government policy

1. INTRODUCTION

Livestock has played a pivotal role in the development of human civilization around the world and continues to play the same role in the present day local and global economy. Agriculture and livestock production, notes Omotara (2016) are among the most prominent economic activities of people in Nigeria, accounting for over 90% of the socio-economic activities of the rural population and therefore serving as their means of livelihood. It has done so by increasing the amount of food and nutrition available to people in four ways – by being a rich source of protein food, fertilizer and by pulling plows. It has also been a good source of raw materials for the leather and clothing industry as well as providing employment to those who keep it. According to Chambers and Mingay (1966), the growth of animal husbandry, including greater use of manure from livestock as fertilizer was the first of four factors that contributed to the agricultural revolution that ended the cycle of dearth and hunger that afflicted Europe for centuries. It is imperative therefore that society, both at local and global levels, must find a way of maintaining a steady livestock production.

In Nigeria like in other parts of the world, livestock keeping is known to all cultures and groups since ages and the need to provide food of crop and animal origin to meet the ever growing demand of its increasing population has often resulted in keeping of livestock and in opening up of lands hitherto uncultivated. The industry in Nigeria constitutes a very important national resource with a great deal of untapped potentials. This derives from the fact that the country enjoys a tropical climate with distinct wet and dry seasons – a feature that makes it conducive for plant and animal food production.

However, due to increasing population, agricultural production (both for animal and food crops) has intensified. Consequently, farm lands that were hitherto left uncultivated for natural regeneration of the soil nutrients are fast disappearing, so also are grazing lands which have traditionally provided dry season grazing to pastoralists. Herding of animals or pastoralism, though practiced in various parts of Nigeria, at least at subsistent level, is a major preoccupation of the Fulani people who live in the northern part of the country. According to Alhassan (2013), the Fulani own over 90% of the nation's livestock population which accounts for one-third of agricultural GDP and 3.2% of the nation's GDP and so their contribution to the local food chain and national food security cannot be overstressed. By constituting the major breeders of cattle, the main source of meat, the most available and cheap source of animal proteins consumed by Nigerians, they indisputably represent a significant component of the Nigerian economy. According to Ezeonwuka and Igwe (2016), the Fulani are undoubtedly the largest pastoral nomadic group in the world, herding goats, camel, sheep, horse, mule and cattle. With their dominance in the Sahel region, they are the best known and most numerous of all the pastoral groups in Nigeria (Alhassan, 2013).

A typical Fulani herdsman keeps and sustains his herd through open grazing. This open grazing system involves young men who do labor intensive herding while the women engage in culinary services, cook and sell animal products in the market, (Olayoku, 2014; Dimelu, Salifu, Enwelu, and Igbokwe, 2017). According to Blench (2010), one of the striking aspects of pastoralism in Nigeria is the contrast between its actual complexity and the simplified representations usually made of it. An important aspect of the nomadic Fulani pastoral group as a social unit is that permanent habitation is usually not common. Camps are shifted frequently in the dry season and less in the wet season (Awogbade. 2004). Nze (2015) reckon that the Fulani, by their culture, tradition and occupation, have remained an itinerant race who never owned lands nor had any permanent abode. In fact, they cared less about land ownership because they are always on the move. They simply live with their cattle wherever there is abundance of fodder and absence of tsetse-fly.

1.1 Statement of the problem

As observed by Odoh and Chilaka (2012), a typical Fulani man lives his life around his cattle which is traditionally herded by taking them round in large numbers to feed in open spaces and uncultivated rangelands in a migratory or nomadic manner. These nomads basically spend most of their lives in the bush and are the ones largely involved in clashes between herders and the local farmers (Idowu and Okunola, 2017). Through this age long practice, the animals and their herders trample on both cultivated and uncultivated farmlands. From their feeding and unorganized movements, they wreck incalculable damages to crops and farmlands. In return or rather to avoid these grazing related loses, the crop farmers indulge in all manner of preventive measures to stop the animals from encroaching on their farms, including by poisoning the animals' drinking water sources and by sponsoring rustlers to poach on them. What has now become a problem demanding urgent national attention is that the clashes are becoming widespread and constant – becoming a daily occurrence and engulfing almost the entire country and that the parties to the conflicts (especially those that we have lately come to know as Fulani herdsman) now wield guns which they used indiscriminately to invade their host communities and leaving horrible bitter tales in the wake of any such attack.

