UNIVERSITY OF GHANA

COLLEGE OF HUMANITIES

Inventorizing Selected Archaeological and Cultural Heritage Sites of Ghana

BY

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This thesis is submitted to the University of Ghana, Legon, in partial fulfillment of the requirement for the award of **Master of Philosophy Degree in Archaeology**

DECLARATION

I hereby declare that this thesis is a result of an independent research I carried out with the support and supervision of Dr. William Narteh Gblerkpor and Professor Kodzo Gavua and that no part of this work has been submitted to any other institution for the award of a degree.

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ABSTRACT

Ghana has many archaeological and cultural heritage sites. However, the country lacks a comprehensive inventory of these assets. This makes it impracticable to effectively manage Ghana's archaeological and cultural heritage resources, and put the resources at risk of destruction. Archaeological, historic, and cultural heritage sites are, for example destroyed indiscriminately by large-scale earth-moving construction and other infrastructural development activities. This pilot digital heritage inventory project uses computer software programmes, such as ArcGIS, Microsoft Excel and Word to document, annotate, profile, graphically represent and develop an inventory of nine selected archaeological and cultural heritage sites in Ghana. The study also uses desk research (literature search and review), collection of oral narratives, site visits, photography to gather complementary research data. This work is expected to create awareness, enhance the conservation, safeguarding and overall management of the selected sites and other heritage sites in the country. It is recommended that this inventory compilation be continued and more sites should be added to this inventory.

DEDICATION

I dedicate this thesis to my sister, mother and my friends who have become family. Thank you all for your prayers and enormous support.

ACKNOWLEDGEMENTS

I thank God for the completion of this thesis. I owe a debt of gratitude to members of the Department of Archaeology and Heritage Studies for their support during the period of this project. My profound gratitude to my Supervisor, Dr. William Narteh Gblerkpor, and Co-Supervisor, Professor Kodzo Gavua for their guidance and support. My gratitude to the "Improving Africa's Future Using Lessons from the Past" (IAfF) Project, for funding my MPhil programme and research. The IAfF is a Canadian Social Sciences and Humanities Research Council (SSHRC) funded project, led by Professor Ann Stahl (University of Victoria) and Professors Kodzo Gavua and Wazi Apoh. A big thank you to Mr Daniel Kumah through whom I met Mr George Owusu, who trained me in the use of GIS. Dr. Gertrude Aba Mansah Eyifa-Dzidzienyo, Mr. Mark Amenyo-Xa and Mrs. Beatrice Owusu kept encouraging me during the period of my study, and I am very thankful to them. Mr. Albert Appiah Larbi! My friend and colleague during this programme, I thank you very much for your insightful feedback. I also am very grateful to my dear friends: Miss Emmanuella Allor-Annan and Mr. Yaw Appiah Brobbey who were instrumental in helping me find literature during my desk research.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF MAPS

LIST OF TABLES

LIST OF ABBREVIATIONS

BOEM- Bureau of Ocean Energy Management

CERSGIS- Centre for Remote Sensing and Geographic Information Services

ESRI- Environmental Systems Research Institute

GIS- Geographic Information System

GMMB- Ghana Museums and Monuments Board

ICOMOS- International Council on Monuments and Sites

MD- Marine Drive

OCSLA- Outer Continental Shelf Lands Act

OCS- Outer Continental Shelf

PANAFEST- Pan African Historical Festival

UNESCO- United Nations Educational Scientific and Cultural Organization

CHAPTER ONE

INTRODUCTION AND BACKGROUND INFORMATION TO THE STUDY

1.1 Introduction and Background Information of the Study

This pilot digital heritage inventorying project forms part of an attempt to systematically compile, annotate, and provide Geographic Information Systems (GIS) data for the documentation and management of important archaeological and cultural heritage sites of Ghana, including Banda, Begho, Shai Hills, Koma land, Tengzug Cultural Landscape and Elmina Castle. The research utilizes specific digital inventorying tools such as Microsoft Excel, Word, and ArcGIS to document selected archaeological and visualize several sites across the country. Recent advancement in consumer technologies such as computers and related software and hardware and their associated falling prices make these technologies accessible to archaeologists and cultural heritage experts to document, analyze, organize and share heritage resources (UNCTAD, 2021;Shekhar, 2017).

The term **"inventorizing"** which is a transitive verb of the word **"inventory"** refers to the act of making an inventory. On the subject of heritage, an inventory is a catalogue of a community's important historic places. Heritage inventory has been described by Pearson and Sullivan (1995) as a tool used to document the extent of cultural evidence present in a single large or small historic place. A heritage inventory includes all relevant written and graphic information on the evidence. This study focuses on creating an inventory of selected cultural heritage and archaeological sites in Ghana. Heritage sites are those places we ascribe importance and choose to preserve and bequeath to future generations. According to Feary et al (2015, p. 86), "The long and complex history of humans on Earth has produced a rich legacy of intangible and tangible phenomena commonly described as 'cultural heritage." Cultural heritage is known to be the legacy of tangible

and intangible attributes of a society that is inherited from past generations (UNESCO, 2003). Heritage is a highly contested issue due to the fact that what is valuable to one society may not be valuable to the other society. In this study, cultural heritage and archaeological sites are defined as follows: Cultural heritage sites exhibit an outstanding piece of human creativity or a significant exchange of human values across time. This exchange should be made manifest in architecture or technology, a city or town plan and the design of the landscape. It must exhibit evidence of a long-defunct or still-existing tradition or civilisation (SAHO, 2011). A cultural heritage site can be said to be a place that people attach cultural value or meaning to. It is a place where humans settled and used the land in a way that represents their culture, especially if the area is affected by change that cannot be reversed (SAHO, 2011). This includes historic buildings and cultural landscapes. An archaeological site on the other hand, is any place where there are physical remains of past human activities or a location that marks a specific point of human activity in the past. Such a place is marked by spatial clustering of archaeological data (artefacts, ecofacts and features) in any combination (Matero, et al., 2012; Pearson & Sullivan, 1999; Society for American Archaeology, n.d.). People may not necessarily have a connection or cultural value to said place and archaeology should have played a role in its discovery, identification and study (Sullivan & Mackay, 2012). Drewett (1999) establishes that archaeological sites "consist essentially of activity areas and rubbish" (p.17). There are many types of archaeological sites. Some of these are prehistoric archaeological sites such as campsites, rock art sites, ancient cemeteries, stone monuments, among others. There are also historical archaeological sites. Shipwrecks, battlefields, slave quarters, and cemeteries are among the many historical archaeological sites (Girard, McGimsey, & Jones, 2018; Mires, 2014; TRC Environmental Corporation, 2012).

Both archaeological and cultural heritage sites are worthy of being managed and conserved. Conservation is explained by Article 1.4 of the 1999 Burra Charter of ICOMOS as all processes included in "looking after a place so as to retain its cultural significance which encompasses the activities that are aimed at the safeguarding of a cultural resource so as it retains its historic value and extends its physical life". Such "safeguarding" processes/activities include making inventories of heritage which include cultural heritage sites and archaeological sites. Inventorying is a necessary tool for heritage management. The resulting inventories offer essential information on heritage resources, such as their size, location, and significance, to authorities, researchers, and the general public. (Myers, Avramides and Dalgity, 2013). In the construction of developmental works such as highways, building infrastructure among others, inventories serve as a guide as to the conditions or significance of heritage sites to facilitate decisions on how to handle such places of importance. Apart from this, inventories are important for research and for general public understanding and interpretation because they organize information about heritage places (Myers, Avramides and Dalgity, 2013).

1.2 Background Information of the Study Area

The country Ghana, spanning an area of about 238,535 km^2 (92,099 square miles) is located in sub-Saharan Africa at a latitude of 7.9465°N and longitude of 1.0232°W. It shares its borders with Togo (to the East), Ivory Coast (to the West) and Burkina Faso (to the North). Ghana was formerly made up of ten administrative regions (Map 1.2-1) namely; the Upper West, Upper East, Northern, Brong Ahafo, Ashanti, Eastern, Volta, Western, Central, and Greater Accra region (Kyei, Otoo, Abu, & Ofori, 2018). In December 2018, a referendum was held to further break down these regions. As of 2019, Ghana officially consisted of 16 administrative regions. The YES vote ranged between 99% and 99.7%. According to official results released by the Electoral Commission (EC),

the lowest turnout was about 80% with the highest at 90% (Shaban, 2018). Voters from four existing regions consisting of 47 districts voted for the creation of new regions. These new additional regions are Oti, North East, Savannah, Western North, Ahafo, and Bono East. The Northern Region was split into Northern, North East, and Savannah. Volta Region was split into Volta and Oti whereas Western Region split into Western and Western North. Finally, the Brong Ahafo Region split into Bono, Ahafo and Bono East (Map 1.2-2).

Map 1.2-1 :The old Ghana map showing its ten administrative regions. Image retrieved from steemit.com

Map 1.2-2: The current map of Ghana showing its sixteen administrative. Image retrieved from ghanamissionun.org

1.2.1 Geographical Regions of the Study Area

The geographical scope of this inventory covers selected sites across various ecological regions in Ghana. In an attempt to simplify and bring more understanding, the country has been arbitrarily divided into three broad ecological zones (Map 1.2-3). However, the zones are usually categorized as six separate zones as per scientific research (for example Beckley, et al., 2016; Issaka, et al., 2012). These zones are Savannah (made of Sudan, Guinea, and Forest Savannah), Rainforest/Forest (made up of the Semi-deciduous and High rainforest), and Coastal scrub/grassland. It is important to note that due to the purposes of this research, these six zones have been grouped into three major categories. That is to say, they were categorized according to their general attributes (Savannah, Forest, Scrub/grassland). Additionally, each ecological zone affects sites within them in terms of the preservation. The conditions of the savannah zone are more likely to favour sites in this area as compared to the forest zone and the coastal grassland/scrub. Two hundred and eighty-eight archaeological sites were sampled from Oliver Davies' Ghana Field Notes (Davies 1976; 1970) while thirty cultural heritage sites were sampled from several internet sources and publications. Nine archaeological and cultural heritage sites were selected for profiling where their distinct characteristics were adequately described.

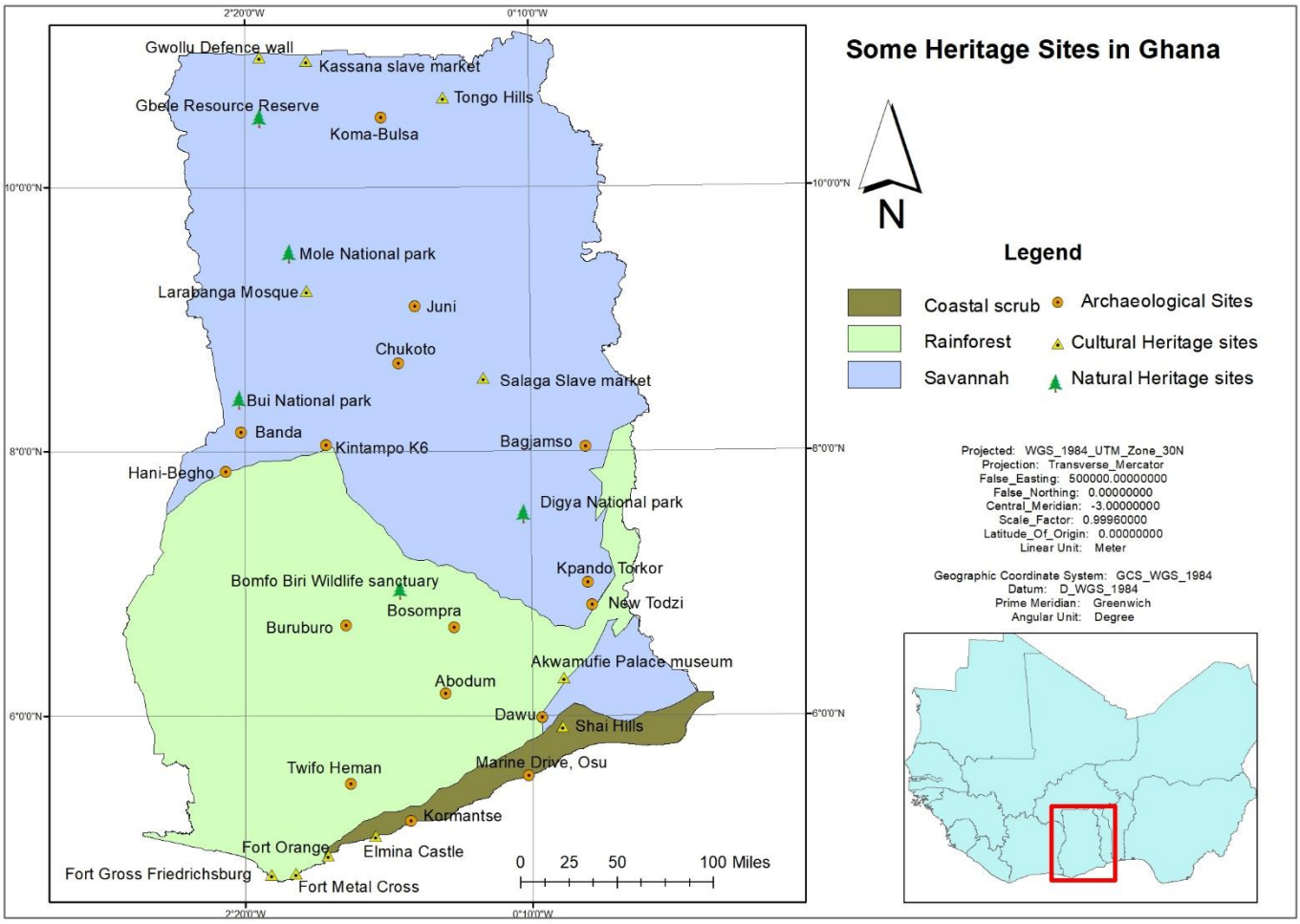
1.2.1.1 The Savannah/Savanna zone

This ecological zone is mainly found in the northern or upper part of Ghana and takes up the majority of the land mass of Ghana (Map 1.2-3). The zone begins from the north, stretches into some parts of the middle belt with some patch close to the coastal zone. With the use of ArcGIS, the savannah zone is calculated to cover an area of about 143,840.731 km^2. It comprises of the guinea savannah, Sudan savannah and the forest savannah. An open tree canopy/scattered trees

characterize this area, which is surrounded by a continuous tall grass understory. The understory is the underlying vegetation between the forest canopy and the ground (Smith, 2016). Trees in this region are widely spaced that the canopy does not close thus allowing light to reach the ground to sustain the grasses. Conditions in the savanna are warm to hot in all seasons but some substantial amount of rainfall occurs only a few months each year. Consequently, the environment is typically dry all season than it is wet. The cultural heritage and archaeological sites located in the Savannah/Savanna zone include the Gwollu Defense Wall, Salaga Slave Market, Kassana Slave Market, the Larabanga Mosque, Tongo-Tenzug Cultural landscape (Kankpeyeng et al, 2010), the archaeological region of Koma (Kankpeyeng & Nkumbaan 2009, 2008; Anquandah 1998, 1987; Anquandah & Van Ham 1985), Daboya (Shinnie, 1982), Birimi and Banda (Stahl, 2001).

1.2.1.2 The Rainforest zone

The rainforest in Ghana, constituting both the high rainforest and the semi-deciduous rainforest is located in the middle belt and some of its southern parts (Map 1.2-3). With the use of ArcGIS, it is calculated to cover an area of 88,287.689 km^2. The rainforest zones are characterized by tall, mostly evergreen trees and high amounts of rainfall (Boakye, 2010). Key archaeological sites include sites in the Krobo mountain (Nkumbaan and Gblerkpor, 2014), Larteh (Darko, 1993), Dawu (Shaw, 1961), Abonse, Boyase Hill, and Begho (Posnansky, 2015). Cultural heritage sites in this region include the Asante Traditional Buildings, Manhyia Palace, Akwamufie Palace Museum, Fort Orange, Fort Metal Cross, Akonedi shrine, Kweku Fri shrine, the caves of Nyagbo and Logba.



Map 1.2-3: An Ecological map of Ghana showing archaeological and cultural heritage sites investigated

1.2.1.3 The Coastal scrub/grassland

The coastal scrub and grassland is calculated to cover an area of 7,384.3295 km^2 with the use of ArcGIS. This zone is made up of a mixture of scrub and tall grass (mostly Guinea grass), and stretches along portions of the coast. This zone contains most of the forts and castles of Ghana, including the Cape Coast Castle, Elmina Castle, Ussher Fort, Fort Christiansborg (Osu Castle), Fort Komenda, Fort Amsterdam, and Fort Orange. Some of the archaeological sites in this area include those located at Kormantse (Agorsah & Butler, 2008), Shai Hills (Anquandah, 1982),

Dodowa, Osu Marine drive, Old Elmina (DeCorse, 2001), Ayawaso, Kpone, Asokrochona, Twifo Heman, Cape Coast etc. Cultural heritage sites located here include the Elmina Castle (DeCorse, 2001), Cape Coast Castle (Anquandah, 1999), Ussher Fort, Fort Christiansborg (Osu Castle), Fort Komenda, Fort Amsterdam, Fort Orange among others.

