AN ARCHAEOLOGICAL SURVEY OF UBASAA IRON WORKING SITE, CHIKUN LOCAL GOVERNMENT AREA OF KADUNA STATE, NIGERIA

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BY

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY ZARIA,
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DEPARTMENT OF ARCHAEOLOGY,
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APRIL, 2015

DECLARATION

I declare that the work in this Thesis entitled AN ARCHAEOLOGICAL SURVEY OF UBASAA IRON WORKING SITES; CHIKUN LOCAL GOVERNMENT AREA OF KADUNA STATE has been carried out by me in the Department of Archaeology. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this thesis was previously presented for another degree or diploma at this or any other Institution.

Jemimah Marcus ADAMS _____ _____

Name of Student Signature Date

CERTIFICATION

This thesis entitled AN ARCHAEOLOGICAL SURVEY OF UBASAA IRON WORKING SITES, CHIKUN LOCAL GOVERNMENT AREA OF KADUNA STATE. By Jemimah Marcus ADAMS meets the regulations governing the award of the degree of Masters in Arts Degree in Archaeology, of the Ahmadu Bello University Zaria, Nigeria, and is approved for its contribution to knowledge and literary presentation.

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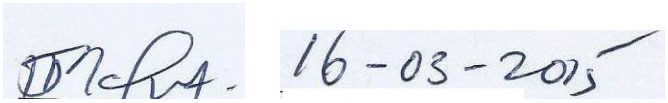
Dr. Joseph Mangut 

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Prof. Zoaka A. Hassan

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Dean, School of postgraduate Studies Signature Date

DEDICATION

This thesis is dedicated to God Almighty who has been my strength and all in life, my late parents Rev. Marcus Adams and Mrs Naomi Marcus Adams whom invested much on me and are not here to reap their labour; your encouraging words are still fresh in my heart.

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ABSTRACT

This research work focuses on the study of iron working site at Ubassa in Chikun Local Government Area of Kaduna State. The work concentrates on the documentation of the evidence of iron working in the area and how this industry affected the environment and human development in the area and its surroundings in general. The research has been conducted using traditions, archaeological survey, and classification and analyses of materials. The oral traditions collected focused on the history of the people who worked iron in the area including the history of iron working and its impact on the different aspects of human life. An archaeological survey of the site involved mapping of the site by determining the size of the site and the distribution of cultural materials on the site. Classification and analysis of artifacts and features was carried out using attributes observable through the naked eyes.

Findings from this research work has been able to reveal that, the workers of iron in this area had a good understanding of their natural environment. The role the environment played in the choice of iron smelting sites has been demonstrated in this work as well. On the whole, the research although in its preliminary stage has illuminated aspects of the history of iron working at Ubassa site in Kaduna State.

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CHAPTER ONE

INTRODUCTION

This research is concerned with Ubasaa abandoned industrial site in Buruku District, Chikun Local Government Area of Kaduna State, Nigeria. (figure 1) The people who occupy parts of the research area today belong to the Gbagyi ethnic group

The site has good evidence of past human activities in form of grinding stone, furnaces, tuyeres and iron slag. Few archaeological works have been carried out in the Buruku area (Abdulkadir, 2008; Marcus, 2008; Bello, 2009) and all of these did not involve survey and mapping for proper documentation of the archaeological materials. These sites are all found in locations where they are prone to both human and natural destruction. This current research is focused on the Ubasaa iron working site and it is justified by the fact that, the site is rich in cultural materials which have been preserved in relatively good state. This site according to oral informants is said to have been a big industrial site but parts of it have been destroyed by the Kaduna Ministryof Environment in their attempt to create a forest reserve (forest plantation). The site was discovered through the help of some forest guards (Mr. Sylvester Boyi, Solomon Boyi,, Monday Thomas, Dan Kaduna Dandadu, and Joshua Ali 2013) under the Kaduna State Ministry of Environment.

Two localities of cultural materials were identified on the site and for the purpose of clarity, have been designated as localities A and B and they are about two kilometers apart.

1.2 Statement of Research Problem

There has been no archaeological research conducted on Ubasaa site despite its huge archaeological potentials. This site with its extensive size and enormous evidence which point to a big iron working industry can only be compared with the Tsauni iron working industry in the Zaria area. Considering the impact of iron working technology on the environment and human life in general, it becomes pertinent to investigate this industry to find out whether it had some links with the Tsauni industry which is not too far away from it, and how it impacted the immediate environment and human life in that part of the present Kaduna state. The findings from this study are potentially useful for addressing current technological and ecological needs. Apart from this, the site is under serious threat by agents of destruction like human activities such as farming, forestry plantation, rearing of cattle as well as natural agents like windstorm and erosion. It is in the light of this that, this current research becomes necessary so as to document the cultural materials that have survived on the site and their history through archaeological and historical methods.

1.3 Aim and Objectives of the Research

The aim of this research is to document evidence of iron working in Ubasaa. Through the following:

- to conduct an archaeological survey and documentation of finds and features on the site
- to collect and document oral tradition on the history of the people of Ubasaa.
- to analyze and interpret data from the site for the purpose of writing aspects of Ubassa history.

1.4 Scope and Limitations of the Research

This research work covers the archaeological survey of Ubasaa site and a comparative study of localities A and B of the site. This research is constrained by the researcher's inability to carryout excavation and makes no provision for the dating of samples of the material remains from the site which would limit the researcher's explanation and interpretation of the available data.

1.5 Literature Review/ Theoretical Framework

The invention of iron working technology was one of the most important feats in human achievements which had a widespread impact on man's life. (Haaland, 1985; Schmidt and Childs, 1985; Odofin, 2010).The study of iron in sub-saharan Africa has been engrossed in arguments and counter arguments. These arguments have given rise to three different schools of thought as regards to the origin of iron working these include; the diffusionist school, the indigenous school and the cautious schools of thought (Okafor, 1995).

Cathage in present- day Tunisia was also said to be one of the donor areas for West African iron technology through the activities of Garamentes which stretches as far as within 200km of Gao in the proximity of river Niger (Andah, 1979; Okafor, 1995).

While the debate about the origins was raging, several early dates were accepted for iron working in parts of Africa. For many years dates from Taruga in the Nok culture area have been held as the earliest for iron working in sub-saharan Africa. The date of 500 BC

was established for Taruga by (Fagg, 1968; Shaw, 1969; cf. Okafor, 1995). Okafor, (1995) favoured both north and north-east Africa as the source for West African iron technology while some people have associated the beginning and spread of iron working in most parts of Africa with the Bantu and their spread in Africa (Fagan, 1965; Greenberg, 1963; Mason, 1974; Davis, 1966; Posnanky 1968; cf. Okafor, 1995). Goucher, (1990) believed that there was transfer of labour and technology during the era of Atlantic trade (c. 1500-1800) which created an African diaspora.

There are also some scholars that counter the argument against the diffusion, independent invention of iron in West Africa was said to be possible (Kense, 1985; Okafor, 1995) this was as a result of lack of or little archaeological evidence to show that iron technology was in transit from the desert regions from where it is said to have diffused to sub-saharan Africa. Also, lack of similarities in methods (processes and artifacts) of working iron between the donor areas and the recipient regions as expressed by (Andah, 1979; Kense, 1985, and Okafor, 1995) is considered another reason for arguing against the diffusionist model.

The controversy surrounding the origin of iron technology in sub-saharan Africa still remains potent among scholars and focus seems to have shifted from whether the idea of iron metallurgy originated in Africa or not. The technolzogy of iron smelting as it pertains to mode of technological processes of production, types of furnaces as found in different areas and the economic, cultural, social and environmental factors directly or indirectly related to iron working (Andah, 1979; Kense, 1985; Childe, and Schmidt, 1985; Okafor, 1995).

The diffusion proponents were simply expecting evidence of pyrotechnology as a foundation for iron technology as was obtainable in other regions which were deficient in earliest study of African metallurgy. Pyrotechnology was said to have existed in Akjourt, Mauretania and in Agadez, Niger Republic (Okafor, 1995). Also the independent proponents have it that migration or trade does not always leave its traces in expected pathways, hence traceable evidence along pathways is tied to chance discovery, so one could not have concrete evidence to argue for the diffusionist model.

A date of mid- ninth century BC was obtained from dating a piece of wood covered by iron slag in a smelting furnace at Do Dimmi in Niger (Calvocoressi, and David, 1979, cf. Okafor 1995). At Meroe, the widely suggested source of African iron, dates of third to sixth century BC were obtained from materials associated with slag (Green, 1975). The site of Buhaya in north western Tanzania, gave dates of ninth and fifth centuries BC for iron working (Avery, and Schmidt, 1979; Schmidt, and Avery, 1978; cf. Okafor, 1995).(Kense, 1985:16) Daboya iron working site in Ghana dates to mid -first millennium BC to mid- first millennium AD. For the Congo basin de Maret, Van Noten, and Cohen, (1977; cf. Okafor, 1995) published fourth to third century dates for the earliest iron working there. For Gabon, it is dated between 500-700 BC, and almost as early in the Cameroon region (Okafor, 1995). Some of these accepted dates are older dates which were rejected as unacceptably early or impossibly old or earlier than what is assumed to be the date for the beginning of iron working in Africa. Such rejected dates include a 3265±65 BC from Nok Nigeria published by Barendsen, Deevey, and Gralenski, (1957:916-918), 3190±129 and 3580±130 BC (Davies 1966) and 1630±130 to 1240±120 BC dates from Ntereso Ghana (Shaw, 1969) and a second

millennium BC dates from Buhaya in Tanzania, (Schmidt, and Avery, 1978; cf Okafor 1995).

Okafor (1993) postulated that the knowledge of early African iron working could have developed independently and at the same time diffused to sub-saharan Africa. This is because most independent invention proponents argued about the AD 500 date of Daima which seems to suggest that the knowledge reached Daima but did not spread from there.

Evidence in a debate by the diffusion and independent proponents regarding the origin of iron technology in Sub-saharan Africa could be of dual origin.

Africa iron technology could have been invented in Africa especially at Taruga in the Nok area, before spreading to other areas especially the southern axis including the Nigerian Cameronian border where the spread was heightened by the Bantu migration (Guthrie, 1962; Greeberg, 1964).

Beside archaeological investigations of early Iron Age smelting site, some people have undertaken what Childs and Schmidt (1985: 122) termed 'Imitative experiment based on ethnographic models aimed at reconstructing techniques of African iron smelting (cf. Okafor, 1995). Many Iron Age sites have been identified and studied in Tanzania which shows that preheating of tuyere before decarburization in the forge was carried out by smelters. Rituals and symbolism especially by depictions on furnace were also prevalent (Schmidt, 1977, 1983, 1996; Schmidt and Awery, 1978; Barndon, 1996; cf Okafor, 1995).

From the site of Bamenda and Ndop plan of Northern Cameroon Work done by Warmer (1975) Warnier & Fowler (1979) and Rowlands (1989) have been brought to

light extensive bloomer iron working in the 'Iron Belt' of the grass fields of Cameroon which has been christened. (cf Okafor1995: 87)

Also from the Congo Basin which comprises of Zaire, Rwanda, Burundi and Gabon, studies revealed numerous iron age sites with evidence of furnace types, smelting techniques and one of the best chronologies for Africa Iron Age (Noten, 1985; Clist, 1987, 1989; cf. Okafor, 1995)

There are many archaeological works carried out in Nigeria which have revealed evidence of iron working across the country. Nigeria through these researches is said to have produced one of the earliest date for iron working in sub-Saharan Africa. These archaeological researches covered extensive iron working sites and have brought to light different types of furnaces that were used for smelting iron. For example the site of Taruga revealed a non-slag tapping shaft furnace that produced a date of 500BC (Nadel, 1942; Fagg, 1969 cf Abubakar 1987; Tylcote, 1975 cf Jemkur, 1989). Further archaeological investigations have revealed that shaft furnaces were widely distributed over northern Nigeria, such as in Kano, Katsina, Kaduna, Zamfara, Kebbi, and Zaria (Abubakar, 1987). Schmidt, (2006) asserted that the shaft furnace is more efficient than other types of furnace in iron production.