As precious human and animal lives are lost and crop yields damaged, food security is not only being hampered but precious manpower to support development is reduced. Again as the animals are taken round through the open grazing system, they do not only pollute a few available water sources to the local people but also (through their destructive activities) bring their breeders and the settled farming communities into direct conflicts that heighten inter ethnic tensions in the land. As all these happen, emotions flare that these constitute ominous danger to environmental sustainability and national integration especially as these happenings are perceived by people in

the South and North-Central regions of the country as signs of failure, imperialism and favoritism by the present Government of Gen. Muhammadu Buhari (rtd). The question that now agitates the minds of concerned Nigerians is, why are these grazing related clashes becoming widespread and constant in our Country, who and who are supplying the parties with guns, why is the government seemingly keeping quiet or rather why is it playing politics with the matter and what remote and immediate dangers does this pose to the effort to bring sustainable development to our country, Nigeria? Finding the nexus between these issues and sustainable development in Nigeria is the primary concern of this study.

1.2 Objectives of the study

1. To examine the effect of open cattle grazing on economic development and sustainable development in Nigeria.
2. To explore the effect of open cattle grazing on integration and sustainable development in Nigeria.

1.3 Hypotheses

Hypothesis 1

H0: Open cattle grazing does not promote economic development and sustainable development of Nigeria.

Hypothesis 2

H0: Open cattle grazing does not support national integration and sustainable development of Nigerian.

2. LITERATURE REVIEW

2.1 Concept of open grazing

To fully capture the meaning of open grazing, it will be most appropriate to begin by understanding first what is meant by grazing and to link it later with the word open. So, what is grazing? In livestock keeping, grazing is a method of feeding in which herbivores or ruminants feed on plants such as grasses and other multi cellular organisms such as algae. Linking the above definition together with the word ‘open’, we then take open grazing to mean the age-old practice of roaming about with animals in open fields, plains and nearby bushes in search of pasture or food for the animals. It is mostly practiced in Nigeria by Fulani herders who move for days on foot with their herds from the north to the more rain-fed southern parts of the country, pasturing their flock as they go. Many have come to take this type of animal grazing as an indiscriminate way of grazing with several attendant negative consequences, (Olugbenga 2017). The system, which can be described as the opposite of sedentary/settled or ranching system has led breeders (mostly the Fulani) to lead a nomadic lifestyle – moving about with their flock and family all year round, and could be said to be necessitated mainly by the need to save cost, find easy market for the animals, escape drought prone areas, escape conflict and desertification prone zones and to escape from human and livestock diseases.

Open grazing system could be said to be appropriate when human and animal populations were small and land was huge, just as the system of shifting cultivation was appropriate then. But over the last few decades, populations of both have exploded, fallow periods have been drastically reduced and weather patterns have changed. Since change is a constant thing in life, some experts believe that changing this culture of primitive or open grazing system has become inevitable. They now view the method as backward, outdated and the people who are into it as uncivilized because it has often led to such issues as cattle rustling (snatching of cattle at gun point or through some other violent means), damage to cultivated farmlands and eventual conflict with sedentary farmers, obstruction of highways, littering and damage to the environment (natural and infrastructural) and neither good for the animals nor for the nomads. At the moment, the system constitutes a serious threat to national security (Okeke, 2014). In order to control this indiscriminate grazing method so that farms, natural vegetation and infrastructure could be safe from destruction by grazers and forestall other associated shortcomings of the system, government established grazing reserves in northern Nigeria and in Obudu in Eastern Nigeria in the 1960s. However, the projects did not continue and free or open animal grazing continued with incidences of farm destruction, violent clashes and deaths in the trail. The clashes have become more violent and bloody when, in recent times, herders who normally went about only with staffs began to carry deadly weapons like locally-made and automatic guns such as AK47 with which they freely attacked their host communities, killing many people in the process (Oyeyipo, and James, 2016).

2.2 Concept of sustainable development

Erhun (2015) defines development as a comprehensive economic, social, cultural and political process which aims at the constant improvement of the well-being of the entire population and of the individuals on the basis of their active, free and meaningful participation in development process and in the fair distribution of benefits resulting there-from. Taking her bearing from this position, she defined Sustainable Development as the process of judicious use and conservation of natural resources for the overall improvement in the quality of life for the present and future generations on long term basis. According to her, the concept of sustainable development was formulated as a welding tool as well as a framework for the realization of economic growth in an environmentally viable world, saying that three interdependent and mutually reinforcing pillars of the concept as recognized worldwide in the transition towards a sustainable society are economic sustainability, environmental sustainability and social sustainability. However, Sustainable Development as a concept first appeared in the World Conservation Strategy put forward by the International Union for the Conservation of Nature (IUCN) in 1980 where economic growth was seen as an enemy of the environment.

