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KEY ISSUES IN LIVELIHOODS SECURITY OF MIGRANT FULANI PASTORALISTS: EMPIRICAL EVIDENCE FROM SOUTHWEST NIGERIA

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ABSTRACT

The study presents empirical evidence on issues related to the security of pastoralists' livelihoods in southwest Nigeria, with an understanding that their migrant status will affect secured access to basic natural resources required for survival of their herds and as well livelihoods sustenance. Qualitative and quantitative data were collected from 120 Fulani pastoralists from three States (Ogun, Oyo and Ekiti) on livelihoods, perceived sources of vulnerability and indicators of livelihood security. Focus group discussions (FGDs) were conducted in the Fulanis settlements using a semi-structured checklist while quantitative data were collected using interview guide. The assessment of livelihoods assets' security was based on Macqueen's asset enumeration method. The asset assessment shows that Fulanis have unsecured livelihoods due to unsecured access to grazing resources. A scoring of identified indicators shows that peaceful coexistence with Yoruba host communities ($z = 1.7$) and collective action ($z = 0.6$) have higher probability of being selected as livelihood security indicators. Poor access to land for grazing and water inadequacy were perceived as major sources of livelihood vulnerability. Reduction of Fulanis' vulnerability through secured rights on land, enhancement in the efficiency of existing livelihoods, improvement in livelihoods asset are imperative for livelihoods security.

Keywords: Fulani, Grazing, Livelihoods, Migrants, Pastoralists, Security, Southwest Nigeria, Yoruba

INTRODUCTION

Africa has an estimated 30 million pastoralists out of which about 10 million are found in Nigeria (Islam, 2001). The Nigerian pastoralists are made up of various ethnic groups such as *Kenembu*, *Buduma*, *Bodawi*, *Shuwa-Arab*, *Koyo*, *Manga*, *Fulbe*, and *Borobro* among others. The largest group of pastoralists is the *Fulbe* or Fulani that constitute about 95 per cent of the nomadic herders in Nigeria. Bearing at least 13 names in West Africa, and found in more than twenty

countries, the Fulani make up the continent's most diffuse ethno-cultural group (Islam, 2001). The Fulanis in Nigeria are mixed among Hausas in the northern part of the country and are the custodian of the nation's herd. Hausa is a major ethnic tribe spread across the northern part of Nigeria. The Hausa are a Sahelian people chiefly located in the West African regions of northern Nigeria and southeastern Niger.

The Fulani pastoralists had immigrated into

Hausa land from the Senegambia valley in the Western Sudan (Adebayo, 1995). Their immigration spanned several centuries; they traversed the West African savanna in small groups; their unit of migration is the compound family, reflecting the patrilinear system. The deteriorating environmental conditions, land degradation and the recurrent drought that hit the Sahel region during the 1960-70s largely account for the exodus of Fulani herdsmen from their homelands into the northern guinea savanna of West Africa (Tonah, 2002). The last three decades have been characterised by a further change in the pastoral migratory pattern. Fulani pastoralists have moved even further southwards to the fringes of the humid tropical forest.

These movements towards the forest zone have been observed in all the coastal countries of West Africa. The control of the tsetse fly, widespread availability of veterinary medicine, increasing use of crossbred cattle, availability of pasture, low cattle population densities, proximity to markets, and the need for the migrant Fulani pastoralists to establish reciprocal relations with the host population largely explain their migration and settlement in the savanna and the forested southern areas (Blench, 1994; Tonah, 2001; Fabusoro, 2006). The movement of pastoralists into the savanna and the fringes of the forest zones have brought to the fore the issue of security of their livelihoods amidst several socioeconomic and political impediments which have limited their access (and control) to vital resources needed.

Fulanis are typically known for drawing their livelihoods from livestock herding. They rely on mobile livestock rearing as a livelihood strategy for human survival and

socio-economic development. Their production system, pastoralism, is based on unrestricted grazing and movement of ruminant livestock (mainly cattle) in response to variation in the availability of water, grazing pasture and the limitation imposed on cattle production by flies and livestock diseases. Pastoralism has been blamed, over the years, for the low productivity of the livestock sub-sector of the Nigerian economy (Gefu, 1988). However, it provides the best strategy to manage low net productivity, unpredictability and risk. As rainfall and temperature patterns result in marked spatial and temporal variations in livestock grazing resources, seasonal movements are essential for pastoralists (Nori, 2007).

While the demise of pastoral livelihoods has been frequently pointed out, in many areas of the world, pastoralism represents the most important livelihood strategy of a growing number of households (Blench, 2001; Swift, 2004). Its overall relevance to food security in vulnerable areas is acknowledged, not only in supporting pastoralists' subsistence, but also in contributing to the provision of protein-rich products to town and urban dwellers and to the national economies of poor countries. These contributions derive from marginal lands where other uses have shown limited results in the long run (Nori, 2007).

Pastoral societies often represent complex but poorly analysed systems, tending to be denigrated by policy-makers and romanticised by novelists (Nori, 2007). This attitude reflects a limited understanding of these societies, often perceived as based on 'backward' and conservative attitudes and as such marginalised from the wider socio-political mainstream. Pastoral and agro-pastoral communities differentiate from

other rural groups by the specific relevance of livestock-based activities and mobility patterns for their livelihoods. In contrast to sedentary farmers and breeders, pastoral herds and flocks (and often households), move through places and seasons, and their livestock forage is mainly natural as opposed to cultivated fodders and pastures. Pastoral resource management is based on a complex set of temporary or semi permanent claims on pasture, water and other resources, as well as on the underlying principles of flexibility and reciprocity. Land, which is the resource base of pastoralists, is therefore not a fixed individually owned capital, but rather a flexible asset with specific use and access mechanisms (Sandford and Habtu, 2000; Thebaud and Batterbury, 2001; Nori *et al.*, 2005).