1.3 Archaeological Practice in Ghana

Before the introduction of archaeology (between 1820-1930s) as a discipline in University College of the Gold Coast, there were individuals who would be termed as amateur collectors, explorers or speculators as well antiquarians who documented prehistoric data. Such collectors included Robert Rattray and H.J. Braunholt (of the British Museum London) who collected cultural objects as a result of mining, building, dredging and farming activities. They also collected several artefacts and cultural items gotten as a result of developmental projects such as building works, road and railway construction unearthing some of these items (Anquandah, et al, 2014). Some of these cultural materials were deposited at the British Museum and some at the Gold Coast Geological Survey Centre in Cornwall Gardens, London. These Western explorers were not archaeologists and did not use systematic methods for recovering the artefacts (example Junner, 1932; Kitson, 1916). As a result, the archaeological materials were poorly described and the interpretations lacked the African cultural contexts in which the materials were produced and used. According to Anquandah et al (2014), the interpretation of cultural materials from this period was Eurocentric or "western" in nature.

Archaeology as discipline in Ghana came to being due to an effort to project the study and documentation of our heritage (see Anquandah, et al, 2014). As part of the first batch of academic disciplines introduced to the new University College of the Gold Coast (now University of Ghana)

in the mid-20th century, the discipline was seen as the solution to heritage problems. Oral accounts as the source of historical information passed down from generations by indigenes were affected by distortions and myths. Therefore, there was the need for a source, method or tool of study to overcome the issues of heritage documentation. Archaeology would therefore seek to investigate the past in order to correct distortions and may confirm so-called myths of oral history. The department of Archaeology was initially established on solely research purposes. The discipline of archaeology came to being as a product of colonization and the western system of education but pioneers of tertiary education in the Gold Coast believed it was the best scientific tool to document the country's heritage. The practice of archaeology in Ghana with it flaws such as personal bias in interpretation, is still the best option for studying Ghana's past and currently the practice is shifting to fit well into the African situation to facilitate the understanding of our own past. Formerly used as a tool by the West to demonstrate racial superiority, archaeology has become a tool for Africans to liberate ourselves from western influence and be independent thinkers. We now get to reconstruct our history not only associated with the arrival of the Europeans but much before. With all these objectives however, there is hardly an inventory that holds some of our archaeological and cultural heritage sites in Ghana. This may be due partly, to the disconnect between archaeological research and the conservation of archaeological sites and assets (Kankpeyeng & DeCorse, 2004). With the exception of a few sites that have been conserved after investigation, including Krobo Hills (Nkumbaan & Gblerkpor, 2014), Atimpoku Site (Gavua & Apoh, 2011), Sesemi (Bredwa-Mensah, 1997).

The practice of archaeology in Ghana and Africa has evolved so much over time. The methodologies have greatly changed. For instance, from wholly adopting western theories to explain African situations to the formulation and use of our theories or tweaking western theories

to fit our setting. It has also evolved significantly with respect to technology. An example is the use of photogrammetry to create three-dimensional images of artifacts, sites and stratigraphy. In addition is the use of computer software to create or make digital sketches of artifacts. Another example is the use of satellite and drone technology aided by computer software to create digital maps (cite actual examples). Making of digital maps using GIS software has become one of the most important aspect of many academic disciplines. It is used in planning and survey, geography, archaeology among others. With the use of an inventory that captures some of our sites and GIS software to create maps to visualize site locations, most of these sites would not be at risk of destruction or exploitation.

1.4 Problem Statement

The use of GIS coupled with taking of inventories has greatly improved the conservation and management of cultural heritage and archaeological sites worldwide. Countries such as Israel (Alef, 2017), Australia (Logan & Mackay, 2013), Canada (Alberta Culture and Tourism, 2017) and Palestine (Taha, 2009) have made use of this technology in the management of their archaeological and cultural heritage assets. From the inception of archaeology as a discipline in the University of Ghana in the 1950s to the present, research and techniques for research have evolved with more archaeological research being undertaken than before. Even though the pace of archaeological research has been accelerated, data acquired from research sites have not been properly organized. With the increasing number of archaeological research and sites, it is imperative to take inventory of existing ones. It is also important to make aspects of these research about sites digitally accessible. There is no current single document that highlights some of these sites that have been worked on. In the Department of Archaeology and Heritage Studies, the closest

to any compilation of archaeological sites are those made by Oliver Davies (Davies 1976;1970). His documents known as *Ghana Field Notes* identified many archaeological sites, contained coordinates of these sites as well as descriptions of the sites. When it comes to making an inventory of archaeological sites, the *Ghana Field Notes* makes a great contribution as it is in itself an inventory and the first comprehensive register that employed systematic identification, description, and listing of over two thousand archaeological sites in Ghana. This register is very relevant to archaeological and heritage conservation in Ghana, as it is the most detailed record of archaeological sites of Ghana till date. The Ghana Field Notes in part serves as a base for assessing the magnitude of archaeological sites in Ghana. However, this document was compiled in the 1970s and since then has not been assessed to know if these archaeological sites have been destroyed or still exist. My research reviews this document by assessing the current status of sample sites compiled by Oliver Davies. Furthermore, this research seeks to compile and profile some of the archaeological sites excavated and researched on, supported with visual cartographical representation and photographs which was not available in Davies' *Ghana Field Notes*. In addition, some cultural heritage sites will be compiled and profiled.

Cultural heritage is an important aspect of the lives of contemporary people. It induces a sense of belonging and identity for them. Nationally, it promotes patriotism among citizens of a country. Subsequently, cultural heritage sites play a significant role in the tourism of Ghana by providing some source of revenue for the economy. During the regime of the First President of Ghana, Dr Kwame Nkrumah, deliberate efforts were made to push heritage matters in the front line of the national agenda (Schramm, 2004). It would appear that after his regime, that focus dwindled. Recently, this seems to be changing as succeeding governments have come up with policies to preserve our cultural heritage assets. These include the 2004 Cultural Policy of Ghana by the

National Commission on Culture. Additionally, as a cultural objective in the 1992 constitution of Ghana, the preservation and protection of heritage places and artifacts is highlighted in Article 39(4). It declares that "the State shall endeavour to preserve and protect places of historical interests and artifacts". Unfortunately, the Ghana Museums and Monuments Board, the mandated agency responsible for implementing the policies has not been able to develop a comprehensive register for the country's cultural heritage resources. The first point of call for the preservation and conservation of archaeological and cultural heritage sites is their documentation, which is hardly done by the GMMB. There is no substantive documentation of Ghana's cultural heritage sites or assets. UNESCO even scored Ghana 0.26/1 for "registration and inscriptions", indicating that even though there has been an effort to register and make an inventory of tangible heritage, it has not been updated since 1999 (UNESCO, 2013). Conversely, there are available inventories for the natural resources of our country. This is an indication of how archaeological and cultural heritage assets are not taken serious in Ghana. One of the responsibilities taken on by the profession of archaeology is to preserve archaeological and cultural resources (Sharer & Ashmore, 2010). This responsibility has been made difficult due to the bad policies and lack of awareness among stakeholders.

The available documentation of archaeological and heritage sites is minimal and some hardly provide any context whatsoever. Ghana Museums and Monuments Board (GMMB) has a small catalogue of sites but it lacks details (Personal communication with Mr. Samuel Martey and Dr. William Narteh Gblerkpor January, 2021). The protection and correct management of archaeological and heritage sites is warranted as it enables archaeologists and other scholars to study and make interpretations for the benefit of the present and future generations. It could also serve as a guide or reference in making policies pertaining to heritage sites as well as help in

packaging archaeological and heritage sites for tourism. This is in line with the 2004 Cultural Policy, which states, "through State and private initiative, Ghana shall develop its heritage and cultural assets and promote their use and appreciation" (p.35).

This research provides a framework for recording existing archaeological and tangible heritage sites in an organized manner, with the inclusion of GIS maps to show the spatial distribution of site and make them digitally accessible to interested publics. The research serves as a case study of how inventorying tools and GIS software provide usable framework for documenting, conserving, and managing archaeological and cultural heritage sites. The study provides a fair idea of some of Ghana's archaeological and cultural heritage sites.

This research is a case study for how inventory and GIS software can serve as a means of conserving and managing archaeological and cultural heritage sites. Therefore, it will focus on the few selected sites. Absolutely given the dictatorship of time and resources, the research cannot cover all archaeological and cultural heritage sites in Ghana. Thus, the purpose of this research will be to provide a fair idea of some of Ghana's archaeological and cultural heritage sites.

1.5 Aim

This research aims to make inventories and create GIS data of selected archaeological and cultural heritage sites of Ghana. This has been in the form of digital or electronic format with the thesis being its paper document component.

1.6 Objective

The primary objective of this research is to inventorise selected archaeological and cultural heritage sites in Ghana through systematic documentation, annotation, and Geographic Information Systems mapping. The components for this objective are:

- To count and estimate all identified archaeological and cultural heritage sites in Ghana- using existing publications and interviewing experts.
- To know the current state of selected archaeological sites from the Ghana Field Notes using Google Earth Pro while creating a digital map and spreadsheet to illustrate said data.
- To profile and create a practicable inventory for selected archaeological and cultural heritage sites of Ghana including Tengzug Cultural Landscape, Old Elmina/Elmina Castle, Shai Hills Resource Reserve, Kormantse, Begho, Banda, Marine Drive (Osu), Koma Land and Larabanga Mosque with the aid of Microsoft Excel and ArcGIS.

1.7 Research question

How would inventorying with Geographic Information Systems mapping (ArcGIS and Google Earth Pro) contribute to improving conservation efforts aimed at safeguarding and promoting Ghana's archaeological and cultural heritage sites and resources?

1.8 Research Methods and Techniques

The sources of data for the study were mainly obtained from secondary sources, specifically journals, dissertations, and the internet. Primary data was obtained through interviewing

researchers and faculty of the Department of Archaeology and Heritage Studies, University of Ghana. These scholars are mainly responsible for researching the sites discussed in the project. In addition, field visits helped to obtain data on the current state of sites and other further descriptions. Photographs were sourced from other literature while others were taken by the researcher. These were samples of photographs of artifacts excavated from archaeological sites, photographs of the architecture of heritage places and photographs of the landscape of both archaeological sites and cultural heritage sites. Finally, GIS software was used to assess, manage and visualize geographic data of selected sites. These Digital maps were made for this study and the associated digital files were given to the A.G. Leventis Digital Centre for African Culture at the Department of Archaeology and Heritage Studies, University of Ghana, Legon.

1.9 Significance of the Research

This study creates the first interactive map of archaeological sites identified by Oliver Davies in the Ghana Field Notes. It also creates a pilot framework for inventorying Ghana's archaeological and cultural heritage sites and assets. The inventorizing of Shai Hills, Begho, Tengzug, Old Elmina/Elmina Castle, Kormantse, Begho, Banda, Marine Drive (Osu), Koma Land, Larabanga Mosque sites provides reference data and valuable information on location, the state of conservation, and annotation of heritage sites of national and international value. This study provides a tested model application of ArcGIS that can be adopted for a systematic inventorising of the nation's archaeological and cultural heritage sites, especially as part of efforts aimed at conserving Ghana's heritage.

1.10 Organization of Study

This thesis consists of five chapters. The first is the introduction to the study (background information about the study and the study area, the practice of the archaeology discipline in Ghana, the problem statement, aim of the research, research objectives, research questions, research methods and techniques, significance of research and organization of study). Chapter two delves into the literature surrounding the subject area and the conceptual framework for the study. That is, inventory and its types, GIS application in archaeology, and the introduction to metadata. Chapter three discusses my methodology of the study. Chapter four presents and discusses the data collected on archaeological sites and cultural heritage sites in Ghana. This includes aspects like background information of each site, the year of site excavation, the principal researcher(s), site age/date, among others. Chapter five concludes the study and makes recommendations for future studies.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Introduction

This chapter examines relevant literature on inventory and inventorying. The chapter also discusses the conceptual framework of this study. Furthermore, the chapter describes what Geographic Information System is and discusses the application of the software in archaeology and heritage studies. The chapter also explores the use of metadata in describing digital files.

2.2 Conceptual Framework

A conceptual framework is the total, logical orientation and associations of anything and everything that forms the underlying thinking, structures, plans and practices and implementation of your entire research project (Kivunja, 2018). A conceptual framework may also be broadly described as theory or as factors and variables addressed in a particular study (Maxwell, 2017; Miles, Huberman, & Saldaña, 2014) This study adopts **Cultural Heritage Conservation and Archaeological Site Management** as its conceptual framework because the project is an archaeological and cultural heritage resources management one. The study primarily involves the identification, mapping, review, and annotation of known cultural heritage and archaeological sites as a necessary step in archaeological and heritage resources management strategy in Ghana.

2.2.1 Cultural Heritage conservation and Archaeological site management

The conceptual framework for this study is Cultural Heritage Conservation and Archaeological Site Management. This constitutes efforts aimed at effectively and efficiently managing and promoting cultural heritage and archaeological sites. Efforts aimed at the protection, conservation,

and promotion of heritage and archaeological sites are part of the major goals of archaeology and heritage studies. Archaeological and cultural heritage site management is consistent with the ethical and social responsibilities of scholars in the discipline, and it fosters linkages between the experts and stakeholders, including the local communities whose past we study, policy makers, and practitioners in the heritage tourism industry. For this reason, the stakeholder theory and "cultural rights" form the theoretical framework for this research. With conservation and management in mind, inventorying through the use of computer programmes serve as tools to conserve archaeological and cultural heritage sites by documenting sites so that stakeholders are aware of them. This therefore puts them in the position of participating in management of heritage.

2.2.1.1 The Stakeholder theory

Stakeholder theory is an idea that various entities have the right and capacity to participate in the conservation and management of heritage. These stakeholders include the government, local people, heritage experts and agencies or bodies in the heritage sector (Hasbollah, 2015; Simengwa & Makuvaza 2015). The government has a hand in the conservation of archaeological and cultural heritage sites by formulating policies and enacting laws that safeguard these sites. They also must ensure that these laws are consequently enforced. Heritage experts contribute to safeguarding archaeological and cultural heritage sites by coming up with solutions, interventions and decisions to say either salvage or leave them unharmed. They also involve local people in their research as a way to make them realize the value of heritage sites. Local people participate in safeguarding archaeological and cultural heritage sites by playing a very active role. Local people act as watchdogs to inform heritage experts and agencies when sites are under threat or being disturbed.

2.2.1.2 Cultural Rights

Cultural rights are rights related to themes such as language, participation in cultural life, cultural heritage, access to culture among others. Cultural rights are essential to the recognition of human dignity which is the heartbeat of human rights. Article 27(1) of the Universal Declaration of Human Rights avers that everyone has the right to freely partake in their community's cultural life, to enjoy the arts and to share in scientific development and the benefits that come with it. This inadvertently mean that people have rights to their cultural heritage sites which make part of cultural life. At the national level, citizens have the right to access national heritage which promotes a sense of patriotism. At the local level, its indigenous people have the right to access and a say on how sites should be managed. Moreover, they have the right to indicate what should be publicly known about their heritage. It is important as heritage experts to involve custodians of natural and/or cultural heritage to know what is appropriate to document. This constitutes the ethic of the profession; i.e. respecting what people value.

The Committee on Economic, Social and Cultural Rights (United Nations) posit that cultural life is “an explicit reference to culture as a living process, historical, dynamic and evolving”, hence culture must be seen not as a series of isolated events, but as an interrelated process where individuals and communities, while preserving their specificities and purposes, give expression to the culture of humanity (Committee on Economic, Social and Cultural Rights, general comment No. 21 2009 on the right of everyone to take part in cultural life, paras. 11 and 12).

Article 39(4) of the fourth Republican constitution of Ghana (1992) asseverates that the state shall endeavour to preserve and protect places of historical interest and artefacts. This is a step in the right direction to promote cultural rights and life of citizens. In spite of its early recognition, cultural rights still remain underdeveloped due to several factors including weak cultural policies.

The rationale for the establishment of cultural rights was not only to protect culture and cultural heritage, but to also improve circumstances allowing all people, without discrimination, to access, participate in and contribute to cultural life through a process of continuous development.

The right of access and enjoyment of cultural heritage is centered on several human rights norms which comprises the right of individuals and communities among other things, to know, understand, enter, visit, use, uphold, and exchange cultural heritage, as well as to benefit from the cultural heritage and the creation of others (OHCHR, n.d.). It also includes the right to participate in the identification, interpretation and development of historical heritage, and in designing and implementing practices to safeguard it. In Ghana, the rights to declare what is national heritage are vested in the office of the president. Nonetheless, various degrees of access and enjoyment may be acknowledged, taking into account the different interests of people and communities in connection to certain cultural heritage resources.

Human rights discourse offers a possible mechanism for evaluating heritage in terms of social justice and wellbeing despite its numerous limitations. Cultural heritage is preserved, developed and transmitted to the future generations as a record of human experience and aspirations, in order to encourage creativity in all its diversity and to inspire a genuine dialogue between cultures. Such obligations include care, preservation and restoration of historical sites, monuments, works of art, among others (Universal Declaration on Cultural Diversity, article 7). Inventory creation and management makes an important aspect of preservation and conservation. The absence of an inventory in Ghana does affect cultural rights because the creation of a heritage inventory promotes public awareness and such awareness is not realized until there is some form of compilation that presents and educates people about what they possess. A concept map (Figure 2.2-1) is drawn below to explicate the conceptual framework discussed above.