The iron slag from eastern Nigeria, especially that of Lejja in Nsukka and Umundu in Enugu State are larger than any that has been discovered elsewhere in Nigeria and are said to have come from shaft slag tapping furnaces (Okafor, 1995). This was in contrast to Anozie's earlier description of pit or bowl furnace at Lejja near Nsukka and Nwofein Abakaliki (Okpoko, and Ibeanu, 1999). Eze-Uzomaka (2009) Asserts that the dates obtained from Lejja revealed that the oldest date was about 4005 ± 50 BC, while

the latest date is 1715±35BP. These new dates obtained from Lejja, showed that iron smelting had been going on in Lejja for over 1,500 years before the earliest dates recovered for iron smelting in Opi (520B.C) in the Nsukka area of Nigeria. In Western Nigeria on the other hand has one of the earliest records of research on iron smelting.

In 1904 Bellamy, recorded the use of dome furnace by the Yoruba smelters at the village of Ola-Igbi, north of Oyo. At Ola-igbi, iron ore, roasted over a fire of green timber, was pulverished by pounding in a wooden mortar and also that the Ola-Igbi people were involved in steel production. (Okpoko, and Ibeanu, 1999) In (Williams, 1973; cf Okpoko, and Ibeanu, 1999). This is highly debatable bearing in mind the complex processes involved in steel production in Ola-Igbi. He also reported that more than 100 people involved in smelting were sighted by visitors in 1904 at Laagbe in Oyo. Research efforts over the past years have increasingly revealed the complexity and sophistication of African system of iron working. This understanding has benefited significantly from the marked increased in ethnoarcheological research, particularly the use of oral traditions and observational situations in the reconstruction of past smelting and smithing processes, (Goucher 1990; Okpoko and Ibeanu, 1999).

Research work in the Zaria area was carried out in part to identify different styles and types of furnace and this yielded good result, the furnace type are clay shaft (Sutton, 1985; Mangut and Odofin 2008).

Sutton observed that Tsauni North furnaces which he categorized as Taruga style are associated with standard tuyere (Effah – Gyamfi 1981; cf. Sutton, 1985) While Tsauni South furnaces which belong to the Samaru West types that is, shaft furnace associated with massive tuyeres (Sutton, 1985) He further considered the Tsauni North

furnaces to be contemporaneous with Taruga and the Nok culture (Sutton, 1985). Massive types of tuyeres have also been reported at Kubani river valley in the Zaria area which is tapering and grass tempered with the narrower end of hole – 5cm and up to 12cm at the broader with an external diameter of about 30cm. Sutton has also reported smaller tuyeres at Tsauni North and Ungwa Makera (Sutton, 1976; Abubakar, 1987), the bores of which range from 3cm – 5cm with external width of up to 10cm.

Abubakar, (1987) observed that the smelters ability to understand the criteria of appearance, texture and density was very vital in the identification of the quality of the ore for use in iron smelting. Based on archaeological investigation at Samaru West smelting furnaces have been found in close proximity to laterite out crops (Sutton, 1976 a) quarry type of mining has been suggested in the Zaria area (Abubakar, 1987) similar case has also been reported in the Lankan district of Jos, Plateau (Daze, 1981).

The pit type of mining was reported in several parts of Zamfara Kingdom in the 19th& 20th century (Abubakar, 1987). In smelting operation in which the site is located very close to the sources of ore and fuel the smelters are not stress in terms of transportation unlike were the smelting sites are not close to the source of ore and fuel then smelters would have problem of transportation to the smelting sites as was the case at Zamfara where donkeys were used (Abubakar 1987) and Lankan District of Jos District of Jos Plateau (Daze 1981).

According to Odofin, (2010) investigating some ancient iron working site in the Tsauni area, gave a number of radio carbon dates of between the first and fourth centuries A.D, although other scholars like Sutton had earlier work in the tsauni area without dating of the site. It has also been acknowledged that furnaces in central Nigeria

were said to be discovered close to streams based on the findings of Jemkur, (1992) and Odofin, (2010).

As far as archaeological work is concerned nothing much has been done in the Buruku area. There are just a few archaeological reconnaissance carried out on some sites in the Buruku area such as, Kurmin Wuya – Dande, Kurmin-Riya'a, and Gwarso which identified the following relics of human activities in the past, defensive walls granary foundations, dying pits, stone monoliths, grinding stones, iron slag, furnaces among others. (See Abdulkadir, 2008; Marcus, 2008; Bello, 2009).These sites despite their cultural material similarities, no mapping and surveying of these site have been done.

The present researcher has surveyed the Ubasaa iron smelting sites for proper documentation and for further study of the site or for excavation, also Tsauni and Ubasaa iron smelters made use of shaft furnaces, littered iron slag on heaps and scattered tuyeres in the site, with all this semblance it possible that there was a link between Tsauni and Ubasaa. The above works ignored culture cultural ecology which has prompted the researcher to adopt it.

For a research to be carried out in a way that it will be properly understood, it has to be situated within or aligned with an appropriate framework that explains and captures the thrust of the research. It is in-line with this that a Cultural Ecological approach was adopted for this research work. This approach is concerned with the dialectical relationship between environment and human cultures. Cultural ecological models are usually both systemic and comprehensive and so provide much more sophisticated models of the interaction between culture

and environment. Not only do they incorporate the tenets of general system theory, they partition the environment into three separate complementary facets rather than one. These are the physical landscape (habitat), the biological environment (biome) and the cultural environment (Andah and Okpoko, 1994). This theory seems to have had its beginning before the early 1900s and by 1920s, ecology had become an organizing framework for broadly based models of plant and animal relationships between and within geographical zones, as reflected by the adoption of the terms "biosphere" by Venadsky and "ecosystem" by Tansley (1935) in Yesner (2008)

The termed cultural ecology was formally coined by Steward (1955) in Yesner (2008), Steward, conceived cultural ecology as a methodology for examining the relationships between human groups and their environments, rather than a factual body of data governing the nature of those relationships. Steward asserts that ecological factors were important determinants of certain aspects of culture (technology, demography, subsistence, economics) and less important in other aspects of culture (social structure, political organization, ideology) Bennet (1943) in Yesner (2008) also followed up with the concepts.

Sowunmi (2001) postulated that ecology is the study of the interactions between the components of the environment in the different habitats on earth. The term ecology comes from two Greek words, Oikos, which means "household" and "logia" which means the study of a given habitat, with plant and animals populations including humans which interact with it and with one another is an ecological system known as an ecosystem. Watson (2008) defines culture as all

the characteristics of human behavior, technological sociological, ideological that distinguished human kind from other primates and other animals.

Anderson (1982) in Alabi (2001) suggested the connection in nature-ecology relationship when he opined that culture is an enduring expression to an environment thus, giving the inter-relatedness of building, instruments of war, tools aesthetics materials among others being components of a functional whole. Like Childe, Steward (1955) provides a view on how environmental endowments and adaptation can influence cultural change. Ecology plays a vital role in shaping the culture of an area and culture is seen as an adaptive system. Hodder (1982) and Ortner (1984) in Alabi (2001) were among some scholars who contributed to the culture ecology school of thought.

In this research, culture-ecology relationship can be viewed from the fact that the ancient Ubasaa had a clear knowledge of their ecological endowments which they harnessed for their benefits. It was observed that mining of iron ores, smelting, and smiting of iron materials including the construction of furnaces and the identification of appropriate plants for fuel at Ubasaa iron working industry were possible because of the interaction between man and his environment. There is therefore a clear demonstration of the nature-culture relationship on the Ubasaa site under study.

Haaland (1985) in his ecological context of iron production also postulated that ecological factors were significant determinant to culture. He further attributed the depletion of the vegetation which adversely affected the supply of hardwood for smelting activity.

Therefore, we can say that when the ecology of an area is endowed or affected, it tend to influence the social and cultural components of a society and this will be identified in the ecological and cultural fabric of ancient Ubasaa. Hence the adoption of this the culture ecology approach as the theoretical framework for this work.

1.6 Methods of the research

Considering the aim and objectives of this research, the following methods were employed during the research; Written sources, Oral tradition, archaeological survey, classification and analysis of finds and features.

1.6.1 Written sources

Consultation of written documents was very imperative for a research of this magnitude. This is because the study of iron smelting varies from place to place. Literatures were consulted about the Gbagyi people and also about iron smelting in Nigeria. Thus, the reference Library of the Department of Archaeology, Ahmadu Bello University, Zaria and other public libraries, private collections and National Archives Kaduna (NAK) were visited to be able to gather written data for this research.

1.6.2 Oral tradition

Oral traditions are histories in forms of poems or songs, folklores or sayings handed down from generation to generation by word of mouth (Bahn and Renfrew 1997) .Oral tradition is a body of social, economic, political, religious and demographic experiences of a human group, preserved and transmitted from generation to generation by word of mouth (Gundu and Igirgi 1993; Schmidt 2006). Oral tradition still remains a

valid source of historical reconstruction majorly in societies where written documents are absent or scanty. Oral tradition if properly analyzed and interpreted will help answer questions and shed more light on archaeological materials and historical traditions of the people. In this research, oral tradition was collected from informants based on gender (men, and women), status, age and willingness to provide relevant information. Twenty six individuals were interviewed during this study, and the interviews were recorded and some transcribed on paper. Some of the oral traditions collected were basically on individual basis and while two of the interviews started based on individuals and ended as a group interview. Women were also involved in the collection of traditions since they are an integral part of the culture, and are responsible for much of the material culture which archaeologists come across such as pottery. Some teenagers were also interviewed, this was to know if their parents had told them of the past and to measure the level at which traditions are passed unto the current generation and the level of consistency with which the traditions are passed and whether this present generation of children in the research area has good knowledge of the past history or not. Oral tradition was used to document the history and traditions of the people who once occupied the Ubasaa site. A question guide was used by the researcher. Although during the oral interviews the researcher could not locate where the former inhabitants are, the researcher only made use of the information given by the few informants who claimed to have had contact with the Ubasaa settlers. An idea about the methods of smelting was not gotten since the informants interviewed were neither part of the abandoned site nor contemporaries of the inhabitants of the site.

1.6.3 Archaeological survey

In this research, the researcher carried out a surface survey by walking on the site with two guides and one field assistant. Archaeological survey is an approach to data recovery that involves the examination of a specified tract of land to observe, record, and collect from the surface the visible remains of past human activity. Survey is supplemented by sub-surface probing (Dancey, 1981:83). Surface survey refers to methods archaeologists use to acquire data from sites without excavation. The overall objective of surface survey is to determine as much as possible about a given site or region based on both observing surface remains and detecting subsurface features through remote means (Ashmore and Sharer, 1996:89). Cultural materials identified were collected randomly and features identified were measured, described, photographed and documented. Instruments used are: Garmin 46 G.P.S. (Global Positioning System) was used to get the locations and positions of finds and features, measuring tape which was used for measurements of dimension such as height, width, circumference and distance between finds and features in association with each other, and finally a ranging pole was used in measuring offsets and as a scale when photographing features. The data from the survey was also used to develop a site map of the study area.

1.6.4 Classification and analysis

Classification provides the first step towards reconstructing the past. Classification refers to the process of arranging or ordering objects into groups on the basis of the sharing of particular characteristics called attributes (Ashmore and Sharer 1996).Analysis means the study of a material in order to understand both its constituent

elements and their relationships. The purpose of data analysis is to provide information useful for archaeological interpretation (Sharer and Ashmore, 1979). Analysis are of various kinds, including typological classification based on form or style, determination of age and various technical studies such as identification of what artifact is made of and how it was made (Sharer and Ashmore,2003). In this research, analysis of data was done using naked the eyes due to financial constraint to carry out laboratory examination and analysis of some the evidence. Furnaces were analyzed using attributes such as types, and size. Grinding stones were classified and analyzed based on their sizes and wear pattern.