In Nigeria, the contribution of the Fulanis to the local food chain and national food security can not be over emphasised. They hold over 90 per cent of the nation's livestock population; the livestock sub-sector accounts for one-third of agricultural Gross Domestic Product (GDP) and 3.2 per cent of the nation's GDP. They are the major breeder of cattle, which is the main source of meat in Nigerian markets. Meat however, is the major source of animal protein consumed by many Nigerians because of its availability and comparative price to other animal protein products. The Fulanis, therefore, represent an important component of Nigerian economy which can not be ride roughshod over easily. Despite their contribution, however, the pastoral Fulani are untouched by modernity and controlling little of their economic and political destinies, the pastoral Fulani wander ceaselessly with their animals in treacherous weather conditions especially in the tropical rain, heat, and harmattan.

In a separate study on property rights, access to natural resources and livelihood security of Fulani pastoralists in southwest Nigeria, it was found that the livelihoods of the Fulani pastoralists is not secured in this region (Fabusoro *et al.*, 2007). A major factor moderating the security of their livelihoods was found to be the property rights regime operating in their Yoruba hosts' communities. The Yoruba (*Yorùbá* in Yoruba orthography) are a large ethno-linguistic group in Africa; the majority of them speak the Yoruba language. The Yoruba constitute approximately 21 percent of Nigeria's total population and occupy the southwest part of the country. The customary property regime designate land rights and control access and tenure on land and other natural resources required by the Fulanis for keeping their animals.

The aim of this study is to explore key issues in the security of livelihoods of migrant Fulanis in the region. It is conceived against the view that the security of the livelihoods of Fulanis is *sine qua non* for sustainability of the nation's livestock herd that contribute significantly to the nation's food security and health. The issues of livelihood security of the Fulanis, therefore, are outlined to provide information on the livelihood security priorities of the Fulanis and the need for policy to address the issues on a sustainable basis. The analysis of the study has been based on the assessment of the livelihoods capital assets of Fulanis households. The capital assets (Natural, Physical, Social, Financial and Human assets) are productive resources that can be combined to secure a livelihood (Department for International Development, DFID, 1999). They also determine the ability of the Fulanis to develop coping strategies for reducing vulnerability (shock, stress, drought, disease outbreak, seasonality, etc) in

Mobility is not just about herds moving where; it is about managing the where so that herds can move. Through mobility, pastoralists ensure that localised pressure over resources is reduced as only a limited number of animals are allowed to graze a given pasture land, thus to make pasture restoration possible. Furthermore, by splitting herds into different groups and keeping them apart, pastoralists minimise risks arising from animal diseases. The likelihood of the occurrences of disease increases with increased concentration of animals in one place. Apart from the natural capital provided through rangelands, mobility critically hinges upon technical as well as socio-political factors, as both human and social capitals are critical in ensuring mobility for pastoral communities (Niamer-Fuller, 1999).

In livestock mobility, Fulani pastoralists may either employ the method of herd diversification or herd divisibility to sustain their herds and secure their livelihoods. Herd diversification is a mix of large and small ruminants, grazers (cattle and sheep) and/or browsers (goats). It is important to minimise risk exposure while serving subsistence needs through optimal utilization of available resources. Herd divisibility is also important for the same reason. Splitting animals across a number of widely dispersed herds spreads risk, while different functional sub-herds (for instance, milking and fattening ones) allows for the manipulation of different animals' ecological potentials, according to capacities and needs (Morton and Meadows, 2000).

In a way, livestock reflects the five assets of the Sustainable Livelihoods (SL) Framework. Ordinarily, people use livestock

mainly for food, but animal husbandry also fills several equally important roles. Sometimes these roles are even more important than the supply of animal protein. Livestock can be used as draught power (Physical asset), can provide manure for crop production and improving impoverished soils (natural asset); it is a form of savings and can be easily converted to cash or goods (financial asset); it is also a form of employment (human asset). As a social and cultural requirement, livestock are a vital component of many cultures. Livestock form dowries and religious sacrifices; they provide entertainment and enable people to show hospitality (social asset). It mitigate conflict and to many smallholder farmers, livestock offer stability and security of livelihoods; act as a buffer in times of need and as a convertible asset (Dorward *et al.*, 2001)

METHODOLOGY

Southwest Nigeria is one of the six geopolitical zones of the country. The region is bounded in the north and the east by the river Niger; in the west by Republic of Benin and in the south by Atlantic Ocean. The region lies between latitude 7° 01' and 8° 14' and stretches between longitude 2° 45' and 4° 15'. The region is made up of six independent States; namely, Lagos, Oyo, Ogun, Ondo, Osun and Ekiti States. These States are occupied mainly by Yoruba people who have customary rights to land resources and are primarily sedentary arable crop growers and small business entrepreneurs. Figure 1 shows the map of southwest Nigeria and an insert map of Africa showing the study location.

Three of the southwest States: Ogun, Oyo and Ekiti, were selected for the study and 120 Fulani pastoralists were interviewed

order to secure their livelihoods (Fabusoro, 2006).

Within this context, the study seeks to examine the livelihoods capital assets of the Fulani households; identify sources of vulnerability to Fulanis' livelihoods in southwest Nigeria; identify factors associated with the livelihoods security of the Fulani households; and identify initiatives within the system, to overcome current constraints.

