UNIVERSITY OF ILORIN

THE TWO HUNDRED AND EIGHT-NINTH (289TH)
INAUGURAL LECTURE

"SUSTAINABLE, SMART, AND SAFE PASTORALISM IN NIGERIA"

By

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FACULTY OF AGRICULTURE,
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Students of the Faculty of Agriculture and other students, here present
Great students of the University of Ilorin,
Distinguished Ladies and Gentlemen.

Preamble

Bismillah, Alhamdulillah, wa Shukra lillahi 'ala ni'matih (In the name of Allah, Praise be to Allah, and Thanks to Allah for His blessings). It is with the Will of Allah and a heart full of gratitude that I stand before this great audience to fulfil a part of my destiny. Today's lecture is the 289th in the series of Inaugural Lectures in the University of Ilorin, the 23rd in the Faculty of Agriculture and the 3rd in the Department of Agricultural Extension and Rural Development after Professors O.A. Adekunle and G.B. Adesiji. I am deeply humbled to be presenting my Inaugural Lecture as the 1st female Head of Department to earn a

Ph.D., the 1st female Professor of Agricultural Extension and Rural Development, and also, the 1st Professor of Rural Livelihoods in the University of Ilorin. I am equally the 1st Professor of the 2003 Alumni of the Faculty of Agriculture of this great University, and the 1st M.Sc. graduate of Agricultural Extension at Usmanu Danfodiyo University, Sokoto in 2008.

The milestone that is being recorded today was initiated by my father and three other significant people. Growing up, I had unconsciously imbibed the spirit of teaching, research, and community service from my father, whom I later realised was studying for a Ph.D. in Adult Education in addition to being a secondary school teacher at the time. He used to return home very late at night and we (my siblings and I) were required to listen to the network news whilst we gave him a summary upon his return. We dared not sleep, and if per chance I slept accidentally, the sound of his car horn would ensure I woke up and ran to the gate to let him in. Furthermore, my dad was prominent in community and religious engagements, where he played different roles that ensured we related closely with his friends' children. These experiences shaped me into what I have become, and little wonder that I also went the education path of agriculture (Agricultural Extension).

To talk about the trio, the first was late Mrs. Fauziyyah Ali (May Allah grant her the highest rank in paradise). When I informed her I had been admitted to study Agriculture at the University of Ilorin, she said to me, ''that means you must continue straight to Ph.D.''. She called me the day before her demise to follow up on my efforts at job acquisition and obtaining a Master degree. Second was my undergraduate supervisor and immediate past Dean of Agriculture, Prof. O.B. Fawole, who upon completion of my undergraduate project, advised me to first get a job while I continue to add higher degrees, as I navigate the academic ladder. The third significant person and the most crucial event was that of my guardian, who visited Sokoto in 2007, when I had just completed my Master degree. He advised that I apply to the University of Ilorin. I did

apply and was lucky to be one of the three Assistant Lecturers appointed in the Department of Agricultural Extension & Rural Development in 2008. I began an initial Ph.D. under the supervision of Professor Israel Ogunlade, the current Dean of Agriculture, and he encouraged me to seek Ph.D. admission abroad. I, therefore, proceeded to the University of Reading (UoR), United Kingdom for a Ph.D. in 2010. My Ph.D. thesis was titled: *Analysis of Vulnerability and Access to Extension Services for Pastoralist Women in Northern Nigeria*. Today, I shall present my long-standing research endeavours with the pastoralists.

Framing the Discourse: Pastoralism, Pastoralists, and the Climate Conundrum

Mr. Vice-Chancellor, my Ph.D. thesis explored who performed what tasks in pastoralists' households, who had access to, and who controlled what resources. The research exposed the vulnerability indices of the pastoralists' wives and their households. Findings from the thesis inspired me to probe further into the rationale behind the choices that pastoralists make, even as I could not stop seeking information and knowledge about this category of people. My friend, Onyedikachi whom we studied for PhD together would later nickname me a pastoralist/itinerant herder because of the nature of my work and husband's job. I also believe those who know me closely would agree that I am actually a pastoralist by nature. I have therefore titled my inaugural lecture: ***Sustainable, Smart, and Safe Pastoralism in Nigeria***. For clarity, three problems are itemised in this lecture and they are: pastoralists' livelihood insecurity, environmental insecurity, and social insecurity and the suggested tripartite solution are sustainable, smart, and safe practices for an enduring pastoralism in Nigeria.

The dialectical process of thesis, antithesis, prosthesis, and synthesis, as enunciated in this lecture, provides the fulcrum upon which the lecture is hinged, offering a framework for understanding the interconnected development of ideas,

historical events, and societal transformations that this lecture brings together. It will also highlight the complex relationships between farmers and herders, climate change, and the role of the extension practitioners (the Insiders).

Thesis: What is already known, an initial idea, proposition, or state of being that represents the current understanding or status quo. Contextually, traditional pastoralism means herders graze their livestock with pasture and water for survival.

Antithesis: This is the opposite of thesis; hence, a contradictory idea or state of being that challenges the thesis. In this case, climate change impacts such as increased desertification and rising temperatures leading to scarcity of resources, forcing herders to migrate to greener areas, where they consequently conflict with settled farmers.

Prosthesis: A temporary or artificial solution that attempts to reconcile the thesis and antithesis. In this lecture, I shall show measures that have been deployed by governments and organisations, but are yet to yield the desired results.

Synthesis: Today, I am proposing a blend that promotes a peaceful coexistence, reduces conflict, and enhances the resilience of both herding and farming communities. This synthesis, *Sustainable, Smart, and Safe Pastoralism* is projected in the title of this lecture.

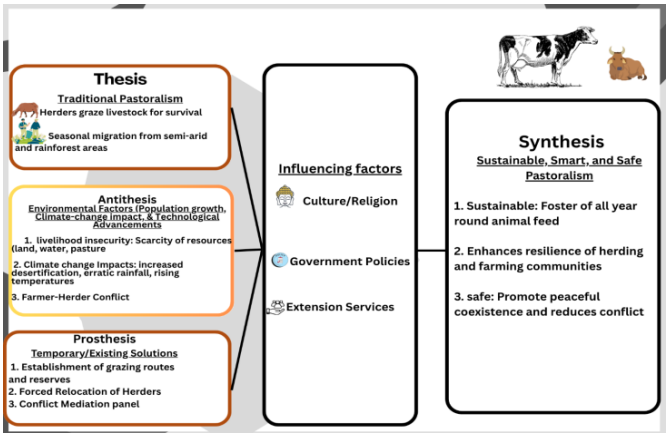


Fig. 1: Pastoralism, Pastoralists and the Climate Conundrum
Source: **Aderinoye-Abdulwahab**, 2025

Vice-Chancellor Sir, Figure 1 shows my thesis and antithesis for this lecture. It depicts pastoralism as an age long livelihood system. I postulate that pastoralists, who are the custodian of cattle, are usually located in dry regions, where impact of climate change has translated into scarcity of resources, insufficient pasture, and shortage of water for their livestock. As a result, pastoralists migrate to the guinea savannah and rain forest regions, where they encroach and feed on farmers' crops causing conflicts and severe losses to the farmers. We, therefore, need to forge a pathway (synthesis) devoid of any encumbrance that will incorporate cultural factors, relevant government policies, and extension services to allow pastoralists to continue their livelihood strategy in a peaceful manner without encroaching on farmers' spaces, thereby reducing/eliminating the altercations between them (Fig. 1).

