SOURCES OF SUPPLY AND CATCHMENT AREAS OF WUDIL CATTLE MARKET, KANO STATE, NIGERIA

Bello Gambo

Department of Geography, Bayero University, Kano State, Nigeria

Corresponding Author's Email: bgambo.geo@buk.edu.ng

ABSTRACT

The study analyzed the supply sources and catchment areas of Wudil cattle market in Kano State. The objectives focused on types of cattle traded, supply source locations of cattle and catchment areas of buyers. Data were collected on types of cattle, sources of their supply and catchment areas of buyers using records of cattle observation and Focus Group Discussion with nine participants including the market leaders and other traders. Types of cattle were presented in table. Sources of supply of cattle and catchment areas for the market were depicted on maps using ARCGIS software. Based on colour of skin and castration, the major types of cattle supplied into the market are *Baki* (Ambala)*, Fari* (Bunaji or White Fulani), *Ja* (Rahaji or Red Bororo), *Galare* (White-horned), *Shodare* (breed of white and red species)*, Nordi* (breed of white and black species) and *Bartandi* (castrated). Cattle are supplied from three main sources: other countries (Niger Republic and Cameroun), other states in Nigeria (Taraba, Adamawa, Jigawa and Yobe) and within Kano State. The catchment areas are three: primary catchment area consisting of buyers within Kano State and neighbouring states, secondary catchment area including buyers largely from northeast (Gombe and Yobe States) and middle belt of Nigeria and tertiary catchment area consisting of all the states in the southern parts of the country. Recommendations given included development of market and transport infrastructure and further study on cattle transport and buyer characteristics.

Keywords: Cattle, Supply, Catchment, Horn, Transport.

INTRODUCTION

Nigeria has the highest population in West Africa and it is expected that it will be among the five most populated countries in the world by 2025 (Kano State Government, 2013). The rapid population growth has brought about an increase in the demand for more food (Nabegu, 2008). In Nigeria, marketing of food products is a major feature of the economy. This is necessitated by the ecological variation as the main source of regional specialization of production. Livestock, grains and vegetables are mainly from the north, fruits and root crops from the middle belt, and root crops together with tree crops from the south (Emielu, 2016).

Kano State has the highest population in the country with over 12 million people. This has contributed to making it an important center of commercial activities. The expansion in the population of Kano has meant greater demands on food production and marketing systems. In terms of livestock, these include breeding for domestic consumption and export, especially to the middle-east, production of milk and milk related products, processing of meat in abattoirs for local and export market and animal feed processing (Kano State Government, 2013). Indeed, market institutions, including livestock markets, have played a major role in making Kano one of the leading industrial and commercial centers in Nigeria (Danladi, 2015).

Wudil District has been an area of large scale economic activities such as agriculture, craft industries and trade. These economic activities have assisted the people of the area in sustaining their lives (Zubairu, 2015). The Cattle market (Kara), which began about 1915 as a small venture located on a cross-road where Fulani cattle-owners brought some animals to meet their regular buyers during the off season, has been recognized as the largest cattle market in Kano State. The market has been one of the main distributive centers for cattle since the beginning of the trade. In fact, its importance in the livestock trade cannot be overstressed (Okediji, 1973).

Vega et al. (2015) observed that market was a spatial reality characterized by two factors influencing the demand: the distribution system and the geographic component of the market. However, most previous researches have concentrated on the former. The geographic, or specifically spatial, component can provide decision makers with objective insight concerning the nature of their customer base and the dynamics of their marketplace. This is especially with large markets like Wudil cattle market. Two spatial components are investigated in this study: supply source locations and catchment areas.

Supply of cattle in Nigeria is through cross-border trade and domestic production. Nigeria happens to be the major destination of cattle cross-border trade from neighbouring areas of Chad, Central Africa, Niger and Cameroon (Kubkomawa, 2017). Domestic cattle production is performed by pastoralists and settled farmers. However, great majority of the cattle are owned by pastoralists. The cattle owned by settled farmers are also managed by the pastoralists (Blench, 1999). Catchment area is the area surrounding a supply location from which it attracts it subscribers. The perspective of any given definition of catchment area depends on the context in which it is used. As regards commodity markets, a catchment area is the areal extent or part of the earth's surface where the actual or