LITERATURE REVIEW

Livestock Mobility and Livelihoods Security

Livestock represents the vital 'technology' that connect range resources and people's livelihood, enabling storage and transportation of food through places and seasons (Nori, 2007). Mobility provides the best strategy to manage low net productivity, unpredictability and risk. Seasonal movements of livestock herds are important to counter natural and artificial disasters, and reduce the effect of droughts. The protagonists of Fulani movements express that raising livestock under sessile conditions leads to a waste of marginal land resources and that more veterinary health problems are experienced. Further, the adjustment to a sedentary lifestyle is traumatic for the pastoralists and costly and burdensome on the government and the quality of life of nomadic pastoralists drops after they sedentarise (Islam, 2001).

Mobility of pastoralists depends on tenure security on lands, knowledge of ecosystem productivity potentials, and constraints, and capacity to negotiate with hosts or enforce access to key range resources, primarily pasture, water sources and migratory corridors. Mobility can be vertical, with different sea-

sonal altitudinal areas. The pastoralists in southwest Nigeria often move from their origin in the semi arid regions of the north to the southwest during the dry season and then move back at the beginning of the raining season. Moving their animals at different times of the year to avoid overgrazing and to enable them to raise considerably more livestock than they could if they chose not to migrate (Ferrerro, 2001; Fabusoro, 2006). The horizontal movement of livestock entails movement within the same grazing belt on a more permanent basis. This movement is determined mainly by the restriction imposed by property regimes, access rights and the need for rotatory grazing to allow restoration of grazing lands and also to prevent diseases.

A distinction can also be made between regular movements and emergency movements during critical times, due to drought, conflict or other reasons. Patterns of mobility range from pure nomadism (opportunistic, no fixed base), through various forms of transhumance (set migratory routes on seasonal basis), to degrees of agropastoralism (with seasonal attachment to crop production); each demanding different involvement of household and herd members (Bourbouze, 1999). Mobility is therefore an ecological as well as an economic necessity, involving a number of social features. Apart from making the best use of range resources, it is also a way to avoid disease vectors in some areas (tsetse flies), to enhance exchanges with other land users (crop residues against animal manure), to access different market opportunities (sell dairy surpluses or to purchase staples or animal drugs) as well as to join with kin for a seasonal festivity, acquire or share information, search for complementary sources of livelihood, and so on (Nori, 2007).

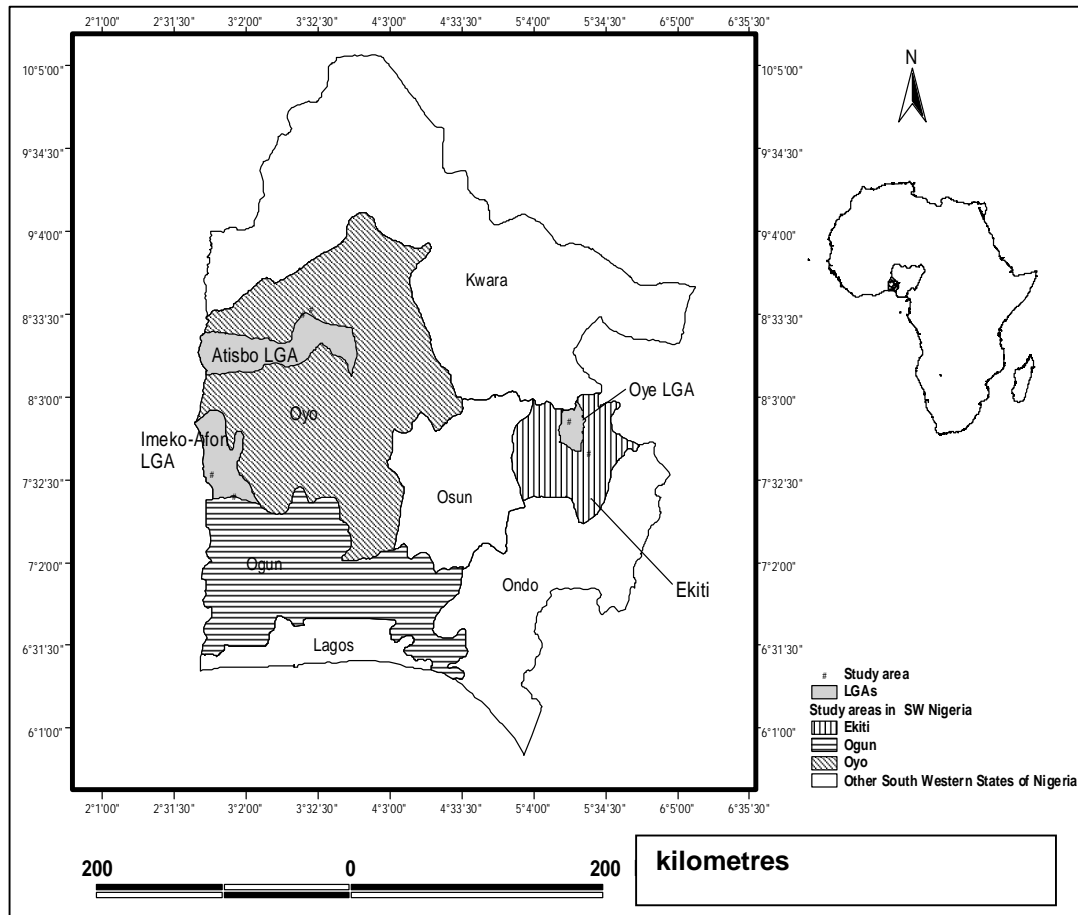


Figure 1: Map of Southwest Nigeria and an inserted map of Africa, showing Nigeria

from six settlements. The Fulani settlements were located at Iwoye-Ketu and Afon (Ogun State), Tede and Irawo-Ile (Oyo State) and Oko-Otunja and Ayede Ekiti (Ekiti State). Focus group discussions (FGDs) were conducted at the Fulani communities to obtain data on ethno-social attributes and livelihoods assets. The sources of vulnerability in the system were also identified alongside the livelihoods security priorities of the Fulani households. The data collected were analyzed using descriptive statistics and organized in Tables and Figures for presentation.