CHAPTER TWO

GEOGRAPHICAL AND HISTORICAL BACKGROUND

2.0 Geographical Background

2.1 Location

Ubasaa (Ressa) site is located in Buruku District, Chikun Local Government Area of Kaduna State. It is situated about 19kilometers from Kaduna along the Kaduna-Lagos highway. On the globe Buruku is located approximately on latitude 10^0 36` 07" north and Longitude $7^0$ 13`10" east. As one of the district headquarters in Chikun Local Government Area, it is bounded by Birnin Gwari Local Government Area to the north, Mando in Igabi Local Government Area to the east and to the west and south by Kuriga and Kasaya Districts all in Kaduna State. The people who occupy Ubasaa area today belong to the Gbagyi ethnic group

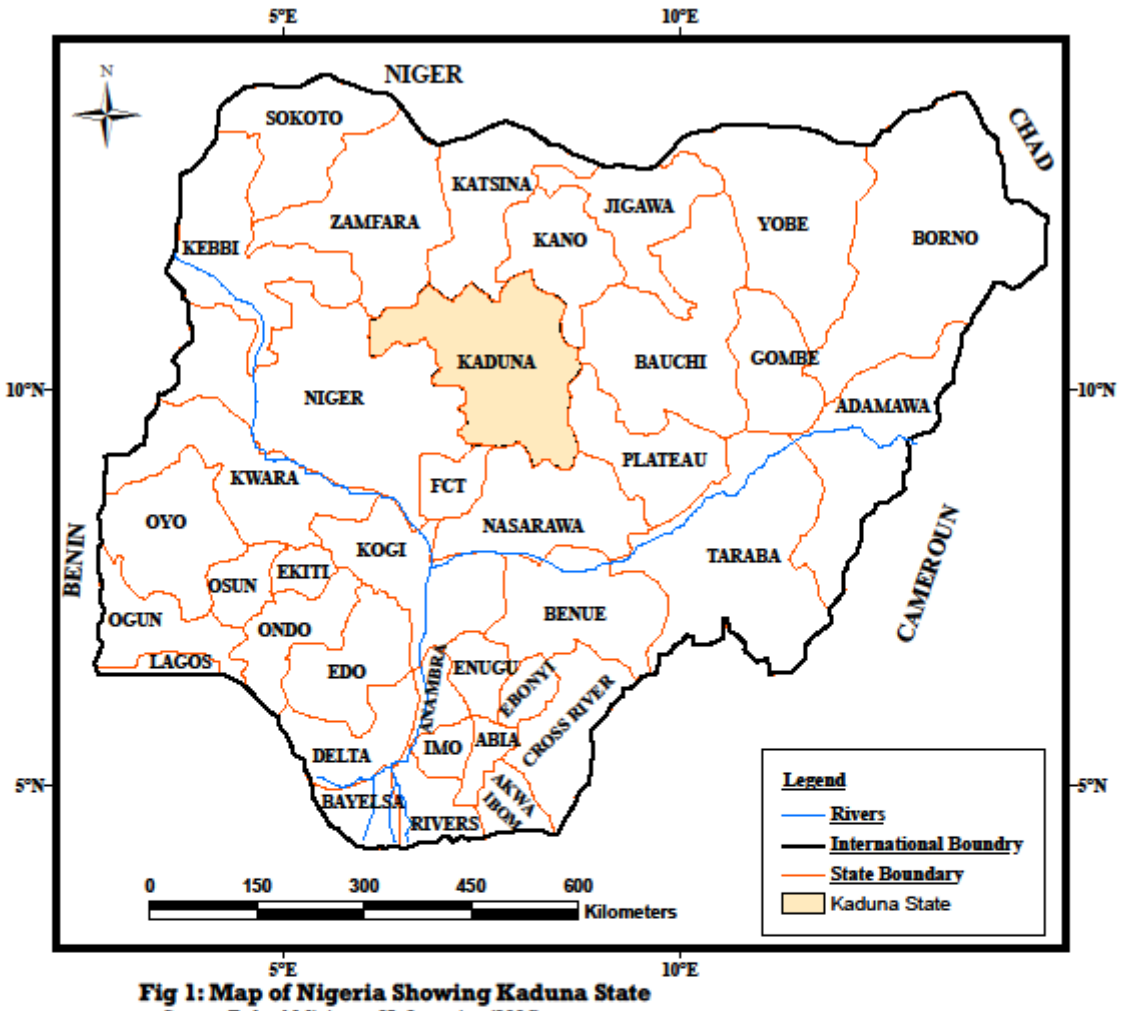

Fig 1: Map of Nigeria Showing Kaduna State

Source: Federal Ministry of Information (2006)

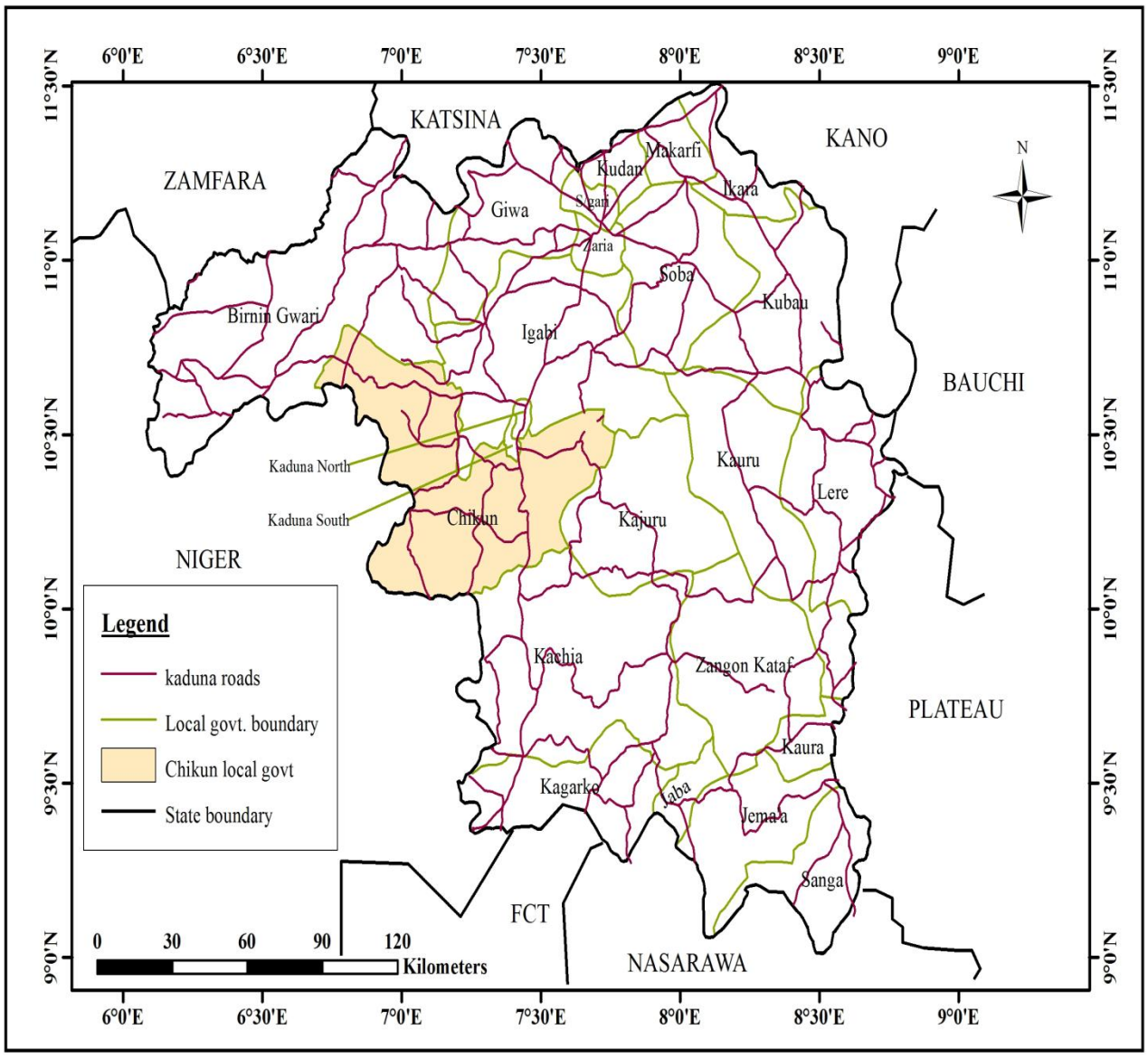

Fig 2: Map of Kaduna State Showing Chikun LGA

Source: National Population Commossion, 2010

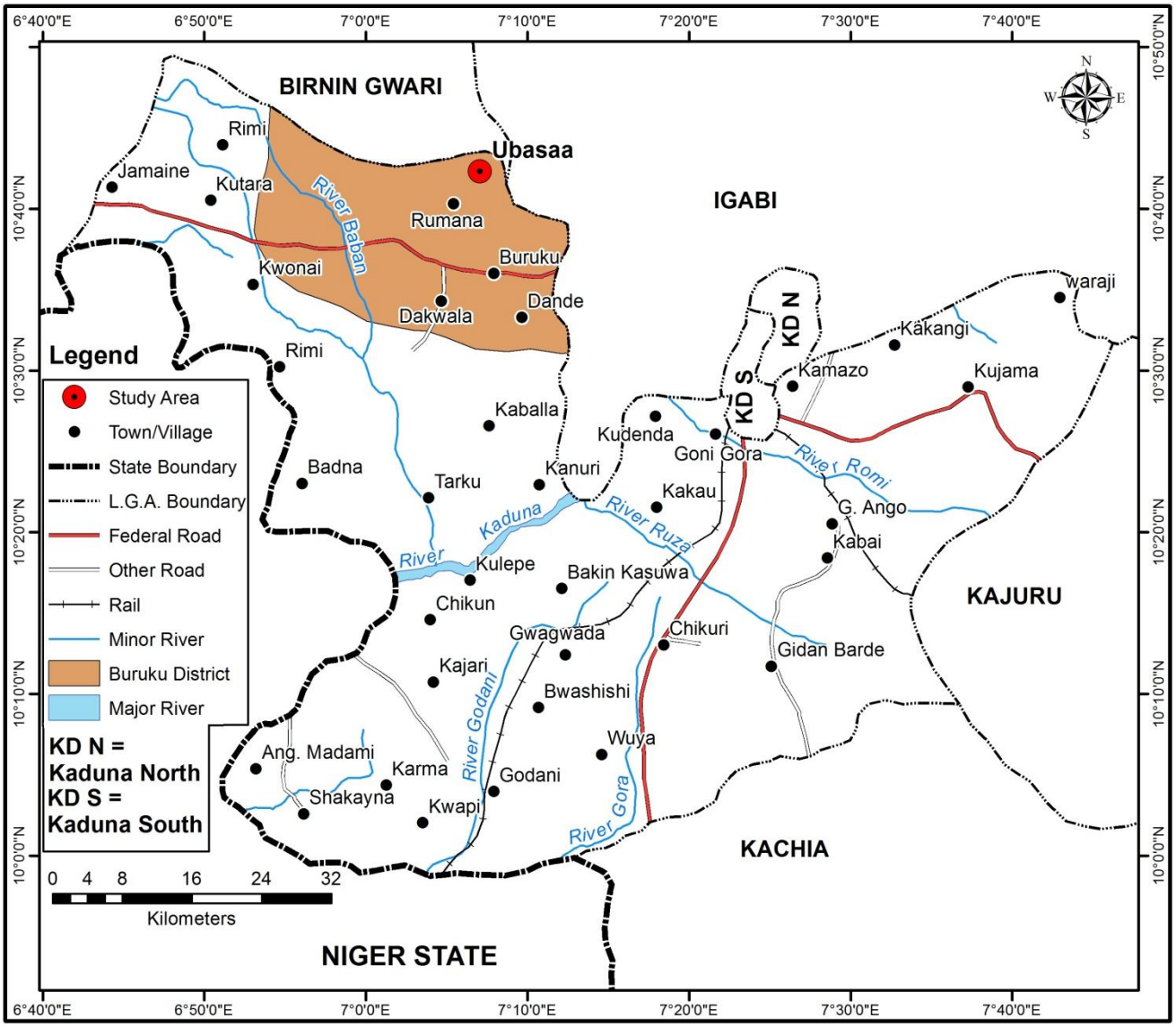

Figure 3: Map of Chikun L.G.A. showing Study Area
Source: Kaduna State Ministry of Land and Surveys

2.1.2 Climate

According to Koppen's classification scheme, the settlement area of Buruku,the District where our research site is located falls within the tropical grassland (savanna), it is characterized by two distinct seasons – wet and dry season (Ajayi, 2003). The wet season lasts for about 5 to 6 months beginning from April to early October, almost 180 days of rain duration in a year; it has its peak in August. The rainfall distribution in Buruku village is similar to that of Kaduna which has a mean annual precipitation of about 1,295.4mm. The duration of sunshine hours ranges from 8 – 10 hours from November to March and about 10 – 12 hours from April to October, Buruku receives the highest temperature between March and April before the onset of the rainy season, and the coolest months are July and August, while in March the temperature can be as high as 37^0C due to cloudlessness and it can be as low as 18.3^0C in December. The effect of low temperature in the early part of the year is intensified by the strong Harmattan winds between November and February. The lowest mean relative humidity occur in December, through early March which are characterized by dominance of the tropical continental airmass and the Hammattan. The highest relative humidity occurs in July and August. The climate of Buruku is generally affected by the North-easterlies (NE) and South-westerlies (SW) winds (Sylvester, 1982).