Caveat: Pastoralism is a way of life for people (pastoralists), whose source of livelihood and economic engagements centre on livestock and herding, irrespective of tribe or religion. It does not include land grabbing, banditry, and any act of terrorism.

In the following sections, I will explore each of these stages in more depth, and discuss what they imply for our understanding of farmer-herder conflicts and climate change**.**

Pastoralism: A Timeless Tradition from the Adamic Era to the Present Day

Mr. Vice-Chancellor, pastoralism, the practice of herding and grazing ruminant animals, has a long and varied history. Its origin can be traced to the Neolithic (Stone Age) period. It can be unequivocally stated that pastoralism as an occupation emerged in the Middle East particularly in areas that include modern-day Sri-Lanka, Iraq, Iran, Syria, Lebanon, Jordan, Israel, and parts of Turkey (Ruthven & Nanji, 2004; Gritzner, 2021). Additionally, evidence show that pastoralism was practised in ancient Mesopotamia, which includes Babylon, ancient Egypt, specifically around the sources of Tigris and Euphrates rivers down to Baghdad. Arguably, both agriculture and pastoralism developed alongside each other, with continuous interactions even from the time of Adam and Eve.

Vice-Chancellor Sir, some historians are of the opinion that Adam and Eve lived within the vicinity of Tigris and Euphrates Rivers around Baghdad (modern day Iraq) (Johnson, 1985), but others were of the opinion that they lived closer to Sri-Lanka (Strathern, 2014). Either way, there is a consensus that the first set of humans on earth lived in the general area of Middle East with religious connotations spreading it across the south and eastern part of Middle East. In truth, both Islamic and Biblical backgrounds gave a converging narration that the first two sons of Adam and Eve, Habil (Abel) and Qabil (Cain) represented two divergent livelihoods of interest that are strongly linked to today's lecture. Cain was a farmer while Abel was a herder. The biblical account has it that Cain and Abel competed over human resource (their sister), and it was reported that whoever offered the better sacrifice would marry their sister. Both the biblical and Islamic contexts mentioned that the two brothers offered sacrifices to God. Abel's sacrifice of a big fat sheep was accepted but Cain's sacrifice of inferior crops was

rejected. Cain (Kabila) therefore killed his brother (The Holy Quran 5: verses 27-30), and this marked the first murder on earth.

Relate to them in truth ˹O Prophet˺ the story of Adam's two sons-how each offered a sacrifice: one's offering was accepted while the other's was not, so he threatened ˹his brother˺, "I will kill you!" His brother replied, "Allah only accepts ˹the offering˺ of the sincerely devout. Quran 5: 27.

Quran 5: 28: *If you raise your hand to kill me, I will not raise mine to kill you, because I fear Allah-the Lord of all worlds.*

Quran 5: 29: *I want to let you bear your sin against me along with your other sins, then you will be one of those destined to the Fire. And that is the reward of the wrongdoers*.

Quran 5: 30: *Still, the other convinced himself to kill his own brother, so he killed him-becoming a loser.*

The narrative of Cain and Abel is rooted in ancient times, but I will attempt to draw some parallels and connections with modern-day farmer-herder conflicts. As an agricultural extension and rural livelihood expert, it can be inferred that, at the root of the conflict between Cain and Abel were resource scarcity, environmental impact, cultural and identity differences, as well as perceived inequalities.

1. **Cultural and identity differences**: The way Abel's animals were a source of provision and worship for him, livestock play a vital role in the cultural, economic, and spiritual lives of many pastoralists' communities today. There are indications that socio-economic factors such as resource scarcity and depletion can often fuel tensions and violence among pastoralists and farmers (**Aderinoye-Abdulwahab** *et al*., 2022) in the same way that scarcity of human resource triggered the conflict between Cain and Abel.

2. **Environmental factors**: evidence has it that environmental factors significantly contribute to modern

day farmer/herder conflict as climate change, land degradation, and water scarcity have been found to exacerbate tensions between farmers and herders (**Aderinoye-Abdulwahab** & Abdulbaki, 2021). Could environmental factors like soil quality and water scarcity, have influenced Cain's poor yield, subsequently resulting in the production of inferior crops?

3. **Perceived inequality**: The acceptance of Abel's sacrifice and the rejection of Cain's, points at perceived inequality. Remarkably, modern-day farmer-herder conflicts often involve perceived inequalities, such as unequal access to: resources, extension services, markets, or government support (**Aderinoye-Abdulwahab** & Adefalu, 2012; **Aderinoye-Abdulwahab** *et al*., 2014). I had argued that pastoralists, as seen in modern-day, see themselves as marginalised, lacking basic and social amenities including infrastructural resources (**Aderinoye-Abdulwahab** & Chimgonda-Nkhoma, 2015; **Aderinoye-Abdulwahab** & Olaniyan, 2015); farmers on the other hand, enjoy better access to extension services, information and farming inputs from government (**Aderinoye-Abdulwahab** *et al*., 2014, 2016a, 2016b, 2017a, **Aderinoye-Abdulwahab** & Chikaire, 2020). Likewise, modern-day farmer-herder conflicts often revolve around competition for resources like land, water, and pasture (**Aderinoye-Abdulwahab** *et al*., 2024b; **Aderinoye-Abdulwahab**, 2025), making pastoralists' cattle feed on farmers' crops.

The story of Cain and Abel's conflict is proof that farmer/herdsman conflict and altercations have a history rooted in ancient period. It serves as a timeless metaphor for struggles between different livelihoods, cultures, and identities. Correspondingly, today's clashes between farmers and herders stem from deeper tensions of competition for scarce resources. Examining the complexities of the Cain and Abel narrative offers valuable insights into the multifaceted nature of farmer-

herder conflicts, highlighting the need for context-specific solutions that address underlying social, economic, and environmental factors. Let us shift our focus to the present day.

Pastoralism and Pastoralists' Livelihood Insecurity in Nigeria

Vice-Chancellor Sir, pastoralism is a livelihood strategy and food systems, which rely on unpredictable climates through livestock production (**Aderinoye-Abdulwahab** *et al*., 2014; **Aderinoye-Abdulwahab** *et al*., 2017a; FAO, 2021; **Aderinoye-Abdulwahab** *et al*., 2024a). Pastoralism is based on the herding of domesticated animals such as cattle, sheep, goats, and camels, on rangelands, where crop cultivation is difficult or impossible due to environmental constraints such as aridity, steep terrain, or poor soils (ILRI, 2021; FAO, 2021). It is a branch of agriculture that contributes about 10 percent of global meat production (ILRI, 2021) and functions as an ecological unit (**Aderinoye-Abdulwahab** *et al*., 2023b). Pastoralism heavily relies on relatively wetter rangeland and farmland to survive during the dry season. It is important to note that rangeland occupies more than half of the global surface and is economically viable for sustainable food production through grazing.

Fig. 2a **Fig**. 2b **Fig**. 2c

2a: **Aderinoye-Abdulwahab**, Hussainah, (her mentee) and some pastoralists 2b: Pastoralists hamlets; 2c: **Aderinoye-Abdulwahab** with pastoralists

Mr. Vice-Chancellor, pastoralists range between 200-600 million people globally and pastoral systems support the livelihoods of about 200-500 million households in Africa alone. Further, pastoral areas in Africa occupy around 40% of

landmass. In Nigeria, a total of 90% of cattle are in the hands of pastoralists and agro-pastoralists and only 10% are with the commercial livestock farmers, thus pastoral and livestock production contribute up to 20% of agricultural GDP with about 1,550MT national meat (361MT beef, 401MT mutton and goat, and other livestock) and 600,000MT national milk production (equating 0.7 billion litres) (FAO, 2021b). It is interesting to note that contrary to common assumptions, pastoralists contribute significantly to the economies of many states (Catley et al., 2013). Cattle population is expected to grow to 53.6 million by 2050, and accountable for about 90% of domestic milk production amounting to 13% of global dairy output (Akpan & Udo, 2021).