potential customers of a market come from (Wieland, 2017; Dolega *et al.,* 2016; Tanase, 2010). There are three categories of catchment areas based on distance (linear, travel or time distances) between customers' homes or workplaces and site: primary, secondary and tertiary. The primary catchment area is the zone in which the majority of customers are based. It takes more than 50% of the customers. The secondary catchment area includes about 25% to 50% of customers, while the tertiary or fringe catchment area contains less than 25% of the customers. As Figure 1 hypothetically illustrates, competition by other markets with the target market exists only in the primary catchment area. There are direct and indirect competitors in secondary and tertiary catchment areas (Tanase, 2010; Vitcenda, 2011; Gray, 2014).

The aim of the study is to analyze the supply sources and catchment areas of cattle in Wudil market, Kano State. This aim is to be achieved through the following objectives:
i)   To describe the types of cattle traded in the market.
ii)   To identify and describe the supply source locations of cattle in the market.
iii)   To identify and describe the catchment areas of buyers.

THE STUDY AREA

Location: Wudil Town is the administrative headquarters of Wudil Local Government Area. It is located southeast of Kano City, on latitude 11º 48′N and longitude 8º55′E (Figure 1). The market is located within the town, near motorable roads (Figure 2). It serves the area, the surrounding local community and beyond.

Economic Activities: Wudil has been an area of large scale economic activities such as agricultural production, craft industrial production and trade. These economic activities have assisted the people of the area in sustaining their lives (Zubairu, 2015). In particular, marketing of agricultural products is as old the culture and traditions of the people since these aspects of the people's life are interwoven with their agricultural production activities (Yakasai, 2011).

The Market: Wudil cattle market is one of the largest of its kinds in the world (Ahmed, 2011). It is the largest in Nigeria and probably the largest in West Africa as it covers an area of great length and breath. Activities in the market usually commence on Wednesday through Thursday to Friday (market day). Activities continue not for transaction but for loading of cattle to different destinations after Friday through Saturday to the early hours of Sunday (Giginyu, 2011).

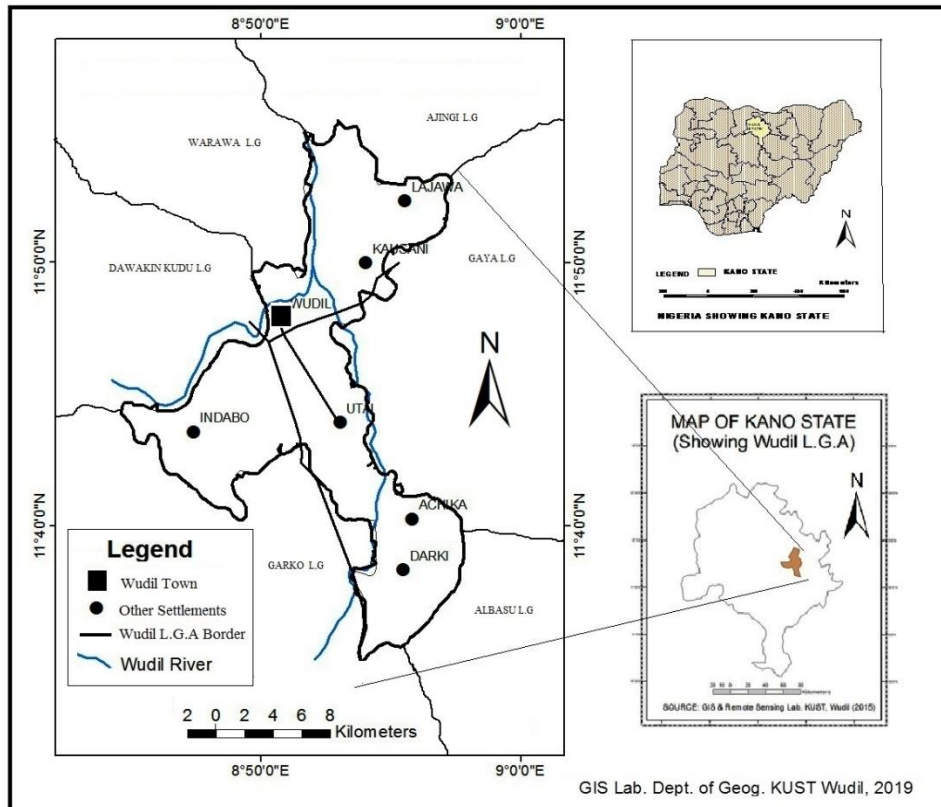Figure 1: Wudil Town in Wudil Local Government Area