Prominent meaning to the concept of sustainable development owe its origin to the former Prime Minister of Norway, Gro Harlem Brundtland, who, in the 1980s, used the term to harp that, considering environmental factors; development “meets the needs of the present without compromising the ability of future generations to respond to their needs” (Ogbo, Eneh, Nnaji-for, Agbaeze, Chukwu, and Isijola, 2017, Ekperiware, Olatayo and Egbetokun, 2017). According to the direct Government website, UK “Sustainable development means a better quality of life now and for generations to come. The concept deals with the continuous improvement in the living standard of citizens and the structural transformation or changes in the productive and distributive input and output systems of the economy (Ojobo, 2005; Ollawa, 1977). Adebayo (2010) argues that sustainable development is the efforts of government (Federal, State, or Local) to improve the environment and the living conditions of the people in such a way as not to negatively affect generations to come. Similarly, Mohammed (2013) sees sustainable development as “the ability to preserve the existing resources of the state for collective use of citizens while conscious efforts are made to conserve the resources for the future generations”, while Oyewo and Badejo, cited in Michael (2016) defined sustainable development as ‘the utilization of resources to meet the economic, social and environmental needs of humans, such that the interest of the present and future generations are served.

The foregoing points to the fact that there is no one universally accepted definition of the term. Adejumo and Adejumo, (2014) posited that what is however common to all the definitions concerns resource exploitation at a rate that would not prove detrimental to future generations. Explaining further, they said that sustainable development simply meant not using up resources faster than the planet can replenish. Sustainable development is about the continuous harnessing of resources to enhance the quality of life of citizens. This is in addition to putting in place adequate provision to cater for future generations. Looking at all the definitions, we can say that Sustainable Development is, therefore, likely to manifest in a country where the leadership is innovative in approach and action. According to Okebukola (2014), innovation is very important to the extent that it galvanizes socioeconomic growth and development of societies. He argues that innovation in an irrigation system, for instance, has revolutionized the agricultural sector for enhanced food production in the developed world.

Sustainable development is able only if deliberate efforts are made by those who are entrusted to manage public resources in a competent manner and are willing to do so for the benefit of all in the society. This is where transformational leadership becomes imperative in the management of public resources for sustainable development. Sustainable development in Nigeria will ensure that future generations have the right to a high standard of living, prevent the crises in resources, show the need for national quality and create the awareness of environmental, economic and social needs of all stakeholders (Abbas, 2011). In line with this theory, the social, economic and ecological factors in Nigeria will have to be bearable, viable and equitable for us to be able to achieve sustainable economy in the country. This chapter was aimed at providing information on the steps taken by the researcher in the gathering, treatment and analysis of data related to the research. It includes such sections as the design of the study, area under study, data sources, validity/reliability tests and the techniques used in data analysis.

3. METHODOLOGY

The study adopted a descriptive quasi-survey method. The researchers used focus group discussions (FGD), review of relevant documents and questionnaire method to collect data for the study. The researcher had discussions with some stakeholders, analyzed the contents of relevant documents as contained in textbooks, newspapers, magazines and journals that were reviewed. To support the above methods, a questionnaire was also designed and administered on the focus group discussants to supplement the other methods. In view of the fact that this study relied heavily on secondary data, all data used were content analyzed with a view to determining whether they support or vary with the study's stated objectives and the degree of such support or variation.

4. Data analysis, findings and recommendations

4.1 Open grazing and sustainable national integration in Nigeria

4.1.1 International crises group (ICG) report (2017)

In analyzing the possible dangers that the ongoing grazing related crises poses to national integration in Nigeria, an extract of the report released by the International Crisis Group (ICG) in 2017 on herders-farmers disturbances was brought in focus. The groups' report said:

The conflicts, particularly herder attacks on farming communities, have spawned dangerous political and religious conspiracy theories. One is that the attacks are part of a longer-term Fulani plot to displace indigenous populations and seize their lands. Among Christian communities, herder attacks are widely seen as a subtle form of jihad. In March, 2016, the Prelate of the Methodist Church of Nigeria, Dr Samuel Uche, said: "We are aware there is a game plan to Islamize Nigeria, and they are using the Fulani herdsmen to initiate it". In the south east, Biafra separatist groups describe the attacks as part of a northern plot to overwhelm the peoples of the south and forcefully convert them to Islam. Some southerners accuse President Buhari of deliberately failing to stop herder aggression, pointing to his pastoral Fulani background and his position as life patron of the cattle breeders' association, (MACBAN), to buttress their charges.

