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# COMMUNICATION, **MIGRATION**, AND SOCIAL INCLUSION IN NIGERIA

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# 1

## **Communication, Ecological, and Sociological Aspects of Nomadic Pastoralism and Cattle Ranching: Literature and Expert Reviews from Uyo, Nigeria**

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### **Introduction**

The migratory or nomadic grazing called pastoralism as a practice in bovine production has gone on in Nigeria, West Africa and other parts of the world for hundreds of years, even centuries. However, in Nigeria particularly; the practice has often resulted in conflict with subsistent crop farmers along the migratory routes.

In recent times especially since the 1990s, armed banditry has infiltrated Nigerian cattle breeding industry often occurring in the form of cattle rustling (theft) and more seriously, bloodletting and mass killings by armed herdsmen. This bloody dimension to a hitherto, seemingly innocuous agribusiness has tended to dominate media headlines and has seemed to suppress the ecological and communication angles of the social problem.

To place the problem in its proper context, Dibe & Abdul'Aziz (2018) have reported in *Africanews* that the ongoing conflict between farmers and pastoralists is

costing Nigeria about \$16 billion in potential annual revenues. They add that with human death toll of between 2000 to 3000; from 2016 to 2018; the dangerous potential of the clashes is as worse as the Boko Haram insurgency in the Northeast.

Seeing the conflict as a failure of humanity rather than a failure of institutions of society and economy, Amadi (2018) notes that the conflict has tended to polarise arguments about causes and solutions. On the one hand, defenders of the herdsmen underscore the climate and ecological factors that push pastoralists southwards for fresh grass and water. On the other hand, supporters of the farmers see the conflicts in the light of alleged cattle breeders' quest for land control/ownership and subsequent dominance. Mohammed (2018) agrees and views the conflict as a resource war due mainly to demographic changes and sundry factors such as cattle rustling, overgrazing and bloating human and cattle numbers.

Some see the solution to the herdsman/farmer conflict as the cessation of open grazing and the inauguration of commercial ranches. However, this is more complex, especially as Rasheed (2018) states that the constraints of land and land ownership in tribal areas are a huge setback. He stresses that ranches work in countries with huge pastoral lands such as Brazil, Argentina, Canada and Russia, some 17 times bigger than Nigeria. To douse the palpable tension, he suggests the restriction of grazing to more receptive states such as Adamawa, Kebbi, Sokoto, Zamfara, Bauchi, and Jigawa states. However, some states such as Imo and Akwa Ibom have offered or made plans to provide grazing fields and cattle ranches respectively. These would certainly broaden the base of the receptive states.

The herdsmen/farmers violent conflict and the tolls on animal and human lives underscore the critical role of communication. Already, Shehu (2017), Oduhlami (2017) and Gaver & Essien (2017) have castigated the media for being biased and not taking pains to conduct independent and reliable investigation and tending to colour the conflict in ethnic and religious hues. This sort of indictment underscores the crucial place of communication in conflict management. This is in line with Odoemene's (2017) call for stakeholders to convene a dialogue around the deeper socio-cultural, historical, structural and economic flanks of the conflict using mediation, reconciliation, building trust, and reconstruction to address the drivers of conflict. Indeed, Tukur (2013) addressed the need to reorient media perception of pastoralists as instigators of conflict to equally include them as victims of conflict.

Apart from being a communication issue, the conflict over cattle breeding is also an environmental issue. Whether it is pastoralism or ranching, there is always some implications for the ecology. Stanford University (2007) states that tremendous environmental problems result from large-scale livestock productions whether in their

intensive (animals are contained and fed) or extensive (animals live on the land by grazing) forms. These include land degradation, air and water pollution, loss of biodiversity and climate change.

Therefore, this article explores the herdsmen/farmers conflict in Nigeria, the environmental consequences of pastoralism and cattle ranching, and examines the communication strategies that could be useful to individual, community, and environmental stakeholders, regarding the sociological and ecological dimensions of cattle nomadism and ranching.

### **Statement of the Problem**

Cattle rearing particularly the migratory, nomadic, pastoralist variant has become an age-long agricultural practice the world over. However, while the Western world has largely modernised, intensified, and mechanised its beef and milk production economy, much of Africa including Nigeria still practice the age-long method. The climatic condition spawned by global warming and manifested as desertification, droughts, and water shortages have perennially driven cattle breeders from the North of Nigeria to the central and Southern parts less affected by harsh climate changes.

However, this southward drive by migratory herders has often resulted in conflict and clashes with subsistent farmers over crop damage, farmland degradation, blockade of migratory routes, water pollution, etc. The British Broadcasting Corporation (BBC) news report monitored on December 17, 2018 quotes Amnesty International as stating that the crisis which had since turned bloody has recorded more than 4000 deaths of herdsmen, farmers, and others in between.

Many communication and media studies have examined the media coverage and framing of the conflict between herders and farmers. Adamu (2018) investigated public perception of the media coverage of the 2016 herdsmen and farmers' conflict in Plateau State. Shehu (2017) examined newspaper coverage of herders/farmers conflict in Nigeria. Similarly, Odunlami (2017) studied newspaper coverage of the Fulani herdsmen/farmers' conflict in Nigeria. Likewise, Gever & Essien (2017) toed the same line but concentrated on central Tivland in Benue State. Also, Abdulbaqi & Ariemu (2017) dealt with framing of the conflict and its implications for peace journalism. Specifically, Shehu (2017) pointed to the need to have the sort of media that are not ethnically-tainted in the coverage of conflict related to nomadic cattle breeding in order not to threaten Nigeria's socio-cultural co-existence. Oduulami (2017) observed the poor coverage of the herdsmen/farmers conflict and the lack of attention accorded victims of the crisis. Also, Gever & Essien noted the episodic rather than proactive and routine

reportage of the conflict if the appropriate agenda are to be set for the Nigerian public. And then, Abdulbaqi & Ariemu (2017) found out that the framing of the conflict by Nigerian newspapers was divisive, stereotypic, and capable of inciting more conflicts even as it was oriented towards solutions.

Other studies in the realm of policy and conflict such as Ahmed-Gangum (2018), Olayoku (2014) Oli, Ibekwe, & Nwankuno (2018), Ogo-Oluwa (2017) have also captured the Nigerian herders/farmers violent conflict. Clearly, as far as communication and environmental dimensions of the herder/farmer phenomenon are concerned, there appears to be an apparent research gap.

The importance of environmental concern in pastoralism and or ranching is visible elsewhere as seen in projects such as Australian Aid Project's (2015) human and environmental impacts of migratory pastoralism in Arid and Semi-arid east Africa. Others are Europa's (2013) social and environmental impact of pastoralism on ACP countries; and UNDP's (2003) pastoralism and mobility in dry lands. In the same vein, Amiri, Ariapour, & Fadi (2008) investigated the effects of grazing on vegetation in Iran. Freilich, Duda, Emlen, & Freeman (2009) conducted a six-point critique of the ecological effects of ranching in the United states. In China, Fan, Li, Zhang, & Li (2013) did an impact study of nomad sedentarisation on social and ecological systems. Also, Dettenmaier, Messmer, Hovick & Dahlgren (2017) explored the effects of grazing on rangeland biodiversity.