Figure 2: Cattle (*Kara*) Market in Wudil Town
Source: Google Earth, 2019

RESEARCH METHODS

Data Collection

The data collected included types of cattle, sources of their supply and catchment areas of buyers. The main instrument used to collect these data was Focus Group Discussion, which was held with the market leaders (market's head and union leaders) and representatives of the traders, all nine in number. The best way to generate the data for catchment area analysis, supply sources, is through focus group discussion involving market participants (Vitcenda, 2011). There was also field observation of types of livestock. The procedure for the observation included seeking of owners' permission, record of observation in field notes and photographing.

Data Analysis

Types of species, their characteristics and supply sources identified were organized and presented in table. Sources of supply of cattle and catchment areas for the market were further depicted on maps using ARCGIS software.

RESULTS AND DISCUSSION

Supply of Cattle in the Market

Types of Cattle Supplied

A major classification of cattle is between humped or Zebu (*Bos indicus*) and non-humped (*Bos Taurus*) cattle. The origin of Zebu is in south central Asia, while the non-humped cattle originated in the British Isles and western continental Europe (Hammack, 1998). In the African context, Joshi et al. (1957) divided the types and breeds of cattle into five: (i) the humpless or vestigially-humped cattle of the lower Nile valley and Mediterranean Africa; (ii) the zebus of the subsaharan zone, which have many points of similarity with the Indo-Pakistan zebus; (iii) The humpless, straight-backed cattle of West Africa; (iv) the Kuri cattle of Lake Chad, humpless and with characteristic bulbous horns, which are considered as a separate group; and the cattle of much of central and southern Africa from the flood plain of the Nile in the Sudan, through southwestern Uganda and Ruanda-Urundi, to the Rhodesia, Bechuanaland, Swaziland and Basutoland. In Nigeria, Zebu breeds represent the great majority of cattle. Table 1 shows that there are 6 main zebu types, out of which Bunaji, Sokoto Gudali and Rahaji have the largest population size in the Nigerian national herd (Blench, 1999).

Table 1: Proportion of Zebu Breeds in the Nigerian National Cattle Herd

Names of Breed	% of Cattle Population in National Herd
Adamawa Gudali	1.9
Azawak or Tagama or Azawa, Adar, Azawaje	0.7
Bunaji or White Fulani or Daneeji or Yakanaaji or Akuji	37.2
Rahaji or Red Bororo or Rahaza or Gadahe or Abore or Bodeeji or WoDaaBe or Gabassae or Hanagamba	22.0
Sokoto Gudali or Bokolooji	31.6
Wadara or Shuwa or Choa	6.6
Total	100

Source: Blench, 1999

In this study, colour of skin and castration were adopted to categorize the types. The major types supplied into the market are *Baki, Fari*, *Ja*, *Galare*, *Shodare, Nordi* and *Bartandi* (Table 2). All the types are available throughout the year. However, a general categorization of cattle in the market is between Castrated (*Dakki*) and Normal (*Kaladdi*). Thus, all the major types fall under any one of these categories. Kubkomawa, (2017), Blench, (1999) and Joshi, 1957) were used to aid the description of the cattle types.

(i) *Baki*: It is called Baki because it has black skin. It is supplied from Chad, named as Ambala. It is related to Wandara (Shuwa), indigenous cattle of Borno State that is medium-sized, lightly built, and different colours, dark red, black, pied or brown.

(ii) *Fari*: These types of cattle have white skin, black-ear and medium-horn (Plate 1). They are known as Bunaji or White Fulani cattle that are supplied from Taraba and Adamawa states, and Cameroun. Their population size in Nigeria was put at 37.2% and are, therefore, regarded as the most numerous and widespread of all cattle breeds in the country (Table 1). There is higher supply in rainy season because of preference by buyers that require mainly flesh. *Fari* is fleshy especially in the rainy season because of more availability of pasture and water.