RESULTS AND DISCUSSION

Historical antecedents

History, as obtained during the focus group discussion at Tede, Oyo State, has it that the movement of Fulanis into the southwest Nigeria dated back to the late 19th century during the Dahomey war. The affected Fulanis migrated from the Republic of Benin and settled around the southern guinea of southwest Nigeria. Lately, in the mid 20th century, some Fulanis were traced to have moved from the middle belt of the country where at that time competition for grazing land was high. The last set of Fulanis movement and

the notable one among social scientists was the large exodus of Fulanis from different parts of northern Nigeria to the southwest Nigeria in the 1960-70s as a result of drought (Adebayo, 1995; Tonah, 2002).

Three different Fulani populations were encountered in the field. The Hausa-Fulani from the north (Kebbi, Sokoto and Kano states) were found at Iwoye-ketu in Ogun State; the *Borobro* Fulani from Katsina State were found at Oko-Otunja in Ekiti state. The Fulani-Ilorin from Kwara State were found at Jolly farm (Ogun State) and at Ayede (Ekiti State). This section Figure 2

shows the migration map from their place of origin through some of their previous locations to their present location. The map shows the distance covered by the agropastoralists and the period of departure from the origins. The distance between their origin and their present location ranged from 200 km to about 2000 km. Majority of these Fulanis have long time of history of departure from their origin and settlement in the region. This finding corroborates similar studies conducted by Jabbar *et al.* (1995), Blench (1999), Oyesola (2000), Omotayo (2003), Omotayo *et al.* (2005), and Sodiya (2005).

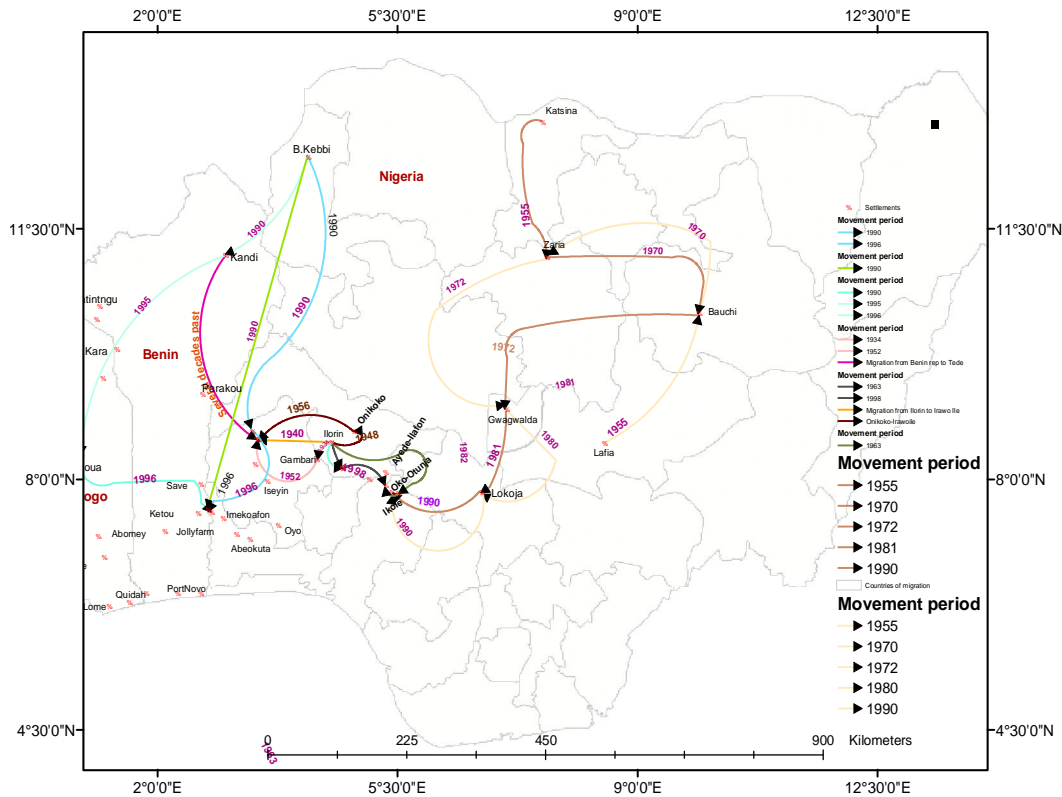


Figure 2: Map showing the migration pattern of pastoralists from their origin to their present locations

From the map, the movement was mainly from the north-west and north central. It was observed that the movement was always in groups or the extended family structure and each group/family settles in the same location and/or move from same location. It was observed that over 90 percent of Fulanis that settled in a community were from the same place of origin. Majority that settled at Iwoye-ketu moved from Kebbi state in the Northwest into the Republic of Benin through Kandi, and then to Kara in Togo, came down south to Save in Benin and entered back to Nigeria. This movement was undertaken in the last fifteen years. Among the Fulani at Iwoye-ketu as at the time of the study, some originated from Republic of Benin. The movement of the *Borobro* at Oko-Otunja (Ekiti State), movement was multidirectional. Their movement from their origin (Katsina) dated back to a period around 1955. They had in the past settled at Zaria (Kaduna State), Bauchi (Bauchi State), Gwagalada (Abuja), Lokoja (Kogi State), Ikole (Ekiti State) and then now at Oko-otunja (Ekiti State). There is a high tendency that this group will soon move away as they had some restriction in terms of grazing and crop farming during the period of the survey. Some of the Fulanis, the Yoruba Fulanis in particular, were not as mobile. They move in one direction from their origin (Kwara) or a location or to another location.