The Australian Aid Project (2015) for instance, notes that the process of producing beef certainty exerts impact on the environment and reduces fuel resources thus making environmental management very important. Amiri *et al.* (2008) had earlier noted the sustained studies of vegetation and soil dynamics on grazed and non-grazed rangelands for improving range management. Similarly, Freilich *et al.* (2009) concluded that ranching should necessarily include natural ecosystem conservation in order to mitigate the negative effects that can be mitigated. In the same vein, Fan *et al.* (2013) called for a holistic assessment of nomadism particularly its impacts on social and ecological systems and cautious implementation of programmes to reduce potential risks in ecologically vulnerable regions. This is also in line with the conclusions of Dettenmaier *et al.* (2017) that livestock grazing involves more than half of the earth's agricultural lands and does affect wildlife habitat and biodiversity changes thus necessitating efficient management of livestock production practices.

In Nigeria, studies have also been conducted on the environmental impact of pastoral nomadism on crop agriculture (Uchedu, Ihedioha & Arua, 2015). In East Africa, Msuya (2015) looked at pastoralism beyond ranching – farming in severely stressed semi-arid and tropic regions. Also, Azuwike & Enwerem (2010) probed Nigeria's

changing environment and pastoral nomadism. Likewise, Ekeyi (2013) interrogated the effects of nomadic herding on the environment in Kogi State. In Brazil, Batista (2016) did a modeling of the economic and environmental impacts of cattle ranching; and, Food and Agriculture Organisation's Livestock Brief 03 (2006) contains an exposition on cattle ranching and deforestation.

Clearly then, as the preceding paragraphs have shown, nomadic pastoralism and ranching impinge on the environment. Given this situation, the question posed in this study is: what communication strategies could be adopted to address the conflict as well as the ecological problems that attend nomadic or ranching systems of cattle production in Nigeria?

### **Objectives of the Study**

The specific objectives of this study were to:

1. ascertain from published literature, the nature and consequences of nomadic (migratory) pastoralism on the Nigerian environment;
2. find out how cattle ranching affects the environment in Nigeria;
3. explore the method of cattle production that is environmentally safe and socio-economically salient for Nigeria; and,
4. examine the role of communication in engendering a viable, socially inclusive, eco-friendly bovine agriculture.

### **Research Questions**

The following research questions were posed:

1. what are the nature and consequences of nomadic pastoralism on the Nigerian environment?
2. To what extent does ranching affect the environment in Nigeria?
3. What method of cattle production is environmentally safe and socio-economically salient for Nigeria?
4. What role may communication play in promoting violent conflict-free, socially inclusive, eco-friendly cattle agriculture in Nigeria?

### **Literature Review**

#### **The Nature and Dimensions of Herder-Farmer Violent Conflict in Nigeria**

The violent conflict between herders and farmers in Nigeria has a very disruptive nature and poses diverse dimensions - economic, political, social, and ecological. Olayoku

(2014) conducted an extensive study of the trends and patterns of cattle grazing and rural violence in Nigeria from 2006 to 2014. He provided very useful insights into the problem and its causes:

Climate changes, the migration further south, the growth of agro-pastoralism, the expansion of farming on pastures, the invasion of farmlands by cattle, assault on non-Falani women by herders, blockage of stock routes and water points, freshwater security, burning of rangelands, cattle theft, inadequate animal health care and disease control, overgrazing on fallow lands, defecation on streams and roads by cattle, extensive sedentarisation, ineffective coping strategies, ethnic stereotyping and the breakdown of conflict intervention mechanism – these are usually identified by scholars as the root causes of such violence in rural areas (p. 2).

In addition, Olayoku (2014) citing Blench (2010) points to the imperative of viewing the herder-farmer violent conflict beyond ecological and economic determinism to include contextual exegesis of local socio-ecological situations and the dire need to overcome socio-cultural stereotyping of the nomadic lifestyle. The ideal situation, we are informed is the co-existence of transhumant herders with agro-pastoralists and farmers who have embraced cattle breeding.

Seeing the herder-farmer conflict in Nigeria as another dimension of insecurity, Ahmed-Gangum (2018) states that the prohibition of open grazing and the establishment of ranching laws as behaviour guide and future conflict resolution measures in some states of Nigeria have failed to address the problem. Rather, threat to lives and property, opposition to the laws, and insistence on cattle colonies or grazing routes have continued. Perhaps this is why Rasheed (2018) in a newspaper opinion article, argues that Nigeria does not have the huge swathes of land available to Canada, USA, or South America. Therefore, pastoral nomads should be adequately educated and orientated towards a future integration into modern animal husbandry methods within the confines of village communities and farmer co-operatives. They are to focus more on milk rather than meat production to fight hunger, malnutrition, unemployment and foster peaceful co-existence.

The herder-farmer conflict in Nigeria is seen even in the international community as a legacy of division and mistrust. Doorly (2016) of the Humanitarian Aid Relief Trust states that raids by herders (and one may add cattle rustlers) is currently perceived as Nigeria second deadly security threat after Boko Haram. She adds that figures from the Global Terrorism Index show that in 2014, one thousand, two hundred and twenty-nine



(1, 229) people were killed, from 63 in 2013. In 2016 and in Benue State alone, up to 380 persons were killed. Often, these fatalities are ethnic and religious in their motives. Between 2016 and 2017, Oli, Ibekwe, & Nwankwo (2018) have recorded, based on the Nigeria Senate Plenary figures cited in *Vanguard*, June 1, 2017, that over 600 persons were killed as a result of the violent conflict. This is in addition to the destruction of crops, cattle, raids on habitation, destruction of settlements, arson, rape and grievous injuries.

Oli *et al.* (2018) view factors responsible for the herder-farmer conflict in Nigeria to include damaging or grazing on crops, climate change, long-standing feuds and fresh water scarcity. They identified negligence, disrespect for traditional institution, and increasing urbanisation as factors responsible for the lack of access to farms or grazing fields. Additionally, they saw the socio-economic effects of herder-farmer conflict in Nigeria to include loss of human, plant and animal lives; destruction of livelihoods, reprisal attacks on people, and community resources, displacement of persons and animals and distrust among people, neighbours and communities. These authors suggest as a way out, the use of dialogue, appeals, and consultation to jettison the open grazing model of cattle production and embrace the establishment of grazing fields, manage water resources optimally and obtain reorientation through education of herders and farmers on human rights, farm practices, animal husbandry and water management.

### **Nomadic Grazing, Cattle Ranching and Effects on the Environment**

This section explores the environmental effects of pastoral nomadism and cattle ranching on the environment. The literature has shown that it is erroneous to suppose that ranching is salutary to the environment while open grazing is deleterious. Both practices, beyond economic, social and cultural effects have ecological impacts. In scholarly as well as lay circles, this has become a controversial subject of debate. Freilich, Emlen, Duda, Freeman & Cafaro (2003) have indicated the inclination towards portraying, "ranching as a benign pastoral pursuit... compatible with the long-term maintenance of biodiversity" (p. 759). Freilich *et al.* in a six-point critique of ranching argue that ranching involves the elimination of carnivores and the destruction of other animals in the rangeland ecosystem – a practice that hurts the long-term interests of ranches. Other criticisms are the truncation of the food web and the issue of carbon biomass; fencing, roads and ecosystem fragmentation; exotic weeds and the herbicides to control them, alteration of fire regimes and the impact of water supplies. These criticisms call for a careful consideration of the ecological effects of both ranching and grazing.

In Iran, Amiri, Ariapour & Fadai (2008) further illustrated the effects of livestock grazing and non-grazing on vegetation and soil moisture. The researchers found out that,

“vegetation characteristics, in particular vegetation cover and plant density, differed significantly between the non-grazed (enclosed) and grazed sites and increased significantly in the non-grazed sites,” (p. 1289). They found out too, that removal of grazing animals... caused an improvement in rangeland condition in the region in terms of soil infiltration and vegetation and species diversity.