(iii) *Ja*: Ja is called so because it has red skin (Plate 2). Its sources of supply are Maigatari in Jigawa state, Niger republic and Cameroon. There is higher supply of types of these cattle in dry season because of preference by buyers that require not only flesh but also the inner parts, and hides and skin. These types of cattle are described as Red Fulani, as opposed to the White Fulani, and Red Longhorn. High value is attached to the hides because they produce good leather. They are called Rahaji or Red Bororo or Rahaza or Gadahe or Abore or Bodeeji or WoDaaBe or Gabassae or Hanagamba (Joshi, 1957). Rahaji has deep burgundy-coloured coat, pendulous ears and long, thick horns. It constitutes about 22% of the national herd (Table 1), thus the third most numerous breed of cattle in Nigeria (Blench, 1999).

(iv) *Galare*: Galare is differentiated from other types of cattle with white horn. It is supplied from around Dutse in Jigawa state and Bauchi state. It is one of the breeds of Rahaji, but while the horns of Rahaji are white with black tips Galare has horns that are completely white.

(v) *Shodare*: This is characterized with white skin with red dots. It is supplied from Geidam and Potiskum in Yobe state. This type of cattle looks like a mixed breed of white and red species, i.e. Bunaji (White Fulani) and Rahaji or Red Bororo.

(vi) *Nordi*: This has white skin with black dots. It is supplied from within Kano State. It looks like a mixed breed of white and black species, i.e. Bunaji (White Fulani), Wadara and Ambala.

(vii) *Bartandi*: This is castrated cattle since childhood. It is supplied from Bauchi, Adamawa and Taraba states.

Table 2: Major Species and their Places of Supply

Species	Characteristics	Places of Supply
Galare	White horn	Jigawa (Dutse), Bauchi
Ja	Red skin	Maigatari, Niger, Cameroun
Fari	White skin	Taraba, Adamawa, Cameroun
Shodare	White skin with red dots	Geidam, Potiskum
Baki	Black skin	Chad
Nordi	White with black dots	Kano
Bartandi	Castrated since childhood	Bauchi, Adamawa, Taraba

Source: Field Survey, 2019

Plate 1: Bunaji or White Fulani Cattle

Plate 2: Rahaji (Red) Cattle

The Sources of Supply of Cattle

The sources of cattle supply to Wudil market are in three categories (Figure 1): (i) Distant sources – these include other countries. This takes place through cross-border trade (Kubkomawa, 2017). Red skinned (*Ja*) cattle is supplied from Niger Republic and Cameroun. White skinned (*Fari*) cattle are supplied from Cameroun. The supply of black skinned (*Baki*) is from Chad. (ii) Other states in Nigeria. These include Taraba, Adamawa, Jigawa and Yobe states. These are the highest cattle production areas in Nigeria, especially the first two (Holt *et al.,* 2018). (iii) Kano State – cattle are supplied from other markets and pastoral households in the state. Unguwa Uku and Danbatta markets are large cattle markets in the state that, together with Wudil market and others in Katsina and Jigawa states, feed Kano – Lagos corridor. These are equally sources of supply because Wudil market had more trucks waiting for loads than the rest of the feeder markets by virtue of its location south of Kano City (Hassan *et al*., 2011). In addition, there are smaller markets around, like Darki and Gaya markets, for retail and serve as assembly centres for collection of cattle from pastoralist households for supply to Wudil market.
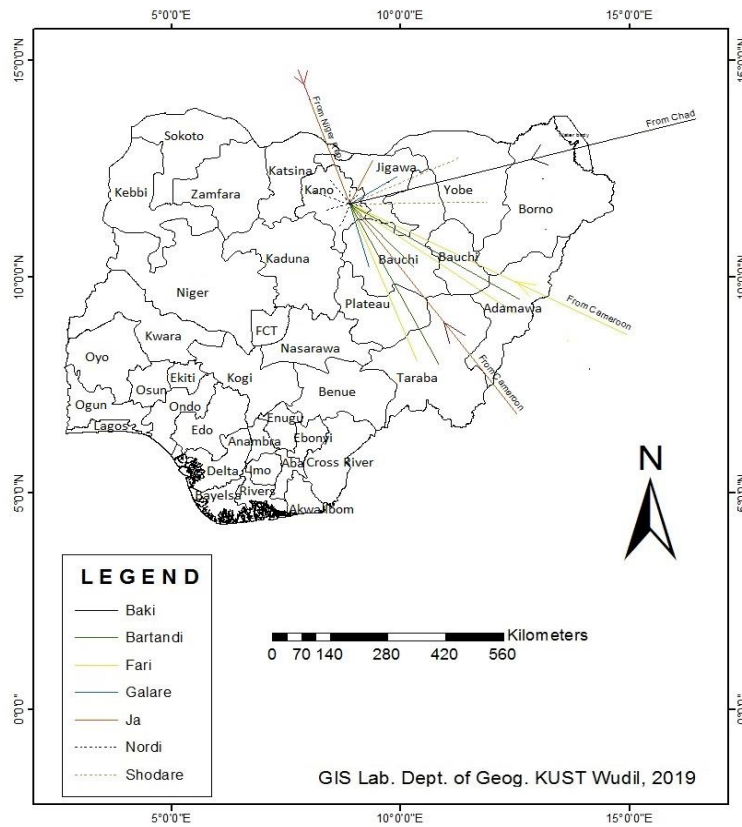
Figure 2: Sources of Supply of Cattle to Wudil Cattle Market (Kara)
Source: Field Survey, 2019