When asked how they knew about the suitability of a site, the overwhelming majority of the Fulani said that they rely on information gathered by their young-adult scouts, friends and relatives. These provided valuable hints about the places to settle within the region. Some said that their animals have a way of approving a location. Attempt to investigate this further yielded no

scientific evidence but basically an indigenous approach. Having lived and grazed in the southwest for many years, the Fulanis have sufficient knowledge of seasonal and grazing conditions of many parts of the region. Prospecting for a grazing space by the Fulani is not a matter of discovering new areas, but of making sure that the areas are unoccupied, free from recent outbreak of diseases, and low possibility of conflict with crop farmers. Although many pastoral families migrate together, herds from different families never mix or get lost during migration. A Fulani man can identify his animal by its name, color, hair, spots, patches, twist of the horn, footmarks, or shape of breast (Islam, 2001).

Generally, based on report from the FGDs, herding is a monumental task for the Fulanis who are always trying to get the best grazing condition for their animals. Contrary to popular belief, moving with animals is not the delight of the pastoralists. According to them:

"We move because we have no choice, herding is becoming more strenuous".

One of the Hausa-Fulani at Iwoye said:

"A bunde I na koye mu ne shiyawa, da a mu ba samu.

Woye n de maka gen shi ne za mu zoona" (Hausa)

" what is taking us around is 'grass' to feed our animals.

Anywhere we see it in abundance, we'll settle".

Majority of the Fulanis move around in search of grass. Movement is also necessitated when there is conflict between them and their host land owners. They also move around in search of pasture for cattle or there is need for expanding family herd.

Availability of market for productive goods of the Fulanis is another factor considered by Fulani in migration plan.

Livelihoods capital assets of the Fulani households

According to Carney (1999), livelihoods are capabilities, assets (including both social and material assets) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future while not undermining the natural resources base. Livelihoods security therefore entails assessing the capabilities of a livelihoods system in maintaining and enhancing its assets and activities. DFID's concept of livelihoods assets (Human, Physical, Social, Natural and Financial assets) (DFID, 1999) was used and the indicators of these was provided by Fabusoro (2006). Highlighted below are the livelihoods capital assets of the Fulani Households in southwest Nigeria:

Natural assets: The natural capital asset of the Fulanis comprises land, forest and grasslands, grazing reserves, natural water-points and rivers and the livestock. Land is an important natural asset required by Fulanis in securing their livelihoods. The import of land as a livelihood asset relies on its need for agricultural food production and for grazing of livestock. Fulani migrate from one location to the other in search for pasture and grasslands. The decision to settle in a location is dependent on the desirability of such land for their livelihoods.

In southwest Nigeria, experience has shown that Fulanis do not have secured access to land for farming and grazing. Where they have access, the tenure is usually limited and

the size inadequate for livelihoods. The uncompromising need for land (farm lands, pasture, grassland, water points, etc) by Fulanis often results in incessant conflict between them and their host communities. The in-availability and or inadequacy of land also account for the seasonal or permanent movement of the Fulanis within and across regions in Nigeria (Fabusoro, *et al.*, 2007). It is believed therefore that when land is adequate for their use, they can manage other natural resources on it and sustain their livelihoods.

Social assets: Within the SL framework, social asset comprises social resources such as networks, membership of groups, relationships of trust and access to wider institutions of society upon which people draw in pursuit of livelihoods. It also includes social status and social privileges accruing from social networks. Social capital is traditionally strong and important among pastoralists, in that it minimises risk, enables common resource management and provides safety nets in times of crisis (Nori *et al.*, 2005). Fulanis are known to be highly social people, contrary to general beliefs. They have highly effective social networks, among themselves. Pastoral groups are normally led by councils of elders who have the skills and wisdom to 'rule' their community and its resources. Without a reliable social networks and influence, the security of their livelihoods in southwest Nigeria would be in doubt. Therefore, the Fulanis participate in local organizations, kinsmen groups and religious activities which designate social status and recognition to some of them thereby gaining some influence and voice at local levels. The ability of the Fulanis to settle in a particular location is dependent of the information they could gather through networks and interaction.

Through social networking, Fulanis also participate in market activities of their host communities which increasingly represent a determining factor for their welfare in many regions. Market integration of pastoral economies varies substantially around the globe, and plays a relevant role in defining the vulnerability and the marginalisation of herding communities. Generally, favourable terms of trade between pastoral and non-pastoral products are in fact vital for pastoralists' development, as the commoditisation and sale of livestock products can ease the imbalance between variable pastoral production and household food needs.

Human assets: Within the farm household model, Fulani household are usually headed by a man, who takes decision on all matters in household, especially those pertaining to the primary livelihood-cattle production. The women and girls in the Fulani household are usually involved in milk processing and marketing and water fetching while the other men and boys in the household handle cattle grazing and caring. Other important Fulani household human assets are the herd boys, who work for the household head to graze the cattle and keep the animals. Usually, they do not work for pay but for milk and get one cattle after about two years of work. They are however, expected to secure the herds and graze them regularly. Fulanis often prefer to have their grown up sons as their herds' men (boys) so as to keep all the cattle within the same household.