In China, the focus of the study by Fan, Li, Zhang, & Li (2013) was on the impact of nomad sedentarisation on social and ecological systems. On the social level, the authors reported about government provision of grassland subsidies as a compensation for herder reduction of grassland use following sedentarisation as well as rapid increase in livestock numbers from 70% before sedentarisation to 95%. On the ecological scale, the study revealed an increased dependence on local water resource use after sedentarisation. The conclusion of the authors was that sedentarisation, coupled with housing and public service provisions and modern animal husbandry methods may produce economic improvements that are short-lived for nomads but at a greater cost in environmental damage and disruption of age-long cultural identity. In its place, pastoralism that promotes food production and sustainable water use along with government policy and technical support should be encouraged.

Taking the discourse further, Dettenmaier, Messmer, Hovick, & Dahlgren (2018) probed the effects of grazing on rangeland biodiversity. They held that livestock grazing impacted more than half of global agricultural lands and could affect rangeland eco-systems as well as wildlife habitat quantitatively and qualitatively, leading to biodiversity alteration. Dettenmaier *et al.* have made several revelations following their Meta analyses of research literature as follows:

1. overgrazing of rangelands by livestock has large, bad impact on wildlife and their dwellings;
2. livestock grazing may pose good, bad, or harmless effects depending on animal type, stock rate, animal distribution, duration, frequency, etc.; and,
3. humans can obliquely affect the environmental results of grazing systems. Here, livestock management practice affects rangeland ecosystem structure which affects other ecosystems and eventually wildlife population.

In Columbia, Hansen-Bundy (2013) has evaluated the hidden environmental costs of cattle ranching which he stated were bound to hurt Columbia's future. Based on a United Nations-supported study of the economics of ecosystems and biodiversity, it is reported that, “carbon dioxide emission from slash-and-burn land clearing, loss of biodiversity, soil degradation, and water pollution represented major environmental costs of converting the Amazon rain forest into pasture for livestock.” The cost impact of deforestation and ranching that follows it along with carbon dioxide emission was

estimated in the study at \$1.5 billion each year. This is about 16 times the sector revenue of the South American region. Besides the huge biodiversity losses particularly plant and animal extinction that follows deforestation, forest burning and ranching, the emitted green house gasses worsened the global warming problem.

As a solution, the recommendation is a shift to what Hansen-Bundy terms “Silvo pastoralism.” This is an integrated approach to managing the ecosystem through tree-planting, cultivation of fodder shrubs, and vegetative fences in and around pasture in addition to other eco-friendly methods that can benefit both herders and farmers. In this way, the trees act as carbon sinks, air filters, and habitat for birds and other animals. The pasture also conserves more water because of the trees, the soil is protected against erosion and cattle dung adds nutrients to the soil. Also, outside the tree-fenced pasture where livestock is contained, crop farming can go on undisturbed making use of manure from livestock and sharing water resources available to the animals.

In less developed countries such as Nigeria and many others in Africa, Clayton-Niederman (undated) observes that developing countries are trading away their future by mowing down forests to establish cattle ranches:

In doing a cost benefit analysis of ranching, it is important to look at costs on environment, opportunity costs, non-use costs and distribution of costs and benefits... environmental costs can be large from cattle ranching alone, and much larger when continued with preceding deforestation. Some of the opportunity costs, or opportunity passed up from taking the present course of action, include increased resources extraction and ecotourism (Clayton-Niederman, undated, p. 1).

Also, Uchendu, Ihedioha, & Arua (2015) in their study of environmental impact of pastoral nomadism on crop farming in Ohafia observed that, “activities of the nomads led to deforestation, erosion, desertification, hardening of top soil surface and loss of fertility among others. The litter from the livestock... served as manure in the farmlands but also created unsightly surroundings in addition to polluting community streams, children's playgrounds, shrines, church premises and village squares/recreational parks” (p.148). In the same vein, Steinfeld & Geber (2010, p. 18237) agree, “a number of studies have underserved the impact of livestock on the global environment, including anthropogenic climate change, nitrogen cycles, and phytomass appropriation... livestock sector will soon reach or exceed recently published sustainability threshold in the areas of climate change, reactive nitrogen mobilisation and anthropogenic biomass appropriation and that curbing livestock sector growth should be a major focus in

environmental governance.” Tobler, Cochard & Edwards (2003) also conclude that intensive livestock ranching as practiced on a Tanzanian ranch was unsustainable.

The question is, how may cattle production be carried out in an environmentally friendly way? Researchers at the Michigan State University (MSU) led by Cameron & Rowntree (2018) evaluated the adaptive multi-paddock (AMP), grass-fed operations, and grain-fed (feedlot) herds methods of cattle production. The multi-paddock system moves cattle from one fenced grass lot to another, not allowing the cows to graze free. Grass-fed operations give dried or fresh grass to cattle contained in sheds while grain-fed cattle are housed and fed with feeds made with cereals.

They advocated no one approach but encouraged best practices and areas of improvements supportive of environmental protection whether the system is grass-or-grain based. To achieve a responsible, sustainable beef production, NSW Government (2018) states that,

Grazing industries are generally considered to be more benign than cropping systems in terms of their effects on the environment. However, beef production does impact upon plants, soil, air, and water, and depletes resources such a fuel. Environmental management in grazing beef production is therefore just as important to the future of the industry and its individual producers as is product quality and consistency, profitability and market access (p. 1).

To make this possible, beef producers are enjoined to obtain a broad appreciation of the factors that help constitute and sustain an ecologically safe cattle production. These include sustainable pasture management, maintenance of biodiversity, soil management, water management by minimising greenhouse gas emissions, and curtailing offensive odours and dust, and the efficient use of other resources such as fuel.

Other sustainability factors are good stock management, taking care of animal welfare, responsible use of chemicals, property management planning including good risk management with enterprise flexibility that allows for adaptation to changing markets; good monitoring and recording systems, good community relationships and perception, and air management.

In like manner, Grosfield (2017) focuses on improving sustainable cattle production in the Brazilian Amazon. He writes about linking sustainable ranching to territorial sustainability through the development and operationalisation of adapted technologies, implementation of monitoring frameworks that empower local actors and fostering of institutional arrangements that involve territorial approaches.

## Media Coverage of Herder-Farmer Conflict in Nigeria

The conflict between herders and farmers over access to grazing lands and water resources on the one hand and cattle destruction of crops, soil degradation and pollution of community water sources has caught media attention for some time now. The print and broadcast media have captured the conflict and issues have arisen out of such coverage. Here focus is on newspaper coverage.

In newspaper framing of herdsman-farmers conflict in Nigeria, Abdulbaqi & Ariemu (2017) content analysed 100 news stories in selected Nigerian newspapers. Focusing on dominant frames employed in the conflict reportage, the study showed that the most used frame was the solution-oriented one. The study revealed that the use of language in the coverage of the conflict tended to cause violence than peace with copious use of terms such as, "killer herdsman, gun-carrying herdsman, jihadist herdsman, greedy farmers, and intolerable farmers" (p. 77). The authors suggest that the media would do well to desist from divisive, stereotypic, and inciting labels.

The authors pointed to Adelabu's (2015) citation of Geelen's twelve contributions to peace and conflict management that the media can make namely: "Channeling communication between parties, educating, confidence building, countering misperceptions, analysing conflicts, de-objectifying the protagonists for each other, identifying the interest underlying the issues, providing emotional outlets, encouraging the balance of power, framing and defining the conflict, face saving and consensus building and solution building (p. 80). The Nigerian media can deploy some of these strategies in their coverage and framing of the herders-farmers conflict.