Catchment Areas of Buyers

There are three catchment areas of buyers for Wudil cattle market: primary, secondary and tertiary (Figure 3). The primary catchment area consists of buyers within Kano State and neighbouring states of Jigawa, Katsina and Bauchi. The secondary catchment area includes buyers largely from northeast of Nigeria, particularly Gombe and Yobe States, and the middle belt of the country including Abuja. The tertiary catchment area consists of all the states in the southeast, southwest and south-south geopolitical zones. In the northeast, there are no buyers from Borno, Adamawa and Taraba States. These are source locations of cattle supply to Wudil Market. Also, the market does not have buyers from Sokoto, Zamfara and Kebbi States because of alternative markets, like Acida cattle market in Sokoto (Adamu, 2005; Mamman, 2005).
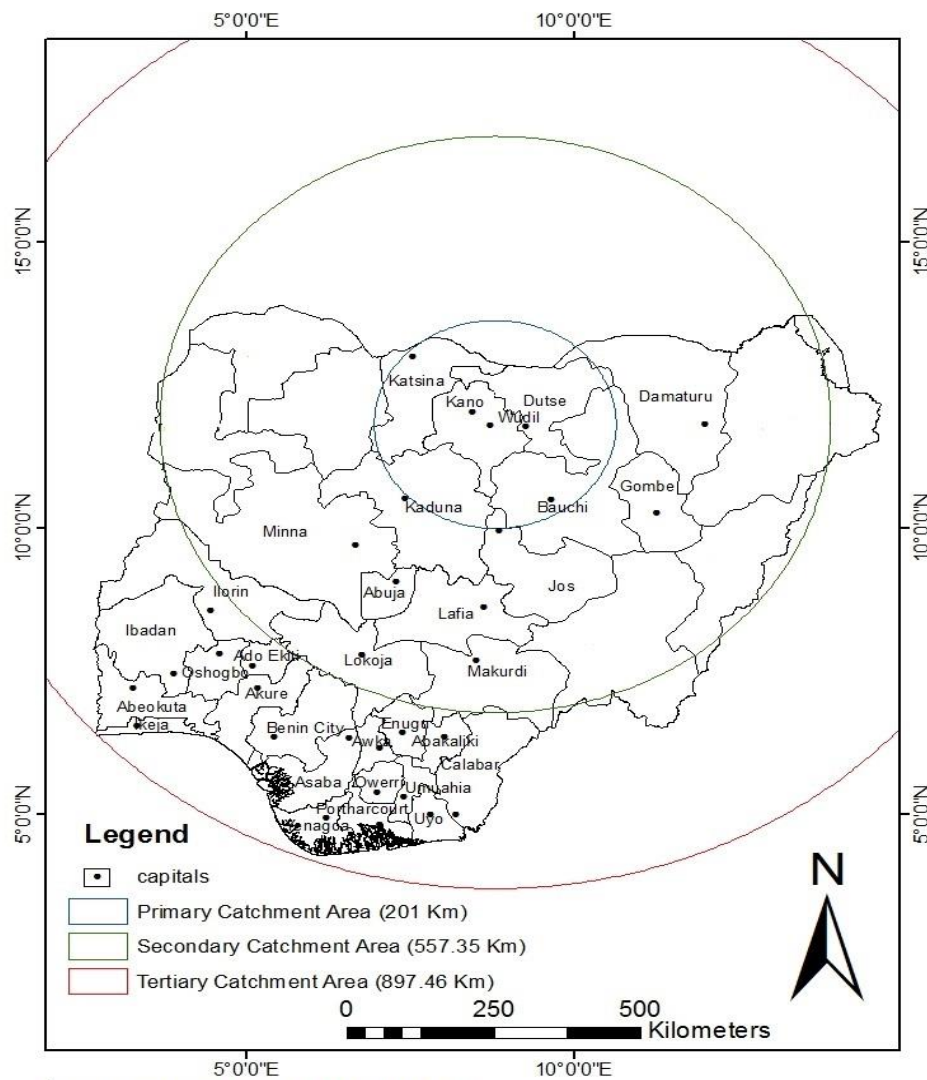
Figure 3: Catchment Areas of Wudil Cattle Market
Source: Field Survey, 2019