The Fulani human asset requires the skills, knowledge, ability to labour and good health which are important to the ability to pursue different livelihood strategies. The pastoral human capital is characterized by an in-depth knowledge of complex range-

land agro-ecological dynamics, critical in detecting resource availability to ensure livelihood strategies and coping mechanisms. Pastoralists' indigenous technical knowledge includes familiarity with patchy land resources and understanding erratic climatic patterns - both relevant in tracking environmental conditions - together with an intimacy with livestock physiology and productivity.

Physical assets: The physical assets are vital to the livelihoods of Fulanis in ensuring the integration of remote settlements to other urban and sub-urban areas which provide for alternative and complementary resources such as health care, market exchanges, cereals, water, among others, especially during critical times (Nori *et al.*, 2005). The basic infrastructure required by Fulanis includes transport, shelter, water, energy, communications and the production equipment and facilities. This enables them to pursue their livelihoods without major obstacles to movement and integration. However, pastoral settlements have limited access to and ownership of physical capital, especially compared to more settled communities, as a result of their constant mobility and of their economic and political marginalisation.

Financial assets: According to Nori *et al.* (2005), livestock overwhelmingly represents the most important form of financial capital for pastoralists, both in terms of stock and flows. It is the primary source of pastoral income, saving, loan, gift, investments and insurance. Threats to the herd or to the clan are, therefore, serious blows to pastoral financial capital. Variations in market prices and problems in accessing remittance income and market-based opportunities also represent major financial threats.

The security of these assets was assessed using the Macqueen (2001) matrix for assessing assets base and determining livelihoods sustainability. Adapting this, there could be five levels of security for a livelihood and or its indicators. These are: unsustainable, constrained, sustainable, progressive and abundant. The perception of the Fulanis was taken on the level of security of the listed livelihoods indicators based on criteria offered by Macqueen (2001) in Table 1. The sustainability, progressiveness or abundance of a livelihood implies its security and vice-versa. Table 2 provides the perception of Fulanis on the security of their livelihoods.

From Table 2, it is obvious that most of the indicators were not sustainable (unsecured). The natural assets were primary to pastoral livelihoods system were perceived by the Fulanis as unsustainable. This has implication for the survival of the entire household. According to Nori *et al.* (2005), livestock is the pastoralists' fundamental means for the production, storage, transfer and transport of food, wealth and other services. As such it is fundamental to their perception of the security of other forms of asset. Any threat to livestock-such as lack of grazing materials, water, raiding, price variation and disease-is therefore a direct threat to pastoral livelihoods. Basic infrastructure such as electricity and water are not available in most Fulani settlements. Most of the settlements are also not linked by communication networks and their access roads are usually very poor.

The unsustainability of livelihoods assets has the following implications:

- a. Inability to construct positive livelihoods that can reduce vulnerabil-

ity and improve living conditions;

- b. Lack of ability to influence policies and institutions which defines their livelihood options.

The findings reveal, however, that their social assets were sustainable (Table 2). This implies that the Fulanis had the ability to compete with other actors in the spheres of the market, state and civil society in order to gain access to resources and also enhance their ability to form work groups. Also their perception that some of their financial assets were sustainable confirms livestock as the overwhelmingly most important form of financial capital for pastoralists. It is the primary source of pastoral households' income, saving, loan, gift, investments and insurance.

Sources of vulnerability in Fulani pastoral system

Based on their perception for livelihood security, the sources of vulnerability (insecurity) was investigated and the levels of their effect on Fulani livelihoods system assessed. According to Bruijn and Dijk (1995) and Nori *et al.* (2005), the insecurities which Fulani society have to face are many and they are part of the historical experience of Fulanis. The resources which they control (livestock) and do not control (land, market, politics) have a large impact on their welfare choices and their interactions with the society at large.

Vulnerability is a combination of exposure and risk and of the ability of households and individuals to cope with those risks and to recover from a shock or deterioration of current status (Chambers, 1989). The factors that make up vulnerability are important because they have direct impact on people's asset, status and the options that are open to them in pursuit of beneficial livelihoods outcomes.

Table 1: Criteria for household livelihood security measurement

Score/ Livelihood Assets Components	Unustainable	Constrained	Sustainable	Progressive	Abundant
Financial (Cash at hand Investment worth, cattle)	Destitute – not enough money for basic essentials	Lack of credit and finance restricts livelihoods to subsistence despite other assets	Sufficient finance to purchase non-essential items given absence of other constraints	Enough finance to overcome restrictions in other capital assets	Rich-sufficient wealth to overcome any shortage in other capital assets
Physical (Infrastructure building and housing)	Isolated – insufficient infrastructure to access necessary resources for survival	Physical isolation and lack of communication restrict livelihoods to subsistence despite other livelihoods	Sufficient infrastructure to improve condition through trade given absence of other restrictions	Infrastructure sufficiently good to allow alternative livelihoods options despite restrictions in some areas	Connected -access to products and services so easy that livelihoods opportunities are abundant
Natural (Grazing resources water and agricultural land)	Degradation – land failure due to irrevocable degradation of land resources	Degradation of land base restricts options to those of subsistence	Enough land resources for crop production and grazing to allow cash sale or grazing access given absence of restrictions	Land and grazing resource surpluses are sufficient to overcome restrictions in other areas	Verdant – natural resources so plentiful that adequate livelihoods are guaranteed
Human (Educational status health status and household labour)	Uneducated - education and skills so limited that opportunities to survive cannot be taken	Lack of education and training restricts options to those of subsistence despite other assets	Enough education and skills to develop non-subsistence opportunities given absence of other restrictions	Skills and education are sufficiently in demand that other livelihoods restrictions can be overcome	Educated – skills and training offer more than one livelihoods opportunity
Social (Networks and cosmopolitaness)	Oppressed – institutions persecute or fail to protect livelihoods	Social organization so weak that it restricts livelihoods options despite other assets	Social networks allow the development of organised support structures for non-subsistence activities given absence of other restrictions	Social structures sufficiently strong to compensate for restrictions in other areas	Supported – social structures offer varied employment and income generation