The United Nations Development Programme (UNDP) categorises any family that depends on more than 50 per cent of its gross household income on livestock (milk and meat) as a pastoral household, especially if such livestock products are using unimproved pasture (UNDP, 2019). The livestock is considered a significant capital asset for pastoralists in sub-Saharan Africa, and hence, essential for securing their livelihoods (**Aderinoye-Abdulwahab** *et al*., 2024b). There were about 9.2 million cattle in Nigeria as of 1981 (Aminu *et al*., 2024) with an estimated 20 million cattle according to recent estimates (FAO, 2021b; Aminu *et al*., 2024). This puts the country as the 6th largest cattle population in Africa and one of the world's largest (Aminu *et al*., 2024; **Aderinoye-Abdulwahab,** 2025). Accordingly, the importance of pastoralist industry and its contribution to food production in the developing world cannot be overemphasized. Indeed pastoralism is still being practiced in some parts of Americas, Europe, Asia and Australia.

Mr. Vice-Chancellor, in the course of my interactions with pastoralists in Nigeria, I observed that the majority of them are situated in the fringe areas, where access to infrastructure is limited. They are highly vulnerable to shocks brought about by the impact of climate change. Water and pasture for livestock are

mainly scarce in these areas, especially during the dry **s**eason. Moreover, desertification, low rainfall, and prolonged shortage of water and pasture, as a result of impact of climate change, have necessitated their relocation from the arid to the guinea savannah and the rain forest regions (**Aderinoye-Abdulwahab** & Adefalu, 2012; **Aderinoye-Abdulwahab** *et al*., 2017a).



Fig. 3a **Fig**. 3b **Fig**. 3c

3a, 3b, and 3c: **Aderinoye-Abdulwahab**, Dolapo, Komolafe, Mutiu (colleagues and mentees) on a focus group discussion with pastoralists in their community.


Fig. 3d **Fig**. 3e

Fig. 3d: Ibrahim, son of Aderinoye-Abdulwahab and a pastoralist with his flock

Fig. 3e: **Aderinoye-Abdulwahab** with a pastoralist and his flock in one of the study sites during Ph.D. field work, 2013.

Additionally, I found that pastoralists who live within this geographic domain have limited access to social, health, preservatives, and processing facilities necessary for developing the value chain activities of their meat and milk products.



Fig. 4a **Fig**. 4b **Fig**. 4c

4a: **Aderinoye-Abdulwahab** and Hussainah (student), 4b: **Aderinoye-Abdulwahab** with pastoralist women making cheese, 4c: **Aderinoye-Abdulwahab** with pastoralists' women selling cheese

Livestock is undoubtedly a crucial component of pastoral households in Nigeria, contributing to organic fertilizer production, fuel, and other essential products (**Aderinoye-Abdulwahab** & Salami, 2017b). Various studies have shown that pastoralists in Sub-Saharan Africa (SSA) have long suffered from natural and social calamities (**Aderinoye-Abdulwahab** & Olaniyan, 2015; **Aderinoye-Abdulwahab** *et al*., 2016a**; Aderinoye-Abdulwahab** *et al*., 2019; **Aderinoye-Abdulwahab** *et al*., 2022**).** These include land degradation, droughts, disasters like conflicts due to competition for natural resources, malnutrition, falling levels of per capita income, and political isolation.

Additionally, pastoralists in Nigeria rely heavily on crude unhygienic methods for preserving and processing their milk. The poor environmental conditions they live in further exacerbate the quality of their processed milk and cheese. Without a doubt, having sufficient food will not guarantee a good nutritional outcome if certain vulnerability indices such as poor processing techniques, hygiene, and usage of adequate and appropriate preservatives are compromised. Therefore, a livelihood strategy that maximizes milk and meat production and a diet that includes relatively large amounts of animal products with adequate nutritional contents; that are likely to impact the nutritional status of children is urgently required. Not only does livestock management serve as food and a source of animal

protein for rural economies such as the pastoralists, it is also their main source of income generation (**Aderinoye-Abdulwahab** *et al*., 2024b).

Given that pastoralists live in the dry regions, their households require adequate adaptive and coping mechanisms to withstand social, economic, health and environmental challenges associated with dry land situations (Fawole & **Aderinoye-Abdulwahab**, 2021). Poor nutrition and health, and low incomes during periods of low rainfall are chronic problems. The situation is more critical for the wives and children, who are often left behind as men are responsible for seasonal herding. The wives and children of pastoralists depend on milk from their husbands' cattle for sustenance. While pastoralist women are usually culturally restrained from interacting with non-related males, this makes accessing information on nutrition and food safety from the largely male extension agents more problematic. For these reasons, attaining food security and good nutrition, which consequently leads to better health requires a shift from the conventional to a more efficient sustainable and climate resilient food production practices (IPCC, 2019; **Aderinoye-Abdulwahab** *et al*., 2024b).Having established the first problem as it relates to the importance of pastoralism and how it affects people whose livelihoods rely on agro-pastoral system as well as the entire populace, I will then move to situate the second pillar of problem, which is environmental insecurity.

Climate Change Impacts on Pastoralism and Pastoralists' Livelihood

Mr. Vice-Chancellor, an increase or decrease in the average global temperature that subsists over a period of 10 to 30 years is termed climate change (IPCC, 2014, 2019, 2021). Climate change has severe impacts on pastoralism and pastoralists' livelihood, particularly in sub-Saharan Africa. Rising temperatures, changing rainfall patterns, soil erosion, and increased frequency of extreme weather events, such as droughts and floods, affect the availability and quality of pasture and water resources (**Aderinoye-Abdulwahab** & Adefalu, 2012,

2018, 2022; **Aderinoye-Abdulwahab** & Chikaire, 2020; **Aderinoye-Abdulwahab**, 2025). This, in turn, threatens the productivity and sustainability of pastoral livestock systems, leading to reduced livestock numbers, lower incomes, and decreased food security for pastoralist households. Climate-related shocks can therefore aggravate existing social and economic challenges faced by pastoralists, including poverty, inequality, and conflict over resources (Hesse & Pattison, 2013; Ifeanyi-Obi; **Aderinoye-Abdulwahab** *et al*., 2022).

Climate change, therefore, acts as a "threat and risk multiplier" (UNDP, 2020).Climate change has also been reported to reduce flock performance through high pest infestation and diseases as well as less availability of grazing land and pasture (Rao *et al*., 2019). With the rate of change in climate, up to a 25% reduction in productivity of the heavily rain-fed agriculture subsector of Nigeria is predicted by the year 2080 (Okunola *et al*., 2020). Nwaobiala and Nottidge (2015) also predicted 10-20 percent reduction in crop yield by 2050 as a result of climate change, which may translate into a 4.5% reduction in GDP by 2050 and a critical loss of livelihoods and increased poverty for the over 100 million households engaged in pastoralism (OECD/FAO, 2016). Hence, it is apparent that changing rainfall pattern and heightening frequent extreme weather events will make livestock production increasingly challenging, thereby posing different threats to the sustainability of pastoralism in Nigeria.