2.1.3 Geology

The study area is underlain predominantly by the Precambrian rocks of the northern Nigerian basement complex endowed with principal rock types such as older granites, quartzite's, gneisses, complex dionites, schist, phyllites, and pegmatiles occur as loose sediments. The rocks have generally been deeply weathered to form deep weathering profile of fine textured soils or debris which is easily eroded. The older granites are frequently exposed on the land surface either in form of dome hill (inselberg) or as low outcrops. There are also Ruwares and Kopjes found in isolated areas (Bulus, 2008)

The soils are predominantly tropical ferruginous soil derived from the basement complex and sedimentary rocks around the high plains of the area. The soils are similar to those of other northern plains with low organic matter content usually about 1-2% which is attributed to the sparse vegetation cover within the area and poor process of humification, highly weathered mixture of clay quartz and other diluents, soft when wet and may become harder (rock like) when dried and even crack during dry season with clay content of 1:1 (Kogi, 2005; cf, Bulus, 2008).

The nature of the parent materials are of unconsolidated texture with shallow profile in some parts and resistance to weathering. There is also hydromorphic (fadama) soils which occur around the flood plains or marshy areas, with annual deposition of alluvial materials which make the soil more fertile for gardening and irrigation farming during the dry season. These soils also possess excessive water retention capacities that persist into the dry season (Bulus, 2008). Specifically, the soil in the research area are reddish brown and lateritic in nature.

2.1.4 Drainage

Buruku is characterized by a river and streams. River Tubo is the major river in Buruku, it has its source from the highlands of the northern or Hausa Plateau. The river flows southeast of the study area into River Kaduna. River Tubo is partially seasonal and it exhibits both transgression and regression, it is not navigable throughout the year. During the rainy season, the river rises and flows to all the surrounding flood plains but during the dry season, the water level usually falls and become shallow. River Tubo is fed by Damari stream in the far north of the village, and other streams such as Kigudu, Ressa, Kureh, Bida, Badna (Tukurwa) and Gwoso. These make possible the availability of water all year round in river Tubo thereby enhancing irrigation activities in the flood plains of Buruku.

2.1.5 Vegetation

The vegetation lies within the northern guinea savanna zone of Nigeria. It is made up of trees and grasses. The trees are short and widely scattered, they have thick barks probably for protective purpose against harsh environmental conditions and they are usually about 10 to 15m high. The common tree species found in the natural environment include *isoberlina-doka (Doka)* in areas where the soil profile is deep and fertile, other species are baobab (*Adansonia digitata)*, locust bean (*Parkia biglobosa*), white doka (*Isoberlina-tomentosa),* black plurell, *dinya* (*Vitex doniana*), custard apple, *Gwandar daji* (*Annona senegalensis*), sheabutter (*Butyrospernum paradoxum* or *Vitellaria paradoxa), kiriya* (*Prosopis oblonga*) *Baushe* (*Terminalia avicennioides*) *Kargo* (*Piliostigma thonningii*) and few acacia species. However, most of this natural vegetation has been altered by human activities that include bush burning, deforestation, over cultivation among others.

Non-natural vegetation are mango (*Magnifera indica*), tamarind (*Tamarindus indica),* cashew (*Anacardium occidentale),* guava (*Psidium guajava*), Citrus spp and other protected species. The Kaduna State Forest Management Project (KDFMP) in Buruku also have several exotic tree species such as Mahogany, (*Khaya senegalensis),* Ilorin balsam, (*Danieleronivera*), and Eucalyplus (*eucalyptus spp*) which are very good indicators of northern guinea savanna and high water table (Sylvester 1982).

2.1.6 Economy

The economy of the people revolves basically around agriculture in form of farming, and animal husbandry, both in the past and present. This is because each family as a basic social unit of society primarily farm to make it self-sufficient. At the present farming has developed from mere subsistence to large scale mechanized farming whereby laborers, tractors and animals are used for ploughing. Most people instead of farming for subsistence alone, also farm as wage earners. Farming is mostly done during the rainy season, while harvesting is done during the dry season. Also irrigation farming is being practiced presently in Buruku thereby giving the people the opportunity to engage in other activities such as weaving, hunting, bee-hiving among others. During the rainy season the people farm maize (*Zea mays*), rice (*Oriza spp),* guinea corn – (*Sorghum bicolor*) (*Vogera),* yam (*Dioscorea spp),* millet (*Pennisetum typoidum*), groundnut (*Arachis hypogeal*), sugarcane *(Saccharum officinarum*), tomatoes (*Lycopersicon esculentrum*), pepper (*Capsicum frutensis*) Gauta (*Solanum aethiopum*).

Animal husbandry is also practiced; livestock are reared by many farmers and by the nomadic Fulani who supply the farmers with manure. Another economic activity is in

form of small industries, such as blacksmithing, weaving of mats and hats of varying sizes and shapes, local extraction of groundnut oil, and sheabutter oil among others.

The people are known for boat making and fishing, they are said to have never been drowned in a river. They produced cocoyam, yam, cassava, potatoes and other native plants such as *risga, kamuku, tumuku, aburu* among others in the past

The people trade their farm produce, woven materials and other craft items on their main market day which is every Friday, and neighbouring villages such as Ugara, Gindindutse, Dande, Gwarso, Rumana- Hausa, Rumana-Gbagyi, Badna, Damba, Barinje, Udawa, Kawo among others do patronize the market to transact their businesses. The people are very good in producing local farm implements such as hoes, cutlasses, knives among others and these are also traded.

2.2 Historical Background

There are not much written documents on the Buruku area but, historical and anthropological researches on the Gbagyi people in general have made us to understand that they are scattered across some states in central Nigeria. Filaba(2008:4) asserts that, the Gbagyi people are found in all the local government areas in Niger State. In Kaduna State, they are in Birnin Gwari, Chikun, Kagarko, Kaduna North, Kaduna South, Igabi and Kauru Local Government Areas. In Nasarawa State, they are found in Keffi, Nasarawa Toto and Karu Local Government Areas and are spread across the whole Federal Capital Territory. The Gbagyi have two dialects; the Gbagyi/ Gbari and Gbawyi. One prominent area of research focus has been the origin and migratory history of the Gbagyi into their present homeland. An archival source in NAK SNP 17:3148 has it that,

oral traditions collected over the years by diverse scholars on the history of the Gbagyi claim that probably the Gwari tribe was indigenous to the southern part of Zaria province and were akin to the Bassa who came from this neighborhood; Gwari carry their load on their shoulder instead of their heads a practice common to both tribes (NAKSNP17: 3148; 281). Na'ibi,S and Dallatun, H (1969) assert that the Gbagyi settled in Zazzau before they were driven out of the area which is the present day Zaria, and this justifies why Zaria is still referred to as Zaria Gbagyi. From Zaria they dispersed and moved off in different directions along the banks of River Kaduna south of Zaria stretching to the confluence area of the Niger and Benue Rivers and others settling on Kuta hill tops. An archival source also claims that, "the Gwari in the north of the Nasarawa Emirate however, affirm that they have always been subservient to the Koro and that they came with them from Borno.

Diko (1990:1) reported that, the Gbagyi were said to have lived in Saudi Arabia and later migrated into Africa when Islam became strong in Mecca and Medina. The Gbagyi's continued with their idol worship even when the Islamic religion spread into the country. The Gbagyi are said to have left Saudi Arabia then crossed into Africa in small groups. They later came to Borno where they settled for many years with the Kanuri-Beriberi and other ethnic groups. Many Gbagyi groups strongly believe in this story and buttress the argument with the fact that the Gbagyi and Kanuri have common facial marks and other cultural practices.

Despite the cultural similarities between the Gbagyi and the Kanuri /Beriberi, (Meek 1960:213; cf Filaba and Gojeh 2008), their tradition of common origin is not supported by linguistic evidence. Filaba and Gojeh(2008:45) postulated that, the Kanuri'

and Gbagyi must have had some great contacts, possibly cultural and political when the Gbagyi were still around Lake Chad. Some Kanuri may have migrated into the Gbagyi area and become assimilated, as they were long-distance traders. This view is further supported by traditions collected in Hausaland and Borno, which alleged that the seven Hausa States were a hybrid of miscegenation of a Cananite who came to Borno and married a princess. He went to Kano and got a sword and came to Daura where a *sarki* (snake or rival king) prevented people from taking water from a well and he killed it. The queen then married him as his reward. She could not beget children thus he slept with her Gwari slave through whom seven *Banza* (slaves or subjects) where given birth to. They are: Gwari, Nupe, Jukwun,Yoruba,Yauri, Zamfara and Kebbi were born. Later, the Queen begot Hausa and they are:Biram, Daura, Gobir, Katsina, Kano, Rano, Gobir and Zaria (Smith 1967:53-59 cf Filaba and Gojeh 2008).

NAK SNP17: 18729; has it that, the Gbagyi people must have been subjected to some religious persecution by the Kanuri, this version claims that around 1600 AD, the Kanuri declared war on the Gbagyi because they refused to convert to Islam that was spreading in Borno during that period. It further states that the Gbagyi fled to Katsina and Kano kingdoms where they would be able to practice their beliefs without any hindrance. This version was silent about what happened to the Gbagyi people in Katsina and further said that the Gbagyi people that settled in Kano suffered religion persecution when one Kano king became a Muslim and decided to Islamize the ethnic group and other 'pagans' which led to waves of migration southwards. They journeyed to Zaria from there a large number of them found their way to Suleja and Koton Karfi area where they are said to have been established prior to 1750 AD.

As earlier mentioned Buruku district is bounded to the north by Birnin Gwari Local Government Area where the old urban centre of Birnin Gwari is located, Temple (1965) has it that some people came from Katsina and obtained a great influence over the neighbouring Gwari, which increased by the arrival of emigrants from Kano, Katsina and Zaria. The population is now mixed, for there are a number of Hausa (including Maguzawa) settlements. Temple (1965) has it that Kwongoma division has two independent districts under Gwari *sarkis* – Allawa and Kushaka. Temple further postulated that, Kushaka claims to be the oldest of the northern Gwari states having been founded early in the eighteenth century, if not before (1965:123). The original founders were said to have come from Manta on the northern bank of the River Kaduna which, before its destruction by Na Gwamache, was a powerful Gwari town. They found Kamuku (Ngwoi) town already established in the hills, and were probably given lease to settle, on agreeing to acknowledge their supremacy.

Boyi in his project work on – *A Survey of Historical Origin, Migration and Settlement in Buruku1900-1980*, has it that the tradition of origin of the Buruku people was attributed to NkwaGbagyi who were said to have migrated somewhere from Minna and settled at Kurmin-Riya before moving to the present day Buruku

Filaba in his work on – *A History of Karu, Kurape, and Kurudu Kingdoms: A study of economics, social and political changes among the Gbagyi of Central Nigeria in the 18th and 19th centuries (1994)*. Presented a strong argument against some colonial writings and debunked some of their assertions, especially on the origin of the Gbagyi speaking people. He concluded that it is possible that they never had a Bornoan origin as claimed by some colonial historiography, but had inhabited the central Nigerian area

where they lived a normal life exploiting the resources to meet their daily needs. Most of the Gwari villages or settlements today own their origin/history to hunting expeditions.

However, the use of linguistic and archaeological evidence has shown that the claims of Gbagyi tradition of origin being tied to migrations from Borno to Zaria holds no water. Greenberg's linguistic classification places Gbagyi, Nupe, Igbira and Gade in the same unit of the sub-family of the Niger-Congo language, which shows that, Gbagyi, Nupe, Igbira and Gade are generally related, they share the same geographical area (Central Nigerian Area) and they also have similarities in words. On the other hand, the Kanuri language is of the Nilo-Saharan group; hence, it becomes clear that the Gbagyi and Kanuri languages have no traceable genetic relationship. Also the 1600 AD date is too short for the disappearance of the Gbagyi original language (Sule 1988:33).

The early history of the Gbagyi is just like most African groups that come from oral traditions which thrive from generation to generation.

Oral traditions collected from the research area focused on the Ubasa site. Ubasaa is said to be the name of the first settler who served as king and also named the place after himself.