Source: Adapted from Macqueen (2001): p6

Table 2: Perception of Fulani agropastoralists on security of their livelihood (N = 120)

LIVELIHOODS INDICATORS	Unsustainable	Constrained	Sustainable	Progressive	Abundant
Natural asset					
Grazing resources	■				
Water	■				
Agricultural land	■	■			
Human asset					
Educational status	■				
Skills in other livelihoods				■	
Health status	■				
Household labour	■	■			
Physical asset					
Equipment for other livelihoods	■				
Infrastructure		■			
Building and housing		■			
Financial asset					
Remittances	■				
Cash at hand		■			
Investment worth (Cattle)		■			
Social asset					
Networks			■		
Cosmopolitaness			■		

Key:



Perception of majority, Above 50% of the sample

Table 3 presents the perception of the Fulanis on the sources and level of vulnerability in their system. First is insecurity of cattle herd as a result of poor access to grazing resources and water inadequacy. This threatens the subsistence of all Fulanis and consequently the survival of the group as a whole. This was followed by cattle diseases and poor veterinary service. Although the nature of their settlement and their migrating system may not be an incentive for veterinary service provision in the states, this poses a threat to their livelihoods and they could be vulnerable if there is an outbreak of a disease and no veterinary attention obtained. Furthermore, the Fulanis do not have any difficulty integrating fully into the socio-cultural system of the Yorubas. Also because of the peaceful coexistence between the Fulanis and the Yoruba, conflict, though a source of vulnerability, has no effect on their livelihoods.

In general, pastoral vulnerability is shaped by ecological, economic and political forces at local, regional and global levels. The increasing encroachment of external actors, interests and pressures on grazing lands often results in processes that undermine the viability and sustainability of pastoral livelihoods, as they constrain their capacity to cope with the variability and the uncertainty of the bio-physical environment they depend upon. The transforming forces and processes of cultural, institutional and economic integration, when combined with emerging trends such as increasing population density, HIV/AIDS, urban expansion and environmental degradation, may trigger insecurity and conflict within pastoral communities. The resources which these groups control (livestock) and do not control (land, markets, politics) subsequently have a large impact on their welfare choices and their

interactions with society at large—and the chances of such interactions turning violent (Fabusoro, 2006).

Indicators of livelihoods security and access to natural resource management in Fulani agropastoral system

Given the critical reliance of the pastoral livelihoods upon natural resource access and conditions, a sustainable livelihoods approach could offer pragmatic means of fostering sustainable development of the pastoral system in Nigeria. This will have overall effect on livestock development in Nigeria and consequent availability of beef for increased protein consumption. In the real sense, the traditional strategies for coping with insecurity by the Fulanis include reducing their resource use, migrating and partial movement of herd to another location. These strategies have not been useful in achieving livelihood security.

Based on the discussion with the Fulanis and other target groups during the FGDs, they were made to score the items identified as indicators of livelihoods security on an ordinal scale of important/not important by assigning 1/0 respectively against each of the identified indicators. The averages of the raw scores were converted to standardised Z score and probability values were also generated. The result is presented in Table 4.

The probability values indicate the probability that a certain percentage of respondents will select the respective indicator as important for livelihood security. The table shows that peaceful coexistence with Yoruba host communities has the highest probability (0.96) of being the most important indicator of livelihood security; collective action comes next (0.73) and access to grazing resources coming third (0.58).

Table 3: Perception on sources and level of vulnerability (Insecurity) (N = 120)

Sources of Vulnerability/ Insecurity	Highly vulnerable	Vulnerable	Fairly vulner- able	Not vulnerable
Poor access to land for grazing	■			
Water inadequacy	■			
Cattle diseases		■		
Poor veterinary service		■		
Government actions and inactions		■		
Poor educational level			■	
Socio-cultural problems			■	
Conflict with host				■

Key:

■ Perception of majority, Above 50% of the sample

The relevance of the identified factors to the security of livelihoods of Fulanis in the region is discussed below:

- i. **Peaceful coexistence with Yoruba host communities:** An important livelihoods security factor of the Fulani pastoral system is the peaceful coexistence between them and the Yoruba hosts. Being a social factor, it implies that the security of livelihoods of the Fulanis and the tenure of their land security depends largely on the mode of interaction between them and their Yoruba hosts.
- ii. **Access to grazing resources:** Grazing resources are primary to the nutrition of Fulani herds and access to it is fundamental to the security of their livelihoods. Due to lack of (access to) grazing reserve, the Fulanis have difficulties in grazing their animals. Although the peaceful coexistence and mutual understanding with their Yoruba hosts grant

Fulanis unrestricted access to any fallow land either during the wet or dry season (Fabusoro, 2006), the quality of such materials could not be ascertained. There is, therefore, the need to establish grazing plots where nutritious grazing materials could be grown to provide sufficient nutrition to the cattle and hence secure their livelihoods.

- iii. **Collective Action:** Collective action for natural resource management can include joint investment in buying, constructing or maintaining local infrastructure and technologies; setting and implementing rules to exploit a resource; representing group to outsiders; and sharing information. Although collective management will not guarantee equity, it will provide avenues for Fulanis to have a common voice both to the local host community and the government. Collective action can facilitate access to information and even allow them to participate in technology development.