Vice-Chancellor Sir, pastoralists are highly vulnerable to climate change due to their dependence on natural resources and their limited capacity to adapt to changing environmental conditions. Burning fossil fuels, cutting down trees, or other human activities increase the atmospheric carbon dioxide (CO_2) and other greenhouse gases (GHG), thus amplifying the concentration of these gases leading to a trap of heat and a rise in global temperature. More importantly, about 40 per cent of anthropogenic methane emissions are from agriculture, but the largest part is from livestock's enteric/digestive fermentation

from cattle. Methane (CH_4) emissions per unit of milk and meat output are extremely high and this may be due to low-quality diet intake by the cattle. Furthermore, the livestock sector is estimated to account for 16 per cent of global release of GHG emissions into the environment (IPCC, 2021).

However, there is anecdotal evidence that pastoralism contributes less of the emissions that have caused global warming and climate change because pastoral systems operate as part of rangeland ecosystems and rangelands have been reported among the largest carbon stocks in the world. An assessment of the carbon footprint of a pastoral system, which is based on rangeland ecosystem approach that pastoralism uses and maintains, found it to be carbon neutral (Assouma *et al*., 2019). If pastoralism were to be removed, the forms of land use that would fill the same ecological niche would either release soil carbon or maintain emission rates similar to those of livestock production systems (Manzano & White, 2019). To summarise the technical climate terms that I have elaborated here, I would state the following:

1. More greenhouse gas emissions translate into more carbon; and less greenhouse gas emissions means less carbon in the atmosphere (and a healthier planet!) and with pastoralism, we generally have LESS carbon emissions.

2. Pastoralism often involves grazing livestock on natural rangelands, which can help sequester/lock carbon in soils and vegetation.

3. Pastoralism typically uses low-input systems, meaning fewer synthetic fertilisers, pesticides, and machinery, resulting in lower emissions.

4. Some pastoralist communities employ regenerative practices, such as rotational grazing, which can enhance soil health, biodiversity, and carbon storage.

Vice-Chancellor Sir**,** it is essential to note that some practices, like overgrazing or land conversion (deforestation inclusive), as well as intestinal fermentation from livestock production, can lead to increased emissions. Please note the difference between livestock production and pastoralism as used in this lecture. The earlier is practiced on a commercial scale, is capital intensive, with high inputs and growing feed crops. The practices in livestock production can lead to deforestation, high fertiliser use, and other emission-intensive practices leading to higher global emissions of up to 14.5%. Livestock production also involves transportation, processing, and storage, which can generate additional emissions. Whereas the latter, that is, pastoralism, is typically based on rangelands ecology with lower emissions due to its inclination for high carbon storage as earlier mentioned in this lecture. This said, I am entering the third arm of the problems, social insecurity.

Farmers/Herdsmen Conflicts

Vice-Chancellor Sir, migration can occur either because the environmental quality of a habitat has become unliveable or, more commonly, because the migrant's economic outcome is likely to be better in areas with greater resource availability. It is fundamental to state that one basic feature of herdsmen is migration. Presumably, the eventual effects of migration on host communities' farms will include challenges of socio-cultural integration, pressure on land**,** cultural and social differences, over-population, and social disorganisation; all of which are conflict triggers. All along, the interactions between pastoralists and farming communities had been harmonious. Herders' cattle would usually fertilise the farmers' lands in exchange for grazing rights (International Crisis Group [ICG], 2017). However, one of the most common conflicts in Nigeria today is the farmer-herder conflict, which has led to the destruction of properties and termination of lives.

Mr. Vice-Chancellor, conflict is an inevitable natural phenomenon in indigenous African societies. It is often argued that human beings are by nature competitive and aggressive, and

as such, there will always be conflicts among them. The Eco-Violence Theory (EVT) developed by Homer-Dixon in 1999 explains the relationship between environmental factors and violent conflicts. The theory of eco-violence has its tenets in the migration of large populations, due to deprivation, to areas considered as greener pastures. The large populations would have hitherto depended on resources such as freshwater, cropland, forests; but may be necessitated to move due to scarcity or shrinking of these resources, which could be as a result of increasing desertification, over-use or degradation, and unequal distribution. In this regard, conflict is driven by the desperation of the affected migrant groups, who will normally have the intention of protecting and advancing their livelihoods and economic interests, in the face of harsh economic and climate realities (Olagoke, **Aderinoye-Abdulwahab** *et al*., 2021). Besides, affordable quality fodder all year round is a great challenge, and this predisposes the pastoralists into serious conflict situations with farmers whilst this now poses serious security threats and far-reaching consequences for the nation at large (ICG, 2017; **Aderinoye-Abdulwahab** *et al*., 2023b).

Fig. 5a

Fig. 5b

Fig. 5c

5a: A flock of cattle feeding on farmer's crops in Kw. State, 2011, 5b: **Aderinoye-Abdulwahab** and a pastoralist with his flock and 5c is a flock of cattle on a farmer's plot. Pictures were taken during the Ph.D. fieldwork in Kwara State, 2011.

Reports from literature already suggested that resource scarcity is caused by variables such as: population growth, climate change, and lack of access and control over productive resources (Ribot & Peluso, 1993; Homer-Dixon, 1999; **Aderinoye-Abdulwahab** *et al*., 2016a). Thus, environmental

resource scarcity will constrain agricultural and economic productivity, further inducing the disruption of economic livelihoods, poverty and migration. As such, my research over the years presupposes that pastoralists and their host communities have continued to have altercations due to the pressures associated with the challenges of integration, climate change impact and lack of basic and social infrastructure and other conflict triggers.

Table 1: Farmers/Herdsmen Crises Statistics in Nigeria

Farmers/ Herdsmen Clashes	**Number of Deaths**	**Number of clashes**	**States Affected**	**Source**
Farmers/Herdsmen Clashes (2014)	1200	Several Clashes, Over 34 Reported	Plateau, Adamawa, Taraba,	Global Terrorism Index
Farmers/Herdsmen Clashes (2017)	Over 2000	Several Clashes	Benue, Taraba, Plateau, Adamawa, kogi Nasarawa	Sahara Reporters
Farmers/Herdsmen Clashes (2018)	Over 3641	Several Clashes	Adamawa, Benue, Kaduna, Ondo, Taraba	Amnesty Internatio nal
Farmers/Herdsmen Clashes (2020–2024)	2,347	5,291	North-central, North-west, and South-west	Premium Times, This Day
Farmers/Herdsmen Clashes (2024)	467	Over 359	North Central highest Impact	NEMA, Recent Reports (T.V Channels)
Farmers/Herdsmen Clashes (2025)	Over 20	Unspecifi ed	Mostly North-central and South-west	Recent Reports on News Channels

Aderinoye-Abdulwahab, 2025

Vice-Chancellor Sir, the farmer-herder conflicts have also resulted in large scale displacement of people from their native lands (**Aderinoye-Abdulwahab** *et al*., 2022, **Aderinoye-Abdulwahab** *et al*., 2023b). Indeed, in recent times, the tensions

and reports of violence relating to cattle herders have spread throughout northern and southern states of Nigeria and incidents have occurred in a minimum of 30 out of the 36 states (**Aderinoye-Abdulwahab** *et al*., 2019). Some reports have it that all 36 states have experienced some level of farmer/herder conflict or the other. An example was seen in March 2025, where it was claimed that armed herders invaded no fewer than four communities and killed over 20 farmers in Akure-North of Ondo State. Again, in Adamawa State, Mr. Jackson, a farmer was convicted for manslaughter although he claimed self-defence from a herder's attack on his farm. Mr. Jackson had been sentenced to death by the lower court in 2015. The judgment was sustained by the appellate court in 2021 and affirmed by the Supreme Court on the 7th of March 2025. These killings must stop and the conflict will have to be abated! The following is a poem, as composed by an unknown author, which was adopted from a *WhatsApp* post. Although the poem focused on Nigeria's North, there are indications to show that the crises has spread all over Nigeria.