During the field sessions a majority of the informants said that the past settlers were the Gbagyi people who smelted iron. These informants claimed that the Ubasaa people did start iron smelting in the evening and continued to the early hours of the morning while the ore and fuel was gotten during the day time. They also claimed that Ubasaa was the name of the first settler and a chief *(sarki*). According to Saleh Umaru (personal comm. 5th July 2013) the early settlers belong to the Gbagyi ethnic group and had a strong political system with a *sarki* that controlled the Ubasaa area which covers

even to the present Kwate settlement, the distance from Ubassa (River Ressa) to the present Kwate settlement is about 7.5km. Kwate is found in the present day Igabi Local Government Area of Kaduna State,that shares boundary with Chikun Local Government Area of Kaduna State. This name Kwate is gotten from river Ressa their source of water. This name came about as a result of insects and leaves in the water which have to be removed to make the water drinkable. The informants said that our research site was a very big town that had defensive walls for protection against external attacks and the *Fulanin gida* normally served as watchmen for them when the town was in existence. Although they could not give reasons why the Ubasaa people left the site and are not sure of where they migrated to. Efforts made to investigate further about the where about of the original Ubasaa descendants were futile due to the inability of the informants to remember anything about their migration history from Ubasaa (Saleh Umaru and Jatau 5th and 7th July 2013 respectively).

With regard to oral tradition collected from various informants about Buruku has it that they belong to the Gbagyi ethnic group. The name Buruku was derived from *Abuku* (meaning meat in Gbagyi language). Buruku is said to be the younger brother to a village named Gwarso and as a result of population increase, Jemu and one of his brothers was said to have left Gwarso to Kurmin-Riyaa where they settled and built defensive walls, smelted iron, dyed clothes among other activities. Iron smelting according to an informant (Mallam Sa'du, and Saleh Umaru personal communication and 5th July 2013) was mostly done at night because of the cool breeze at night. The name Buruku came as a result of the Katsina migrants who adulterated the word *Yillabuku* (I am going to buy

meat) to Buruku, which later became the popular name of the settlement called Buruku. (Alh Yau Mamuda, Saleh Umaru pers com, 6th July 2013)

The political activities in the past started with the Daje family but they were overthrown by Jibrin who was sent by Sarkin Zaria. After his death, there were a lot of controversies among the Gwarso, Daje and the Jibrin family on the chieftancy title. The Daje family later emerge victorious, this lineage till date usually name their sons Abubakar and Mamuda for inheritance and royal identification. In the past the prince is normally secluded, while he is been taught how to act like a king before he succeeds his father although this custom is no longer in practice. Then title holder then were from smelters family because they were held in high exteem (Alh. Yau Mamuda,Alh Umaru, Saleh Umaru)

2.2.2 Wars

According to oral informants (Nuhu Saleh, Ali Yakubu, Iliya Umaru, Sa'du, and Saleh Umaru personal communication 2008 and 5th July 2013) the Gbagyi people of this place made use of bows and arrows to fight wars. The people were said to have never been defeated during wars because they made use of supernatural powers to fight wars which was very efficient for them. They had defensive walls, their streams were normally full even in dry season, this is to prevent their enemies from attacking them, and they were seen as frogs by their enemies. They also used bees to attack their enemies as a result of all these they were not be captured during the Queen Amina's war.

2.2.3 Crafts

The Oxford Advanced Learners Dictionary defines crafts as an activity involving a special skill at making things with the hands. The Buruku people in the past smelted iron and produced iron implements such as bows, arrows and spears for hunting. They also dyed clothes, weaved, tanned and produced earthen wares. They made use of tanned skin to cover themselves during the rainy season and this served as a rain coat (Gaje Ya'u, Umaru Hassan, pers. Com 6th July 2013).

2.2.4 Social Activities

Religion / festival

The Gbagyi just like most African societies practiced African traditional religion. They had different types of gods that protected them from evil such as *Magajiya, Sarkin Pawa* and others that are kept in the room for easy communication. These gods usually release bees to fight their enemies in times of war, the gods of the river makes it fill up even when it is dry so that their enemies would not cross to them. Before they occupied any land, human sacrifices of slaves were made, the slaves were usually bought from different lands or they were exchanged.

Also domesticated animals were not hurt by wild animals because of the rituals that they normally performed for protection

Also, a festival is usually done yearly before the rainy season starts, sacrifice of black goat and chickens are made to the gods on a hill at night during which no one in the village was expected to put on any light that day and whoever did the contrary will lose his home to mysterious fire outbreak. After the sacrifice is made the meat would be cooked and light will be distributed to the men from the chief's house to take home to

their families. During the sacrifice, they normally pray for protection and bountiful harvest. (Mallam Saidu, Mallam Ya'u, Saleh Umaru pers com 6th July 2013)

When a child is born, then he is usually taken to the river bank until the day of the naming ceremony. No one goes to the river bank except an old man who checks once in a while to see if the child has been carried away or invaded by ants, but if none of these happened, on the day of the naming ceremony the child is usually found with different gift items that will be used for the naming. This implies that the child is a true son or daughter of the father. It is important to note that the African traditional religion has been partially replaced by Christianity and Islam among the Buruku people (Mallam Ya'u, Mallam Sa'du, pers com, 2008 and 2013).

Marriage Ceremony

According to oral informants, in the past, before a boy or girl is married they must agree after which the boy will inform his parents, then he is accompanied by his uncle to inform the girl's parents of their son's intention about their daughter, if the girl confirms this then the boy will bring a bundle of guineacorn to her parents. The groom to be and his friends will farm for the father in-law for about 2-3 years or more as the case may be. The girl visits the boys house for four days in a year during which she is not expected to eat due to shyness and irritation, she normally carries along with her honey to feed on and she will do that for about two or three times before the marriage. The bridal price is usually paid to the girl's parents before the boy begins the farm work. The dowry includes *bunu* (a black wrapper) *adarawa, yenbebe* (white and black cloth) which is expensive because of its design work. These items are put inside a woven basket called

gwarma or *adudu*, honey, cow fat, sheabutter oil, *wassawasa* and other food stuffs that will last for more than six months for the bride in her husband's house. During the marriage ceremony the groom's relatives and friends do visit the bride house with gift items. The bride is taken to her husband's house at night or early hours of the day. In this area cousins were allowed to marry each other but were also warned not to tarnish the family image or relationship (Saleh Umaru, Gaje Ya'u pers com 5th and 6th July 2013).

Burial

The old were buried in the house, after the grave has been dug a ritual (*Jiba*) is carried out before the burial takes place. In the case of a king, he is buried by the minor chiefs; the king is buried in a bed chamber within a tomb built like a house. The tomb is sealed until another king dies and is taken for burial, then the bones of the former king will be packed to a side and the new dead body will be laid on the bed. After the death of a certain king the minor chiefs went to clean the burial chamber only to find out that the previous king who had died for a long time has not decayed but remained the way he was buried. This made them to build another tomb for him and for subsequent burials. None of the informants could explain why that particular king could not decay (Saleh Umaru, Mal Sa'du personal communication 5th July 2013) and (Jatau, Danladi 7th July 2013).

CHAPTER THREE

ARCHAEOLOGICAL SURVEY OF UBASAA SITE

3.1

The archaeological survey of Ubasaa site was done with the help of one field assistant and three guides from the local community in the research area. They helped in carrying the equipment, holding of measuring tapes for taking measurements, clearing of some areas of the site for the survey and identifying features on the sites.

Two localities of cultural materials were identified on the site and for purpose of clarity; they have been designated as localities A and B and are about two kilometers apart.

3.2 Objectives of the Survey

The objectives of the survey were:

- To establish the spatial relationship between and among features on the site.
- To produce an archaeological map of the research site.
- To measure and document the dimensions (sizes, diameter, length, width and heights) of features on the site.

3.3 Site Characteristics

The site is located in the forest reserve area and the distance from the site to the present Buruku settlement is about 4½ kilometers eastward from the site. The soil is reddish brown, sandy, and lateritic in nature in locality A, and while in locality B the soil is brownish and grayish in some parts of the site. Flora found here include locust bean, *Tamarindus indica* (*Tamarind/ tsamiya*), Sheabutter (*Butyrospernum paradoxum*) ,*Kiriya(prosopis oblonga)Doka (isoberlinia doka), Marke (Anogeisssus leocarpa),*

Baushe (terminalia avicennioides) Taura (Detarium microcarpum), Kawo (Afzelia africana),Goron biri (Irvingia gabonensis),Kurna (Ziziphus mauritiana),Kalgo (Piliostigma thonningii), Baure (Ficus sycomorus),Kanya (Diospyros mespiliformis), Kadanya (Vitelleria paradoxa) among others.

The fauna include snakes of different types, rats of different types, squirrels, monkeys among others.

The survey of Ubasaa began with the establishment of the datum point which was a motor able road close to the site and it has the following coordinates, latitude 10^0 36` 18" north and Longitude $07^0$ 16` 22" east. Finds and features on the site include grinding stones, iron slag, tuyere and furnaces.

3.4 Archaeological evidence of iron smelting in Ubasaa

There are furnace remains in Ubasaa numbering to 27 which were identified in two localities designated as locality A and B. All furnaces are shaft and constructed with clay and two of the furnaces have piled of tuyeres inside with residues of slag in them. The heap of iron slag in locality A and B are 5 and while the mound of tuyeres are 7 in number.

3.5 Localities A

Localities A was identified in the southwestern part of the site, localities A covers a total landmassof about 39,999.2sq meters (895.6meters) and the following cultural materials were identified in this locality.

3.5.1 Grinding Stone

One broken lower grinding stone was identified in the northern part of localities A. It was about 5.8m away from a heap of iron slag and its distance to a feature designated as furnace six is 1.1m to the eastward (plate1 below).

Plate 1: A broken lower grinding stone in locality A

3.5.2 Iron Slag

There were numerous scatters and heaps of iron slag of varying sizes identified on this locality. However, four of the heaps were more imposing in their outlook.

Heap 1 the heap of iron slag is located 78m away from the datum point and was found at south western part of the site, the heap of slag from north to south is measured 5m and from east to west is 3m apart.

Heap 2 is located 2m south east from furnace 5 and the slag debris extend was about 5m southward.

Heap 3 is located 48.8m southeast from heap 2 of iron slag and its extend is about 4.2m north to south and 3.8m east to west. This heap is about 5.8m from lower grinding stone.

Heap 4 is located 8.3m east of furnace 10, it extend about 1.7meastward this heap of iron slag is mixed with tuyeres.(plates below).

Plate 2: One of the iron slag scatters in locality A (Lat.10 36’17.3’’N and Long. 07 16’ 21.1’’E,)

Plate 3: One of the heaps of iron slag in localitiesA (Lat. 10 36’ 18.0’’ N and Long. 07 16’ 22.6’’E)

3.5.3 Tuyere

There were four mounds of broken tuyeres identified in localities A and they range from 18m to 20m in diameter and 2m to 4m in height. The longest of the broken tuyeres identified measured between 30cm and 49cm.

Mound 1 of broken tuyeres is located 20m east of furnace 13; this mound of tuyeres is mixed with iron slag.

Mound 2 of broken tuyeres is located about 17.7m southward of tuyere mound 1 and has an extend of about 18m, from mound 2 to furnace 14 which has seven tuyeres piled inside is 1.7m south east.

Mound 3 of broken tuyeres is located 22m south eastern boundary of furnace 15.

Mound 4 of broken tuyeres is located 18m west of furnace 16 and it extend is 20m. (Plates 4a and b below)

Plate 4a: One of the mounds of broken Tuyeres (Lat. 10 36’ 19.7’’N and Long. 07 16’ 25.3E)

Plate 4b: One of the mounds of broken Tuyeres (Lat. 10 36’ 21.1’’N and Long. 07 16’ 25.6’’E)

3.5.4 Furnaces

Twenty five furnaces were identified in locality A. Their diameters range from 20cm to 94cm, and their heights ranged between 16cm to 66cm, they were mostly atthe foot of either mounds of broken tuyeres or heaps of slag. Two of the furnaces had tuyeres inside them. The average distance from one furnace to another ranged between 60cm to 6.9m.