Table 4: Z score computation of pastoralists on importance of indicators of livelihood security (N=120)

Indicators of livelihoods security	*Raw Score	Z score	Probability
Peaceful coexistence with Yoruba host communities	98	1.7	0.96
Collective Action	75	0.6	0.73
Access to grazing resources	67	0.2	0.58
Herd health condition	61	(0.1)	0.46
Stable and healthy household workforce	56	(0.4)	0.34
Social Capital	55	(0.4)	0.34
Children education	34	(1.5)	0.07

The values in parentheses indicate negative z values

**Multiple responses obtained*

- iv. **Stable and healthy household workforce:** The Fulanis generally have a fairly large size of household. Studies have estimated Fulani household size to range from 6 – 10 persons, usually polygamous and with extended family structure (Omotayo, 2003; Sodiya, 2005; Fabusoro, 2006). The household members in the Fulani system contribute immensely to household livelihoods. The contribution of each family member to the sustenance of the household is very crucial. There is the need therefore for support from both the government and private organizations to the sustenance of the health of the household member.
- v. **Herd health condition:** According to the Fulanis, the state of health of their livestock is synonymous to their personal state of health. The state of health of their cattle, as the main source of livelihoods, is always a major concern to them. Despite irregular contact with veterinary service, they make painstaking efforts to ensure that the cattle strive well under the new agroecological condition in which they are settled by personally administering drugs and using local herbs on some occasions to treat their animals. Investment in veterinary health services by the government will contribute to the sustainability of Fulanis households and hence security of their livelihoods
- vi. **Social Capital:** The livelihoods assets are useful in constructing positive livelihoods and reducing the impact of vulnerability factors. They enhance the capability to be and to act. Of these assets, the Fulanis were found to be rich in social capital. The social capital, which includes networks, membership of groups, relationship of trust, reciprocity and exchanges, play a vital role in helping them to improve their livelihoods, mobilise assets and defend them. The Fulanis have very strong network across the country and they are widely travelled. This capital plays a major role in their livelihood security especially during pe-

riod of relocation as they rely on information obtained from family, neighbours and friends. Building upon their social asset will provide support to the security of their livelihoods.

- vii. **Children education:** The Fulanis' major constraints to participating in existing basic education programmes were found to result from their constant migration/movements in search of water and pasture for their livestock; and the critical role of children in their production systems, which makes parents and guardians reluctant to release them to participate in formal schooling. Also, are the irrelevance of the school curriculum which is tailored to meet the needs of sedentary groups and thus ignores the educational needs of nomadic people; their physical isolation, since they operate in mostly inaccessible physical environments; and a land tenure system that makes it difficult for the nomads to acquire land and settle in one place. Coming to this realization, the establishment of nomadic education was supported by the Fulanis as an opportunity to educate their children. The view now is that education of their children will not pose any threat to their livelihoods but assist in securing the future for them and their children in the country's socioeconomic and political system.

CONCLUSION AND RECOMMENDATIONS

The security of livelihoods of Fulani pastoralists has far reaching implications on poverty reduction, food and nutrition security, peaceful co-existence and sustainability of livestock industry. This study has revealed important indicators that could be en-

hanced to ensure livelihood security and improved pastoral system in southwest Nigeria. Efforts are needed to ensure that Nigeria's pastoralists can secure their livelihoods and have improved access to vital livelihoods resources. Domestic herd animals not only enhance the landscape; they also represent important bio-cultural heritage. Therefore important that relevant stakeholders work together in achieving secured livelihood for the pastoralists. Some of the initiatives for achieving this are discussed as follows:

- i. *Instituting policies that will favour Fulani pastoralists:* Fulani pastoralists are far away from institutional realities of the government and this is affecting their corporate grafting into government's programmes and policies. Not that there has not been any government effort towards the security of livelihoods of Fulanis, these efforts need to be consistent with local opinions and practice. Efforts are needed in securing pastoral land rights, not only through a formal legislative framework that protects pastoral lands against exploitation and violation at any level, but even more through the sound implementation of these laws and policies on the ground. Relevant policies that will favour pastoralists in the region will relate to land accessibility, forage and pasture restoration, veterinary services, children education, infrastructural development and commodity services.
- ii. *Securing rights to land to reduce their vulnerability.* Security of land rights for pastoralists is vital to the security of their livelihoods. This is needed to halt process of land eviction from pastoral communities, and reverse current policy decision-making towards appropriate investments in herding areas. Through substantive and pro-

cedural laws at both the national and regional levels, the government must ensure that grazing routes are protected across the country and the institutions managing such routes should be identified and appropriately empowered.

- iii. *Enhance the efficiency and productivity of existing livelihoods:* Efforts should be made to provide animal health services, innovative techniques for production, preservation and storage and exchange. These are effective ways to decrease the vulnerability of pastoralists, as they allow for better use of natural resources by lowering the impact of seasonality and in so doing reduce threats to pastoral livelihoods.
- iv. *Enhancing socio-political capital:* This represents an important task in the process empowering pastoral communities and securing their livelihoods. This will ensure the development of their capacity to raise their claims and effectively enforce their rights in negotiated ways. The lack of effective representation of pastoralists' interests lies at the root of pastoralists' vulnerability, as it has been instrumental to governments' lack of responsiveness. Shifting the attention towards the socio-political dynamics that regulate pastoral institutions implies a serious consideration of the dynamics of power relations among the different social actors involved and related implications in resource management.

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