Herdsmen and Farmers' Crops Destructions
In Nigeria's north, where plains are wide
A crisis brews, with farmers beside
Their livelihoods, torn apart by strife
As herdsmen destroy their life

With cattle's migt, they trample and tread
On crops that grew, with sweat and careful spread
The farmers' toil, laid waste in a day
Leaving them with nothing, but a hopeless sway

Why must you destroy, what others have sown?
Why must your cattle, feed on crops not their own?
Can't you see, the hunger and the pain?
The families suffering, the children in vain?

We're all Nigerians, under the same sky
Why can't we coexist, with a peaceful sigh?
Let's find a way, to resolve this strife
For the sake of all, and a peaceful life

Let's protect the farms, and the farmers' right
To grow and harvest, without a constant fight
Let's promote dialogue, and a peaceful coexistence
Between the herdsmen, and the farmers' persistence

For a brighter future, where all can thrive
Let's end this destruction, and let peace survive.

Source: Unknown Author, 2025

Vice-Chancellor Sir, pastoralists believe that local political leaders have tended to favour sedentary farmers, whose votes they crave, over itinerant herders, who may not be around at election time. Hence, herders feel increasingly marginalised (**Aderinoye-Abdulwahab** & Chimgonda-Nkhoma, 2015) and are largely distrustful of local political leaders as conflict mediators. Following the rising spate of attacks, the Benue State Government of Nigeria banned open grazing in the year 2017. All of these interventions are yet to be fully implemented. Onifade (2018) and Ifeanyi-Obi, **Aderinoye-Abdulwahab** *et al*. (2022) also identified poor government policies as well as ineffective dispute resolution strategies, as major causes of conflicts between pastoralists and farmers. Up until now, the suggested solutions are yet to be attainable. Consequently, my research in recent years has taken a slight turn from the status quo ante, by introducing the Tripartite Approach to address the established problems and chaos that have been provoked by the indices of climate change. This leads to the offering of the three potential solutions with the expectation that they will go a long way in abating the identified problems.

The Sustainable Approach to Strengthening Pastoralists' Livelihoods

Vice-Chancellor Sir, I propose grassland intensification as a sustainable solution to the environmental insecurity occasioned by climate change impact. Grassland intensification protects the environment and enhances carbon and water storage under constant livestock management. It will also prevent environmental pollution in the sense that carbon sequestration is

aimed at reducing the carbon in the atmosphere while grass plantation will help to achieve this, because plants take in carbon dioxide and release oxygen. Thus, more carbon is locked in the soil and less carbon released into the atmosphere. Equally, grassland intensification enhances soil health and reduces soil erosion. All of these translate into reduction in greenhouse gases, reduction in competition for scarce resources and by extension, promotion of peaceful coexistence between farmers and herders (**Aderinoye-Abdulwahab** *et al*., 2024a; **Aderinoye-Abdulwahab** *et al*., 2024b; **Aderinoye-Abdulwahab**, 2025). This approach will directly contribute to Nigeria's efforts to achieve Sustainable Development Goals (SDGs) on no poverty, zero hunger, sustainable cities, climate action, life on land, peace, justice and strong institutions. It is believed that "Greening the Peace" will not only make a significant contribution to tranquility, but will also add to Nigeria's sustainable development and peace-building efforts.

Grassland intensification through the cultivation of Napier grass (*Pennisetum purpureum*), in particular, and its processing into silage and hay in order to ensure environmental security and availability of quality forage and feed for all year-round use, can serve as an enduring means to reduce the greenhouse emissions in the environment as well as solve the ravaging security issues in the country. Napier grass is a fast-growing tropical forage that can be cultivated on any type of soil and it reaches maturity in 3 months. This means it can be harvested 3- 4 times in a year, thereby helping to attain feed-sufficiency for ruminant animals. Napier grass cultivation is expected to result in improved environmental sustainability through enhanced soil conservation, reduced land degradation, and increased carbon sequestration. Scaling up Napier grass cultivation will translate into the establishment of demonstration plots, and development of Napier grass value chains. Permit me to quote, again, from the Quran. *...And We send down water (rain) from the sky and made the earth fertile, causing every type of goodly plant to grow on it* (Quran 31:10).



Fig. 6a **Fig.** 6b **Fig.** 6c

Fig. 6a, 6b and 6c: Cultivated Fields of Napier grass (*Pennisetum purpuruem*)



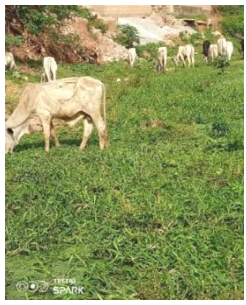


Fig. 7a **Fig.** 7b **Fig.** 7c

Fig. 7a, 7b, and 7c: Uncultivated Spots of Napier Grass

The conversion of Napier grass to hay and silage will enhance body weight of cows and massive cultivation in the form of grassland intensification will effectively lower the rate of greenhouse gas emissions as cattle's release of methane (CH_4) into the atmosphere is quite high (**Aderinoye-Abdulwahab** *et al*., 2024a). The use of Napier grass (*Pennisetum purpureum*) as livestock feed will reduce the pressure on natural resources while also promoting environmental conservation, reducing the pressure on natural resources and promoting sustainable land use practices. Grassland intensification will also help to combat desertification, increase tracking, support community-based conflict resolution, establish grazing reserve and encourage ranching.

The Smart Approach to Strengthening Pastoralists' Environmental Security

Mr. Vice Chancellor, the second potential solution to the identified problems is the use of Climate-Smart Agricultural Practices (CSAPs), herein referred to as the Smart approach. Climate-smart agriculture (CSA) is an integrated approach for managing crop lands, livestock, forests and fisheries production. Climate-smart agricultural practices (CSAPs) is not a solution to climate change itself, but an initiative that looks at addressing the interlinked challenges of food security and climate shocks (Ifeanyi-Obi, **Aderinoye-Abdulwahab** *et al*., 2022). It also aims to increase productivity, enhance resilience, and reduce greenhouse gas emissions to promote a sustainable and safer environment (**Aderinoye-Abdulwahab** *et al*., 2024a). Hence, I will show how CSAPs can help pastoralists increase productivity and resilience (adaptation) whilst reducing the emission of green-house gases in their environment. Examples of CSAPs that I am proposing are:

1. **Traditional pastoralism** is a climate-smart agricultural practice that has the potential to increase carbon stocks and lower greenhouse gas emissions in the atmosphere, particularly when implemented in conjunction with sustainable land management practices and in regions with suitable climate and soil conditions (Manzano & White, 2019). Not only this, traditional pastoralism, when practiced in a sustainable (e.g. ranching) and peaceful manner (e.g through grazing routes and reserves), can also contribute to mitigating the environmental impacts of climate change.