Away, from framing, Gever & Essien (2017) investigated newspaper coverage of the conflict between farmers and herdsman in central Tiv land in Benue State. The emphasis of the study was on text format, frequency, prominence, depth of coverage, language of reports and audience evaluation of the coverage as captured in the *Daily Sun* and *Daily Trust* over a period of one year. Adopting the survey and content analysis research methods, the study revealed that the dominant reportage format was the straight news, that the coverage was episodic, tucked away in the inside pages, and paid scant attention to the victims of the conflict.

In a similar vein, Odunlami (2017) probed *The Guardian* and *The Punch* newspapers in the first five months of 2016 finding out that the coverage of the herders-farmers clashes lacked prominence comparative to politics and anti-graft campaign irrespective of the volatile, emotional, and passionate coloration of the 'ethnic' violence. Again, the study equally revealed a concentration on sourcing from politicians, groups and associations rather than victims of the violent conflict. In a related study, Shehu

(2017) investigated *Premium Times* and *Thisday* newspapers. The rationale for the study was that the herders/farmers conflict remained, "the most prominent resource-use conflict in Nigeria" (p. 216) and that, "violence of herders and farmers is not well-reported in the past eight years, it accounted for 615 deaths out of a total of 61, 314 fatalities in Nigeria" (p. 216) mainly because of the rural locale of the violent conflict. Shehu's conclusion is that, "Fulaniphobia" is at the core of the newspapers portrayal/framing of Fulani herders as, "stubborn and unforgiving" (p. 223). To him, the demonisation of the tribe rather than extenuate the conflict would aggravate and escalate it by spreading the hatred around Nigeria.

Outside of media coverage, Adamu (2017) investigated the public perception of the media coverage of 2016 herders and farmers conflict in Bokkos, Plateau State. She identified over-protectionism of herds, proliferation of small arms and light weapons, and religious extremism as factors contributing to the rising wave of herders' attack on farmers. Her study revealed among others that most respondents felt media reports of the herder-farmer conflict were lopsided, ignored facts concerning casualty details, and were at variance with security agency reports on the conflict.

## **Theoretical Framework**

This study hinges on sustainability theory. Jenkins (2011) explains that, "sustainability directs practical attention to the complex mutuality of human and ecological systems. Economic health, ecological integrity, social justice, and responsibility to the future must be integrated to address multiple global problems within a coherent, durable, moral, social vision" (p. 381).

The relevance of this theory can be situated in the need to conduct cattle production in an economically healthy way and at the same time, do so in such a manner as to promote peace, environmental integrity and socio-cultural cohesion. Jenkins explains that the theory of sustainability stemmed from the 1987 Brundtland Report encompassing economic, political, and ecological models. Very importantly, ecological models:

sustain biological and ecological integrity... focusing directly on the health of the living world. Within this model, there are two major ways of deciding which ecological goods to sustain. From an anthropocentric point of view essential natural resource should be sustained, as should those ecological systems and regenerative process on which human systems rely. From an ecocentric point of view, species should be sustained for their intrinsic value, as should ecological systems as generators of creatures

with intrinsic value (p. 383).

The essence of this direction of thought is therefore an exploration of how communication resources could be applied to conduct nomadic pastoralism or modernised ranching in the business of cattle production in Nigeria with the preservation of human, animal, crop and ecological lives.

## Methodology

This study relied on the qualitative research method for data gathering. The instrument of data collection was the in-depth interview schedule. This technique uses smaller, manageable sample to generate information about respondents' thoughts, feelings, attitudes, perceptions, disposition or experiences (Wimmer & Dominick, 2000).

A small, purposive sample of eight respondents was selected for this study. Based on the nature and purpose of this study, this was justified for, as Campbell, Cleland, Collumbien & Southwick (1999) note, "when the objective of research is understanding of social process, representativeness is not the prime issue in systematic sampling of respondents and it should not then become one at the later stage of interpretation" (p. 42). Gill, Stewart, Treasure & Chadwick (2005) affirm that in-depth interviews "provide a deeper understanding of social phenomenon than would be obtained from purely quantitative methods such as questionnaires" (p. 292).

The following, mostly from the University of Uyo population therefore constituted the sample for this study:

- |                                  |  |
|----------------------------------|--|
| - Dr Paul Milverton Eko          | - Animal Scientist                             |
| - Prof Innocent V. O. Modo       | - Development Sociologist                      |
| - Dr Edem A. Eniang              | - Wildlife Expert/Environmentalist             |
| - Prof Benedict Ime Umoh         | - Cattle agriculture expert                    |
| - Emmanuel Ating Onwioduokit-    | Professor of Economics                         |
| - Ashong Clifford Ashong         | - Professor of Development<br>Communication    |
| - Nkereuwem Udoakah              | - Professor of Communication and Media Studies |
| - Mallam Ibrahim Mustapha Bello- | Cattle herd owner, Uyo.                        |

In other words, the 8-member sample consisted of two animal scientists, one development sociologist, one environmentalist, one expert economist, two communication specialists, and a cattle breeder. The rationale behind this sample selection is that the topic has agricultural, development, sociological, economic, ecological as well as communication dimensions.

The face-to-face oral interview sessions were conducted in the months of June, July and August 2018 each lasting between 30 minutes and one hour and held separately

in the respondents' offices. They were tape recorded and later transcribed. The interview schedule was constructed based on the research questions and objectives and the responses formed the basis of results. The findings were interpreted with the guidance of reviewed literature, related empirical studies as well as the theoretical underpinning of the study.

## **Findings and Discussion**

The findings of this study and the discussion that goes therewith are based on the research questions posed for the study as follows:

### **Research Question One: What are the nature and consequences of nomadic pastoralism on the Nigeria environment?**

This question helps meet the objective of ascertaining from published literature the nature and consequences of nomadic pastoralism on the Nigerian environment.

Respondents Dr Paul Eko, an animal scientist and Professor Innocent Modo, a development sociologist at the University of Uyo, Nigeria said cattle rearing in the form of nomadic pastoralism has gone on in Nigeria since 1916. It is largely done through Fulani herders who move from the arid north to the middle belt of Nigeria and the southern parts when pasture and water resources dry up. Environmental/climate conditions are at the root of nomadism though the infestation of tse-tse flies in the south in the rainy season also propels the movement of cattle up north in these periods. These movements and the disruption they cause to crop lands in the south and middle belt regions as well as the resistance by farmers and the theft, confiscation and/or killing of the herd are frequent sources of skirmishes, clashes, and violent/armed struggle between herders and farmers. Dr Eko said:

The need to secure feed for livestock has often led to the destruction of valuable crops by cattle herd sometimes due to the cropping of grazing routes or the negligence of herders to effectively control animals from devastating the crops. Unfortunately, these developments have resulted in persistent crises and clashes following direct confrontation between owners of damaged farmers and herders.

Apart from the frequent violent conflicts that trail nomadic pastoralism in Nigeria, there are other consequences. Dr Edem Archibong Eniang, an environmental and wildlife expert and specialist in Taxonomy, Zoology, and Ecology at the University of Uyo, Nigeria identifies those consequences to include encouraging conditions that promote desertification, habitat fragmentation and destruction, fish losses, spread of foot and mouth diseases and tetanus, crop/fruit destruction, and contamination of the



environment with cow dung.

Other problems brought on by nomadic pastoralism include disruption of cultures in host communities, violation of peaceful co-existence, security breaches, and encroachment on farms and communal lands leading to violent confrontations. In addition, Professor Benedict Ime Umoh, a scholar in cattle agriculture at the University of Uyo, states that,

Nomadic pastoralism deprives children of herders from acquiring a smooth, formal education since the practice is migratory in nature. Often, it means abandoning children and families for the sake of cattle rearing. The migration of cattle herds over long distances on foot results in poor health and quality of cattle and wellbeing of herders.