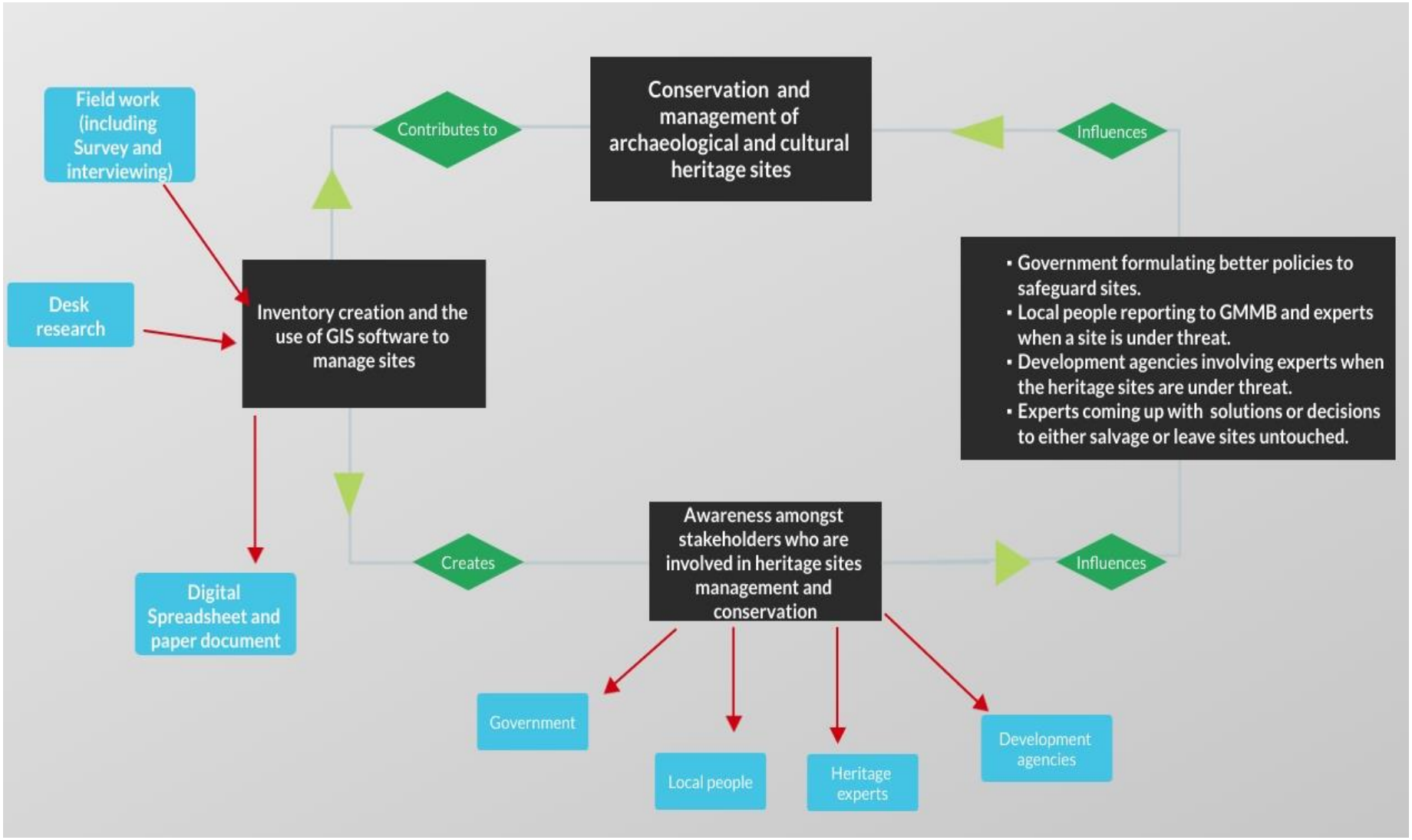


Figure 2.2-1: Concept Map of the Framework

2.3 Review of Ghana Field Notes (1970 & 1976)

The Ghana Field Notes is a four-part document made in the 1970s that contains several archaeological sites in Ghana that was recorded before this period (1970s). This document presented in an alphabetical order highlight many archaeological sites and their key descriptions, observations of these sites as well as their geographical coordinates. Part one (80 pages) of the four-part document contains sites from the Volta region area (referred to as Togoland in the document). Part two (178 pages) is made up of the sites in northern Ghana (comprising the area of the Northern territories before independence), part three (110 pages) constitutes sites from the Ashanti region (comprising the area of Ashanti before independence) and part four (229 pages) is made up of sites from southern Ghana (the coastal areas and the eastern region of Ghana).

The Ghana Field Notes were made by Oliver Davies, an archaeologist who was born in Chelsea, London on 7th May 1905. He worked in Ghana from 1951 to 1966 at the Department of Archaeology in the University College of the Gold Coast (now University of Ghana). During his time of research in Ghana, he took record of archaeological sites he had been encountering on his field researches. This survey began as a result of the Volta River Basin Project where a survey was conducted around the Volta River to salvage archaeological sites which were set to be destroyed in the advent of the Akosombo Dam construction. A number of 48 sites were located and excavated in the Volta and Northern regions (Anquandah, Kankpeyeng, & Apoh, 2014). Davies later took the initiative to continue the survey by traversing the entire country of Ghana to record archaeological sites and making notes which were later compiled in the 1970s. He does well to speculate or suggest the likely site type based on the surface finds encountered on the site. With regard to geographical coordinates, GPS was not available until the 1970s. Therefore, paper maps gridded with latitudes and longitudes were used to provide coordinates of sites. Alternatively, the

distance and bearing of sites were recorded with the use of either a prismatic compass or a theodolite and later computed to generate the coordinates of sites. According to Boachie-Ansah, Derrick Watson pointed out that the site coordinates recorded by Oliver Davies were accurate and were very efficient in assisting researchers to locate sites (J. Boachie-Ansah, personal communication, October 21st 2021).

This document did not contain only his survey but other surveys undertaken by scholars like Kitson, Junner, Wild, Shaw and Anquandah. Artifacts which were collected from these sites during the survey were also recorded in the documents as well as their locations in museums such as the Department of Archaeology and Heritage Studies Museum (Legon), Ghana Museum (Accra), the British Museum, Pitt-Rivers Museum (Oxford), Cambridge Museum, Manchester Museum, Jos Museum (Nigeria), Cheltenham Museum, Basel Museum für Völkerkunde.

This document which is over forty years has been one of the most useful document in the Department of Archaeology and Heritage Studies. Researchers and students have referred to this document when they are in search of an archaeological site to work on or to confirm the existence of a site that has been mentioned in other texts. That is, this document has served as useful reference to identifying archaeological sites by researchers (see Asare 2019; Kumah 2012; Gavua 2006, Posnansky 1973, York 1973; Anquandah 1965). Boachie-Ansah stated that: *"…for anybody trying to research archaeological sites in Ghana, you need to consult that book* [Ghana Field Notes] *…it holds information on archaeological sites relevant for future researchers…"* (J. Boachie-Ansah, personal communication, October 21st 2021). When it comes to making an inventory of archaeological sites, the Ghana Field Notes makes a great contribution as it is in itself an inventory and the first form of inventory of Ghana's archaeological sites. A compilation or catalogue such as this can be relevant to archaeological and heritage conservation in Ghana as it is

the earliest effort to document what is there (in terms of archaeological sites) and this can influence policy and law making decision because policies and laws are made with available data or resources (in this case inventory). This pioneering work however has its limitations. First of all, archaeological sites that have been recorded are based on surface finds and this is usually not enough to declare a place as an archaeological site because surface finds can be deceptive. Nonetheless, it is imperative to note that more of the sites that were recorded in the Ghana Field Notes have yielded positive results after being excavated by fellow researchers. For example, sites such as Begho, New Buipe, Yendi Dabari, Banda, Daboya, Kormantse, Legon Botanical Gardens, Akpafu, Kintampo among others. Secondly, it can also be argued that since a large number of sites recorded in the Ghana Field Notes were not excavated, the chronology of the sites cannot be established.

Despite the usefulness of Davies' work, it has been so many years since this work has been updated. There are also some improvements that need to be made. These documents lack geographical maps and it is unavailable in simplified digital formats. There are no maps to give a sense of the visual location of the sites documented. This thesis attempts to improve on this work by creating a digital version of the data in the Ghana Field Notes through the use of Microsoft Excel. It drew information from Davies' document to create a digital spreadsheet and map. It goes further to give an update of the state of some of these sites that existed in the 1950s through the use of Google Earth. This map is made interactive and contains all the information from the spreadsheet. It is provided online through this link – https://www.google.com/maps/d/edit?mid=1c7BN92xNXRIW05KU3drMrY-qb53qJfud&usp=sharing

2.4 Inventory: Uses and its types

One of the initial ideas of an inventory is usually the stock of items kept by organizations. This is not wrong as the subject of inventories are majorly associated with economics, finance or procurement (example Muller, 2003 and Wild, 2002). An inventory refers to an itemized list of current assets such as: a list of goods on hand or a catalog of the property of an individual or estate (Merriam-Webster). An inventory of archaeological and cultural heritage sites may contain information on historical resources and archaeological sites. The primary files in such inventories may include local, regional and national register of archaeological sites, historic places, heritage sites, and individual site inventory forms as well as reconnaissance and intensive level survey reports. Specifically, archaeological and cultural heritage inventories consist mainly in locating the various sites in a given region. Inventorying involves reviewing known archaeological sites, re-evaluating the potential of known sites, researching new archaeological and cultural heritage sites, and sometimes re-evaluating them. These processes may result in the registration of new cultural heritage and archaeological sites. The development of inventories for archaeological and heritage sites form an important mechanism for safeguarding heritage resources, especially those located in areas susceptible to major earth-moving construction projects. Archaeologists and heritage experts conduct field inspections in such locations to make sure that cultural and archaeological sites will not be disturbed, or recommend mitigating strategies, including salvage archaeology and cultural impact assessment. This definition is useful in describing inventories for heritage sites as a heritage inventory is referred as to a listing of heritage sites that have cultural heritage significance with the aim of conserving them. As Pearson and Sullivan (1995) have

described, inventory of heritage is a tool used to document sites of cultural relevance. This documentation includes all relevant written and graphic information on these places.

2.4.1 Uses of Inventory in Archaeology and Heritage Studies.

There are several forms of inventory which serve different purposes, including inventories for the purposes of accounting, and procurement of goods. This study, however, focuses on inventory made for heritage assets. Inventory compilation play crucial roles in establishing the component parts of our common heritage in changing times, and prompting public support for its understanding and protection (Bold, 2009, p. 17). An inventory- the documenting of what is there- is necessary for the purposes of education, protection, restoration, planning and conservation. It is based on this reason that this research sought to create a workable inventory of selected archaeological and cultural heritage sites. In this study, the inventory covers two categories of sites- archaeological and cultural heritage. The aim of an inventory is to be part of a process in an activity. In this sense, it is not an end in itself but part of activities such as heritage impact assessment, land-use planning, physical restoration or encouragement and management of tourism.

2.4.2 Types of Inventory

Types of inventories are determined by the task or purpose at hand as mentioned earlier. Bold (2009) categorizes inventories into four types and names them inventory options: Selective, exhaustive, topographical and thematic. Any of these categories can be considered in creating heritage inventory. According to Bold (2009) selective inventory requires the establishment of criteria, which are based on the understanding of one's task or purpose of the inventory. He posits

that selective inventory cannot be objective in its compilation looking at the underlying factors, which are the choices being made. This inventory option will be considered for this study because exhaustive inventory as the name suggests tries to be comprehensive in compilation. Bold (2009) suggests this exhaustive option be carried out in a limited area rather than nationally because there will be a need to register or document every single asset. This is understandable seeing as the activity would be more effective.

2.5 Documentation Standards for Heritage Inventories

Documentation standards are a set of best practices that have been tried and tested by professionals and are constantly changing as professional practices change. Documentation standards are adopted even in museums and museum studies. These are how to document a collection and what type of information should be collected for each object. In the aim of documenting heritage sites, standards are also used. These are a set of rules about how to document heritage and what type of information should be collected for heritage inventories. These international guidelines include International Core Data Standard for Archaeological Sites and Monuments; Core Data Index to Historic Buildings and Monuments of the Architectural Heritage (adopted by the Council of Europe), and MIDAS heritage- The UK Historic Environment Data Standard.

One of the tasks or "best practices" of documentation is the use of core information. Core data or information are essential and basic categories of an object (heritage sites in this case) that are regarded as necessary for collection. These core data are common to a number of documentation projects since they make part of documentation standards. The idea of core data has been developed with computers in mind. This is because core data categories make recording, retrieving and exchanging of information electronically easier. However, it is actually helpful in indexing,

ordering and classifying information regardless of whether the information is on paper, card index or database. Documentation standards can be local. This is developed specially for one's national circumstances. This study did not fully adopt any professional standard. It developed its own standard for this pilot project but with consideration for a documentation standard that is international and responds to global trends in future projects.

2.6 Case Studies (Examples) of Inventories

Many countries have created inventories for their heritage and these are either natural heritage, cultural or even both. In Palestine, an inventory of natural and cultural heritage sites was created on the basis of "Potential Outstanding Universal Value" (Taha, 2009). This inventory essentially profiled selected sites to show their character. This inventory was made up of twenty sites selected by Department of Antiquities and Cultural Heritage of the Ministry of Tourism and Antiquities with the consultation of experts from both public and private institutions. These selected twenty out of sixty sites were believed to reflect the natural and cultural diversity of Palestine. The inventory identified cultural and natural sites that met the criteria and requirements for the inscription on the World Heritage list set by the Operational Guidelines for the implementation of the World Heritage Convention. Elements included in this inventory are the description of the site, geographic location, justification for outstanding universal value, criteria met and statement of

authenticity (see Figure 2.6-1). The idea of the profiling selected sites characteristic of the country of Palestine is also adopted for this project.

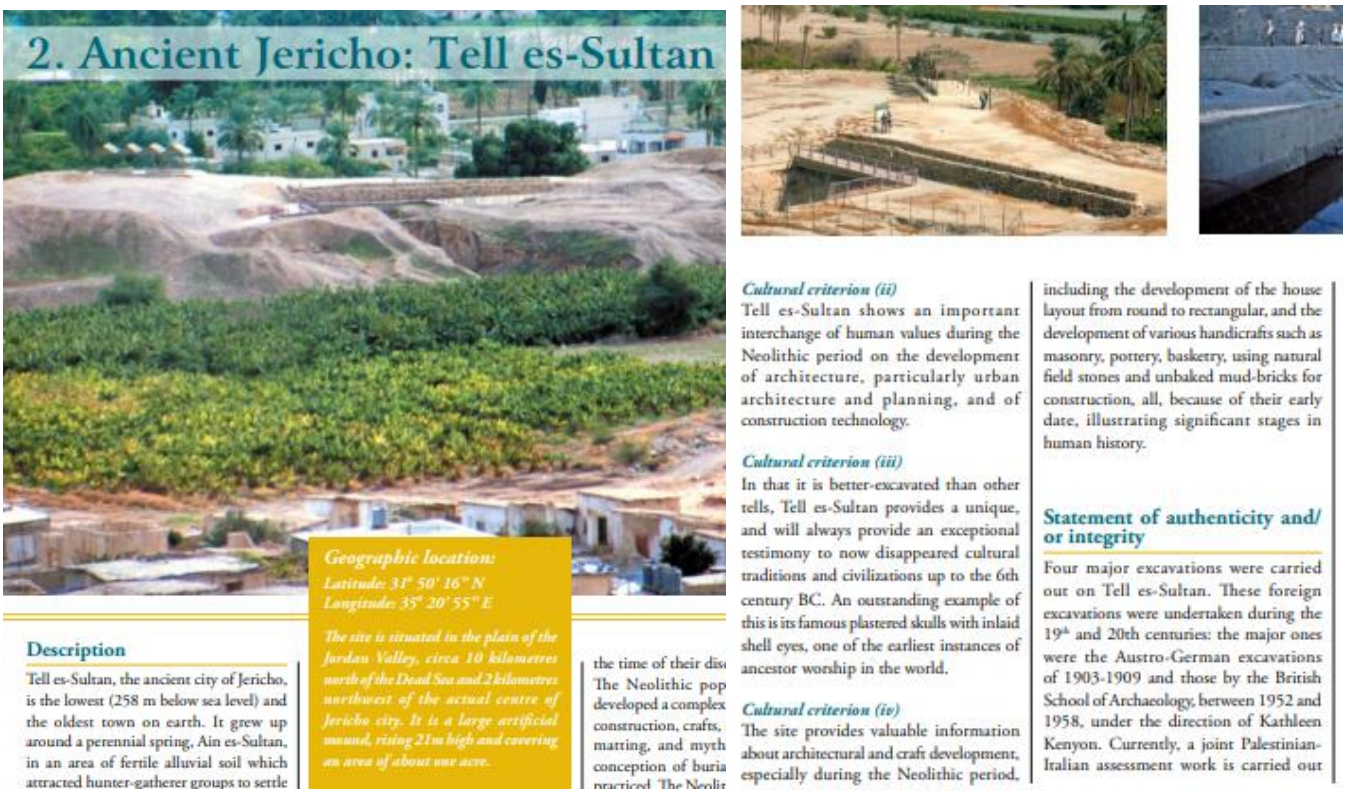


Figure 2.6-1: Showing excerpts from inventory document. Source: Taha (2009)

With respect to inventorying only cultural heritage, some countries also document their tangible and intangible cultural heritage to make inventories for them. Regarding tangible cultural heritage sites, Azmi et al (2015) discusses their attempt to explore heritage place inventory as a conservation tool for establishing the value of places in Malaysia, finally leading to their protection. Built heritage (buildings or groups of buildings that are deemed to be of special value and meaning) in smaller towns and cities according to the article have been neglected and overlooked, hence the attempt to use inventory as a tool to highlight the value or significance so

as to protect them. In this attempt, the study went through the process of acquiring and gathering background information of the identified historic places through observational survey and case study approach. A survey was conducted in Kampung Kepayang, a small town in the state of Perak, Malaysia as a case study. The survey began with familiar places with the aid of literature written about those places and proceeded to record other places which were unknown or previously overlooked. Subsequently, a total of 50 pre and post-war buildings consisting of varying styles, uses and values were recognized as unique characteristics that made the town distinct. The 50 buildings identified met the following conditions: 1. the definition of built heritage of the study; 2. at least one of the pre-defined assessment criteria; and 3. they lay within the legal boundary of the town (but exceptions were made for external places that have significant relations to the town) (Azmi, Faizah, & Ali, 2015). The study made use of standardized survey forms to ensure that data collected was consistent. Each of the 50 buildings used separate survey forms and assigned a reference number to ensure that a systematic inventory record would be formed at the end of the survey. Other data recording items such as digital cameras, field notes and maps were used to supplement the forms. This use of some form of survey and inventory form was employed for this study to guide the kind of information recorded.