The report continued,

Communities in the middle belt and south have formed self-defense vigilante groups, some of which have threatened organized reprisals. In March, 2014, Leonard Karshima Shilgba, an ethnic Tiv academic and thought leader, warned that if the federal government could not stop the attacks, "the Tiv people would also demonstrate that they equally have the right and also the capacity to raise a standing army of thousands from each ward and kindred". Following an April, 2016 attack on Nimbo, in Enugu State in the south east, the separatist Movement for the Actualization of the Sovereign State of Biafra (MASSOB) ordered "Fulani herdsmen to leave Biafra land or ... face our wrath". In May, 2016, Ekiti State Governor, Ayodele Fayose, warned of possible attacks on Fulani herders if their alleged predatory behaviour vis-à-vis locals continued. And the president of the Christian Association of Nigeria (CAN), Reverend Olasupo Ayokunle, warned: "If the government fails to stop the provocation by the Fulani (herdsmen), they should be prepared for war. No ethnic group has a monopoly of violence and no ethnic group should be a monster to others (ICG, 2017, p53)

The implication of the above observations by the group and the feelings among southern Nigerian citizens is that the grazing related disturbances being witnessed in Nigeria today has gone from what can be described as farmers and herders competition over grazing resources to one that has festered to several other groups and regions in the country - religious, ethnic and geopolitical- with a subterranean undertone. The report showed that there is a strong mutual suspicion among the various groups and strata in the country and that the danger is grave and ominous especially as government is perceived as aiding one group against the other or others or, at best, doing nothing to extinguish the fire. If as warned by Shilgba, the Tiv and other ethnic groups in the country begin to form ethnic militias and hope to use that to either attack or defend themselves in the face of what they take to be a naked and unprovoked aggression against their people and governments handling of the matter with kid gloves, it will portend a clear lack of confidence in the ability of government to protect its people and so a booster for possible breakdown of law, order and eventual dismemberment of the political entity known as Nigeria. Same

thing will happen if the threat issued by a Biafra separatist group known as MASSOB for all Fulani herdsmen to leave Biafra land is allowed to pass. The resort to such anti nationalistic phrases as ‘Biafra land’ in a country like Nigeria is a pointer to the loss of patriotism and commitment to the Nigerian project and a thirst for parting of ways now pervading the country. With all these calls and warnings coming from all sections and groups in the country – Peter Ayodele Fayose (immediate past Governor of Ekiti State) from the South west, MASSOB and other likeminded groups like the now proscribed Indigenous Peoples of Biafra (IPOB) and Biafra Zionist Movement (BZM) from the South east, Leonard Karshima Shilgba from the Middle belt and the Christian Association of Nigeria (CAN) – the danger lurking in the corner for Nigeria’s disintegration appears to be daunting. It is a time bomb which appears to be ticking fast against the fragile peace that is prevalent in the country today.

4.1.2 Amnesty international report (2018)

In another report published in 2018 by Amnesty International on the farmers-herders disturbances in Nigeria, the group said:

majority of the attacks by both sides were retaliatory, which then affected nearby communities because of the ethnic connection with the targeted communities. We feel deeply concerned that the government of Nigeria has failed to comply with its obligation to exercise due diligence, failing both to address the underlying causes of the violence between herders and farmers described in this report and to stop violence when it did occur, resulting in the death of hundreds of people, the destruction of thousands of homes and extensive harm to people’s livelihoods, Amnesty International’s research indicate this is partly because of the fact that perpetrators of the crimes are getting away, encouraged by government’s seeming partiality and glaring unwillingness to live up to its obligations (AI, 2018).

In analyzing the above report, the conclusions that readily come to mind are that since the attacks have begun to be seen from an ethnic dimension as to engender fear in the psyche of a community that, because of their ethnic attachment to the one involved in the crises, it will be the next to be attacked, then no community is safe because no community in Nigeria came from the moon or is an island unto itself. The result of this kind of feeling will be that no meaningful cooperation and integrative building blocks can be laid among the various communities and ethnic groups in such an environment. Again when the people no longer repose confidence in the ability of their government to protect them against real or imagined harm from other individuals and groups, the tendency will be for such a people to raise their own armies or to start looking for protection elsewhere since nature, they say, abhors vacuum. No wonder then that several separatist groups like the Indigenous Peoples of Biafra (IPOB), the Niger Delta Volunteer Force (NDVF) and other similar groups are springing up in the country lately – all laying claim to desiring to protect their own people and calling for the dismemberment of the country or at least for its restructuring.

4.2 Presentation and analysis of questionnaire responses

To support the qualitative data that were presented and analyzed above, questionnaire were also administered on twenty five members of the focus group discussion. The questionnaire is divided into sections A and B. While Section A dwelt with the demographic features of the respondents, Section B focused on the main issues of the research.

Table 1: Distribution and recovery of questionnaire

Options	Frequency	Percentage (%)
Questionnaire Returned	25	100%
Questionnaire Not Returned	0	0%
Total	25	100%

Source: Field Survey, 2019.

The table above show that twenty- five (25) questionnaire were distributed and that they were all recovered. This 100% success in questionnaire recovery could be attributed to the relative small size, commitment of

respondents and to its spontaneous administration and recovery by the researcher during the focus group discussion.