Besides, pastoral nomadism causes compaction (stampeding) of soil, soil erosion, and contamination of rivers, streams, ponds which are sources of drinking water in most communities.

Also, looking beyond the social, cultural, and ecological consequences of nomadic pastoralism, Professor Emmanuel Ating Onwioduokit, an economist at the University of Uyo examined the economic costs of the violent clashes that attend the herder-farmer relationship in Nigeria. He stated that by 2020 and beyond, Nigeria may experience scarcity and high cost of food as a result of the killings involving cattle breeders and crop farmers particularly in the central and southern states where some of Nigeria's foodstuffs are produced. This also means that to bridge the gap, Nigeria may resort to food importation which would further deplete the national reserve, instigate unemployment, and lead to the deterioration of the Nigerian economy.

These findings gleaned from the respondents, to a large extent align with the reviewed literature. Dibia & Abdul Aziz (2018) reported how the conflict between farmers and herders costs Nigeria about \$16 billion and a huge death toll. Amadi (2018) underscored the role of climate change in the conflict. Mohammed (2018) saw the issue also as a resource one. Stanford University (2007) also stressed the environmental consequences of cattle production whether extensive or intensive.

However, Ahmed-Gangum (2018) and Rasheed (2018) state that pastoral nomadism appears to have some merit because Nigeria does not have the size of land that permits ranching and that attempts at ranching had failed in the past. In spite of this, Oli *et al's* (2018) litany of factors responsible for herder-farmer conflict in Nigeria needs to be addressed. Doing so is critical if there must be peaceful co-existence between cattle breeders and farmers, if food security in Nigeria is not to be jeopardised, and if sustainable consideration of the environment is seen as crucial to Nigeria's survival.

## **Research Question Two: To what extent does ranching affect the environment in Nigeria?**

This question addresses the research objective of finding out how cattle ranching affects the Nigerian environment and its agricultural economy.

Ranching has often been recommended as the solution to pastoral nomadism and the consequent violent crises and deaths that come with it. Respondents in this study examined the merits and demerits of this recommendation. Prof. Benedict Ime Umoh explained:

Ranching involves a carefully selected and delineated land, planted with suitable grass (pasture) and provided with farm houses, water resources and accommodation for both ranchers and livestock. It may be established by individuals, ranch co-operatives, communities, or government to breed animals and accrue income to owners. The system engenders healthy cattle breeding and produces good quality beef, milk, and other dairy products. It saves the ranches the cost of moving animals and herders from place to place. Overall, it reduces the price of cattle by concentrating thousands of cattle in one location and stimulating competition in the market.

Adding to the beneficial/positive effects of cattle ranching, respondent Dr. Paul Milverton Eko stated:

Ranching ensures availability of livestock throughout the year provides employment for herders and local people and ensures regular availability of other animal products such as hide, skin, bonemeal, tusks, etc – dependable and veritable raw materials for industries. It also ensures clean environment and effective utilisation of animal dung for biogas generation and use. This mitigates methane gas and global warming. Besides, ranching encourages the conversion of marginal/fallow lands for cultivation/introduction of improved species/variety of fodder, forage, pasture and effective land utilisation.

However, in spite of these advantages, Dr Eko observed that ranching might lead to unauthorised allotment of lands and spark off commercial land crisis. He said it may also result in confrontation involving communities, settlers, indigenes, states and federal governments. He added that ranching may come with the fears of introducing alien cultures and religious practices by ranchers in host communities, dispossession of land and water rights and resources and control by government machinery using instruments of persuasion and coercion.

Looking at ranching from the point of view of economic gains, Prof. Emmanuel Onwioduokit stated that ranching would encourage the exchange of revenues and crop goods between farmers in the central and southern states and ranchers in the far north. Besides, ranching would also have the capability of prolonging the life span of both cattle and herders and increase the internally generated revenues of ranching areas as well as jack up employment opportunities. Ranching involves the procurement and development of a large range of suitable land for the purpose of grazing extensive swathes of special grass for cattle breeding. It also involves provision of water resources, housing/education/health facilities for families of ranchers as well as amenities to manage waste, diagnose, and treat diseased livestock and market livestock products.

Onwioduokit also spoke of the multiplier effects in cattle economy to include boosting money circulation, cattle transportation between the North and South as well as the cultivation, marketing and haulage of fodder/dry pasture and the commercial production of dairy products such as canned beef, tinned milk, yoghurt, cheese, bone meal, skin and hide, etc. Also, governments at state and federal levels are expected to boost the sector by subsidizing irrigation systems for communities and States that provide land for ranching. Irrigation would benefit crop farmers as well.

The literature reviewed earlier supports and also disapproves ranching as a system of cattle production. Freilich *et al.* (2003) cautioned that we should not see ranching as a harmless pursuit. Amiri, Ariapour & Fadai (2008) detailed the effects of livestock grazing and non-grazing on vegetation and soil moisture. Fan, Zhang, & Li (2013) noted that sedentarisation alongside housing and public service provisions and modern animal husbandry methods may produce short-lived economic benefits for nomads, but at a greater cost in environmental damage and disruption of age-long cultural identity. Dettenmaier *et al.* (2018) concluded that livestock grazing may pose good, bad, or benign effects depending on animal type, stock rate, animal distribution, timing, duration, frequency, etc. Dettenmaier *et al.* explain that grazing livestock may not be ultimately beneficial or detrimental to wildlife but that it could bring helpful, untoward or harmless consequences depending on the factors named earlier as they combine with the condition of the soil, precipitation, the flora, and the fauna. Their conclusion is that the role played by humans in systems involving grazing can frontally impact on the ecological consequences of grazing systems. Again, Hansen-Bundy (2013) stated that hidden environmental costs of cattle ranching hurt a country's future. He pointed out that the emission of carbon dioxide stemming from cutting down and burning tress, the loss of biodiversity, the degraded soil and polluted water capture the huge environmental cost of turning the rain forest into cattle ranches. Likewise, Clayton-Niederman (undated) added that developing countries traded away their future when

they cut down forests to establish commercial cattle ranches. She emphasised that cattle ranching destroys the natural resources of poor countries and, apart from this harm, it causes pollution and poses health hazards and hurts future generations because of the losses of the capacities to produce.

Generally speaking, scholars have maintained that beef production ultimately impacts upon plants, soil, air, and water (that is our environment) and depletes resources such as fuel. These findings agree with the sustainability theory which calls for the sustenance of biological and ecological integrity by focusing on the health of the living world whether we look at it from an anthropogenic or ecocentric point of view. What this means is that when humans engage in productive activities, they should do so by using natural resources - land, water, air, forests, etc. in such a way as to preserve them in healthy conditions for future generations.

### **Research Question Three: What method of cattle production is environmentally safe and socio-economically salient in Nigeria?**

This question relates to the research objective of exploring the method of cattle production that is ecologically safe and economically salient to the Nigerian economy.