The general recording information include description of a place, cultural values and character-defining elements. The description gives a general picture of the place and its setting in two or three sentences whereas the cultural value is the significance of the historic place based on value judgement. Cultural values have no internationally agreed typology (Mason, 2002) nonetheless, Azmi et al (2015) still reviewed internationally accepted, well-established, and best methods for identifying and assessing local cultural sites. They then adopted the criteria used across Australia and England for assessing their heritage places. These criteria are the aesthetic, historic, scientific,

social and economic values of the place. The character-defining elements of a place are the tangible components that make it unique as well as use, cultural associations and meanings which make up the place. This set of criteria is applicable for this study and useful in inventorying cultural heritage sites in Ghana. The criteria also have some similarity with the criteria used by UNESCO to select world heritage sites of outstanding (universal) value. The difference however lies in its use. While these UNESCO's standards are used to highlight heritage sites or places that standout worldwide, the Australia/England criteria is used to draw out the value of their local heritage places.

CRITERIA	DESCRIPTION
Aesthetic	Exhibits perfect example of any local styles, material or other distinctive local characteristics. This value may also be derived from the sensory experience, particularly the smell, sound, feeling and sight of a place. For these reasons, it tends to demonstrate landmark quality and contribute to the overall quality of its setting.
Historic	Closely associated with past events, developments or cultural phases that have played an important part in the locality's history, including links to important local figures. The association becomes stronger with the presence of physical traces or the continuing traditional use of a place.

Scientific	Potential of a place to yield information and evidence about past human activity not available anywhere else. Thus, allowing people to understand and learn a great deal about their past history, culture, environment, behavior, earlier technology, architecture and others.
Social	Possess strong and special associations with a community or cultural group in the local district for social, cultural, educational or spiritual reasons. It also tends to develop positive local sense of place and identity. In contrast with other values, social value is less dependent on the survival of physical fabric.
Economic	Relating to places perceived as a source of good economic returns or marketable destinations to lure visitors, investments and media attention. More often than not, individuals are willing to allocate resources to protect places with this value.
Political	Derived from the capacity of places as a political tool to build or sustain civil relations, governmental legitimacy, protest or ideological causes.

Table 2.6-1: Criteria for assessment of local heritage places adopted across Australia and England. Source: Azmi, Faizah and Ali (2015)

Archaeological site inventory is a catalogue or compilation of basic information recorded on archaeological sites. They are enabled by an archaeological site inventory form. The form serves as indicators on the type of data to be recorded. In Alberta (Canada), supported by the Ministry of culture and tourism, is an archaeological data form guide made for archaeological survey (Alberta Culture and Tourism, 2017). This guide helps archaeologists to record certain details of a site during a survey for the purposes of preservation and protection. Details are also recorded for likely

field excavation (usually the last resort of field work). In Ghana, however, archaeological field work does not encompass this level of detail. Even though this activity is done at the time of field work, in our situation some of these data elements can be adopted. In other words, this activity of recording on the field can be reversed whereby we consider adding more of such details to our archaeological field work that has already been done. Some data types that can be recorded include Elevation, Land Owner and contact, Environment/Site Setting, Sub-type, Site type, Cultural affiliation, Name and date of the observer among others.

A more specific aspect of archaeology where inventories have been used to supplement research is underwater archaeology. A report was prepared by the Bureau of Ocean Energy Management (BOEM) and TRC environmental corporation where this subject was discussed (TRC Environmental Corporation, 2012). In the U.S., the Department of the Interior delegated its Outer Continental Shelf Lands Act (OCSLA) responsibility to the Bureau of Ocean Energy Management (BOEM) thereby giving BOEM the authority to lease areas of the Outer Continental Shelf (OCS) for activities focused on oil and gas and non-energy minerals including sand and gravel (TRC Environmental Corporation, 2012, p. 3). The BOEM currently has the responsibility under the OCSLA of permitting undertakings within such waters of the OCS.

The BOEM is required that in its undertaking of permitting activities on OCS areas, there must be consultation on cultural resource stewardship found in a section of their National Historic Preservation Act. In efforts to be in line with their National Historic Preservation Act and to manage known and potential cultural resources better, BOEM requested an updated study on historic shipwrecks and prehistoric sites. The study built on two earlier studies from about 38 years ago that covered portions of the Atlantic OCS. From both studies, an overview of the geology, prehistory, and sea level rise data that may affect submerged prehistoric site preservation, as well

as a predictive model for locating historic shipwrecks was provided. The goal of the study was to improve the predictive model for identifying intact, submerged prehistoric archaeological sites on the Atlantic Outer Continental Shelf by looking at more current studies on archaeological research, prehistoric habitation patterns, and relative sea level curves (TRC Environmental Corporation, 2012). This was done by assembling a team of experts in underwater archaeology, history, prehistory, geoarchaeology and marine geology from notable institutions in the U.S. The research on historic shipping and shipwreck was supplemented by the creation of a database (inventory) of known and suspected shipwrecks. The database contained locations of historic shipwreck with a summary of maritime history for the study area. It also presented current thinking on submerged prehistoric sites and the coastal landscape they occupied within what is now the Atlantic OCS as well as expectations for where sites might be found and how to go about finding them. According the report in TRC Environmental Corporation (2012), the sources for this database included both primary and secondary sources from a large number of repositories, institutions, and agencies with an interest in maritime history. The information drawn from these places about each shipwreck was assembled into a Microsoft Access database. This served as a searchable tool that BOEM can use to identify known and likely historic sites within an area of concern. In addition, a geodatabase for all entries with coordinates within the Atlantic OCS also has been generated to work with ArcGIS. This goes to show the importance of GIS software (even if they are not ArcGIS) in documenting historic sites to the extent of underwater sites.

The area of Maritime or underwater archaeology has been mildly explored in Ghana. This is rather unfortunate because Ghana's 500km+ coastline along the Gulf of Guinea contains a number of shipwrecks due to the transatlantic commerce and trade in enslaved people (Cook 2014, 2012; Pietruszka 2011). It would be essential that an inventory of shipwrecks located in the seas of Ghana

be made and more studies be undertaken as Cook (2014) rightly suggested; “time allowed for only preliminary mapping and recovery of artifacts, but it was clear that a significant wreck had been located that was worthy of further study and this was named the Elmina Wreck”.

2.7 Geographic Information Systems (GIS) in Archaeology

2.7.1 Introduction

Westcott and Brandon (2000) have described GIS as “the most powerful technological tool to be applied to archaeology since the invention of radiocarbon dating”. This statement can be disputed by others but does not take away the fact that GIS is making phenomenal strides in the discipline of archaeology. From Archaeology to Zoology, GIS is a useful tool for nearly every field of knowledge. GIS is being used in the discipline of archaeology for nearly three decades now and has been one of the early users of this technology and science. This is so because both fields (with GIS having roots in geography) slightly overlap and is concerned with exploring and interpreting how humans organize, understand and use space over time. Archaeology has in abundance spatial information due to the study of cultures, geography and its composition over time. Much of this information carry a lot of spatial data and this makes it a perfect match with GIS as GIS manages spatial data. On the subject of GIS and archaeology, several books have been published (Conolly & Lake 2006; Wescott & Brandon 2000; Maschner, 1996; Lock & Stančič, 1995; Gaffney & Stančič, 1991; Allen, Green, & Zubrow, 1990).

GIS is concerned with the documentation and display/presentation of geographical information using GIS components. These three components are the **software** (the computer program that stores and manages spatial data). Examples are ArcGIS, GRASSGIS, MapInfo, Idrisi. The **Hardware** ranges from a small laptop to large mainframe computers. These computers are assisted

by input devices (such as keyboard, mouse, or scanners), digital survey equipment (Global Positioning System (GPS), Total station) and output devices (monitors and printers). The **people** or professionals in charge of the design and analysis of geographic datasets are the last component of GIS. They may also be in charge of data collection.

2.7.2 Definitions of Geographic Information Systems

Geographical Information Systems can be defined as "integrated, spatial, data-handling programmes which will collect, store, and retrieve, spatial data from the real world" (Mayhew, 2003, p. 245). It is also referred as a tool for integrating spatial data with other information to allow sophisticated spatial and statistical analysis and cartography (TRC Environmental Corporation, 2012, p. xv). It is also defined by National Centre of Geographic Information and Analysis as "a system of hardware, software and procedures to facilitate the management, manipulation, analysis, modelling, representation and display of georeferenced data to solve complex problems regarding planning and management of resources"- (NCGIA, 1990). Geographic information systems manages geographic data in a way that a person reading a map may select data he/she needs for a specific project or task. One characteristic of a good GIS programme is its ability to process geographic data from various sources and integrate them into a map project. Many countries have an abundance of geographic data for analysis, and their governments often make GIS datasets available publicly. However, in Ghana some spatial datasets are not publicly available. Some institutions like Survey and Mapping Division, Sambus Geospatial, CERSGIS, Geotech Limited, AccuGeospatial, Ghana Health Service, Electricity Company of Ghana, and Ghana Water Company make use of spatial datasets usually acquired by the institutions themselves for their own

purposes. CERGIS however offer free but old datasets to the public for learning purposes. High resolution datasets are hard to come by but low resolution datasets are usually available online.

2.7.3 Basic Tasks of GIS

We can simply define what GIS is and its ability to capture and manipulate spatial data but this does not adequately breakdown the functionalities of GIS. It would be more informative and important to breakdown and categorise some of the basic tasks of a GIS into five. These are data acquisition, spatial data management, database management, data visualization and spatial analysis (Conolly & Lake, 2006, p. 11). Data is acquired with the use of any of these methods and instruments such as;

- Remote Sensing techniques (digital images obtained through airborne and satellite sensors);
- Topographic techniques (total stations and digital levels);
- Photogrammetric techniques (analogical and digital images produced by aerial and terrestrial cameras);
- GPS techniques;
- Aerial and terrestrial laser-scanning techniques.
- digitised and scanned data

GIS data can be divided into tabular and spatial data. Tabular data are characterized by alpha-numeric data that is organized with a relational database management software (DBMS) (Scianna & Villa, 2011). Most GIS software packages come with a relational DBMS inside or external ones such as Oracle, MySQL, PostgreSQL, etc. Data that has or is possible to associate a reference

system to is known as spatial data. This is used to describe data or information that identifies the geographic location of features and boundaries on Earth, as well as the nature and composition of features. Spatial data is characterized by coordinates that represent unique points on the Earth's surface. These coordinates could be in two-; latitude and longitude (x, y) or three-dimension (latitude, longitude and elevation- x, y, z). Topographic maps, site locations and morphology, archaeological plans, artefact distributions, air photography, geophysical data and satellite imagery among others are spatial data. With spatial data management, GIS uses highly complex database management system to store and retrieve spatial data and their attributes. In other words, it is characterized by intricate means and components to store and manipulate spatial objects. Such sophistications for instance prevent spatial data and their attributes from being redundant. GIS represents spatial data using either of these data models or structure known as raster and vector data. Raster data is defined by Escobar, Hunter, Bishop, and Zerger (n.d.) "as an abstraction of the real world where spatial data is expressed as a matrix of cells or pixels, with spatial position implicit in the ordering of the pixels. With the raster data model, spatial data is not continuous but divided into discrete units". With vector data however, they define it as "the basic units of spatial information which are points, lines (arcs) and polygons. Each of these units is composed simply as a series of one or more co-ordinate points". For instance, a collection of related points makes a line while a collection of related lines makes a polygon.

Another basic task of GIS is database management. When data is stored in a database, they are accessed using a database management system (DBMS). GIS can provide an environment where spatial and non-spatial datasets can be linked and their relationships explored. As pointed out earlier above, GIS software packages come with a relational database management software or other external ones. These database management software facilitates the management of data

(whether spatial or non-spatial) so they can be manipulated by users (see Conolly & Lake, 2006 Chap. 4 for more on database management). This then can be visualized hence, the fourth basic task of GIS; data visualization.

Data visualization or spatial data visualization in GIS allows for viewing spatial data in innovative ways. Data could be viewed thematically or 'fly-throughs' in three dimensions. Hard-copy paper maps are produced with the help of cartographic tools provided by GIS. Some GIS packages are equipped with features that also facilitate the publication of interactive map data on the Internet. Countries like Palestine, Canada, Malaysia and several others have made use of this task to visualize some of their natural and cultural heritage sites. Coordinates of these sites were picked, integrated into GIS and then displayed as digital maps or produced as paper maps. This is made possible by the use of the components of GIS.

The last basic task of GIS is spatial analysis which is the core of GIS. Spatial analysis is the set of statistical and related methods used for the analysis of spatial data. According to Conolly and Lake (2006), it has many of its foundations being established by quantitative geographers in the 1950s and 1960s. In the 1970s and 1980s, it was adopted and modified by archaeologists. They noted that spatial analysis has fallen into disuse in archaeology and other social sciences due to a number of factors. One of them was the move toward more contextualized and relativist approaches to human behavior research. However, there has recently been a resurgence of interest in spatial analytic techniques as a means of understanding historical human behavior.

Essentially, spatial analysis helps one to examine and make sense of the spatial data collected and represented in raster or vector form which is stored in a database system.

2.7.4 Applications of GIS in Archaeology

One application of GIS in archaeology is archaeological field survey. We usually begin an archaeological investigation with systematic field survey in order to make inventory of cultural features and artifacts visible to the ground surface of a site or region. These inventories partly provide insight into the variety and type of artifacts found on the sites, the dimension of the site itself and also to know areas in the site priority must be given to when conducting an excavation. Such decisions are not only backed by practical reasons but also due to budget and time constraints. GIS can be used in archaeological field survey where GPS technology is integrated with GIS. This helps in planning and excavation prioritization. For example, such an approach was used for an archaeological field survey at the Aztec-period Calixtlahuaca site, located in the Toluca Valley approximately 40 miles (60 kilometers) due west of Mexico City (central Mexico) (ESRI, 2009). The aim of this survey was to examine the non-elite residential occupancy of the site. This method allowed for the collecting of precise, reliable data on archaeological ground conditions, such as subsurface prehistoric structures, surface artifact density, and natural features, which could then be incorporated into and displayed using GIS. Another example is the field survey of the Hambuikong site (Yikpabongo) in Northern region, Ghana (Appiah-Adu, 2012). The GPS and total station was used to record and map the positions and features of several mounds in the area. This was then visualized by integrating the data into a GIS software to produce maps.

Moreover, GIS is useful in an archaeological excavation. GIS characterizes as a spatial management tool and this allows quick visualization of spatial data. Plans and drawings of archaeological remains can be linked directly to database records. As soon as data is collected, GIS can quickly facilitate the visualization of data patterns during the course of excavation so that there is no need to get off field before analysis or interpretation can take place. This can help one

quickly identify possible relationships between data thereby efficiently exploring them. GIS bridges the gap between data collection on field and analysis and interpretation post-field.

Additionally, another application of GIS in archaeology is predictive modeling. This is the attempt to forecast the location of an archaeological site based on known patterns in data. This attempt to forecast, are formulations which may be either inductive or deductive which is set up with the objective of predicting unknown events (Scianna & Villa, 2011). The "unknown events" in the case of archaeological studies is predicting site locations. Archaeologists have recovered and documented only a fraction of the millions of archaeological sites in the world while the rest is being destroyed as a result of land developments (Warren & Asch, 2000). One way to curb such an unbalance is to create formal models that are capable of predicting the locations of sites, hence the predictive modelling.

2.7.5 The Difference between GIS and GPS

There has been some confusion between GIS which is an acronym for geographic information system and the global positioning system popularly known as GPS. This may be due to the similarity in acronyms (GIS, GPS) or maybe because both have major roles when it comes to mapping and survey. GIS has been briefly explained earlier. GPS and how it works shall be explained to provide a contrast to what we have known about GIS in this chapter.

The Global Positioning System is a satellite navigation system that provides precise location of objects on the earth's surface through a receiver unit. GPS technology was first developed in the United States by the department of Defense in the early 1970s. It began operating at the close of the 1970s. It was used as a navigation system for the military.