2. **Another climate-smart practice** is **good grazing** as it supports carbon sequestration given that pasture which contributes as little as 7% to global emissions from agriculture can store 200-500kg Carbon (C) per hectare of land (Assouma *et al*., 2019; Manzano & White, 2019). Browsing of grassland by cattle makes it easy for pasture roots to be displaced in the soil thereby

encouraging microorganisms to feed on the displaced roots and consequently encouraging carbon sequestration.

3. **Breed selection** is also a smart approach as it is essential that pastoralists choose climate-resilient livestock breeds (Assouma *et al*., 2019). This is because some breeds are drought resistance while some are drought tolerant.

4. **Improved nutrition** is also a smart practice and can be achieved by optimising livestock diets through pasture improvement and supplemental feeding practices (**Aderinoye-Abdulwahab** *et al*., 2024b).

5. **Water saving**/retention irrigation technique including rainwater harvesting (Opiyo, *et al*., 2024).

6. **Relocation** from climate risk zones (migration) (**Aderinoye-Abdulwahab** *et al*., 2024b, Fawole & **Aderinoye-Abdulwahab**, 2021), and livelihood income diversification (**Aderinoye-Abdulwahab** *et al*., 2018).

7. **Early warning systems**, especially by the Nigeria Metereological Agency (NiMET), to allow farmers and pastoralists to plan ahead of droughts and floods (**Aderinoye-Abdulwahab**, 2025).

The earlier mentioned Napier grass cultivation is equally a climate-smart agricultural practice. Other climate-smart agricultural practices that pastoralists can adopt include improved and more tolerant pasture varieties (e,g. Bracharia (bread or palisade grass), guinea grass, Pangola grass), integrated/mixed farming, crop rotation and diversification, climate information services, agroforestry, strengthening resilience of pastoralists through income diversification so they can adapt better to climate change impact, and leguminous plants such as *Stylosanthes*, which usually serve as protein component for permanent pasture. This then leads me to the third leg of the proposed solution.

The Safe Approach to Strengthening Pastoralists' Livelihoods, Environmental and Social Security

Mr. Vice-Chancellor, while the insiders as used in this framework are the extension agents, agricultural extension primarily focused on empowering people to acquire skills for beneficial life changes through education (**Aderinoye-Abdulwahab** *et al*., 2014; Maulu *et al*., 2021). Ab-initio, agricultural extension aimed at transferring new technology to rural communities, thereby improving their lives. However, there have been reports emphasising the need for extension to shift from knowledge transfer to facilitation of learning. Extension has therefore been regarded as aprocess of getting farmers to do what they would otherwise not have regard for; hence, the need for proper choice of approaches and delivery methods in order to attain the extension's objective (**Aderinoye-Abdulwahab** *et al*., 2016b, **Aderinoye-Abdulwahab** *et al*., 2023b).Agricultural extension agents, in the past, have collaborated with veterinary professionals to offer vaccination programmes, disease surveillance, and treatment services (**Aderinoye-Abdulwahab** & Nkhoma, 2015).

Previously and especially in the 1980s, agricultural extension in Nigeria largely used approaches such as the training and visit (T&V), farmer field schools, and commodity approach extension model; but emerging extension practitioners including my humble self believe that extension should adopt a combination of more participatory and contemporary methods (**Aderinoye-Abdulwahab** *et al*., 2023b). It is therefore important for extension service to adopt a fusion of the traditional and modern approaches that would result in an improved extension outreach as well as holistic national development. A participatory approach to conflict resolution fundamentally has the affected group at the centre, as this will be a more efficient way to achieve the goal of resolving conflict. Through the participatory approach, farmers and herders can be included in the decision-making process that will lead to the development of a total resolution package. Extension service

should, therefore, be participatory, and implementers must ensure that the potential beneficiaries are involved in the design of the proposed programme through a targeted needs assessment (**Aderinoye-Abdulwahab** *et al*., 2023b).

Vice-Chancellor Sir, effective extension service could help to develop better processing methods and preservatives for milk and its products as a safe and empowerment strategy for pastoralist women. This is to further reduce the spoilage of milk products and ensure a regular supply of nutritious milk across seasons in the face of fluctuations of changing climate and poor environmental conditions as this will ensure economic empowerment for this category of people. Besides, extension helps to build resilient capacities among vulnerable individuals by encouraging wide participation of all stakeholders and developing appropriate frameworks for coping and adaptation that can also help to mitigate the effects/impacts of climate change (Ogunlade, **Aderinoye-Abdulwahab**, & Mensah, 2014).

Moreover, my experience as an extension expert (an Insider), has shown that extension agents have high knowledge about climate change impact, its causes, effects and adaptation/ mitigation methods (**Aderinoye-Abdulwahab**, 2025). I equally found that timely intervention and access to veterinary care reduce livestock mortality and improve overall herd health while extension workers double as veterinary doctors in rural communities (**Aderinoye-Abdulwahab** & Adefalu, 2012). So, it is very important to adopt and embrace the use of extension agents (the Insiders) to help mitigate the effects of climate change on the livelihoods of pastoralists. Invariably, the safe practices that can be used to cushion the effect of the highlighted vulnerabilities include provision of an inclusive agricultural extension service, land use and appropriate government policies (**Aderinoye-Abdulwahab** *et al*., 2016a, 2018, 2019), among others.

For example, the Federal Government of Nigeria through the Ministry of Agriculture has launched the National Electronic Extension Platform (NEEP) to improve farmers'

productivity as well as enhance agricultural extension service delivery. The federal government has also constituted a livestock reform committee under the newly created Ministry of Livestock Development with a view to restructuring pastoralism and grazing techniques associated with livestock rearing in the country. Other approaches include advocacy on modernisation of livestock rearing system and improved breed adoption among the small-scale farmers.

Agricultural extension services can potentially be provided by three main sources: the public sector, the private non-profit sector, and the private for-profit sector. The public sector includes ministries and departments of agriculture and agricultural research centres. The private non-profit sector includes local and international non-governmental organisations (NGOs). The private for-profit sector consists of commercial production and marketing firms, commercial farmers or farmer group-operated enterprises.

Therefore, Mr. Vice-Chancellor, I unequivocally submit that a pluralistic, bottom-up, but preferably public private partnership approach to agricultural extension services be embraced by government, farmer-based organisations, NGOs and active participants in agricultural value chain. This will help to facilitate the needed advisory services in order to achieve improvement in livelihoods and reduce vulnerability, such as those occasioned by scarcity of resources among pastoralists and farmers. To recap, the three potential solutions as illustrated in this lecture are sustainable practices (such as grassland intensification), adoption of climate-smart agricultural practices (breed selection, rotational grazing, conservation agriculture), and a safe but effective and efficient deployment of extension service and extension agents (the Insiders).

My Contributions

A: Contributions to the Community

Mr. Vice-Chancellor, beyond the academic environment, I engage in activities that aim at enhancing livelihoods and food security. At home here in the University of Ilorin and

surrounding communities, I participated in capacity building training on climate-smart agricultural practices for vegetable farmers in Sentu and Ile-Apa Communities. In collaboration with Aderonke Foundation, I have provided 2 windows tablets to pastoralists' children in Agbabiaka and Iponrin communities to reduce the number of out-of-school children. I served as the Treasurer to the Faculty of Agriculture Muslim Forum from 2019 to 2022. I was also the Treasurer to the University of Ilorin chapter of NiWARD from 2020 to 2023, Treasurer to Children and Youth in Agriculture (CYIAP) from 2015- 2019.