In this study, respondents seemed to prefer cattle ranching over pastoral nomadism. Prof Emmanuel Onwioduokit states that ranching "is the better method of cattle rearing for the Nigerian economy. It would stem the violent killings between nomadic herders and farmers and undercut the political/religion undertones of the crisis." Dr Edem Eniang agrees that, the intensive system, which is, ranching, is the better option too. He explained: "In the intensive system of ranching, cattle are housed, restricted, grain- or grass-fed, and marketed." Dr Paul Eko added that, "the intensive system of ranching also involves the paddock rearing method where animals (cattle, goats, sheep, etc) are accommodated and fed with hay (dried feed stock) and silage (partially fermented feed stuffs). Prof. Vincent Modo also stated that ranching is preferable as it would allow herders to produce their cattle in the safety of the north, permit southern farmers to grow and sell pasture or other crops conflict-free, and transporters to haul cattle, feed, and other dairy/farm products between the north and south for an improved economy. Modo said pastoral nomadism encourages "primitive accumulation or appropriation of land" and resulting bloodletting as well as ethnic and religious intolerance.

However, Prof. Benedict Umoh had a more balanced view. He stated, "no one method of cattle rearing is best except it is well-developed and improved. The establishment of "artificial pasture," which permits rotational grassing deserves consideration. Here, "cows are taken from one paddock to another to feed from reserved

grass. Wherever ranching is considered, the promoters should equally provide land for the establishment of social services such as schools, and hospitals, water, electricity, and access roads.”

Significant to the pastoral nomads is the notion that there is no better way to rear cattle than what they have practised for ages. Mallam Ibrahim Mustapha Bello, a native of Katsina State and cattle breeder in Uyo, Akwa Ibom State stated that the *Truka* cows reared at home in the north are grain-fed and/are more expensive whereas the wild *Amballa* cows are grass-fed and so must be moved from place to place. He said, “we move cows from the North to the South by trucks and from one town to another within the states on foot because of insufficient rainfall and green grass in the north.” He further stated, “*Amballa* cows were not brought up in the practice of foraging in one place. They are used to being moved by herders from place to place. Because green grass is better than dry leaves for their feeding. So, we move southwards to nourish and ensure good health for them.” He continued, “For the herders, they take the long walks as exercise and if they become weak, Tramadol medication energises them while the cows that become sick are injected with pharmacy medications.”

Regarding environmental effects of pastoral nomadism, Bello stated, “we are not aware that cattle dung dropped on the streets are injurious to health or that it is a menace to the society. Likewise, we cannot tell whether cows pollute the water they drink at streams and brooks since we are not health workers.” And finally, on milk production, Bello said it was impossible to produce milk from the cows brought into Akwa Ibom because they are not brought in sufficient numbers and are mainly slaughtered for their beef.

In the reviewed literature, it is clear that neither pastoral nomadism nor ranching is completely, environmentally safe. Cameron & Rowntree (2018) evaluated the adaptive multi-paddock system, the grass-fed operation, and the grain-fed method and encouraged best practices and areas of improvements that support environmental protection. The NSW Government (2018) recommended a system that included sustainable pasture management, maintenance of biodiversity, soil management, water management, reduction of green gas emission, curtailment of offensive odours, and efficient use of fuel among others. Also, Grosfield (2017) suggested the development and operationalisation of adapted technologies, and other measures that link sustainable ranching to territorial sustainability.

**Research Question Four: What role may communication play in promoting a violent conflict-free, socially inclusive, environmentally-friendly cattle agriculture in Nigeria?** This question aligns with the research objective of examining the role of communication in promoting rancour-free cattle agriculture in Nigeria.

Communication is important to humans. They fail to communicate at their peril. Respondents in this study viewed communication as a necessary but not the sole ingredient in conflict management, community development, environmental remediation, etc.

Ashong Clifford Ashong, a professor of development communication at the University of Uyo stated that the communications media should play the role of educating Nigerians on what is right, ideal, profitable, and socially acceptable and encourage behaviours that promote social integration in the Nigerian system. He said, "The media should educate Nigerians against fueling the crises between herders and farmers in the communities. They should seek and agitate for social justice for all and stand against any section of the country or ethnic group exhibiting superior tendencies over others. And the government should be socially responsible by ensuring social inclusiveness for all citizens."

Another respondent, Prof. Emmanuel Onwuduokit explained the media role as that of highlighting the economic costs of herder-farmer conflict and how it hurts the Nigerian economy. The media too have the responsibility of reporting objectively, fairly, analytically, and deeply all the development aspects capable of ensuring Nigeria's stability.

Dr Edem Eniang, an expert in environmental resource management stated that, the key to securing environmentally safe cattle agriculture is, "rigorous environmental conservation awareness and sensitisation. This entails serious media campaigns, education of cattle breeders in their communities to embrace intensive rather than extensive cattle rearing system. The extensive cattle rearing system is the bane of the environment and society as the practice breeds ethnic distrust, violence and criminal activities."

Professor Nkereuwem Udoakah stated that the media generate information sourced from different sectors of the polity and their role is to analyse and interpret policies and programmes in elaborate ways through editorials, features, reports, discussions, etc. He said it is the place of those involved or affected by cattle rearing in Nigeria to approach the media and acquaint them with the issues, problems, and challenges that confront them. Udoakah stated further:

The media should undertake research on development or situations as obtained elsewhere in order to contribute meaningfully to the Nigerian situation. Armed with adequate information, knowledge, and intelligence about the breadth of the issues, the Nigerian media can then explore and expose the merits and disadvantages of each cattle rearing method whether it is pastoral nomadism,

intensive cattle ranching, or something in between. A well-guided media would leave discerning stakeholders and members of the public to take informed and rationale decisions for themselves. That said, it is important to note that the media today have been commercialised, meaning that issues that are not of economic relevance to them, profit wise, would not attract them.

The centrality of communication in conflict management and environmental remediation as seen in the herder-farmer crises that threaten agriculture in Nigeria and peaceful co-existence generally is an aspect of strategic communication. Negotiation and mediation are important tools in strategic communication. GTC Rioplus (2006), states that negotiation involves the discussion of differences by parties with the help of a facilitator who aims at achieving an amicable solution. Mediation is a voluntary process whereby parties in conflict permit a neutral interest to steer the clarification of positions, identification of interest and creation of solutions acceptable to all parties. A third tool is arbitration. Here conflict parties submit themselves to a legal authority that possesses the mandate to enforce a solution with the weight of the law. The success of these conflict resolution tools of strategic communication demands a focus on underlying interests, addressing both the procedural and substantive dimensions of the conflict, inclusion of all-important stakeholders in seeking a solution and correctly evaluating and appreciating the powers each stakeholder possesses.

These strategic communication tools namely conflict management, environmental communication and environmental education hold the key to the resolution of herder-farmer violent conflict in Nigeria. In addition, with targeted legislation, regulatory and policy framework, Nigeria can achieve an appropriate method of cattle production that is environmentally safe, economically viable, socially inclusive, and violence-free.

In addition, several other strategic communication approaches can be adopted to effectively communicate the sociological and environmental problems that attend the issues of nomadic pastoralism or cattle ranching in Nigeria. These strategies are adapted from Nisbet & Markowitz's (2016) strategic science communication of environmental issues and; Jarreau, Altinay & Reynold's (2015) best practices in environmental communication. Some of them are as follows:

**Maintain trust in politicised debates.** It is clear and apparent that the conflict between farmers and herders in Nigeria has been highly politicised. The conflict has often taken on political, ethnic, and economic dimensions as well as an ecological aspect. The government has often been accused of taking sides or not doing enough to curtail the conflict just as the press has also been accused of bias, under reporting and lopsided

framing. It is important therefore for communicators representing government, interest groups, communities, non-governmental organisations, religious groups, or political affiliates to maintain the trust of stakeholders including farmers, herders, communities, groups and government by communicating the truth, displaying honestly, exhibiting fairness, maintaining neutrality and ensuring a balance of viewpoints.