Furnace 1 was found in the southern boundary. From the heap 1 of iron slag to furnace 1the distance is about 2.3m apart, diameter is 94cm. The distance from furnace 1 to 2 is 12.1m to the east of the arbitrary boundary it has the diameter of 85cm. the distance from furnace 2 to 3 is about 60cm,diameter 70cm southwest of the arbitrary boundary. The distance From furnace 3 to 4 is about1m directly south of furnace 3, diameter 75cm. the distance from furnace 4 to 5 is about 2.6m south east of 4, diameter is 35cm. the distance from lower grinding stone to furnace 6 is about 1.1m apart eastward ,

diameter 20cm, thickness10cm. The distance from furnace 6 to 7 is about 2.3m southwest, diameter is 75cm and there were seven tuyeres piled inside furnace7. The distance from furnace 7 to 8 is about 3.5m south east, diameter is 70cm, height is 20cm, thickness is 14cm. from furnace 8 to 9 is 6.9m directly south; diameter is 65cm, height 27cm, thickness 13cm. The distance from furnace 9 to 10 is 4.9m, diameter is 65cm, height 20cm, thickness 16cm. the distance from slag cluster four to furnace 11 is about 11.3m north, diameter is 60cm, thickness 8cm, height37cm. The distance from furnace 11 to 12 is about 2.4m, thickness9cm, height 27cm. the distance from furnace 9 to 13 is about 39m, diameter 50cm, height4cm,thickness 8cm. the distance from furnace mound 2 to furnace 14 is about 1.7m, diameter is 1m, thickness8cm, height2cm. The distance from furnace 14 to furnace 15 is about 20cm this furnace has seven tuyeres inside with one big tuyere at the ground, thickness 13. The distance From mound 3 to furnace 16 is about 8m apart, diameter is 1m , height is 30cm, thickness is 9cm. the distance from mound four to furnace 17, is about 60m apart, diameter is 60cm, height is 66cm thickness, 8cm.the distance from furnace 17 to 18 is about 9.4m, diameter is 60cm, directly north from furnace 17. The distance from furnace 18 to 19 is about 4.35m, diameter 65cm, and height 30cm thickness3cm. The distance from furnace 19 to 20 is about 3.6m north east of furnace 19, diameter 75cm, height 40cms, thickness 7cm. the distance from furnace 20 to 21 is about 11.5m, diameter 50cm, thickness 8cm from 21to 22is 47cm, thickness7cm. the distance from furnace 21 to 22 is about 138m apart, diameter is 70cm, thickness7cm, height 32cm. the distance from furnace 22 to 23 over a gully is 32m apart eastward to furnace 22, diameter is 1m, height37cm, thickness 7cm. the distance from furnace 23 to 24 is about 75cm south of furnace 23, diameter, 53cm,

thickness7cm, height is 16cm. the distance from furnace 24 to 25 is about 4.3m, diameter is 70cm, thickness 10cm, height 30 cm. the distance from furnace 25 to 26 is about 4.5m north east of furnace 26 this furnace is broken and so could not be measured (plates 5a to 5d below).

Plate 5a: A broken part of a furnace in locality A

Plate 5b: One of the remains of furnaces in locality A

Plate 5c: Another furnace remains with broken tuyeres inside in locality A

Plate 5d: furnace remains with a large tuyere by its side

Plate 5e: Another furnace remains in locality A

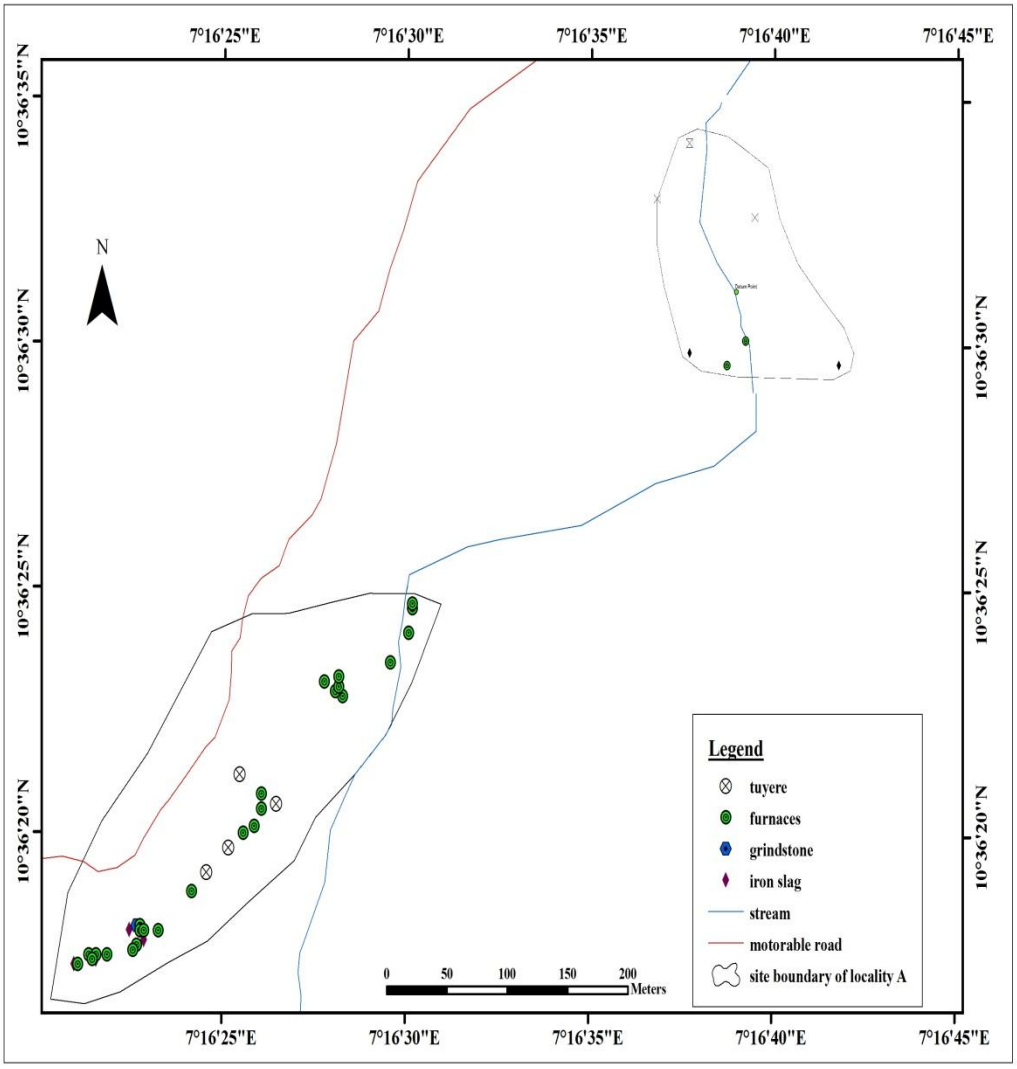

Fig 4: Map Showing Locality A and B of Ubasaa Iron Smelting Site

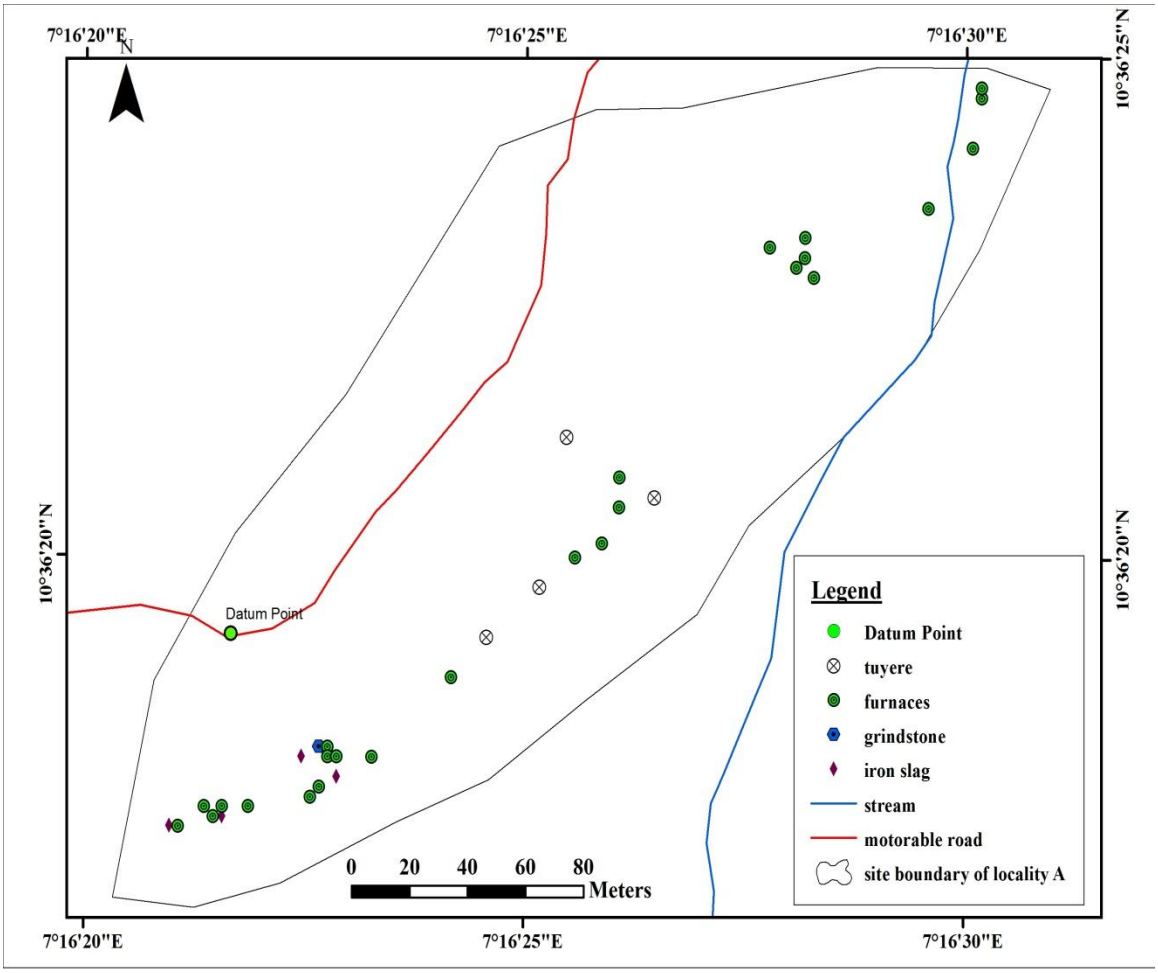

Fig 4: Map of Ubasaa Iron Smelting Site (Locality A)

3.6 Localities B

This locality of cultural materials was identified in the north eastern portion of the site and the total landmass of localities B is about 2,626.6sq meters (205.9meters) it comprised of the following evidence:

3.6.1 Iron Slag

There was one heap of iron slag identified here. The heap of iron slag is located 20m away from the datum point and was found at south western part of the site.This measured about 1.4m in height. It is located 19.5m eastwards from mound 2 of tuyeres and it has an extend of 5m. The iron slags are shiny dark gray in color and are large in sizes.(Plate 6 below).

Plate 6: The heap of iron slag in locality B

3.6.2 Tuyeres

There were three mounds of broken tuyeres identified in locality B, and they were found in association with iron slag. The height of the mounds ranged from 1m to 2.1m.Tuyere mound 1 is located at the northern arbitrary boundary, it extend 9m.

Tuyere mound 2 is located 18m northward tuyere mound 1, and it extends 3.8m.

Tuyere mound 3 is located 13m southeast furnace 2 and it extend is 8m.(plate 7 below)

Plate 7a: one of the mounds of broken tuyeres in locality B

Plate 7b: Mound of broken tuyeres mixed with iron slag in locality B

3.6.3 Furnace

Two furnace remains were identified in this locality B and were almost completely destroyed by erosion and human activities. Their diameters ranged from 0.5m to 0.70m, while their heights ranged from 18cm to 20cm respectively.

Furnace 1 is located 19.5m south east of heap of tuyere.

Furnace 2 is located 16.3m south of furnace 1. The diameter of furnace 1 is 75cm, thickness 6cm and height 18cm. The diameter of furnace 2 is 70cm the furnace foundation has been destroyed by human activities.(Plate 8 below).