Twenty-nine satellites were launched into space and programmed to orbit the earth. However, twenty-four satellites actually provide global coverage, orbiting the earth twice for 24 hours. The remaining five satellites are used as spare and for contingencies for when one or more working satellites malfunction. GPS requires four satellites out of the twenty-four to track location. Each satellite has a very accurate atomic clock which records the time and position it sent its radio signal to the receiver. The GPS receiver unit which ranges from a small handheld one to a permanent base station also has its own internal clock that aids in the provision of precise location by ascertaining the time it took for each satellite's signal to travel to the receiver, hence the distance of the receiver to each satellite. A mathematical technique called "Trilateration" is used to locate a person's position. "In theory, three satellites are sufficient to provide a three-dimensional location (e.g. latitude, longitude and elevation) on the Earth's surface by establishing the position of the intersection of the distances between the receiver and each satellite" (Conolly & Lake, 2006, p. 63). Due to the level of inaccuracy of the GPS's internal clock, an additional satellite is needed to correct the time differentials to establish the level of precision needed for three-dimensional measurements. This additional satellite makes the fourth satellite needed to track location.

The use of the GPS technology has become diverse. Some of these uses include tracking airplanes to control airspace traffic. It is also used by the online transportation programs to navigate places to either pick or drop clients (E.g. Uber, Lyft, Bolt etc.). In the mapping and survey world, a handheld GPS unit is used to take locational information of features on a landscape and also take boundaries or extents of landscapes. In archaeology, GPS is used to record the extent of archaeological sites and also positions of monuments. Expensive high-end GPS units can go further to record the artefact locations.

With all that has been said, where there is dense overhead vegetation, GPS technology cannot function well and becomes somewhat unreliable for survey. GPS technology is not always suitable for use in every situation. This is why one must also consider other methods of acquiring spatial data mentioned earlier.

2.8 Introduction to Metadata and its Types

2.8.1 Introduction

The word "Metadata" is a term largely associated with and used by information professionals. Metadata can be explained as information about documents, datasets, images, and other material. It has mostly been referred to as "data about data". Caplan (2003, p. 3) posits that metadata is structured information about an information resource of any media type or format.

The concept of metadata might be a tad less complex and been in existence for a longer time than some might think. Previously, we used to write the date we received a hardcopy photograph from a photographer or the day the photograph was taken at the back of the photograph. There have been instances where people wrote their names on books and the date they bought or received those books. These little acts served as ways to cement a memory or remember an occasion but in hindsight, metadata was being created. Currently, metadata is used in almost every aspect of our lives. With creation of the internet and computers, most software packages are driven by metadata; from searching for videos on YouTube to storing a tall list of contacts on our phones (Riley, 2017). All these come with the use of metadata in the sense that, in order to locate a video, its name and related topic must be inputted. We cannot go through our long contact list in search of one person so we might key in alphabets related to the person's name. The aforementioned are instances

metadata has been employed. Metadata is also essential in inventory making hence its purpose in this chapter.

Since the inception of libraries, there have been efforts to ease accessibility and retrieval. This easy access to information is made possible because of the creation and use of metadata. The manual/analogue style of cataloguing books adding the call numbers of the book, description of the book, the author and year of publication were the creation of metadata. However, with the emergence of computers, digitization became paramount. Thus, metadata is mostly now digitally created and one purpose of digitization is for preservation. Nevertheless, digitizing does not mean access. This is because the simple act of making digital copies of collections does not mean they could easily be found, understood or utilized. The combination of digitization and the creation of metadata on the other hand, tremendously enhances end-user access and that is the key purpose of creating digital resources. Through the storage of descriptive and contextual information, metadata seeks to make digital resources easily recognizable, retrievable, and useful. Documented guidelines like Ballegooie and Duff (2006), Conolly and Lake (2006), Day (2005) and NISO (2004) explicate the process metadata could be documented and the reasons for creating them.

2.8.2 Metadata Schema

The development of standardized metadata entries usually termed as “Schemas” help to solve the problem(s)/issue(s) that may arise concerning retrieving data about an object. Schemas are set of properties used to describe resources. “Metadata schemas outline a common understanding of what data are composed of (that is, its elements or attributes) for the purpose of describing data. Once a scheme has been formally implemented or adopted by a standards organization (such as the International Organization for Standardization), it becomes a metadata standard” (University of

California, San Diego, 2020). They are basically “containers” in which datatypes should be put. There are several schemas and they are selected based on how appropriate it is for an object or project. The schemas are sometimes combined if appropriate for the project. Examples of these metadata schemas are Dublin Core, MARC 21 (Machine Readable Catalogue), MODS, Online Information eXchange (ONIX), Simple Knowledge Organization System (SKOS), and Friend of a Friend (FOAF). The schemas facilitate the retrieval of data by presenting metadata in a standardized, machine-searchable ways. This ensures easy and faster access to information. This project employed the Dublin core schema as a guide. This is because it is generally used for creating metadata for most projects. It therefore picked certain elements constituent in Dublin core and tweaked it to suit the study. Dublin core consists of 15 elements that describe a dataset: title, creator, subject, description, publisher, contributor, data, type, format, identifier, source, language, relation, coverage and rights (Dublin Core Metadata Initiative, 2003)

Metadata is not limited to books; it is also used to document digital data as complex as satellite images. Information about a satellite image such as its date of collection, the type of sensors used, spatial coverage, amount of cloud cover, resolution, and costs can all be documented as part of the data related to that image. Metadata therefore gives meaning to non-textual materials like datasets or images that may not be usable without this additional information. Regarding the use of metadata in archaeology, it might be a lot more cumbersome. Archaeological data broadly refer to available evidence of the past as well as the interpretation of that evidence. However, it consists of all sorts of information types such as artifacts, features, ecofacts, the contextual relationships between the aforementioned, cultural norms and values, aerial photographs, near infra-red photographs, digital photographs, drawings, paper and digital maps, contour surveys, CAD layers, GIS databases, field notebooks, recording forms and so many information types. Having such a

wide variety of data can make documentation of metadata in archaeology a daunting task. Nonetheless, it enriches the data. The more metadata - data about data-, the more enriched a datatype will be.

2.8.3 Types of Metadata

According to Archaeology Data service/Digital Antiquity, metadata can loosely be grouped into a few categories. These are project-level metadata, resource-level, file-level and administrative-level metadata. Some literature (Riley, 2017) classify metadata into descriptive, administrative (technical, preservation and rights), structural and markup languages. Descriptive metadata as its name suggests is metadata used to identify and describe data or collections as well as their related information resources. Cataloguing records and cutorial information are examples of descriptive metadata. Descriptive metadata is greatly used by the cultural heritage community. Administrative metadata refer to metadata used for managing and allocating data/collection and information resources. Location information and acquisition information make examples of administrative metadata. Technical, preservation and rights fall under administrative metadata. Technical metadata deals with information about digital files and how to decode or render them. Examples of properties are file type and file size. Preservation metadata is related to preservation management of data/collections and related information resources. Rights metadata deals with information about who owns the dataset and also who can access the data in question. Example of rights metadata properties include copyright status, license terms and rights holder. Structural metadata describes the relationships of parts of resources to another (Riley, 2017). Examples are pages in a sequence or a table of content that leads to the beginning of sections. Finally, markup languages combine metadata and content together. They are an electronic type of metadata. It

cannot be created without the use of a computer. For example, in a textual resource, there might be flags inserted in the content. This can mean marking structural elements such as paragraphs or heading.

Archaeology Data service/Digital Antiquity groups metadata in a way such that certain "data about data" is collected on every level of a project. As a result, the types mentioned in other literature are combined or incorporated on every level. It also further suggests that the three categories relevant to archaeological projects are project-level metadata, resource-level metadata and file-level metadata.

Project-Level Metadata, which incorporates descriptive or resource discovery metadata is largely recorded at a broad level for an entire project regardless of the techniques used. It also covers elements such as dates, site and artefact keywords, project details and geographic location. Descriptive or Resource Discovery Metadata is created to make provisions for the complete description and easy retrieval of datasets or documents. A good example is the Dublin Core standard. It incorporates a number of descriptive and resource discovery focused elements.

Resource-Level Metadata is similar to project level because it also places emphasis on description. The focus is on details that normally vary when placed in the larger project context. Examples include locations, material types or keyword-list elements that do not cut across all resources in a project.

File-Level Metadata incorporates technical and preservation metadata. As the name implies, it is typically very specific and it is applied at the level of individual files. Information on hardware and software are incorporated in file level metadata. Much of this metadata is usually generated

by the digital archive if the data is to be deposited on there. The rest of the metadata has to be created by the data creator.

The role of metadata describes digital versions of the data that have been collected in this study. The subject of inventories and GIS cannot be discussed without discussing metadata. It plays a significant role when inventory and GIS data are being digitally used. When the digital versions of the data are given to the Department of Archaeology and Heritage Studies for management and update in their digital repository, their metadata will enhance easy access and retrieval.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discusses the research methods and approaches adopted for data acquisition, analysis and presentation. The chapter highlights specific methods of research, including desk-based research (literature search and review), collection of oral information through interviewing, fieldwork through site visits, photography, and the application of Excel spreadsheet software, and ArcGIS software.

3.2 Desk-based Research

The desk-based research involved the searching and reviewing of extant literature as well as other textual materials that relate to the topic. The research also involved search and review of digital sources on the internet and publications located at the Balme Library and Department Library, Department of Archaeology and Heritage Studies, all of University of Ghana. The online literature review provide data on how to create and use inventory and the "best practices" suitable for the research project. The online sources provide valuable information on the use Geographic Information Systems and how the software specifically facilitates research, documentation and mapping in the field of archaeology and heritage studies. The Department's library provided information on the number of known archaeological sites and cultural heritage sites in Ghana. This is particularly true of sites that have been investigated by faculty, staff, and students of the Department and University of Ghana. Relevant documents, including published and unpublished materials about several sites were identified and reviewed. These secondary data formed significant source of information for the research data because the sample sites for the project have

been previously investigated by archaeologists and heritage experts. For example, Banda (Logan, 2012; Smith, 2008; Cruz, 2003; Stahl, 2001), Begho (Posnansky, 2015; 2010); Elmina Castle and Old Elmina (Cook, 2014, 2012; Piestruszka, 2011; Decorse, 2001), Shai Hills (Anquandah, 1997, 1982; Ozanne, 1962), Tengzu (Eyifa, 2016; Insoll et al., 2011).

3.3 Sample Sites and Site Selection Criteria

Fifteen percent (288) of the estimated total number of archaeological sites (1,920) from the Ghana Field Notes were randomly selected for this research. The approach of a stratified random sampling was employed where 72 sites were arbitrarily selected from each part (1-4) of the Ghana Field Notes to ensure that sites were evenly selected across all areas that each part of the document represent.

The selected archaeological sites for profiling their character included Osu Marine Drive, Kormantse, Begho, Banda, and Koma Land. The cultural heritage sites included Old Elmina and Elmina Castle, Shai Hills Resource Reserve, Larabanga Mosque, and Tongo Tengzug Cultural Landscape. The selection of both archaeological and cultural heritage sites was based on a myriad of factors. These included, for the archaeological sites, those that have been extensively researched and have direct bearing on the nation's historical past. Cultural heritage sites on the other hand, were selected based on their popularity as major tourist attractions with outstanding local, national, and universal values.

For the purposes of this work, Ghana had been divided into three ecological zones: Savannah, Rainforest, and the Coastal scrub/grassland. Sample sites were selected from each zone, with at least one site representing a zone. This was done to ensure a regional balance in order to have sites

that fairly represent different ecologies and chronological periods. In the Savannah zone, one of the selected archaeological sites was Koma Land. This site was selected due to the extensive research done there (e.g., Kankpeyeng, Nkumbaan, & Insoll, 2011; Kankpeyeng & Nkumbaan 2009, 2008; Anquandah 1998, 1987, 1985). Furthermore, over the past years the Koma Land site has had problems with looting of archaeological artifacts especially terracotta figurines (Nkumbaan, 2015; Kankpeyeng &Nkumbaan, 2009). In light of this, adding it to the list of archaeological sites to inventorize is essential.

The Tongo-Tenzug Cultural Landscape is another very important site located in the savannah zone. The site is currently listed as number two on Ghana's UNESCO's tentative list. This implies that the Tongo-Tenzug Cultural Landscape has both local/national and universal values. These qualities make the site a likely candidate for consideration for a World Heritage Site status. The documented outstanding characteristic features of the Tongo-Tenzug Cultural Landscape include its unique physical landscape, the architectural style and the associated socio-cultural characteristics (Eyifa, 2016; Kankpeyeng & Insoll, 2004) (see Figure 3.3-1).

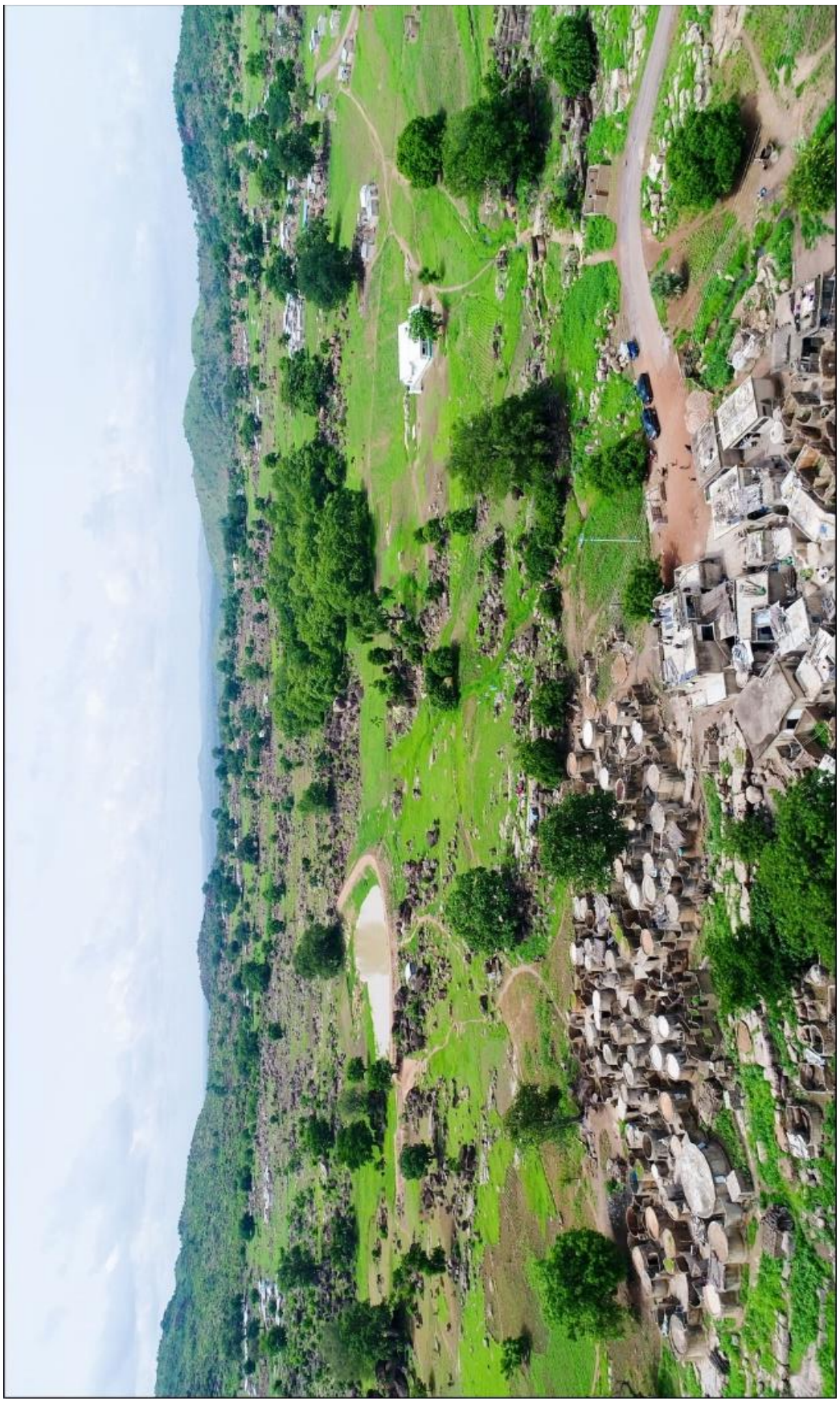


Figure 3.3-1: Aerial view of a portion of Tengzug landscape. Photo: William Gblerkpor

The Banda archaeological site is also located in the savannah zone. This archaeological site helps us in understanding trade networks such as the trans-Saharan trade and trans-Atlantic trade, and how they shaped the lives of people living in west Africa. Archaeological findings at various sites in the Banda district also portray connections to British colonial and economic interests. One of the proponent researchers in this area is Ann Stahl (Stahl 2013; 2001; 1999; 1994; 1991). Through her, other researchers such as Amanda Logan (Logan, 2012), Leith Smith (Smith, 2008) and Maria Cruz (Cruz, 2003) have worked in this area. This site was selected because it was one of the key places in the trans-Saharan trade.

The Larabanga Mosque is a Sudanese-style building and is believed to be the oldest mosque in Ghana and one of the earliest in West Africa. The mosque was selected for inventorying because of its deep historical value, as well as being a major heritage tourist attraction in the country. This unique building architecture (built heritage) (Apotsos, 2016) also highlights the great diversity of Ghana's cultural heritage sites and resources. It has long been a pilgrimage site for Ghana's Muslim population (World Monuments Fund, n.d.). It also serves as physical evidence of the interaction between the Arabs and West Africans.