Trust comes from the feeling that the communicator is credible. The adoption of a strategy that leverages on visualising and analogising in order to communicate the complex nature of the sociological/ecological aspects of migratory cattle ranching is important. Trust in the communicator is also earned by emphasising good motives and intentions such as avoiding armed conflict to save lives and property, protection of farms/crops, safety of cattle, protection of water sources from pollution, and preservation of land. Another approach is for the communicator to partner with significant others who have the capacity to relate squarely with an identified culture. These may include environmental specialists, security personnel, environmental psychologists, agriculturalists, community leaders, opinion leaders, non-governmental organisations, government officials, etc.

**Counter misinformation and false beliefs.** In communicating about the sociological and ecological aspects of nomadic pastoralism and ranching, it is necessary to correct false beliefs. In Nigeria as we have seen, nomadic pastoralists believe that their cows can only do well through open, extensive grazing whereas scientists state that open grazing diminishes the beef quality. Pastoralists also do not believe that cow dung deposited in urban spaces or along stream and river routes pose any health hazard. Also, to keep the nomads strong for cattle grazing, resort to psychedelic drugs such as *Tramadol* may not be seen as a threat to health. These are some of the beliefs that need to be corrected. Several means of countering misinformation and false beliefs include:

1. protecting the target audience from being misled by warning against misinformation concerning environmental effects of nomadism;
2. substituting false beliefs with factually accurate and convincing information about nomadic pastoralism, ranching and the environment; and,
3. shaping policy support and individual stands by influencing the attitudes held by people about ranching, nomadism and the environment.

**Tailor Information to audiences.** Environmental issues are complex, scientific issues. They are often difficult to understand by the lay audience, more so the intricate interrelatedness involving the environment and politics, economics, population, gender, culture, health, etc. Communicators must be adequately empowered to explain, translate, or interpret these complexities to the concerned lay stakeholders – farmers, herders, youths, women, community/interested groups. To do these requires the



following:

1. pinpointing what the audience needs to know by investigating their knowledge about the environment/cattle agriculture;
2. using stories and storytelling methods to persuade the audience about environmental issues that attend cattle production techniques – nomadic pastoralism and ranching; and,
3. collaborating with other specialists including psychologists, sociologists, economists, and political scientists to investigate ways of framing environmental/sociological issues associated with cattle production.

**Promote informal conversations.** Interpersonal communication among stakeholders in the cattle production industry and with significant others in government, communities and group is important if the resolution of the social and ecological problems in that industry are to be solved. Farmers and farming communities, herders and herder communities require conversations in addition to media attention if they must publicly participate or take decisions that are mutually beneficial. To achieve this, the communication strategy should aim at attracting opinion leaders because they are sufficiently motivated to obtain information about the environment, and share the same, scientifically reliable information with their social circles.

**Localise the issue.** Local knowledge generates broad-based content since it relies on information from well-informed persons and supports formal forms of knowledge. Communication of environmental issues should link audiences with its local setting. Rather than design messages that pander to global issues, it is desirous to minimise large socio-political issues and maximise personal gains and successes. In the main, environmental issues such as land degradation, water pollution, deforestation, bush burning, air pollution, or solid waste pollution are also local. Therefore, focusing on local people, groups, settlements, communities that facing these problems as a consequence of cattle production is key to solving the problems. The same can be said about the violent clashes between herder/farmer communities.

**Empower people with knowledge of what can be done.** Communicating with people in order to imbue them with knowledge so they can commit to acting in environmentally friendly ways is anchored on several premises: (a) someone's action can be helpful, and (b) actions go with consequences. When people know what to do about an ecological problem, feel that they have contributed to the problem, see that their efforts can add to the solutions, are assured that those efforts can be implemented; they take action. Communicators are therefore expected to: (i) create messages that have built-in, specific action substitutes, (ii) assist the audience grasp mental images of the effects of their behaviours, (iii) create-community-specific sensitisation for acting, and, (iv) design messages to support the community.

**Structure messages based on time-tested values.** In communicating for the sustenance of peaceful co-existence between farmers and herders and in preserving the environment for future generations, communicators should plank their messages on basic common values and eco-friendly values. There is no gainsaying the fact that lovers of human kind value personal security and safety. They hold their homes and community in high esteem. They hold dear their family's health and the well-being of their offspring. They also have a sense of environmental justice and respect the sanctity of life as well as the well-being of other humans and that of the biosphere.

Adopting these strategies are therefore capable of helping to solve the sociological and ecological problems that come with nomadic pastoralism and/or cattle ranching as systems of animal husbandry in Nigeria. Communicators including environmental journalists, environmental/agricultural stakeholders, governments and non-governmental organisations would find these strategies useful.

## **Conclusion**

Cattle production that does not destroy the forests, that promotes biodiversity, that ensures good soil/water management and controlled air pollution is the ideal. A combination of grain-fed, grass-fed production in multiple paddocks system appears to be better with the cattle grown in tree-fenced pasture enclosures provided with irrigation systems that make crop farming also possible. These are all possible and enhanced where information, education, awareness creation, group sensitisation, community mobilisation and influencing of opinions, attitudes, perception and behaviour are done through the processes of strategic communication.

## **Recommendations**

The communication media have a major role to play by reporting the agricultural sector objectively, fairly, deeply, and analytically through news, features, columns, discussions, images, etc. The media should themselves investigate and seek authentic information and knowledge from credible sources and thereafter inform, sensitise, create awareness, and educate stakeholders in the sector. The media should equally stave off the conflict and crises in the sector by not fueling the problem but rather targeting key stakeholders – the public, farmers, herders, governments, policy makers, law-makers, and opinion leaders with relevant messages. This would permit them to make informed and rational decisions.

Nigerian governments at all levels, communities, non-governmental organisations, and all stakeholders in political, social, and cultural spheres including the media need to apply the tools of conflict resolution namely negotiation, mediation, and

arbitration. Also, strategic communication techniques in environmental communication/education as well as communication for sustainable development principles should be adopted to resolve the herder-farmer crises and institutionalise an environmentally safe, crisis-free, socially-inclusive and economically-viable cattle production in Nigeria.

## References

- Abdulbaqi, S. S. & Ariemu, O. (2017).** Newspaper Framing of Herdsmen-Farmers' Conflicts in Nigeria and Its Implications on Peace-Oriented Journalism. *The Creative Artist*, 11(2): 77-87.
- Adamu, L. S. (2017).** Public Perception of the Media Coverage of 2016 Herdsmen and Farmers Conflict in Bokkos, Plateau State. *PLASU Journal of Communication Studies*, 1(1) 74-94.
- Ahmad, Y. (Undated).** The Socio-economics of Pastoralism: A commentary on Changing Techniques and Strategies for Livestock management. Obtained from [www.odi.org](http://www.odi.org). Accessed August 18, 2018
- Ahmed-Gangum, W. A. (2018).** Herdsmen and Farmers Conflict in Nigeria: Another Dimension of Insecurity. *Journal of Public Administration and Social Welfare Research*, 3(1): 35-50.
- Amadi, S. (2018).** Herdsmen Conflict: Neo-feudalist and its Problems. *The Cable*, January 19.
- Amiri, F., Ariapour, A., & Fadai, S. (2008).** Effects of Livestock Grazing on Vegetation Composition and Soil Moisture Properties in Grazed and Non-Grazed Range Site. *Journal of Biological Sciences*, 8(8): 1289-1297.
- Australian Aid (2015).** Policy Research Overview. The Human and Environmental Impacts of Migratory Pastoralism and Index based Livestock Insurance in Semi-Arid East Africa. A white paper of the Department of Foreign Affairs and Trade, Australian Government.
- Azuwike, O. D., & Enwerem, E. (2010).** Nigeria's Changing Environmental and Pastoral Nomadism: Redistribution of Pains and Gains. Obtained from [www.berlinconference.org](http://www.berlinconference.org).
- Batista, E. L. D. (2016).** Modeling the economic and Environmental Impacts of Cattle Ranching Intensification in Mato Grosso. Minas Gerais: Vicosa.
- Cameron, L. & Rowntree, J. (2018).** Environmentally-Friendly Cattle Production (Really). *Environment*, March 19.
- Campbell, O., Cleland, J. Collumbien, M., Southwick, K. (1999).** *Social science methods for research in reproductive health*. Geneva: World Health Organisation.