4.3 Demographic Characteristics of Respondents

The demographic characteristics of the respondents are presented as follows:

Table 2: Gender distribution of Respondents

Options	Frequency	Percentage (%)
Males	21	84%
Females	4	16%
Total	25	100%

Source: Field Survey, 2019.

The above table show that 25 respondents, representing 84% were males while the remaining 4 respondents, representing 16% were females. It shows that there is a preponderance of men over women among the research respondents and this could be as a result of women's penchant to keep away from burning national issues.

Table 3: Academic Qualification of Respondents

Options	Frequency	Percentage (%)
O' Level Certificates	0	0%
1 st Degree/HND Certificates	6	24%
Master Degree Certificates	10	40%
PhD Holders	9	36%
Total	25	100%

Source: Field Survey, 2019.

The table above show that while there are no School Cert. (O' level) certificate holders, among the respondents, 6 respondents, representing 24% were First Degree or HND holders. Another 10 respondents or 40% of them have Masters Degrees while 9 respondents, representing 36% were PhD holders. The table shows that there is a dominance of highly educated people over the moderately educated ones in the study and this may be attributable to the fact that the researcher used university teachers for the research and also because of the technical nature of the topic.

Table 4: Age Distribution of Respondents

Options	Frequency	Percentage (%)
20 – 29 Years	0	0%
30 – 39 Years	2	8%
40 – 49 Years	8	32%
50 – 59 Years	10	40%
60 Years and above	5	20%
Total	25	100%

Source: Field Survey, 2019.

The table above show that while there are no respondent within the age bracket of 20-29 years, 2 respondents, representing 8% were between the ages of 30-39 years. 8 respondents, representing 32% were between 40-49 year age bracket. Another 10 or 40% of the respondent population were between 50-59 years of age while 5 respondents, representing 20% were above 60 years of age. This showed that the study made predominant use of people in their middle ages. This could be because the topic under discussion is one that requires people that are knowledgeable and experienced on national issues.

4.4 Section B: Core Issues of the Study

Table 5: Open grazing of animals on farmlands damages crops and reduces the quantity of food available for human consumption

Options	Frequency	Percentage (%)
Strongly Agree	13	52%
Agree	9	36%
Undecided	2	8%
Disagree	1	4%
Strongly Disagree	0	0%
Total	25	100%

Source: Field Survey, 2019.

The table above show that 13 respondents, representing 52% strongly agreed that grazing on open farmlands causes damage to crops and reduces the quantity of food for human consumption. Another 9 respondents or 36% also agreed. 2 respondents, representing 8% were undecided on the issue. 1 respondent, representing 4% of the total respondent disagreed with the notion while none strongly disagreed. This showed that majority of the respondents or a whopping 88% supported the idea that open grazing on farmlands is detrimental to food security.

Table 6: Conflicts associated with grazing cattle on farmlands prevent crop farmers from going to their farms and so reduces the quantity of food produced

Options	Frequency	Percentage (%)
Strongly Agree	11	44%
Agree	11	44%
Undecided	3	12%
Disagree	0	0%
Strongly Disagree	0	0%
Total	25	100%

Source: Field Survey, 2019.

Table 4.2 above show that 11 out of 25 or 44% of the respondents strongly accepted that conflicts resulting from herders and farmers contestations prevent farmers from accessing their farms and that this impacts negatively on food production. Same number of respondents also agreed while 3 respondents, representing 12% remained undecided. Inversely, no respondent disagreed or strongly disagreed with the idea. This showed that there is a preponderant of opinion that conflicts emanating from open grazing of cattle on farmlands prevent farmers from going to cultivate their farms.

Table 7: Deaths and injuries incurred by farmers and herders in grazing resource-related conflicts, reduces the manpower available for food production in Nigeria

Options	Frequency	Percentage (%)
Strongly Agree	13	52%
Agree	12	48%
Undecided	0	0%
Disagree	0	0%
Strongly Disagree	0	0%
Total	25	100%

Source: Field Survey, 2019.

The table above show that 13 respondents, representing 52% strongly agreed that conflicts between herders and farmers reduces the manpower available for food production in Nigeria. 12 respondents, representing 48% also agreed while no respondent remained undecided or objected the notion. This showed unanimity of opinion that conflicts taking place between herders and farmers over grazing resources reduces the manpower available for food production in the country.

Table 8: Killing of animals during grazing-related conflicts reduces the quantity of protein foods available for consumption in the country

Options	Frequency	Percentage (%)
Strongly Agree	10	40%
Agree	13	52%
Undecided	1	4%
Disagree	1	4%
Strongly Disagree	0	0%
Total	25	100%

Source: Field Survey, 2019.