The sites selected from the coastal scrub/grassland zone include Kormantse, Shai Hills, Osu-Marine Drive and the Elmina Castle and Old Elmina. The Kormantse archaeological site was selected because of its association with the trade in enslaved Africans during the trans-Atlantic commerce. The name of the site is still alive and persistent among the African diaspora population in the Caribbean and is synonymous with bravery, resistance among others (Agorsah 2014; Arkoh 2020). Aside its Atlantic history, it has a history of ironworking which was never known until recently. It is the location for the first English trading post which was stalled by objection of the inhabitants (see Agorsah & Butler, 2008). Thus, the British had attempted to build a fort on this

site however, the inhabitants constantly opposed this attempt by destroying the fort in its early building stages (Boachie-Ansah, 2015; Agorsah & Butler, 2008).

The Osu Marine Drive (MD) archaeological site is located in Accra near the historical Christiansborg Castle, which is located on the fringes of the Atlantic Ocean. The MD site is currently under extensive archaeological survey and excavation by Wazi Apoh and his doctoral candidate Beatrice Darko-Yeboah. The research at the site forms part of a salvage archaeology and cultural heritage impact assessment study aimed at rescuing archaeological and heritage resources before the construction of a multi-million-dollar tourism enclave development project by the government of Ghana. The MD site was selected for the inventorying project for two main reasons. First, the site's proximity to the Osu Castle, one of the hubs of the trans-Atlantic trade in the 17th to the early 19th century (Engmann, 2018). Secondly, the site represents a contact site between Europeans and Africans. The ongoing fieldwork at the site has produced more than eight thousand artifacts and ecofacts, including locally-manufactured pottery, imported ceramics, glass products, marine fauna remains, glass beads, smoking pipes, and metals. Engmann's (2018) recent excavations along the beach in the immediate vicinity outside the Osu Castle also recovered similar archaeological and historical records. The beach stretch from Christiansborg Castle to the Black Star Square was also part of the settlement of Old Osu. Secondly, the site is currently under threat from the proposed construction and infrastructural development plans earmarked for the area, including the MD site. As a result, this inventory may become a vital piece in maintaining the historical landscape and record of the MD archaeological site.

The Shai Hills represents a classic mixed heritage site- containing elements of both natural and cultural significance. Most of the site now falls within the Shai Hills Resource Reserve, one of Ghana's Protected Areas (Gblerkpor, 2021). The site exhibits the characteristics of an

archaeological site and a cultural heritage site. It was once what the people of Shai called home. It is now an eco-tourism destination and nature reserve which has material evidence of human settlement before the coming of the Europeans, where they subsequently forced the Shai people from their land. This site was selected to be part of my inventory due to its dynamic nature. It is where the descendants of Shai still have a connection to and have value for. In a year, about 30,000 tourists visit this site (Per. Comm William Gblerkpor, 2021). It is also a well-researched archaeological site where researchers such as Ozanne (1962) and Anquandah (1997; 1982) have worked.

Elmina is believed to be the first point of contact between the Europeans and sub-Saharan Africans. It therefore has archaeological evidence of the old Elmina settlement which was close to the St. George's/Elmina Castle. Elmina Castle was built by the Europeans and now is a place of shared heritage for both Africans and Europeans because this was where they both traded. First, in gold and later the slave trade. African slaves were also held captive there in waiting to be transported to the Americas. This place is selected as part of the inventory due to its value to Ghanaians and the world as a whole. Made a world heritage site of outstanding value by UNESCO, it receives many visitors in a year and is the most visited castle among the forts and castles in Ghana. According to the 2017 GMMB annual report, 39,203 people of local and foreign origin visited the castle.

At the edge of the savanna-forest zone lies Begho one of the most important and extensively-researched archaeological site in Ghana (e.g., Anquandah, 1995, 1981; Crossland, 1989; Posnansky, 2015, 1973, 1972; Daniel Kumah, ongoing). Begho was deeply involved in the trans-Saharan trade and rose to become a pioneering urban polity in the sub-region (Anquandah, 1995; Dueppen, 2016; Posnansky, 2015). Begho was the largest town in the interior of what later became

known as the Gold Coast at the time of the arrival of the Portuguese in 1471. Ethno-archaeological research provides evidence of the presence of terracotta, beads and weights of stone which attests to the importance of the gold trade (Dueppen, 2016; Posnansky, 2015; Anquandah, 1995b).

3.4 Interviewing

Interviewing refers to the skillful art of asking questions on a subject matter one is investigating and recording responses or answers (Kumekpor, 2002, p. 185). Interviewing is chosen to aid this study because desk research is not enough source of information and data. There may be some information that may have not been captured in written texts. There were conversational interviews with researchers who work(ed) on the various sites to attain more information about the sites they worked on. Additionally, interviews with researchers sought to gain answers to the estimated number of archaeological and cultural heritage sites in the country.

3.5 Fieldwork

There were limited visits to selected sites. Fifty archaeological sites documented by Oliver Davies including Asokrochona, Ashaiman, Little Legon, Dawu, Awukugua, Aburi, Larteh, Cape Coast, Kormantse, Ajenkotoku, Dawhwenya, among others were visited to ascertain if these sites were indeed destroyed or intact. This was part of the attempt to confirm geographic coordinates as well as the current state of sites observed earlier using satellite imagery.

Some of the archaeological sites (Kormantse, Begho, and Osu) selected for profiling were visited to know their state, whether they are being negatively affected by human or natural phenomena. On the other hand, some of the cultural heritage sites (Elmina Castle and Shai Hills) were visited to know their character-defining elements and to also know their cultural value (be it aesthetic,

scientific, social, economic or political). These surveys were conducted with the aid of two types of standardized survey forms which drew inspiration from other literature centered around creating inventories for heritage sites (Example: Saskatchewan Ministry of Tourism, Parks, Culture and Sports, 2008).

CULTURAL HERITAGE SITE DATA FORM Project Municipality/District
Location Coordinate Proximity to
Construction date/ Established date/ Significant dates Associated People Associated events
Materials Condition/Threats Setting/Associated resources

Value of site

Table 3.5-1: Cultural Heritage site inventory form

ARCHAEOLOGICAL SITE INVENTORY FORM
Project Municipality/District
Site Name
Field No
Location
Elevation
Coordinate
Land Owner

Environment/Site Setting
Water Body
Landform Terrace Ridge Hill Knoll Knob and Kettle terrain Plain
Sediment Boulder Cobble Gravel Sand Silt Clay Loam
Vegetation
Description
Sub-Type Surface Subsurface Underwater Stratified Undetermined
Component

Single Multi Undetermined
Site Type Campsite Stone feature Killsite Workshop Quarry Rock art Burial Palaeoenvironmental Settlement Dwelling Urban Trading post Mission School Ceremonial/religious
Calendar Date (A.D./B.C.) Radiocarbon Dates
Disturbance Factors (natural, human, current, potential)
INSPECTION STATUS
Permit Holder/Researcher
Observed by/Date

Collected by/Date
Tested by/Date
Excavated by/Date
Form completed by/Date

Table 3.5-2 Archaeological site inventory form

3.6 Geographic Information System (GIS) Software (ArcGIS & Google Earth Pro)

Geographic Information System (software) is a computer-based application rooted in the science of geography (Mayhew, 2003). It facilitates the use of digital maps by allowing the user to compose or create one. It is also used to capture, analyze and edit geographic and spatial data. Archaeology in Ghana is not very much in tune with digital maps and employing this technique could help enhance our research in the sense that analysis of archaeological sites on a bigger scale will be easier. It was also used to produce visual representations of site locations to have a clear idea of where a site is located. The GIS software used was ESRI's ArcGIS (ArcGIS developed and maintained by Environmental Systems Research Institute) (see Figure 3.6-1). Digital maps were made for each archaeological site and cultural heritage site selected for profiling. For the archaeological sites, the maps contained boundaries of the site as well as where previous excavations had taken place on the site. The selected cultural heritage sites may not necessarily have "boundaries" but maps were made for these sites to display their location in their respective

districts. This made them more ‘narrowed down’ and individualized. As previously mentioned, in ArcGIS or any other GIS software, site extents are stored as polygons whilst coordinates are stored as points. The data (points, polygons, polylines) that is created is stored in a digital format known as shapefiles (.shp). These files contain tables (.dbf) that are linked to them. Here, the table contains data that attributes to a particular shapefile. For example, a shapefile of districts in Ghana will contain attributes such as district name, the region of that district, area (measurement) of the shape etc. Using this instance, this table can therefore be manipulated to contain more data like names of District Chief Executives of each district. Shapefiles together with data attributes that are linked to them create the representation of geographic data. Shapefiles have supporting mandatory files (attribute format and shape index format) that are needed for your digital map to function properly.

Google Earth Pro is a computer programme that maps the Earth by layering satellite data, airborne photography, and geospatial data onto a three-dimensional globe, allowing users to view places and landscapes from multiple perspectives. Although Google Earth Pro may not be a true GIS, it allows visualization, assessment, overlay and creation of geospatial data. Coordinates of archaeological sites obtained from the Ghana Field Notes were fed into the programme to find out if the coordinates were correct while the sites were visually inspected to determine if they were destroyed by construction and infrastructural activities or were still intact. Information drawn from the Ghana Field Notes and Google Earth make part of the spreadsheet data. ArcGIS was used to process the data from the Excel spreadsheet table to display archaeological sites that are destroyed, intact or fairly intact.

Digital maps will no longer be digital once they are made hard copy for this thesis. This means they cannot be updated. However, digital versions (data) provided to the department of Archaeology and Heritage Studies can be updated and managed once there is a GIS software

available. Therefore, the use of GIS software does not end with producing maps for the purpose of this study.

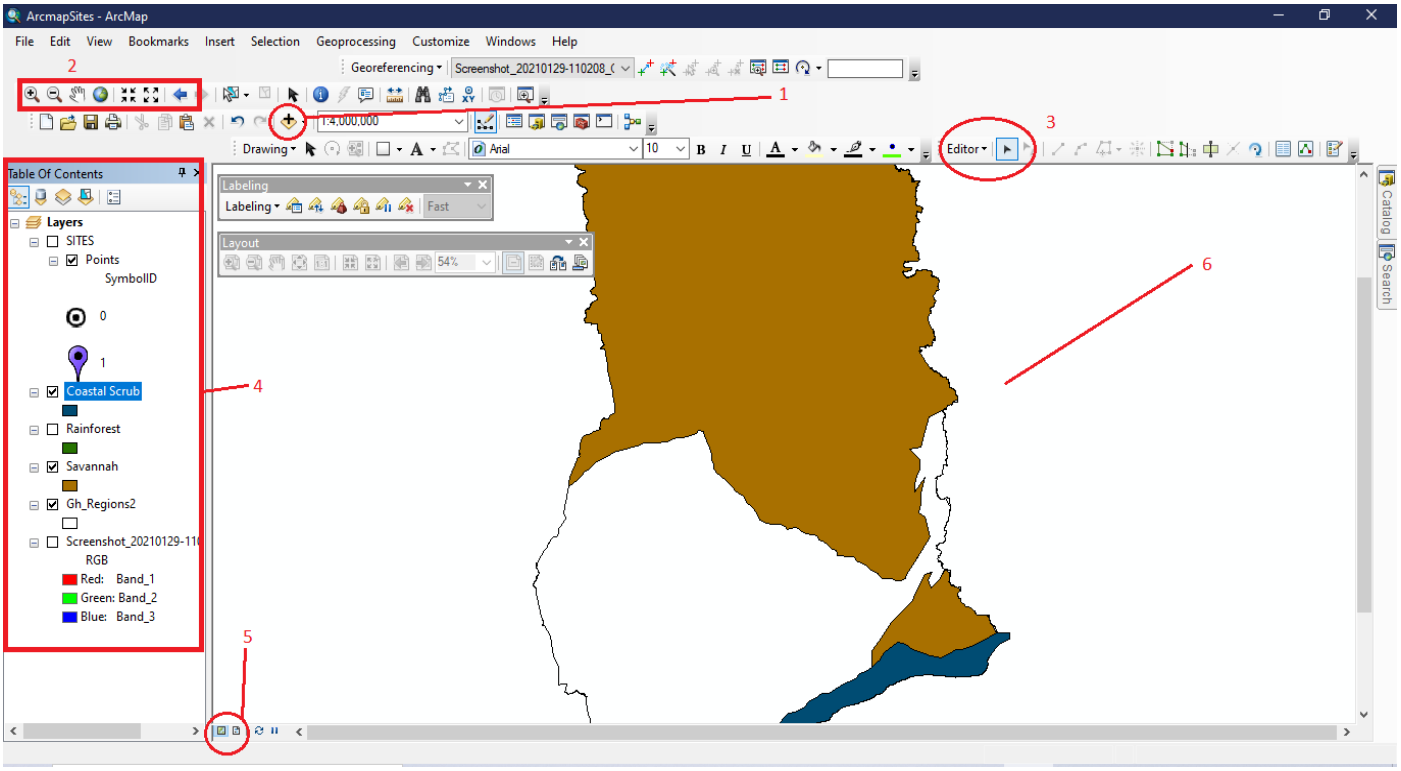


Figure 3.6-1: Interface of ArcGIS

1- Allows for the addition of data or files (shapefiles, images, and tables) from the computer to the map's active data frame. Added data appears in the table of contents (4).

2- These are some navigation tools for zooming in and out, pan (re-center or drag) your map (6). There also zooming for the full extent of your map.

3- The editor tool allows for the altering of the data added in the table of content (4). Data (tables, polygons, points, polylines) can either be deleted, modified or added to the data frame in the table of content, as a result reflecting in the map.

4- The table of content is the space where added dataset is seen. It is where the different layers, constituent in the map space (6) are shown. Here, properties such as labels, tables, symbols and colour can be edited to suit one's wish.

5- This contains both the data and layout view. The function allows you to toggle between both views. The data view provides a window for exploring, displaying and querying the data on your map. It is a geographic window that allows you to work in real-world coordinates and measurements. The layout view constitutes map layout elements like titles, north arrows and scale bars. The layout view is primarily in a page setting or space. This essentially gives you an idea of how your maps will look like when printed or exported.

6- This is the workspace that visualizes what one is working on. Additionally, any alterations made in the table of content or from editing reflects in this space.

3.7 Photography

Photography plays an essential part in inventory recording and archaeological research activity as well as documenting heritage assets. Gadgets such as a digital camera and a smart phone were used to take photographs. Photographs were sourced from other literature while others were taken by the researcher. These were samples of photographs of artifacts excavated from archaeological sites. Photographs provided visual representations of places and activities of the research. Where photographs were already available, metadata of these photographs were recorded and added to give them richer contexts. Photography was employed to take images of the architecture of heritage places and photographs of the landscape of both archaeological sites and cultural heritage sites.

The use of descriptive metadata and technical metadata generated by the camera was essential in creating metadata for the photographs.

3.8 Spreadsheet Software

Finally, a spreadsheet software called Microsoft Excel was used to make the digital inventory. A spreadsheet is a computer file that is made up of cells in rows (horizontal series of cells) and columns (vertical series of cells) which can help arrange, calculate and sort data. Some of the data types from the survey form that were used to record site information were used as the field elements in the spreadsheet (see Figure 3.8-1). The field elements were typed in rows so that its corresponding data can be filled in their respective columns. There are far more complex computer programmes that can be used to make inventories. They possess better retrieval attributes as compared to Microsoft Excel. These however require a great level expertise to operate. Due to this, Excel was used as it requires little expertise to use. Also, the file is not the final stage of storing sites' data. This excel file and other digital files such as photographs and GIS data files (shapefiles) will be given to Ghana Museums and Monument Board and the Department of Archaeology and Heritage studies (A.G. Leventis Digital Centre for African Culture) for update and management in their digital repository.