Plate 8: Remains of furnace in locality B

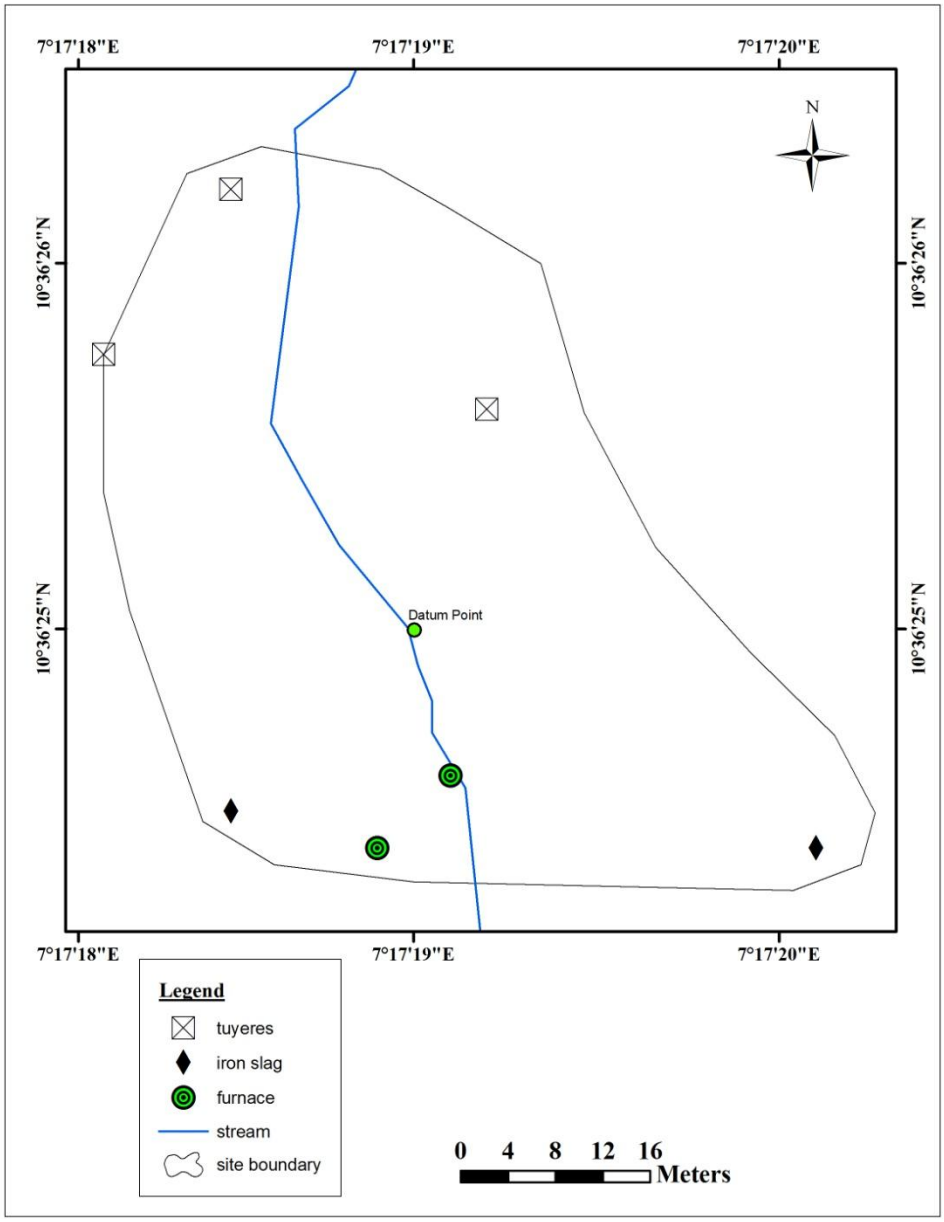

Fig 5: Map of Ubasaa (Locality B)

CHAPTER FOUR

CLASSIFICATION, ANALYSIS AND INTERPRETATION OF DATA FROM THE UBASAA IRON WORKING SITE

4.1 Introduction

Classification and analysis of archaeological data provides the steps towards reconstructing the past. Classification is the ordering of phenomena into groups, based upon the sharing of attributes. Here, data are isolated, described and structured, usually via typological classification, along with chronometric, functional, technological and constituent determinations (Sharer and Ashmore 1980). The researcher will do a comparative analysis of the materials from both locality A and B such as iron slag, tuyeres and furnaces,

Iron Slag

Slag can be defined as a solidified once molten silicate matter that result from the reduced iron ore, which is composed of gangue material from the iron ore, fuel ash and refractory materials (Okafor, 1992 cf Okafor 1997). They are often found discarded on metal working, smelting, smithing and refining sites. Iron slags are durable and almost indestructible. Slags vary in texture, colour,density, appearance and specific gravity. They have no definite shape or form, since they exist in diverse forms depending on how they remained in or were removed from the furnace.Iron slag is the waste which the smelter throws away during the process of iron smelting. Analysis of the iron slag was based on visual observation. This observation shows that, the slag were dark gray in colour and were generally porous.

Plate 9; A sample of iron slag

Grinding Stone

Stone tools were undoubtedly among the earliest used by human societies (Sharer and Ashmore 1980). Stone features are one of the most durable remains that can survive in archaeological context. It is one of the ancient technologies in human history and also among the earliest tools used by man. This cultural evidence is considered to be the first tools used by man to conquer his intermediate environment. The stone tools have their history dating to the early, middle and late stone ages. Most important stone evidence identified in archaeological records are choppers, cleavers, hand axes, arrow heads, flakes and grinding stones. The broken lower grinding stone identified on the site revealed that it was made of granitic rock. The depth of the wear pattern is 2cmand the diameter is 1cm

Tuyeres

Tuyeres are earthen pipes that serve as connection channels between the furnace and the bellows. There were four mounds of broken tuyeres in locality A and three mounds in locality B. Tuyeres were piled up inside some of the furnaces.

Plate 10: A sample of Tuyere

Furnace

Furnaces are structures within which smelting takes place. There were 25 furnaces at locality A and some of them had tuyeres inside. These furnaces are shaft furnace because they are cylindrical in nature and some of these furnaces are found at the foot of the iron slag and tuyere mound.

4.2 Comparative Analysis of data from locality A and B

Ubasaa locality A and B have similarities in both finds and features. Both localities have evidence of iron working in form of heap of iron slag, tuyere mound and furnaces .Although locality A has the highest number of furnace remains, their diameters, width and height fall within the same range with those of locality B. The tuyeres are all in

heaps and almost of the same sizes although no piled of tuyere was found in the furnace remains of site locality B as in the case of some of the furnace remains in site locality A.

4.3 Site Chronology

The structure of archaeological data has three dimensions namely; time, space and behaviour, and all archaeological reconstructions are inclined towards one or all of these dimensions (Sharer and Ashmore 2003). Therefore site chronology in archaeology refers to placing a particular site or group of sites within a specific temporal (time) framework. It also means determining the age of a site in isolation or establishing chronological sequence among series of sites. There are various techniques for establishing chronology in archaeology which are classified as absolute and relative dating. Relative age determination is achieved by methods that evaluate the age of one piece of data compared with another. Absolute age determination on the other hand, is made by methods that place the age of the material on an absolute time scale, usually a calendrical system or years before the present (B.P.) (Sharer and Ashmore 2003).

Archaeological evidence in Ubassa indicate Shaft furnace which has semblance to that of Tsauni and Samaru west types of furnaces. The massive types tuyeres and heaps of iron slag at Ubassa also have semblance to that of Tsauni and Samaru west types, due to the semblance iron smelting evidence in Ubassa and Tsauni area, it is possible that the same Gbagyi people that smelted iron ore at Ubassa must have also smelted at Tsauni since the original inhabitant of Tsauni are not known or it is possible that they had contact with each other, or they most have migrated with the technology to the study area due to population increase. The cultural similarities and proximity of Tsauni, Samaru west type to Ubassa suggest that the people might have had contact. A tentative

synchronizes radio carbon dates of between first and fourth centuries A.D of Tsauni can also be used for Ubassa. (Odofin, 2010)

4.4 Interpretation of Data from the Site

Interpretation is the meaning the archaeologist infers from analyzed and archaeological research is explanation which has to do with answering the questions of what?, when?, where?, how? and why?. However, because the archaeologist was not part of the phenomena under study, various methods and theoretical frame works are employed to view assemblage of analyzed and synthesized data for a meaningful explanation of past cultural processes. Events in the prehistoric past cannot be directly observed, as such, the archaeologist can only reconstruct them from material evidence recovered by relating and taking clues from the present. In doing so, the archaeologist applies theoretical links based on analogy, (Sharer and Ashmore 1979, 2003).

The archaeological record of Ubassa was explained and understood drawing inferences from historical analogy. Generally, Ubassa is a promising site that requires further research particularly excavation and dating of samples from the site. The overall cultural materials found in Ubassa are suggestive of early iron smelting activities in the area.

Grinding stones

One broken lower grinding stone was sighted at the site. This could have been used for sharpening implements, or it could have been used to pound herbs.

Furnaces

The evidence of furnaces at Ubasaa indicates that iron smelting took place at the site. This furnace seems to have two coats of clay when one observes it width carefully. The furnace type of Ubasaa is shaft furnace that consists of cylindrical mud structure. The height of these structures varies from as low as 2cm to as high as 66cm. According to Abubakar (1987), shaft furnaces are widely distributed over the northern Nigeria area. They were employed in Kano, Katsina, Adar, Zamfara among other areas definitely in the 19th Century and most probably much earlier. Also at the site of Onumoba the furnace types were essentially sunken and low shaft furnaces that vary in heights between 1.2m and 2.0m (Assa, 2010)

Archaeological evidence indicates that shaft furnace seems to be the earliest with the date of C.500BC at Taruga. Going by this date at Taruga and Zaria's first Century A.D. they must have been very old indeed. Although how long it took to smelt at both Taruga and Zaria is not known (Daze 1981; Okpoko, 1987; Abubakar, 1987; Jemkur 1992). The Ubasaa people might have developed iron technology independently or they could have acquired the knowledge from elsewhere considering the semblance of the shaft furnaces found in Ubasaa and those discovered in Zaria (Daze, 1981; Abubakar, 1987). The presence and the location of iron ore could have determined the site of the industry and could have been relocated when ores were exhausted (Okafor, 1995).

Tuyeres

Tuyeres form an integral part of a furnace. The heap of tuyeres found at Ubasaa could be likened to the second type of tuyere Abubakar (1987) described as massive and singly used, which were employed in the Catalan and Sukur types of furnace and also the Leja iron smelter in Nsukka (Okafor 1995).

The tuyeres were constructed after the furnace had been finished. One furnace might be used for series of smelting operations, but new tuyeres had to be provided. The number of tuyeres differs from seven to eight (Abubakar 1987). This could be the case at Ubasaa where in some furnaces there were six to seven tuyeres. According to Abubakar (1987) the tuyeres in Zamfara served for ventilation and for collecting slag at the bottom, slag was tapped via the tuyeres. This explains why they had to employ new sets of tuyeres for each smelt because they did get blocked after each tapping process. This could have been the reason of the heap of broken tuyere's on Ubasaa site.

Iron Slag

Heaps of iron slag and related evidence indicate that the production capacity of the furnaces varied; so also must have differed the length of time that particular sites were in use. The heap of slag could mean high level of iron production or the ore is of low quality resulting to a lot of residue, this can only be ascertain when samples of slags are taken to the laboratory for proper analysis and interpretation.

4.5 Discussion

The natural environment of Ubasaa is very essential because the natural environment most at times influence people's culture. It seems that they had a good relationship with their environment for them to be able to explore and utilized the natural resources with which they fashioned iron implements. The people were able to identify and use iron ore, good fire wood for smelting, mud for constructing furnaces and source of water which is paramount to iron smelters. They had understanding of times and best

weather condition for smelting. Thus it can be inferred that the people have a good understanding of their environment.

The people might have depended on iron smelting, since Ubasaa is an industrial site, although one cannot ascertain whether it was the whole people that took part in iron smelting since that was the only evidence that was sighted, although oral tradition has it that it was a big site where the people lived and had a Sarki that controlled other places but most part of the site has been destroyed as a result of forestry plantation, which did not allow the researcher to see other cultural materials on the site. Also the evidence of sheabutter trees, locust bean among others which would have been used as part of their diet and one broken lower grinding stone identified could have been used to pound vegetables and the iron implements must have been used for hunting.

As a result of the importance of iron tools and implements, iron workers occupied enviable positions in their communities from ancient times until the colonial period. It should be noted that Nigeria produces varieties of food ranging from tuber to grains. The antiquity of these agricultural practices is yet to be determined.