Fig. 8a

Fig. 8b

Fig. 8c

8a: **Aderinoye-Abdulwahab** with Ile-Apa Women Vegetable Farmers; Figures 8b and 8c: **Aderinoye-Abdulwahab**, Adekola and Fawole on a vegetable farm at Amoyo Community, Ilorin where women vegetable farmers were enlightened and taught climate-smart agricultural practices that are beneficial to vegetable farmers.

Mr. Vice-Chancellor, as a way of giving back to the community, I have been engaged in philanthropic activities for decades and this has culminated into a registered NGO, where I am a co-founder; Aidant Shades Counselling and Family Support Initiative which is targeted at fostering family bliss. At Aidant, we have empowered women who are vulnerable (particularly widows, divorcees, and the marginalised), and hence, deserving of financial, marital, and family-life supports. Aidant also helps to groom and reform young adults with adolescent challenges.

B: Contributions to Professional Associations

On a national scale, I am a member of the Nigerian Forum for Agriculture and Advisory Services (NIFAAS), where I am the team lead for the Foresight and Climate-Smart Working Group (F&CSA-WG). Specifically, I led the North-central zone of NIFAAS on a national policy discourse to promote the uptake of CSA Practices in Nigeria and this led to my participation in the inclusion of CSA and gender issues in the National Agricultural Extension Policy, 2020-2022.I also participated in the compilation of climate smart initiatives in Nigeria for onward compilation in the Africa Climate Smart Activity Data base. Still, as a member of the Policy Working Group of NIFAAS, I was part of the team that worked on the inclusion of CSA in the National Agricultural Extension Policy for Nigeria. I am equally a member of several professional bodies both at home and abroad.

C: Contributions to the University

1. Vice-Chancellor Sir, I was Head of Department between 2023 and 2024. Under my leadership, the Department, for the first time in its 43 years of existence, published a textbook, which serves as instructional material to aid teaching and learning for all agricultural extension students from undergraduate to Ph.D.

2. I was a Postgraduate Coordinator, Examination Officer, Sasakawa Coordinator, Secretary Departmental Postgraduate Committee, and Departmental Welfare Secretary at different times in my career.

3. I have supervised well over 100 undergraduates and more than 25 M.Sc. projects and dissertations. I have successfully supervised 2 Ph.D. theses (one of which is a current Head of Department at Federal University, Dutsinma), and 4 others are on-going.

4. I served as GNS lecturer and taught the Sandwich Programme at the Institute of Education, University of

Ilorin. I equally served in various university committees such as the Committee that drafted the Policy on Lecture Delivery in 2021.

5. I earned a certificate on Supervising Doctoral Candidates at African Universities from Stellenbosch University, South Africa (2020).

6. I earned a Professional Diploma in Education (PDE) from Ahmadu Bello University, Zaria (2007).

7. I won an Institutional-Based Research Grant on Gender differentials and Attitudes of Smallholder Farmers towards Home Gardening in Southwest Nigeria. The research produced 2 published journal articles.

8. I am the principal investigator in a National Research Fund (Tetfund NRF 2024), where the research is focused on Leveraging Blockchain Technology for Secure and Transparent Agricultural Supply Chains in Nigeria.

9. A Certificate in French Language Alliance Francaise D'Ilorin (2008) as well as from the Nigerian French language Village, Badagry (2003).

10. Currently, I am a student of cultural studies at the Centre for Cultural Studies in the University of Ilorin, where I am learning more about the culture of different tribes in Nigeria.

D: Contributions to National Development

1. Mr. Vice-Chancellor, I have served as external examiner to various tertiary institutions some of which include Federal University of Agriculture, Abeokuta, Kwara State University, Malete, National Defence College, Abuja, Kaduna State University, Kaduna, and as facilitator and at National Open University, Nigeria (NOUN).

I was North-central Coordinator for a National Policy Discourse on Strengthening the Uptake of Climate Smart

Agriculture among Stakeholders in Nigeria, 2020 and also served as the National Coordinator for CAADP-XP4 project in 2025.

Fig. 9a

Fig. 9b

Figure 9a: Participants from Agricultural Institutions from across the North-central Zone of Nigeria at the CSA-TIMPs National Policy Discourse (2020).

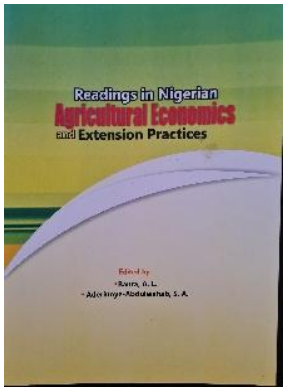
Figure 9b: National Policy Discourse on Climate-Smart Agriculture: Technologies, Innovations, and Management Practices. Sponsored by African Forum for Agricultural Advisory Services (AFAAS), May, 2020. From left to right: Dr Philip Ifejika (National Institute of Freshwater Fisheries Research (NIFFR), New Bussa, Kwara State), Professor T. O. Amusa (Department of Forestry, University of Ilorin), Professor Olanrewaju (Geography Department, University of Ilorin), Prof. **Aderinoye-Abdulwahab**, and Mr. Abdulrahman Olumoh (Kwara State Ministry of Environment).

1. I participated in the Annual Review Workshop on Action Research and Development under the TRIMING Project funded by the World Bank and the Federal Ministry of Water Resources in Sokoto, Nigeria.
2. I was a postdoctoral research fellow at National Agricultural and Extension Research Liaison Services (NAERLS), Ahmadu Bello University, Zaria (2022-2023).

Fig. 10a **Fig.** 10b

Fig. 10a and 10b: **Aderinoye-Abdulwahab** and Tologbonse (Host Supervisor) during her postdoctoral research at NAERLS, ABU, Zaria

1. I was a visiting Senior Lecturer at Kaduna State University (KASU), Kafanchan, Kaduna State 2019-2020. During my stay at KASU, I edited two instructional materials for Agricultural Extension Programme.



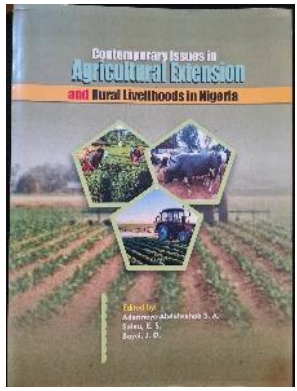


Fig. 11a **Fig.** 11b

Fig. 11a and 11b: Copy of books edited by **Aderinoye-Abdulwahab** during her Sabbaitical Leave at Kaduna State University, Kaduna (2019)

2. I, along with one of my mentees, won a Future Africa Research Leadership Fellowship (FAR-Leaf) Award, University of Pretoria, South Africa, where I am currently serving as the home Supervisor (2025-2027).

Fig. 12: **Aderinoye-Abdulwahab**, Ololade Abdulrahman (FAR Leaf Research Fellow) and Sola Komolafe (Mentee & Lecturer at KWASU).

1. I have mentored several undergraduates and graduate students as well as young professionals. Many are in the academia within Nigeria and some others are outside the shores of the country.

Fig. 13a **Fig**. 13b

Fig.13a: **Aderinoye-Abdulwahab** and her students at the Kwara State Agricultural Development Project (KWADP) during an educational and institutional visit by the Farm Practical Year Students (2024).

Fig. 13b: **Aderinoye-Abdulwahab** carrying her daughter- Salmah flanked by her Ph.D. supervisors, Professors Henny Osbahr and Sarah Cardey, 2013).