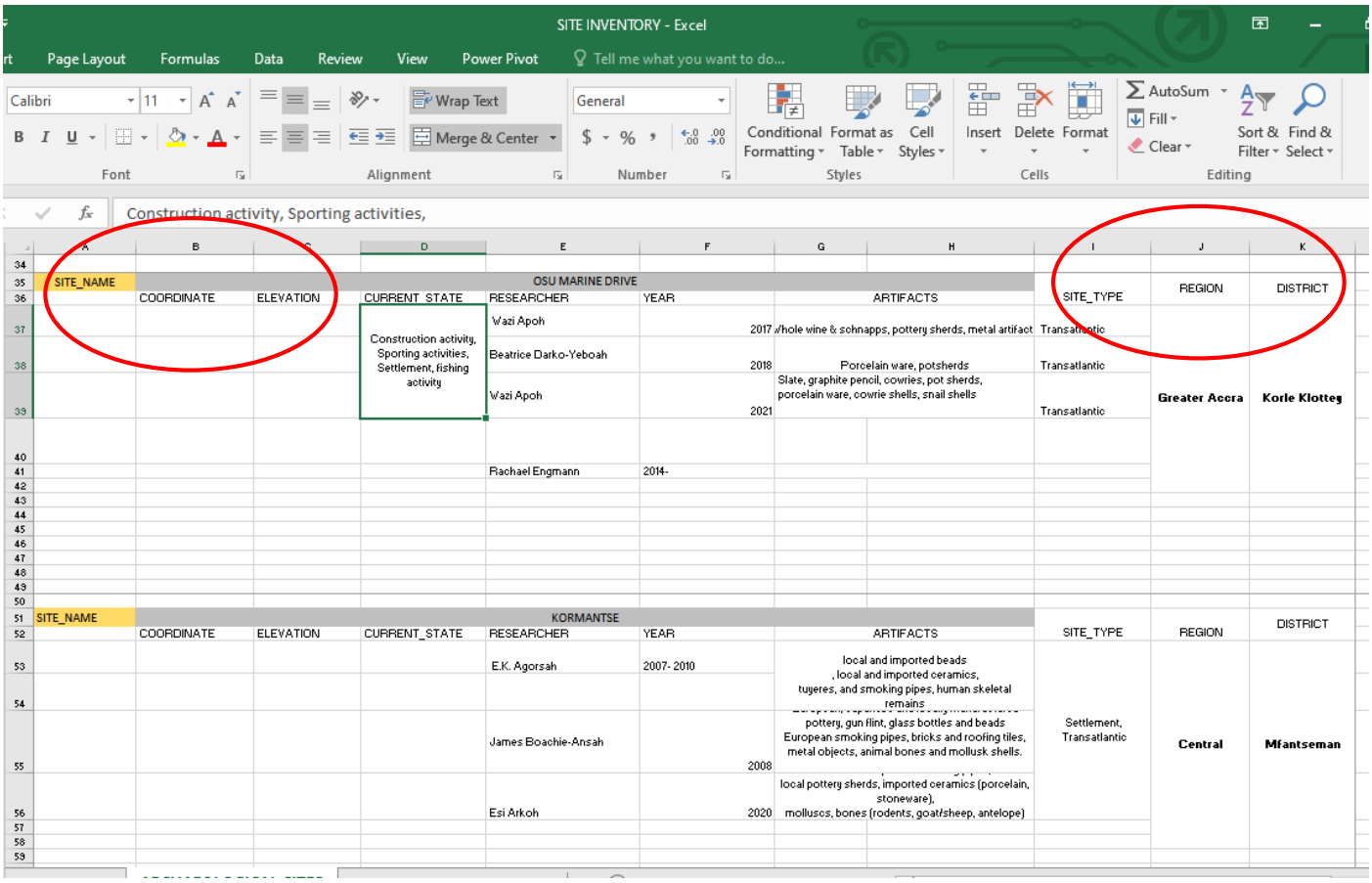


Figure 3.8-1: Interface of Excel with some of the field elements circled in red.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF DATA (THE INVENTORY)

4.1 Introduction

This chapter profiles nine archaeological and cultural heritage sites selected from different regions of Ghana. The chapter is divided into two main sections: The first part addresses the selected archaeological sites. It presents the estimated total number of archaeological sites in Ghana, tabulates and maps fifteen percent of the estimated total. In addition, five of the well-researched archaeological sites in Ghana have been annotated. This include examination of the characteristics of the sites described. Here, critical attention is paid to themes such as background information on the site, previous and/or current research, dates/age of the site, findings as well as their current state.

The second section presents the number of known cultural heritage sites, tabulates and maps fifteen percent of the known ones. It profiles four of these cultural heritage sites by describing their character as well. It touches on themes such as the background/overview of the site, landscape and/or architecture of the site, some findings from the site and the value of the site in question. It is important to note that within these two main sections, each section is broken down according to the three ecological zones used for this study.

4.2 Archaeological Sites in Ghana

Archaeological sites are places where there are physical remains of past human activities. As mentioned earlier, they may not necessarily have value to people. Through the use of existing publications on archaeological sites and the documenting of archaeological sites identified by

Oliver Davies (Davies 1976;1970), we can estimate the number of known archaeological sites identified in Ghana. Archaeological sites in Ghana make an estimated number of 1,920 sites. Some of these sites may have been destroyed over the years and may not exist any longer. 15% (288) of the estimated 1,920 identified archaeological sites were tabulated with Excel (see Table 4.2-1) and plotted with ArcGIS (Map 4.2-1). The Excel table contained field elements including site number, site name, coordinates, site description, current state. Similarly, a spreadsheet of the five profiled archaeological sites that succeeds this section had been made.

4.2.1 Presentation of Data

The table below constitutes five columns which are site number, site name, coordinates, current state and comments. The site number lists the sites in an ascending order and is associated with the next column which is the site name listed in an alphabetical order. The next column is the "site type". This column indicates whether the site is a prehistoric site or historic or both. In this table, prehistoric connotes both Stone Age and Iron Age sites. Stone Age sites are sites that produced materials associated with the Middle Stone Age and the Late Stone Age (such as microliths, flakes, crude stone implements, polished stone axes, grinding hollows) and are open air, rock sites or beach sites. Iron Age sites are those that produced materials such as furnaces, tuyeres, iron slags as well as iron tools or implements. Historic sites in this table refer to sites that have materials associated with the European contact period or Transatlantic period (for example imported smoking pipes, porcelain, bottles, graphite slates).

The "coordinate" column contains the set of values that shows the location of each site. The "current state" column shows the state of each site in the table (whether it is intact, fairly intact, destroyed or undetermined). Google Earth gives the user the opportunity of seeing an imagery of

the location entered. We can therefore speculate even though we may not be on the actual ground to inspect the site. From the imagery, we can determine that a site in question has been affected or destroyed by activity such as road construction and building/structure development. Hence in this context, "destroyed" in the "current state" column connotes sites whose imagery indicate settlement, road or infrastructural activity where the site was located (see Figure 4.2-1). A site is also considered destroyed if the location is found in a water body (see Figure 4.2-2). For sites that are intact, they may usually have no settlements or roads in proximity and/or have intact vegetation (see Figure 4.2-3). Fairly intact sites have roads, buildings or settlements in proximity or have minimal vegetation (see Figure 4.2-4). The state of an archaeological site is however considered undetermined if the imagery is blur or affected by cloud cover (see Figure 4.2-5). The final column contains comments made by the researcher on the Google Earth imagery as well as some comments made by Oliver Davies on some sites and their finds.

Figure 4.2-1: An example of a destroyed site caused by building activities or settlement.

Figure 4.2-2: An example of a site destroyed by waterbody

Figure 4.2-3: An example of site considered as fairly intact (found in proximity to two building facilities and a road).

Figure 4.2-4: An intact site found in a green vegetation

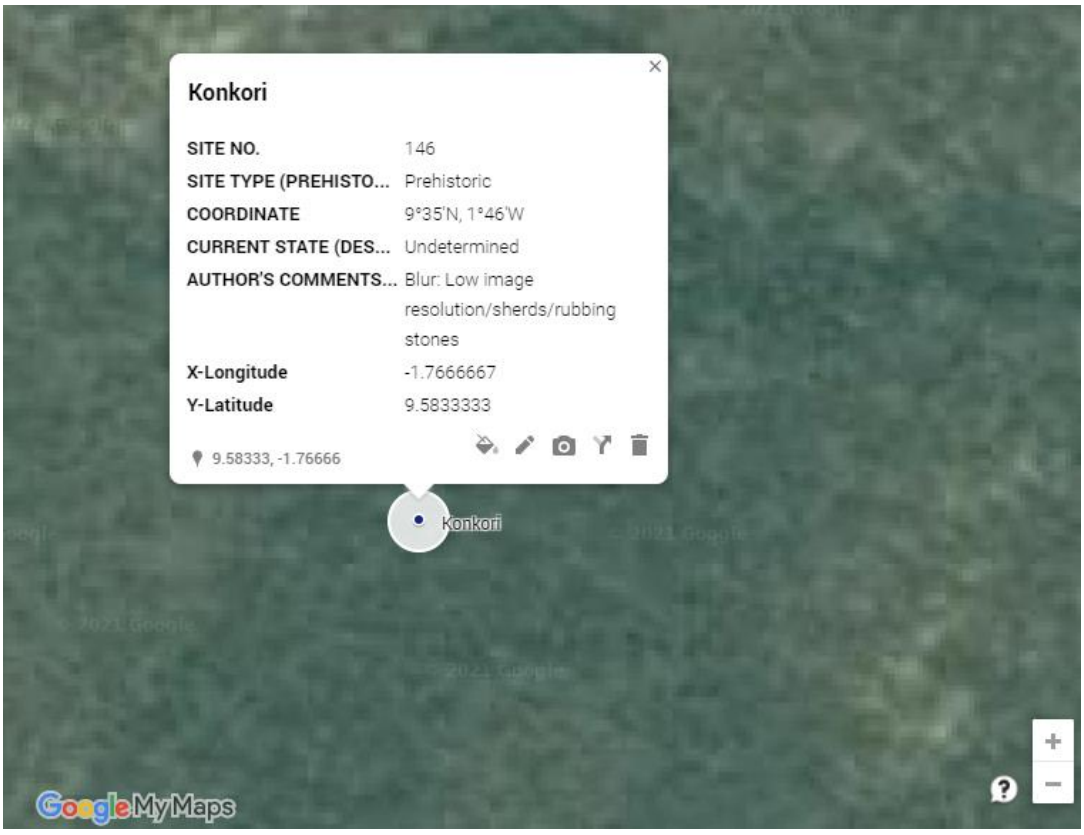


Figure 4.2-5: Undetermined due to low resolution

SITE NO.	SITE NAME	SITE TYPE (PREHISTORIC-STONE/IRON AGE) / (HISTORIC)	COORDINATE	CURRENT STATE (DESTROYED/PARTIALLY/INTACT)	AUTHOR'S COMMENTS ON IMAGERY/ DAVIES COMMENTS ON SITES & FINDS FROM SURVEY
1	Abehenasi	Prehistoric-Stone age	7°07'N, 0°24'E	Intact	Piriform hand-axe
2	Abetifi	Prehistoric	6°40'48"N, 0°44'35"W	Intact	Cave site/Celts/Biconically pierced quartz pebbles/ground greenstone disc
3	Abirem	Prehistoric	6°44'N, 1°33'W	Destroyed	Destroyed by building activities/Celt
4	Aboabo	Prehistoric-Stone age	5°56'N, 0°57'W	Destroyed	Quartz microliths- End-scraper/Blades
5	Abokobi	Prehistoric	5°44'N, 0°12'W	Destroyed	Biface axe/Biconically perforated pebbles
6	Abompe	Prehistoric	6°23'N, 0°28'W	Intact	Microliths from quartz pebbles
7	Abrongo	Prehistoric-Iron age	8°07'45"N, 0°13'15"W	Fairly Intact	Heap of iron slag
8	Abuakwa	Prehistoric	6°42'N, 1°43'W	Destroyed	Habitation-earth
9	Aburi	Prehistoric-Stone age & Iron age	5°49'50"N, 0°11'W	Fairly Intact	Scatter of sherds/clay pipe/Iron slags/Quartzite tool at the Botanical Gardens (probably an axe or hoe)
10	Accra Airport	Prehistoric	5°35'20"N, 0°09'40"W	Destroyed	Celt/Miniature quartzite pick
11	Accra Golf Course	Prehistoric	5°32'30"N, 0°12'W	Destroyed	Miniature biface hand-axes/thick miniature pick
12	Accra-Kaneshie	Prehistoric	5°34'05"N, 0°14'10"W	Destroyed	Scatter of pottery
13	Achimota	Stone age/ iron age	5°37’50”N, 0°13’45”W	Destroyed	Quartz hammer stones/Sherds/slags/tuyeres/
14	Adaklu	Prehistoric-Stone age	6°30'N, 0°30'E	Intact	Biconically pierced quartz pebble
15	Agate	Prehistoric-Stone age	6°44'10"N, 0°20'50"E	Fairly Intact	Sangoan pick/broken celt/greenstone hoe
16	Agbogba	Prehistoric-stone age	5°41’N, 0°12’W	Destroyed	Broken quartz limande-hoe
17	Agogo	Prehistoric	6°48'N, 1°05'W	Destroyed	Celts
18	Ahinsan	Prehistoric & Historic ?	6°19'40"N, 1°31'W	Destroyed	Pottery/Terracotta /Celts/Pipes
19	Ajenkotoku	Prehistoric-stone age	5°45'N, 0°20'30"W	Fairly Intact	Plain and patchy sherds/Bones/Rubbing-stones/Chisel

20	Ajumakese	Prehistoric	6°49'N, 1°36'W	Destroyed	Celt with slightly arched blade/slightly polished waisted piece/Imported sherd
21	Akaniem	Prehistoric	8°07'15"N, 0°18'04"W	Destroyed	site destroyed by Volta river/Baobab on site/sherds
22	Akpafu	Iron age/iron working	7°15'N, 0°30'E	Intact	Furnace/iron slag
23	Akroso Amanfoso	Prehistoric	7°24'25"N, 0°11'40"E	Destroyed	site destroyed by Volta river/pottery/terracottas/spindle-whorls/European and african pipes/sherds of stone-ware
24	Akukome/Anfoega	Prehistoric-Stone age	6°52'45"N, 0°16'36"E	Destroyed	Quartz microliths
25	Akumadan	Prehistoric	7°23'20"N, 1°57'40"W	Destroyed	Large iron slagheap/Quartz flake/Microtranchet
26	Akwatia	Prehistoric-Stone age & Iron age	6°02'N, 0°47W	Fairly Intact	Celts/Tuyeres/Pottery/Stone beads with biconical perforation
27	Amedjofe	Prehistoric & Historic	6°51'N, 0°26'E	Intact	Perforated stone/Celts/Sherds/Iron slag/Porcelain pipe
28	Amomaso	Prehistoric	7°21'00"N, 2°40'50"W	Fairly Intact	Quartz end-scraper/probable cores
29	Ampedu	Prehistoric	8°27'N, 1°30'W	Fairly Intact	Several mounds of which some are hollow
30	Angeta	Prehistoric	6°50'06"N, 0°18'55"E	Fairly Intact	Quartzite pebble choppers/miniature picks/lance-heads
31	Anincheche	Prehistoric-stone age ?	6°00’30"N, 0°49’05"W	Intact	Notched blades
32	Ankaful	Prehistoric	5°09'N, 1°19'W	Fairly Intact	Quartz microliths
33	Ankobra Junction	Prehistoric	5°26'N, 2°07'20"W	Intact	Probable sangoan hand-axe/Celts/Beads
34	Anomabu/Anomabo	Prehistoric & Historic	5°10'32"N, 1°06'45"W	Destroyed	MSA disc-core/bricks near Fort William
35	Antoa	Prehistoric	6°45'N, 1°32'W	Destroyed	Pipes/Celt/pot
36	Anwia	Prehistoric	6°23'45"N, 1°38'00"W	Intact	Quartz microliths (Large blades & scraper)
37	Apiadu	Prehistoric	6°40'N, 1°32'W	Destroyed	Several old pots/Celts/Cylindrical
38	Apinamang	Prehistoric	6°05'N, 0°41'W	Intact	Split axe resharpened/Flakes
39	Asakwa	Prehistoric	6°14'45"N, 1°30'40"W	Fairly Intact	Quartz microliths (Flakes, end-scraper, microtranchets)
40	Asantekwa (Santikwa)	Prehistoric	8°05'00"N, 1°49'10"W	Intact	Microlith flakes of quartz quartzite silcrete and chert/side-scrapers/hollow scrapers/microtranchet

41	Ashaiman	Prehistoric	5°40'30"N, 0°02'30"W	Fairly Intact	Quartz hand axe/Quartz microliths
42	Asofa	Prehistoric	5°39'15"N, 1°06'19"W	Fairly Intact	Scatter of sherds/Baobab in proximity to site/Slag heap
43	Asokrochona	Stone age	5°36'30"N, 0°03'W	Destroyed	Destroyed by the Road & Railway cutting/Part of the site taken by the sea/Variety of MSA tools-Choppers/Rubbing stones/Scrapers/Hand-axe
44	Asuchwi	Prehistoric	6°45'N, 1°27'W	Destroyed	Celts/Pipes
45	Atebubu	Prehistoric	7°45'N, 0°59'W	Destroyed	Stone rubber/Hammer/Bowl of pipe
46	Atiankama	Prehistoric-Stone age	5°57'N, 0°51'W	Intact	Cylindrical beads/Broken pots/Perforated stone/Hand-axe
47	Atome	Prehistoric-Stone age	6°53'58"N, 0°23'30"E	Intact	Quartz pebble-pick/Quartzite pyramidical core
48	Avenya	Prehistoric-Stone age	6°39'45"N, 0°28'23"E	Fairly Intact	Handaxes
49	Awiabo	Prehistoric	5°01'50"N, 2°26'30"W	Intact	Few quartz microliths flakes/chips
50	Awukugua	Historic?	6°00'N, 0°05'W	Destroyed	Between the late 16th and 17th century site
51	Axim	Prehistoric & Historic	4°52'N, 2°14'W	Fairly Intact	Sherds/Celts/European objects from outside Fort Anthony(Brass basins, pipe, beads,sword)
52	Ayido	Prehistoric	5°39'N, 0°13'W	Destroyed	Sherds/Quartzite flakes/Quartz microliths/Quartzite hoes
53	Bagjamse	Prehistoric-stone age	8°03'10"N, 0°13'32"W	Destroyed	site destroyed by Volta river/Quartzite tortoise core/sherds/grinding grooves
54	Banda	Prehistoric & Historic	8°8'55.32"N,2°21' 44.96"W	Intact	Several sites in the area with mounds
55	Bandiyile	Prehistoric-stone age	8°53'N, 0°10'E	Intact	Blunt-backed blades/thumbnail
56	Banka	Prehistoric-stone age	7°48'15"N, 0°05'E	Destroyed	site destroyed by Volta river/flakes/cores/awls/end & side scrapers/bun-shaped grindstones/pottery sherds
57	Bantama	Historic?	5°43'25"N, 0°45'17"W	Fairly Intact	Modern-looking undecorated pottery
58	Bau	Prehistoric-Iron age	8°32'N, 0°37'W	Intact	Mounds/sherds/slag/grindstone
59	Bawaleshi	Prehistoric & Historic	5°37'50"N, 0°09'15"W	Destroyed	Low and wide mounds/Sherds/Rubbing stones/European imports