Scholars like Okpoko and Ibeanu (1999) asserts that early knowledge and practice of iron smelting and smithing might have given food production a boost in most Nigerian communities. According to (Abaje-Williams 1989; cf Okpoko and Ibeanu, 1999) has itthat in parts of northern Nigeria, oral information is replete with accounts of the use of horses for the transportation of iron ores from distance mines to the smelting sites or of iron ores sold to smelters. For instance, the ancient smelting town of Kau in Abuja emirate was much larger and better fortified than the modern Kau whose present settlers are ignorant of iron smelting processes, even though, they are able to show the mining

fields. Also (Thomas-Emeagwali, 1989 cf Okpoko and Ibeanu, 1999) has it that, the old settlement was said to have been abandoned at a point when perhaps mining of ores was no longer economically viable with the coming of the European metals. It should be noted, however, that the influx of European metals during the colonial period destroyed the economic relations that existed amongst the different ethnic groups of Nigeria. For example, it has been reported that traders from Katsina in Nigeria came down to Kau on a regular basis in search of iron ores.

The demise of iron smelting in Ubassa could have been as a result of deforestation effects. The industry made huge demands on hardwoods, which are difficult to regenerate and also aided environmental deterioration through erosion and eventual shift in settlements which the where about of the past Ubasaa people is not known by some of the few aged informant that had contact with them in the time past.

From observation, the ancient people of the area had a vast knowledge of their environment and this is reflected in their utilization of the natural resources they could find which they harnessed into cultural materials especially the ore used for smelting iron, understanding the type of mud suitable for furnace construction, the best type of wood for fueling during the smelting among others. Thus, this indicates that they had knowledge of their environment and of times and seasons, which must have influence the location of their industry.

The geological composition of any place is looked at in relation to its global location, since though, the geological composition of different location and countries can be unique, and they nevertheless have strong relation to global geological processes. Garba (1988) stated that, the geological framework and mineral deposits of Nigeria are

genetically related to the global geologic processes and episodes that affected the African continental crust.

The geological map of Kaduna state indicated that, Ubasaa falls within the Migmatite-Gneiss complex. Elatipo et.al (2013) asserts that the Migmatite-gneiss-quarzite complex are the most widespread and occupy about 30% of the total surface area of Nigeria and probably the least studied of the major rock group. McCurry (1989) postulated that the migmatites include rocks of varying Lithology, texture and structure, showing differing degrees of granitisation and migmatisation. They are composite rocks consisting of metamorphic host rock and acid injection which may be pegmatitic, feldspathic or granitic material. Migmatite-Gneiss when weathered can form laterites that contain high iron content.

Analysis of similar rocks within the same region by McCurry (1989) and Elatikpo (2013) has shown that this rock have low iron content ranging from 1.18 to 6.70wt% and it could not be the likely source of raw materials for the smelting work at Ubasaa. This rock may have however undergone long period of weathering giving rise to formation of laterite as seen in the study area.

The geology dictionary defines laterite as a soil residue composed of secondary oxides of iron, aluminum, or both, together with clay minerals and some silica. In regions of extreme weathering intensity. The laterites are superficial iron deposits and are the likely sources of raw materials for the iron smelting work that was carried out in the study area. No geochemical analysis of the laterite was carried out but their reddish colour indicates high iron content. The digging of laterite or iron bearing rocks must have led to gully erosion in Ubasaa.

Another source could be obtained from the banded iron formation (BIF) which might have occurred in the area by isolated hills. The banded iron formation (BIF) sedimentary rocks that are typically bedded or laminated and composed of at least 25 percent iron, mostly as oxides. (Hematite, magnetite) and microcrystalline quartz (chert, chalcedony, jasper) banded iron formation occur in the Precambrian crust of all continents, from 3800ma onwards, with a peak at 2500ma, and scatter of occurrences in the late Neoproterozoic. They are commonly used as low grade iron ore. Because banded iron formations have not been formed since Precambrian time, it is thought that special conditions must have existed contemporaneously with their formation. Their origin has been ascribed primarily to a marine biochemical process in which oxygen from photoautotrophic bacteria produced seasonally rhythmic deposition of oxidized iron from ferrous iron in solution. Other factors, including volcanic activity and the chemical oxidation of ferrous iron, may be involved.

The vegetation of Ubasaa lies within the northern guinea savanna zone of Nigeria. It is made up of trees and grasses. The vegetation is sparse, this is as a result of cutting down of trees in the area. There are different species of trees identified in the site but few among them are considered ideal for smelting based on some considerations, which ranged from slow burning and their availability within the Ubasaa environment. According to Tanimu Maisamari and Bala Nana (2013 pers.comm) some of the important trees that were used for smelting n still used for smithing are Kiriya (Prosopis Oblonga), Baushe (Terminalia avicenniodes), Marke (Anogeissus leocapa) among others. These tree according to oral informant that the trees are usually cut down and then burnt to produce

charcoal for smelting activity. According to Tanimu Maisamari and Bala Nana (2013, pers.comm) said that Baushe (Terminalia avicennioides) can be used immediately after it has been cut down wet, because it normally drains it water when it is on fire.

Charcoal was said to be the major source of fuel for iron smelting, without charcoal probably there would not have been an effective way of generating enough heat that could melt the ores.

The main source of drainage in Ubasaa is the Ressa River and other smaller streams which they use for smelting iron and for their domestic usage.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

This research on Ubasaa industrial site in the Buruku District of Chikun Local Government Area of Kaduna State was embarked upon due to the archaeological potentials of the site with the hope that it will contribute immensely to the knowledge of indigenous iron smelting in the Buruku area. The methods that were used to carry out this research included oral tradition, archaeological survey, written documents, and classification and analyses.

The first method employed, was the consultation of written document which was done in libraries and archives. These written documents provided background information on the research work.Oral traditions were collected from both men and women on the history of the site, but unfortunately, a majority of those interviewed in the area had no knowledge of the past Ubasaa people. The site was located through oral information. Archaeological survey of the site was carried out, finds and features identified which included iron slag, grinding stone, tuyeres and furnaces were all measured and documented.

Finds and features were analyzed and interpretations revealed how the people had a good relationship with their environment, they harnessed the natural resources in their environment to meet their needs. The iron working industry from this area may have impacted immensely on human life and development in the area.

5.2 Conclusion

This research is preliminary; it focuses mainly on surface finds and are generally not reliable in archaeological interpretations because of problems of context. The research was limited to survey, it excluded excavation of the site and inferences made were basically tentative. It is the researchers hope that in the future this research shall involve excavation of the site and iron slag taken to a laboratory for proper examination, to ascertain the quality of iron ore smelted. The excavation of furnace remains may also provide more insight into the technological innovations of the people. Examination of tuyeres will help to know the chemical composition of tempering materials that could determine whether a particular tuyere led to successful preheating applications.

The information that has emerged from this research, to an extent, has shown the contribution of archaeology not only to the reconstruction of the ancient iron technology of the Ubasaa but also other aspects of the people's culture. The research has shown that iron smelted in the Ubasaa area was done using shaft furnaces which are similar to other areas within the northern and central Nigeria such as Tsuani.

The location of the industry was influenced by the presence of iron ore and the river Ressa as the source of water. This has given us the insight into how the environment affected human technology and location of industries even in the past. This research has also identified another important and extensive iron working industry that must be investigated further and the site dated to add to the body of information on iron working in Kaduna state, Nigeria and Africa as a whole.

We accept responsibility for all the limitations that may be observed in this preliminary report work and would improve on it as research continues on the site.

6.3 Recommendation

Generally, research on iron smelting in Buruku area has not been extensively carried out, and the research is far from been exhaustive. This is partly because no excavation has been carried out on any site in the area. Dating of neither the furnace remains and iron slag analysis has been conducted to establish the time period for the technology in the area hence; there is the urgent need for further and more rigorous research in the area.

The bloomery slag can be studied or analyzed with regard to the mineral composition of the smelted ore and the chemical composition of the fuel used in the smelting. The chemical composition of the refractory materials used in the smelting, the furnace, the furnace lining and the tuyere; the rate of air blast that went into the furnace during the smelting. The state of the slag as it was removed from the furnace that is, whether it was tapped in a molten state or removed after solidification in the furnace; and also the surrounding conditions of the slag since it was formed.

Excavation was not carried out during the research; hence, excavation of Ubassa and proper examination will help us to see the types of tuyere identify and the shaft furnaces if they came as a result of immigration or simply a revolution of techniques and if at all it has a link with Tsauni,and Samaru as a result of the similarities in furnace type and massive tuyeres. Excavation would enable us to determine the nature of the smelting furnaces used in the industry, including the positioning of tuyeres in the furnaces.

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QUESTION GUIDE

During the research work in the field, traditions were collected from both adults and children and the following questions served as a guide to the collection of the traditions

TRADITIONS OF ORIGIN

- May I know your name and age?
- Are you a native of this place?
- Who told you about this place?
- What is the meaning of this place?
- What is your occupation?
- Did you witness all these events yourself or you were told about them?
- If you were told, who told you and why?
- Did you believe the stories?

SETTLEMENT PATTERN

- Was this your first settlement?
- Where did the people live in the past?
- Where did they come from?
- Who founded the settlement?
- What is the name of the place,
- Why did they give such a name?
- Are they your forefathers?
- What made them leave their former place?
- How did the new settlement begin?
- Were they the first to come or did they meet some people here?
- Was land owned communally or individually?

ECONOMY AND TECHNOLOGY

- What do you think about the features in the site?
- Were the people involved in crafts, if yes what types?
- Did the people use iron implements?
- Did they mine, smelt and smith iron?
- What type of tools did they make?
- Do they do any rituals before making any of their crafts?
- Do you still practice all the crafts?
- Were these people also farmers, what crops did they grow?
- Did they rear animals and what types?
- What are the roles of women?
- Have you told your children and others about it?

BURIAL AND RELIGION

- How were people buried?
- Is it the same with the past?
- Are the old and young buried the same way? Yes/No Why?
- What type of religion did they practice?
- How were leaders chosen?
- Do you have any significant religious rituals associated with rites of passage, child birth and initiation into adulthood?

LIST OF INFORMANTS

S/no	Name	Age	Gender	Date	Place	Occupation	Information
1	Saleh Umaru	99	Male	5th July 2013	Buruku	Farmer/ Ubandoma Sir Gbagyi	Traditions of origins and general information
2	Yakubu Ali	41	Male	5th July 2013	Buruku		General information
3	Tanimu Maisamari	38	Male	5th July 2013	Buruku	Farmer/ Maiangwa	General information
4	Bala Nana	54	Male	5th July 2013	Buruku	Hunter	General information
5	Alh. Yau Mamuda	88	Male	6th July 2013	Buruku	Farmer/ Religious leader	Traditions of origin and Political organization
6	Alh. Saidu	87	Male	5th July 2013	Buruku	Farming	Settlement History
7	Alh. Umaru Hassan	73	Male	6th July 2013	Buruku	Black smith/ Farmer	General Information
8	Joshua Ali	26	Male	3th July		Forest guide	General Information
9	Esther A		Female	5th July 2013	Buruku	farmer	General Information
10	Gaje Ya'u	73	Female	6th July 2013	Buruku	House wife	General information
11	Mr. Sylvester Boyi	81	Male	27th June 2013	Buruku	Civil servant	General Information
12	Monday Thomas	35	Male	27th June 2013	Buruku	Forest guide	General information
13	Dan kaduna	29	Male	27th June 2013	Buruku	Forest guide	General information
14	Solomon Boyi	36	Male	27th June	Buruku	Business	General information

				2013			
15	Paul Adamu	17	male	5th July 2013	Buruku	student	General information
16	Danladi	25	Male	7th July	Kwate	Farmer	General information
17	Nuhu Saleh	40	Male	5th July	Buruku	Farmer	Traditions of origin
18	Iliya Umaru	48	Male	5th July	Buruku	Farmer	Political organization and Traditions of origins
19	Jummai	64	Female	7th July 2013	Kwate	Faremer	General information
20	Hassana Jatau	78	Female	7th July 2013	Kwate	House wife	General information
21	Jatau	100	Male	7th July	Kwate		Traditions of origin and General information
22	Baban Danladi	76	Male	7th July	Kwate	Farmer	Migration history and general information
23	Hosea Ali	15	Male	5th July	Buruku	student	General information
24	Nuhu Markus	36	Male		Buruku	Civil servant	General information
25	Salihu Amos	59	Male		Buruku	Forest guide	General information

26	Mairuwa	57	Male	5th july	Buruku	Farmer	General information
27							