From the table above, we can see that 10 respondents, representing 40% strongly accepted the notion that farmers and herders conflicts contributes in reducing the amount of protein foods available for consumption in the country. Another 13 respondents, representing 52% also agreed to this assertion while 1 respondent each, representing 4% respectively remained undecided and disagreed with the notion. No respondent strongly disagreed. This showed that majority of the respondent agreed that grazing related conflicts between herders and farmers results in reduced protein foods in the country.

Table 9: Open grazing of animals on uncultivated vegetation covers damage the soil and exposes it to water and wind erosion

Options	Frequency	Percentage (%)
Strongly Agree	9	36%
Agree	11	44%
Undecided	2	8%
Disagree	2	8%
Strongly Disagree	1	4%
Total	25	100%

Source: Field Survey, 2019.

-Table 4.5 above show that 9 respondents, representing 36% strongly agreed that grazing on uncultivated vegetation exposes the soil to erosion. Another 1 respondent, representing 44% also agreed while 2 respondents,

representing 8% were undecided. Another 2 respondents, representing another 8% disagreed while 1 respondent or 4% of the whole respondents disagreed with the notion.

Table 10: Indiscriminate open animal grazing on water points may lead to water pollution that may constitute health hazards to humans

Options	Frequency	Percentage (%)
Strongly Agree	12	48%
Agree	10	40%
Undecided	2	8%
Disagree	1	4%
Strongly Disagree	0	0%
Total	25	100%

Source: Field Survey, 2019.

It is seen in the table above that 12 respondents, representing 48% strongly agreed that grazing of animals on water points can pollute and constitute health hazards to humans. Another 10 respondents, representing 40% also aligned themselves with the idea. 2 or 8% of the respondents were undecided while only 1 respondent, representing 4% disagreed with the idea. No respondent strongly disagreed with the idea. The implication is that majority of the respondents supported the notion that grazing of animals on water points results in water pollution that poses serious health challenges to humans.

Table 11: Animal dung from open grazing litters and adds to the quantity of green house gases in the atmosphere

Options	Frequency	Percentage (%)
Strongly Agree	9	36%
Agree	10	40%
Undecided	4	16%
Disagree	1	4%
Strongly Disagree	1	4%
Total	25	100%

Source: Field Survey, 2019.

In table 4.7 above, 9 respondents, representing 36% strongly agreed that dung left to litter the environment from open grazing contributes to increase green house gases in the atmosphere. Another 10 respondents, representing 40% also agreed while 4 respondents, representing 16% remained undecided. 1 respondent each, representing a total of 8% disagreed and strongly disagreed with that dung littering the environment from open grazing increases the quantity of green house gases in the atmosphere. This showed that majority of the respondents accepted the notion that animal dung left to litter the environment helps to worsen the amount of green house gases in the atmosphere.

Table 12: Grazing on open spaces like school fields, hospital premises and highways destroy the scenic beauty of our natural and built environment

Options	Frequency	Percentage (%)
Strongly Agree	8	32%
Agree	9	36%
Undecided	5	20%
Disagree	2	8%
Strongly Disagree	1	4%
Total	25	100%

Source: Field Survey, 2019.

The table above shows that 8 respondents, representing 32% strongly accepted that grazing on open spaces destroys the scenic beauty of our natural and built environments. 9 respondents or 36% also agreed while 5 respondents, representing 20% were undecided. 2 respondents, representing 8% disagreed while 1 respondent, representing 4% strongly disagreed. This showed that slightly above 2/3 of the respondents agreed that grazing on open spaces destroy the scenic beauty of man’s natural and built environment.

Table 13: Deaths and injuries sustained from grazing-related conflicts, reduces the quantity and quality of manpower available for meaningful economic activity

Options	Frequency	Percentage (%)
Strongly Agree	13	52%
Agree	10	40%
Undecided	1	4%
Disagree	1	4%
Strongly Disagree	0	0%
Total	25	100%

Source: Field Survey, 2019.

Table 4.9 above show that 13 respondents, representing 52% strongly agreed that conflict resulting from herders and farmers engagements reduces the quantity and quality of manpower available for meaningful economic activities. Another 10 respondents, representing 40% believed the idea while 1 respondent, representing 4% remained undecided. On the other hand, while 1 respondent or 4 % disagreed, none disagreed with the notion that conflict between herders and farmers reduces the quantity and quality of manpower available for meaning economic development. This shows an almost unanimity of opinion that economic activities are negatively affected whenever conflicts between farmers and herders occur.

Table 14: Herding cattle on highways, residential and business districts creates avoidable traffic gridlocks that disrupt gainful economic activities

Options	Frequency	Percentage (%)
Strongly Agree	7	28%
Agree	12	48%
Undecided	3	12%
Disagree	2	8%
Strongly Disagree	1	4%
Total	25	100%

Source: Field Survey, 2019.