Some of the states (including Abuja) in the secondary and tertiary catchment areas have more than one cattle (*Kara*) market (Table 2). The diversity of the catchment locations indicates the importance of the market to the study area as regards local and regional trade (Gambo, 2016). Wudil cattle market feeds the Kano – Lagos corridor with an approximate estimate of over 50 trucks load of cattle during the peak period and 8 trucks in the lean season (Hassan *et al.*, 2011).

Table 2: Some Wudil Catchment Cattle Markets in Nigeria

States	Cattle Markets
Abia	Umuchieze (Lokpanta)
Abuja	Suleja, Kara, Zuma Rock
Akwa Ibom	Itam
Anambra	Barrack, Kara, Nkpor, Ochanda, Tempo
Bauchi	Mararrabar Liman (Katagun), Gadar maiwa, Soro, Azare, Alkhareri
Bayelsa	Ogogini, Indiamer, Bayelsa Farm
Benue	North bank, Wadata market
Cross River	Ikot Eneobong
Delta	Oko market, Abraka
Ebonyi	Eke
Edo	Aduwawa, Auchi, Ekpoma, Enya, Flyover, Uromi Junction
Ekiti	Ilokun in Ado-Ekiti
Enugu	Enugu Zango, Obolo market
Gombe	Kasuwar shanu, Muringa
Imo	Ikigwe, Obinze Barrack
Jigawa	Shuwarin, Gujungu
Kaduna	Kaduna, Zaria
Kano	Uku, Darki, Gaya, Takai
Kogi	Lokoja, Okene
Kwara	Bacita
Lagos	Agege, Agumalu, Iseri, Sabo Ikorodu, Toll Gate, Alaba
Nasarawa	Shinge, Keffi,
Niger	Muriga
Ogun	Karalsheri, Oluwanisola
Ondo	Akure Zango, Oh market, Akumba market
Osun	Oshogbo
Oyo	Akinyele, Bodija and Zango
Plateau	Bukur
Port Harcourt	Bonny, Mile 3, Slaughter
Yobe	Potiskum, Babban Gida, Geidam, Yadin buni, Kuka reta

Source: Field Survey, 2019

CONCLUSION AND RECOMMENDATIONS

Three main conclusions can be drawn from the study. Firstly, variety of cattle traded in the market and availability throughout the year is a pointer to improved livelihood in the study area because other related activities are incorporated such as transportation, sale of animal feed, meat and medicine, and pastoralism. Secondly, the diversity of supply sources and catchment areas indicates that Wudil cattle market is important to the area as regards local, national and international trade. Lastly, consideration of cattle variety in the determination of the sources of supply may serve as useful information for those concerned with cattle trade. Based on the conclusions, it is recommended that: one, in order to ensure steady and reliable supply and demand of cattle, the market and transport infrastructure need to be developed and improved; two, there is the need for further study especially on cattle transport and other aspects of the catchment area like buyer characteristics.

REFERENCES

Adamu, F.L. (2005): The Role of Informal Market Institutions in Trading and Market Security: The Case of Acida Livestock Market in Sokoto Paper developed under a network research of the UK *Department for International Development* .25 March, Usman Danfodiyo University, 2005.