- Cayton-Niederman, Z. (Undated) Forests for Cattle: Are Developing Countries Trading Away Their Future? Obtained from [web.stanford.edu](http://web.stanford.edu).
- Dettenmaier, S. J., Messmer, T.A., Hovick, T. J. & Dahlgren, D. K. (2017). Effects of Livestock Grazing on Rangeland Biodiversity: A Meta-analysis of Grouse Populations. *Ecological Evolution*, 7(19): 7620-7627.
- Dibie, M. I. & Abdul Aziz, I. (2018). Violent Conflicts between Nomadic Herders and Farmers Escalate. *Africanews*, January 14.
- Doorly, A. (2016). Herdmen-farmer Conflict in Nigeria: An Ongoing Legacy of Division and Mistrust. Humanitarian Aid Relief Trust, August 4. Obtained from [www.hart.uk.org/blog](http://www.hart.uk.org/blog).
- Europa (2013). The Social and Environmental Impact of Pastoralism on ACP Countries. Obtained from [www.europari.europe.eu](http://www.europari.europe.eu).
- Fan, M., Zhang, C. & Li, L. (2014). Impacts of Sedentarisation on Social and Ecological Systems at Multiple Scales in Xinjiang Uyghur Autonomous Region, China. *Ambio*, 43(5): 673-686.
- Food and Agricultural Organisation, FAO (2006). Livestock Policy Brief 03. FAO. Obtained from [www.fao.org](http://www.fao.org).
- Freilich, J. E., Emlen, J. M., Duda, J. J., Freeman, C. & Cafaro, D. J. (2009). Ecological Effects of Ranching: A Six-point Critique. *Bioscience*, 53(8): 759-765.
- Gerver, C. V., & Essien, C. F. (2017). Newspaper Coverage of the Herdsmen-farmers Conflict in Central Tivland, Benue State. *Media, War, & Conflict*, <https://doi.org/10.1177/1750635217741912>.
- Grosfield, L. (2017). Improving Sustainable Cattle production in the Brazilian Amazon. Global landscape Forum. Obtained from [news.globallandscapesforum.org/21625/...](http://news.globallandscapesforum.org/21625/...)
- GTZ Riophus (2006). Strategic Communication for Sustainable Development: A Conceptual Overview. Environmental Policy and Promotion of Strategies for Sustainable Development. Bonn: GTZ Riophus.
- Hansen-Bundy, B. (2013). Hidden Environmental Costs of Cattle Ranching will Haunt Columbia's Future; Study. *Columbia Reports*, April 26. Obtained from [columbiareports.com](http://columbiareports.com).
- Iro, I. (Undated). Where Modernism has Failed and Traditionalism has Thrived: A Look at Commercial Ranching and Fulani Herding System. Obtained from [www.gainjl.com/fulani9.htm](http://www.gainjl.com/fulani9.htm).
- Jarreau, P. B., Altinay, Z., & Reynolds, A. (2015). Best practices in environmental communication: A case study of Louisiana's coastal crisis. *Environmental Communication*, (2015): 1-23.

- Jenkins, W. (2011). Sustainability Theory. In M. W. Anders. *Berkshire Encyclopedia of Sustainability. The Spirit of Sustainability* (pp. 380-384). www.berkshirepublishing.com.
- Mohammad, Z. I. (2018). Politics of Herdsmen/farmers Conflict. *The nation*, January 17.
- Msuya, D. G. (2015). Pastoralism Beyond Ranching. A Farming System in Severe Stress in Semi-Arid Tropics Especially in Africa. *Journal of Agriculture and Ecology Research International*, 4(3): 128-139.
- Nisbet, M. C. & Markowitz, E. (2016). Strategic science communication on environmental issues. A commissioned white paper in support of the Alan Leshner Leadership Institute, American Association for the Advancement of Science.
- NSW Government (2018). Responsible, Sustainable Beef Production. NSW Department of Industry. Obtained from www.dpi.nsw.gov.au.
- Odoemene, A. (2017). Whither Peace Building Initiatives? The Escalation of Herder-Farmer Conflict in Nigeria Social Science Research Council, Brooklyn, New York.
- Odunlami, D. (2017). Sleeping on the Feet with Open Eyes: Newspaper Coverage of the Fulani Herdsmen/Farmers' Conflict in Nigeria. *Agogo: Journal of humanities*, 2 (2007). 29-37.
- Olayoku, P. A. (2014). Trends and Patterns of Cattle Grazing and Rural Violence in Nigeria (2006-2014). IFRA- Nigeria Working Papers Series No. 3.
- Oli, N. P., Ibekwe, C. C., & Nwankwo, I. U. (2018). Prevalence of Herdsmen and Farmers Conflict in Nigeria. *International Journal of Innovative Studies in Sociology and Humanities*, 3(1): 30-39.
- Personal communications with Paul Milverton Eko, Innocent V. O. Modo, Edem A. Eniang, Benedict Imo Umoh, Emmanuel Ating Onwioduokit, Ashong Ashong, Nkereuwem Udoakah, and Ibrahim Mustapha Bello in Uyo in interviews conducted on June 8, July 6, and August 9, 2018.
- Rasheed, A. (2018). Herdsmen/Farmers Clashes; Problems and Solution. *The Guardian*, 31 January.
- Shehu, A. (2017). Newspaper Coverage of Herders-Farmers Conflict in Nigeria. *International Journal of Communication*, 22(1): 370-381.
- Stanford University (2007). Harmful Environmental Effects of Livestock Production on the Planet "Increasingly serious," says Panel. Obtained from www.sciencedaily.com/releases/2007/02/070220145244 htm.
- Steinfeld, H., & Gerber, P. (2010). Livestock Production and the Global Environment:

Consume Less or Produce Better? *Proceedings of the Academy of Science, U.S.A.* 107(34): 18237-18238.

Tobler, M. W. Cochard, R., & Edwards P. J. (2003). Impact of Cattle Ranching Large-Scale vegetation Pattern in a Coastal Savanna in Tanzania. *Journal of Applied Ecology*, 40(3) <https://doi.org/10.1046/j.1365-2664.2003.00816.x>.

Tukur, M. B. (2013). Conflict Between Transhumant pastoralist and Farmers in Nigeria-The Way out. June 11. Obtained from [pastoralist2.wordpress.com/2013/06/11...](http://pastoralist2.wordpress.com/2013/06/11...)

Uchendu, G. C., Ihedioha, J. I. & Arua, E. O. (2015). Environmental Impact of Pastoral Nomadism on Crop Farming in Ohafia, Abia State, Nigeria. *Discourse Journal of Agriculture and Food Sciences*, 3(10) 148-154.

UNDP (2003). Pastoralism and Mobility in Drylands. Obtained from [www.undp.org](http://www.undp.org).

Wimmer, R. D. & Dominick, J. R. (2000). *Mass media research: An introduction*. (6th ed.) Belmont CA: Wadsworth.