Table 4.10 above show that 7 out of 25 respondents, representing 28% strongly agreed that grazing on highways, residential and business districts causes unnecessary traffic gridlocks that disrupt economic activities.

12 respondents, representing 48% also bought the opinion while 3 respondents, representing 12% were undecided. On the other hand, 2 respondents or 8% disagreed while only 1 respondent, representing 4% strongly disagreed with the idea. This showed that more than $\frac{3}{4}$ of the respondents accepted the opinion that herding animals on highway, residential and business districts lead to avoidable traffic gridlocks that disrupt smooth economic activities.

Table 15: Damage to crops and animals during conflicts over grazing rights reduces the quantity of agricultural produce in the economy and so reduces GDP

Options	Frequency	Percentage (%)
Strongly Agree	9	36%
Agree	12	48%
Undecided	2	8%
Disagree	1	4%
Strongly Disagree	1	4%
Total	25	100%

Source: Field Survey, 2019.

The table above shows that 9 respondents, representing 36% strongly believed that grazing related conflicts between herders and farmers is inimical to steady GDP growth. Another 12 respondents, representing 48% agreed with the idea while 2 respondents, representing 8% were indifferent to the idea. On the other hand, 1 respondent disagreed while another 1 respondent also strongly disagreed with the statement, to 8% the total number of respondents who did not see any truth in the statement. This showed that majority of the respondents agreed that damage to crops and animals during grazing related conflict is inimical to GDP growth within the economy.

Table 16: Resources expended in managing grazing-induced conflicts are an avoidable waste that should have been channeled to other activities to support the economy

Options	Frequency	Percentage (%)
Strongly Agree	6	24%
Agree	12	48%
Undecided	3	12%
Disagree	2	8%
Strongly Disagree	2	8%
Total	25	100%

Source: Field Survey, 2019.

The table above shows that 6 respondents, representing 24% strongly agreed that management of grazing induced conflicts is a waste of resources that could be used to grow the economy. 12 respondents, representing 48% agreed with the notion while 3 respondents or 12% of the respondents were undecided on the matter. On the other hand, 2 respondents each disagreed and strongly disagreed with the statement, bringing to 16 the total percentage of respondents who opposed the statement. This showed that a little below $\frac{3}{4}$ of the respondents believed that resources sunk in the management of grazing induced conflicts is an avoidable waste that could be used to grow the economy.

Table 17: Conflicts between farmers and herders over grazing rights lead to mutual hatred among the various ethnic groups in the country

Options	Frequency	Percentage (%)
Strongly Agree	12	48%
Agree	11	44%
Undecided	2	8%
Disagree	0	0%
Strongly Disagree	0	0%
Total	25	100%

Source: Field Survey, 2019.

The table above shows that 12 respondents, representing 48% strongly believed that conflicts between farmers and herders in Nigeria fuels mutual hatred amongst the various section of the country. Another staggering 11 respondents, representing 44% of the respondents also agreed with the statement while only 2 respondents or 2% of the respondents remained undecided. No respondent disagreed or strongly disagreed with the statement. This showed that there is a near consensus opinion that farmers and herders conflict in Nigeria generate mutual hatred amongst the various sections of the country.

Table 18: Herders and farmers conflicts over grazing rights hinder inter ethnic marriages among the various ethnic groups in the country

Options	Frequency	Percentage (%)
Strongly Agree	7	28%
Agree	9	36%
Undecided	3	12%
Disagree	3	12%
Strongly Disagree	3	12%
Total	25	100%

Source: Field Survey, 2019.

Table 4.14 above shows that 7 respondents, representing 28% strongly agreed that herders and farmers conflict over grazing rights hinder inter-ethnic marriages among the ethnic groups in the country. 9 respondents, representing 36% also agreed while 3 respondents, representing 12% were undecided. On the other hand, 3 respondents, representing 12% disagreed with the statement and another 3 respondent or 12% also strongly disagreed with the statement. The implication is that there is a slight majority of those who believe that inter ethnic marriages among the various sections in the country is hindered by conflicts between farmers and herders in Nigeria.

Hypothesis 1

H0: Open animal grazing does not promote economic growth and sustainable development of Nigeria.

H1: Open animal grazing promotes economic growth and sustainable development of Nigeria.

Table 19: Hypothesis testing on animal grazing and sustainable development

Options	Frequency	Percentage (%)
Positive Responses	81	81%
Negative Responses	19	19%
Total	100	100%

Source: Field Survey, 2019.