Ahmed, A. (2011): Cultural Effects on Art, Craft and Architecture in Wudil in Muhammad, M. and Ritter, B. (Eds.) Wudil Cottage Industries. Wudil: Kano University of Science and Technology.

Danladi, J. (2015): The Contributions of Kantin Kwari Market to the Socio-Economic Development of Kano Atate, 1967-2013. *Kano Journal of Hitory*, 2 (1): 131-146.

Dolega, L., Pavlis, M. and Singleton, A. (2016) Estimating Attractiveness, Hierarchy and Catchment Extents for a National set of Retail Centre Agglomerations. *Journal of Retailing and Consumer Services*, 28: 78-90.

Emielu, S. A. (2016): Tropical Africa: A Social and Economic Geography. Nigeria: Geographical Bureau, Ilorin.

Gambo, B. (2016): Catchment Locations of Buyers for Agricultural Food-Product Wholesale Markets in Kano Metropolis, Nigeria. *Dutse Journal of Pure and Applied Sciences (DUJOPAS)*, 2(2): 97-106.

Giginyu, I.M. (2011): In the Heart of Nigeria's Biggest Cattle Market. Daily Trust, 24.

Gray, A.C. (2014) Spatial Delineation of Market Areas: A Proposed Approach. Unpublished M.Sc. Thesis, Faculty of the USC Graduate School University of Southern California.

Hammack, S.P. (1998): Cattle Types and Breeds, Characteristics, and Uses. United States: Texas Agricultural Extension Service, the Texas A&M University System.

Hassan, U.A., Makarfi, A.M. Bayi, U.A. and Abubakar, B. (2011): Assessing Barriers to the Flow of Goods along the Lagos –Kano Corridor, World Bank Study Report.

Holt, J., Lecumberri, N., and Willenborg, E. (2018): Revised Livelihoods Zone Map and Descriptions for Nigeria: A Report of the United States Agency for International Development Famine Early Warning Systems Network (FEWS NET).

Joshi, N.R., McLaughlin, E.A. and Philips, R.W. (1957): Types and Breeds of African Cattle. Rome: Food and Agriculture Organization of the United Nations.

Kano State Government (2013): Kano State Investor' Handbook. www.kano.gov.ng

Kubkomawa, H. I. (2017): Indigenous Breeds of Cattle, their Productivity, Economic and Cultural Values in Sub-Saharan Africa: A Review. *International Journal of Research Studies in Agricultural Sciences (IJRSAS),* 3(1): 27-43.

Mamman, A.B. (2005): Transport Aspects of Livestock Marketing at the Achida and Sokoto Kara Markets. Paper developed under a network research of the UK *Department for International Development* .25 March, Usman Danfodiyo University.
Community.dur.ac.uk/…marketing/A.B.%20Mamman%20-%20Transport.

Nabegu, A.B. (2008): Utilization of Municipal Solid Waste in Urban Agriculture around Kano Metropolis. *Journal of Geography and Development*, 2 (1): 1-15.

Okediji, F.A.B. (1973): The Cattle Industry in Northern Nigeria, 1900- 1939. Indiana: Prepared by the African Studies Program Indiana University Blooming ton.

Tanase, G.C. (2010): Trading Area Analysis and the Importance of Location to Retail Companies. *Romanian Distribution Committee Magazine*, 1(2): 66-71.

Vega, R. S., Acuna, J. L. G. and Diaz, M. R. (2015): Spatial Analysis of Consumer Behavior in a Food Products Market. *Theoretical and Empirical Researches in Urban Management*, 10(1): 25-42.

Vitcenda, M. (2011): Downtown and Business District Market Analysis, University of Minnesota Extension, Ohio State University Extension, and University of Wisconsin Extension, March 30.

Wieland, T. (2017): Market Area Analysis for Retail and Service Locations with MCI. *The R Journal*, 9(1): 298-323.

Yakasai, M.T. (2011): Marketing of Agricultural Products in Wudil, in Muhammad, M. and Ritter, B. (Eds.): Wudil Cottage Industries. Wudil: Kano University of Science and Technology.

Zubairu, N.I. (2015): A Study of the Colonial Economy of Wudil District, Kano Province, 1907-1960. *Unpublished M.A. Thesis*, Department of History, A.B.U., Zaria.