Other Engagements

i. I held a Rashak Farms & Agro-Allied Climate-Smart Extension Award (2024-2025)
ii. I was a postdoctoral scholar of the Islamic Development Bank (2021)
iii. An awardee- European Union Animal Change Project (2015)

Conclusion

Vice-Chancellor Sir, it is my hope that I have been able to make insightful clarifications, sharpen, as well as deepen an understanding of the plight of pastoralists, the rationale behind the choices they make, why they are perceived as marginalised and vulnerable, and the reasons they take certain decisions. I believe this interaction has ensured a holistic understanding of the dry region and people living in these areas. Summarily, the complex interplay of livelihood, environmental and social insecurity challenges facing pastoralism in Nigeria requires a multifaceted solution. As we strive for an aggregation of sustainable, smart, and safe pastoralism in Nigeria, I'll like to leave us with the words of our creator, who reminds us thus: '*And He created the cattle for you; in them is warmth and numerous benefits, and from them you eat*.'

Recommendations

Vice-Chancellor sir, given that pastoralism and farming are the first professions on earth coupled with the fact that farmer/herdsman conflict led to the first killing on earth, there is therefore, an urgent need to address the root causes. I, therefore, recommend that pastoralists and farmers, government and policy makers, and extension agents engage in the following to ensure a sustainable, smart, and safe pastoralism in Nigeria.

1. The Federal Government through the newly created Ministry of Livestock Development should immediately adopt sustainable pastoralism through grassland intensification (by cultivating large expanse of pasture fields). Extension agents will serve as experts to guide

on crop rotation and management, agroforestry, rotational grazing, and pasture restoration, among others.

2. The pastoralists should adopt smart pastoralism, which includes adoption of climate-resilient breeds, the use of drought-tolerant pasture species, improving rain water harvesting, water conservation, and efficient irrigation systems.

3. Livestock extension agents should provide sensitisation and socio-cultural campaigns to encourage inter-marriages between pastoralists and their hosts (the farmers). This will ensure they imbibe each other's social values and help to foster peaceful coexistence.

4. NiMET should adequately scale down weather forecast information through media and viable agro-climate cooperative. The Agency must step up their scope to focus, not only on farmers but, to include pastoralists.

5. Policy makers should formulate and implement relevant pastoral policies that will enhance the implementation of existing grazing reserves and ranching.

6. Pastoralists need to urgently abate soil erosion and deforestation as well as increase carbon stocks by reducing greenhouse gas emissions, to ultimately reduce climate change impacts. Again, extension agents have a huge role to play in achieving this.

7. The newly established Ministry of Livestock Development should promote safe pastoralism by educating and enlightening pastoralists as well as creating conflict mediation units that will specifically serve the need of pastoralists through massive deployment of livestock extension workers (the Insiders).

8. Extension agents should promote a safe environment among pastoralists by encouraging them to embrace dialogue, negotiation, and conflict resolution mechanisms.

9. The Federal Government should create social protection programmes to strengthen resilience of pastoralists' wives. This should include institution of skill acquisition programmes and empowering pastoralist women through income diversification as this will help them mitigate and adapt to climate change impact. This will also reduce the pressure on resource use scarcity.

10. Extension agents should incorporate enlightenment and campaign against discrimination of the pastoralists among the host communities.

11. The Federal Government should increase budgetary allocations for Agriculture and Livestock Development Ministries to at least 10% of the total, employ qualified livestock extension agents, as well as train and retrain extension agents.

12. The Federal and State Governments through the Ministries of Environment and Livestock Development should enforce existing laws that support CSAPs. For example, there is a need to control open grazing, indiscriminate tree-cutting and license of firewood/charcoal business owners.

Endowment Fund (#1,500,000)

As a way of giving back to the society and encouraging future generations of womenfolk, I want to pledge the sum of One million, five hundred thousand Naira (#1,500, 000) only, as endowment.

A: Colonel Ibrahim Bolaji Abdulwahab Award for the Best Graduating Student of Agricultural Extension and Rural Development

A sum of #750,000 to be disbursed as an award of #50, 000 annually to the best graduating student of Agricultural Extension for the next 5 years; thereafter a sum of #100,000 for the following 5 years (Year 6-10) in honour of my husband for his unwavering spirit, unflinching support, and overwhelming

dedication towards my success. His encouragement has been without borders.

B: Hajia Fauziyyah Kehinde Ali Award for the Best Graduating Female Student of Agricultural Extension and Rural Development

A sum of #750,000 in memory of Hajiya Fauziyah Kehinde Ali for directing me towards the acquisition of a PhD and setting the stone that culminated into today's achievement to be disbursed for the best graduating female student of Agricultural Extension and Rural Development in a #50,000 annual award for the next 5 years; thereafter a sum of #100, 000 in the following 5 years (Year 6-10). May the Almighty Allah continue to repose her soul and protect her from the punishment of the grave.

ACKNOWLEDGEMENTS

I acknowledge and appreciate the Almighty Allah for directing me towards sustainable, smart, and safe paths. Special praise and thanks to our creator for making this day possible. My gratitude to Him is endless and I pray that His infinite mercy continues to safeguard and sustain all of us in smart ways.

Vice-Chancellor Sir, Man laa yashkuru-n-naas, laa yashkuru-llah (He who does not thank people, does not thank Allah). Thus, I sincerely appreciate all my supervisors (Professors E.B. Tologbonse, Henny Osbahr, Sarah Cardey, B.F. Umar, M.D. Magaji & O.B. Fawole), mentors, friends and family who have made it to this lecture both physically and virtually. May the Almighty Allah safely return all and sundry back to their destinations. I would also like to appreciate the current administration under the leadership of the Vice Chancellor. Professor Wahab Olasupo Egbewole (SAN) in whose regime I was promoted to the rank of Professor in 2023, and for demonstrating an unwavering spirit of support, steadfastness, and dedication as he ensured a sustainable, smart, and safe environment that allowed me to flourish.

I equally acknowledge past Vice-Chancellors, for the role they played in my career path. I want to specially acknowledge and appreciate Professor Emeritus Is-haq Olanrewaju Oloyede, who appointed me into the service of the University of Ilorin in 2008. I should not forget to appreciate the immediate past and current Chairmen, Library and Publications Committee, for their contribution to the successful presentation of my inaugural lecture. I am grateful to the Head of Department, Dr. K.F. Omotesho and the entire academic and non-academic staff of the Department of Agricultural Extension and Rural Development, University of Ilorin. To my colleagues with whom we have smartly worked in safe and sustainable spaces, some call us the three musketeers- Professors L.L. Adefalu and S.A. Adebayo, let us continue to work smartly and sustainably.

Through my husband and dad's effort as a community uncle, I have consequently and by extension gained so many non-

biological fathers and mentors. Hence, I start with a set of significant fathers, brothers, and mentors who among them made initial payment towards my Ph.D. at the University of Reading. One of them actually bought the academic gown that I am wearing today. Therefore, I specially acknowledge Professor Emeritus Is-haq Olanrewaju Oloyede and wife, Dr. Roheemah Oloyede, Professor Yusuf Olaolu Ali and family, Professor Wahab Olasupo Egbewole, SAN, Dr. Aliu Badmus and family, Dr. Wale Babalakin (B.O.B), Bro. Kunle Adedigba, Major General Adeniyi Oyebade (Rtd.) and wife, Mrs. Florence Oyebade, Bro Yunus Akintunde, Bro. Tunde Lawal, Prof. Modinah Abdulroheem & family, late Uncle Soliu Bello & family, and late Justice Muhammad Mustapha Akanbi and the entire family of the late Justice.

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