(a) Formula for “Z”-test Statistics
$$“Z” = \frac{PQ}{n\sqrt{PQ}}$$

Where P = Proportion of Positive Responses (Strongly Agree and Agree)

Q = Proportion of Negative Responses (Undecided, Disagree and Strongly Disagree).

n = Sample

(b) Level of Significance = 0.05

(c) Critical “Z” Value: At 0.05 level of significance the Z score takes values between -1.96 and 1.96 (See Normal Distribution Table).

(d) Decision Rule: If the computed ‘Z’ value is between -1.96 and 1.96 our critical values, we accept the null hypothesis and reject the alternate hypothesis.

(e) Computation for the ‘Z’ Value:

From table 4.6.3, P = 81 (81%), Q = 19 (19%) and n = 25

$$“Z” = \frac{\sqrt{0.81 \times 0.19}}{25 \times \sqrt{0.81 \times 0.19}} = \frac{0.1539}{3.8475} = \sqrt{\frac{0.1539}{1.961}} = 0.078$$

(f) Statistical Decision: Since our computed “Z” value of 0.078 falls between -1.96 and 1.96, we accept the null hypothesis and reject the alternate hypothesis.

(g) Administrative Decision: Since our null hypothesis was accepted, the alternate hypothesis which states that open animal grazing promotes economic growth and sustainable development of Nigeria was rejected.

Hypothesis 2

H0: Open animal grazing does not support national integration and sustainable development of Nigerian.

H1: Open animal grazing supports national integration and sustainable development of Nigeria.

Table 20: Hypothesis testing on grazing and national integration

Options	Frequency	Percentage (%)
Positive Responses	76	76%
Negative Responses	24	24%
Total	100	100%

Source: Field Survey, 2019.

(a) Formula for “Z”-test Statistics
$$“Z” = \sqrt{\frac{PQ}{n\sqrt{PQ}}}$$

Where P = Proportion of Positive Responses (Strongly Agree and Agree)

Q = Proportion of Negative Responses (Undecided, Disagree and Strongly Disagree).

n = Sample

(b) Level of Significance = 0.05

(c) Critical “Z” Value: At 0.05 level of significance the Z score takes values between -1.96 and 1.96 (See Normal Distribution Table).

(d) Decision Rule: If the computed “Z” value is between -1.96 and 1.96 our critical values, we accept the null hypothesis and reject the alternate hypothesis.

(e) Computation for the ‘Z’ Value:

From table 4.6.4, P = 76 (76%), Q = 24 (24%) and n = 25

$$"Z" = \frac{0.76 \times 0.24}{\sqrt{25 \times 0.76 \times 0.24}} = \frac{0.1824}{4.56} = \frac{0.1824}{2.135} = 0.085$$

- (f) **Statistical Decision:** Since our computed "Z" value of 0.085 falls between -1.96 and 1.96, we accept the null hypothesis and reject the alternate hypothesis.
- (g) **Administrative Decision:** Since our null hypothesis was accepted, the alternate hypothesis which states that open animal grazing supports national integration and sustainable development of Nigeria was rejected.

4.5 Summary of findings

This research set out to study the open grazing system of livestock production and the effects it has on Nigeria's sustainable development.

At the end of the study, the following findings were made:

1. That frequent clashes between herders and settled farming communities disrupts local and national economies as most farmers abandon their homes and farming activities in an attempt to escape the ravaging cattle herders and their herds. This leads to excess demand on the few available food products that manage to reach the market. In the end, demand-pull inflation results.
2. That Nigerians are becoming divided more than ever before as disagreements and the resultant conflicts has erroneously come to be interpreted as plots to displace some and benefit some, raising the dust of mutual suspicion among the people.
3. That apart from the grazing reserve and stock route policy of the 1960s, successive governments of Nigeria, over the years has done nothing to give the country a functional livestock production policy. The one it tried became moribund soon after it was initiated while no meaningful effort was made to tackle all skirmishes from the policy lacuna in a manner that will suit the feelings and interests of all stakeholders in the competition. Invariably, government, over time, only succeeded in opening itself up to all manner of accusations, including being partial and complicit in arming one side against the other.

4.6 Recommendations

1. This study also suggests that government should set up and be ready to deploy its security apparatuses in a manner that makes it capable of identifying and nipping in the bud all disagreements likely to result in disruption of people's means of livelihood or loss of lives. This will create room for businesses and other gainful economic activities to thrive in the country.
2. Government should legislate against the rearing of animals (either for grazing or for any other purpose) on built infrastructure like school premises, hospital premises, highways and bridges. By doing this, the rate of environmental degradation occasioned by free roaming animals will be reduced.
3. Government should at all times and in all situations, position itself as the father of all and an impartial arbiter in all its dealings with all individuals and groups in the country. Since equity represents equality, this position of government will create a sense of belonging in the people and make them see the country as their own.

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