60	Bawku	Prehistoric-Stone age	11°05'N, 0°11'W	Intact	Flaked stone/chopper/crude rubbing stones
61	Bazua	Prehistoric	10°59'N, 0°23'W	Intact	Sherds/Ovoid & circular grooves/Scattered flakes
62	Bediakukrom	Prehistoric	6°57'N, 2°37'W	Fairly Intact	Pitted stone
63	Befikrom	Prehistoric	5°16'55"N, 1°01'00W	Destroyed	Mound cut by main road/Burnt earth/Sherds/
64	Begho-Hani	Prehistoric & Historic	7°50'55.81"N, 2°28'43.22"W	Fairly Intact	Major archaeological site considered to be an urban city
65	Bekwai	Prehistoric	6°27'30"N, 1°35'30"W	Destroyed	Piece of iron slag/Sherds/Tuyeres/Glass beadconically pierced pebbles/Celts
66	Beposo	Prehistoric	5°56'15"N, 1°24'45"W	Intact	Old pottery & celts at waterhole/Deeply grooved stones (perhaps for grinding ore)/Rough quartz spearhead
67	Bimbila	Prehistoric	8°48'N, 0°04'E	Intact	Iron slag/grindstones/sherds
68	Biri	Prehistoric	8°10'10"N, 1°57'W	Intact	Quartz and quartzite flakes
69	Boete	Prehistoric	6°11'45"N, 1°38'00"W	Destroyed	Broken celt grinder/Crude chopper/Flake
70	Bofe	Prehistoric	8°02'N, 2°23'W	Intact	Baobabs close to the site/Sherds/House mound/Small slag heap near Bofe
71	Bokukrua	Prehistoric-stone age	7°06'32"N, 2°03'50"W	Destroyed	Roughly chipped and flaked microliths/Chisel/Burin
72	Bombirri	Prehistoric-Stone age/Iron age	8°52'N, 1°58'W	Intact	quartz hammer with abraded head/iron arrowheads and bracelet
73	Bompata	Prehistoric-stone age	6°38'N, 1°04'W	Intact	Flat stone beads/Celts/Large perforated stone/Biconically pierced stone
74	Bonweri/Bonwire	Prehistoric	6°47'N, 1°28'W	Fairly Intact	Celts (hafted)/Pipes/Biconical terracotta bead stamped with small rings
75	Bowena	Prehistoric-Iron age	9°31'N, 1°38'W	Undetermined	Low image resolution/Old slag heap with sherds
76	Bremang	Prehistoric?	6°44'N, 0°38'W	Undetermined	Cloud cover affecting imagery/Celts/Pipes
77	Bui	Prehistoric	8°16'12"N, 2°15'25"W	Destroyed	destroyed by Bui dam project/Microliths/Sherds
78	Bume	Prehistoric-stone age	7°12'50"N, 0°28'25"E	Destroyed	black chert flakes

79	Bung	Prehistoric-Stone age	9°09'N, 0°34'30"W	Intact	flakes from quartz pebbles/snail shells/scored cigar
80	Burai	Prehistoric-stone age	8°15'N, 0°10'W	Intact	Rubbing stones/hammers
81	Busunu	Prehistoric	9°07'N, 1°36'W	Intact	
82	Butie	Prehistoric-Iron age	8°51'N, 1°15'W	Intact	Laterite nodules/sherds/cowry
83	Butre	Prehistoric & Historic	4°49'N, 1°55'W	Intact	Broken greenstone/ Sherds/Grindstone/Glass bead/Brass tubular handle/European pipes
84	Cape Coast	Prehistoric	5°05'58"N, 1°16'27"W	Destroyed	Sherds/Hand-axe/Biconically perforated quartz pebble/Slag
85	Cherepon	Prehistoric?	10°20'N, 2°47'W	Intact	small unrolled tortoise core
86	Chremekrom	Prehistoric	5°56'30"N, 1°54'47"W	Destroyed	Archaic weathered pottery with lower grindstones
87	Daboya	Prehistoric	9°31'N, 1°22'W	Intact	Quartz microlith/Mounds/Sherds/Several low mounds
88	Dafon	Prehistoric-stone age	7°02'N, 0°31'E	Intact	flakes(chert& quartz)/hollow scraper
89	Dakupe	Prehistoric	8°43'00"N, 1°15'50"W	Intact	Large mound/plain sherds/grindstones
90	Dallung	Prehistoric	9°38'N, 1°01'W	Intact	Microlithic quartz chips/unbroken quartz pebbles
91	Damongo	Prehistoric-stone age	9°04'N, 1°46'W	Intact	small quartz flakes, microcores/blades/awl/crescent
92	Dapa	Prehistoric-stone age	7°48'N, 0°31'E	Intact	Black chert backed blade probably Middle Stone Age
93	Dawadawa	Prehistoric	8°21'N, 1°32'W	Intact	Quartz & quartzite knives/Rubbers/Sherds/Very large mound
94	Dawhwenya	Prehistoric & Historic	5°45'30"N, 0°05'00"E	Destroyed	Sherds/pipes/Rhenish stoneware sherd/Sangoan hand-axe/crude MSA pieces/Bead/Hornstone flake
95	Dawu	Historic	5°59'N, 0°05'W	Destroyed	Sherds/glass bottle/pipe/iron knife/Site characterized by mounds
96	Deduako	Prehistoric	6°39'30"N, 1°33'W	Destroyed	Celts from village
97	Degwiwu	Prehistoric	9°21'N, 2°35'W	Intact	Low house mounds/sherds/grindstones
98	Densu Mouth	Prehistoric	5°32'55"N, 0°19'47"W	Destroyed	Site characterized by terraces/miniature pick of granite

					schist/Neolithic hoe/choppers (sangoan?)
99	Dixcove	Prehistoric & Historic	4°50'N, 1°58'W	Intact	Celts/Several mounds of flakes from celt making/European sherds/English bricks/European pipes
100	Dobo	Prehistoric	10°07'N, 2°45'W	Intact	Large mound composed of quartz pebbles/sherds/large granite grindstone
101	Dodi	Prehistoric-stone age	6°31'30"N, 0°08'30"E	Fairly Intact	Few unrolled flakes (probably MSA)/Quartzite pebble chopper/Backed-blade/Hornstone flake/Mounds
102	Dominasi	Prehistoric-Stone age & Iron age	6°31'N, 1°39'W	Fairly Intact	Tuyere from iron-smelting site/Celts/Pipes
103	Donyina	Prehistoric-stone age	6°38'N, 1°29'30"W	Intact	Rough stone adze/Stone bead/Celts/Pipes
104	Ducie	Prehistoric-Stone age	9°50'N, 1°59'W	Fairly Intact	Quartz flakes
105	Dumbai/Dambai	Prehistoric-stone age	8°04'50"N, 0°10'58"E	Destroyed	Microtranchet/Microburin/Quartz flakes
106	Dunkwa	Prehistoric-stone age	5°58'N, 1°47'W	Destroyed	Quartz flakes/cores/pottery/sangoan pick
107	Ejura	Prehistoric-stone age	7°22'N, 1°23'W	Intact	Flakes of quartz and sandstone/Polished celts/Ovate chert hand-axe/Stone beads/Cigars
108	Elmina	Prehistoric & Historic	5°05'N, 1°21'W	Fairly Intact	European & African sherds/Dutch & Portuguese bricks
109	Forikrom	Prehistoric	7°35'N, 1°54'W	Intact	Town characterised by rocks & caves/weathered wide-oval grinding hollows/Sherds from trial excavation
110	Fryusu	Prehistoric-stone age	9°08'20"N, 1°21'00"W	Intact	quartz arrows/flat axes/hammer/cigar/sherds
111	Fuo	Prehistoric	9°16'N, 0°37'W	Intact	sherds/quartz flakes/tortoise shell/molluscs
112	Fwidiem	Prehistoric	6°47'N, 1°06'W	Destroyed	Spearpoint of quartz/Scatter of microliths/Miniature celt
113	Ga	Stone age	9°49'N, 2°32'W	Intact	chipped pebble/disc-core
114	Garkwa	Prehistoric	9°37'N, 2°37'W	Intact	curved rubber of granite/205 grinding hollows
115	Gbegbe	Prehistoric-stone age	5°31'18"N, 0°15'00"W	Destroyed	Pebble with ground hollows/Grooved bead-polisher/Celt/Stone beads/Microliths/Disc-core

116	Gradua	Prehistoric-stone age	8°14'N, 2°18'30"W	Destroyed	Grinding-hollows/Small number of microliths of quartz/Bead polisher/sherds
117	Grubi	Prehistoric-Stone age	8°04'10"N, 0°49'30"W	Fairly Intact	flakes of indurated shale and quartz
118	Grupe	Prehistoric-Stone age	9°14'N, 2°14'W	Intact	Quartz flakes/weathered sherds
119	Gwo	Stone age	10°47'N, 2°42'W	Intact	celts/hammer-stones/disc-shaped rubber/perforated pebble/quartz flakes
120	Have	Prehistoric-stone age	6°41'22"N, 0°28'55"E	Destroyed	Lunate/flake
121	Ho	Prehistoric-stone age	6°37'N, 0°28'E	Destroyed	Fairly heavy hammerstone/celts/biconally pierced pebbles/sherds
122	Hohoe	Prehistoric - stone age	7°09'30"N, 0°28'30"E	Destroyed	Sangoan pick and chopper
123	Jakasi	Stone age	10°29'N, 1°00'W	Intact	chipped and worn circular pink shale
124	Jasikan	Prehistoric-stone age	7°24'14"N, 0°28'26"E	Destroyed	site around the agricultural office and bungalows/black chert chips/chisels/ hollow scrapers/side-scrapers/blunt-backed blades
125	Jedu	Prehistoric-stone age	5°16'50"N, 1°02'45"W	Fairly Intact	Unrolled quartzite hand-axe(Acheulian or Sangoan)/Slightly flaked quartzite pebbles
126	Jimam	Prehistoric	8°35'30"N, 0°06'E	Fairly Intact	Side-scrapers/uniface end-scraper/brown sandstone flakes/uniface picks
127	Jinyasi	Prehistoric-stone age	6°39'30"N, 1°34'W	Destroyed	Celts/Stone bead & whorl/Pipes
128	Jirakojo	Prehistoric-Stone age	7°42'00"N, 0°10'30"E	Destroyed	site destroyed by Volta river/blades/side-scrapers/end-scrapers/chisel
129	Jobati	Iron age/iron working	6°32'N, 0°14'E	Fairly Intact	Tuyere and iron slag from a heap
130	Juaben	Prehistoric	6°49'N, 1°25'30"W	Destroyed	Terracotta with long neck/ Celts/Spherical terracotta bead
131	Juaso	Prehistoric	6°35'N, 1°07'W	Fairly Intact	Pottery/celts/biconically pierced stone
132	Kade	Prehistoric	6°05'00"N, 0°50'02"W	Destroyed	Unrolled sangoan pick/Unrolled hand-axe
133	Kadengben	Prehistoric	7°49'00"N, 0°05'00"W	Destroyed	site destroyed by Volta river/sherds of Ashanti type

134	Kadjebi	Prehistoric-stone age	7°32'N, 0°28'E	Destroyed	Two or three chert flakes
135	Kafaba	Prehistoric	8°30'N, 0°47'W	Intact	flat-topped mound with sherds
136	Kakoshi	Prehistoric	8°30'N, 0°40'W	Intact	sherds/large stone axe heads/rubbing stones/sandstone implements
137	Kandinga	Prehistoric	9°31'N, 1°20'30"W	Intact	quartz microliths/sherds/small mounds indicating isolated earth huts
138	Kanne	Prehistoric-stone age	10°30'N, 2°49'W	Intact	greenstone grindstones/celts/neolithic agricultural tools/quartz microliths
139	Kete Krachi	Prehistoric	7°47'N, 0°04'W	Destroyed	site destroyed by Volta river/Microliths from quartz pebbles appear rare
140	Kiito	Prehistoric-stone age	9°21'N, 1°16'W	Intact	quartz flakes/grinder and shell breaker/axes/scrapers/knives
141	Kintampo	Prehistoric-stone age	8°02'20"N, 1°42'30"W	Destroyed	Neolithic objects/broken cigars/quartz & chalcedony flakes/celts/
142	Kisikrom	Prehistoric-stone age	5°34'30"N, 2°02'20"W	Fairly Intact	Microlithic quartz flakes/Backed-blade/crescents/chisels/burins
143	Kitari West	Prehistoric	8°15'N, 0°11'E	Destroyed	site destroyed by Volta river/small quartz pebbles (broken & flaked)
144	Koforidua	Prehistoric	6°06'N, 0°14'W	Fairly Intact	Celts/Grindstones/Large perforated quartz pebbles
145	Kongeri/Pongeri	Prehistoric	9°35'N, 2°27'W	Intact	sherds/quartz microliths/scrapers
146	Konkori	Prehistoric	9°35'N, 1°46'W	Undetermined	Blur: Low image resolution/sherds/rubbing stones
147	Konongo	Prehistoric-stone age	6°38'45"N, 1°11'50"W	Destroyed	Quartz microliths/End-scraper
148	Kormantse	Prehistoric & Historic	05°12'256"N, 01°04'85"W	Fairly Intact	Local and imported Sherds/Pipes/Iron slags/Lateritic rocks
149	Kotei	Prehistoric-Iron age	6°39'30"N, 1°33'30"W	Destroyed	Pottery/beads/pipes (locally, imported)/shells/iron knives/spindle whorls/slag/celts/gun-flint
150	Koue	Prehistoric-stone age & ?iron age?	8°31'N, 0°36'E	Intact	Flaked quartzite oval hand-axe perhaps acheulian/large iron slagheaps close to the site
151	Kpando	Prehistoric-stone age	6°59'N, 0°15'E	Destroyed	Characterized by silt terrace/scatter of quartz pebbles & microliths/chipped quartzite cores

152	Kpone	Historic?	5°41'N, 0°04'E	Destroyed	Sherds around the foundations of the Dutch 17th-18th C Fort
153	Kpong	Prehistoric	6°09'N, 0°04'E	Fairly Intact	Characterized by silt terrace/rolled flakes/Microliths
154	Kubalem	Prehistoric	8°56'N, 0°26'E	Intact	Ovoid hand-axe
155	Kudani	Prehistoric-stone age	10°12'N, 0°20'E	Fairly Intact	Microliths/plain sherds/blades
156	Kufore	Prehistoric	10°21'N, 0°07'E	Fairly Intact	Chert flakes
157	Kumasi	Prehistoric	6°41'N, 1°37'W	Destroyed	Celts/Pottery/Biconically perforated pierced/Human bones/Beads
158	Kumawu Zongo	Prehistoric	6°54'N, 1°17'W	Intact	Ovoid quartz biface worked as a rounded scraper and a quartz flake
159	Kumbude	Prehistoric?	10°39'N, 0°37'W	Intact	Grindstone
160	Kunfosi	Prehistoric-stone age	9°31'N, 2°34'W	Intact	Quartz microliths/sangoan pick
161	Kwahu Praso	Prehistoric	6°36'N, 0°54'30"W	Intact	Microtranchet/stained pieces (probably Late MSA)
162	Kwayasi	Prehistoric - stone age	8°16'N, 0°40'30"W	Destroyed	site characterized by silt terrace/quartz microliths/blades/end-scraper
163	Labadi	Prehistoric	5°32'N, 0°09'30"W	Destroyed	Quartz chips and a few rough flakes/Large very roughly flaked piece of quartz
164	Lakantere	Prehistoric-stone age	9°16'N, 1°31'W	Intact	Pebble-chopper/ quartz microliths
165	Lamassa	Prehistoric-stone age	8°35'N, 0°45'W	Intact	Bun-shaped grindstone
166	Lambussie	Prehistoric?	10°49'30"N, 2°36'W	Intact	Reddish-grey sherds
167	Larteh	Prehistoric & Historic	5°56'20.00"N, 0°4'45.00"W	Intact	Pottery/Bones/Rubbing stone/pipes/stone axes/Sangoan chopper
168	Lawra	Historic?	10°39'N, 2°52'W	Fairly Intact	Bluish cane-glass beads known as aggrey beads
169	Lilixia	Prehistoric?	10°46'N, 2°06'W	Intact	Hollow base of a coarse pot with 3 legs
170	Limbisi	Prehistoric	9°36'N, 1°24'W	Intact	Quartz microliths/sherds/a pipe
171	Little Legon	Prehistoric-Stone age & Iron age	5°38'20"N, 0°12'W	Destroyed	Quartz artefacts (Late MSA looking)/Quartzite choppers/smelting-site covered by surface-soil forming a low mound
172	Lolobi Ashiambi	Prehistoric-stone age	7°12'N, 0°31'E	Destroyed	Silicified chert flakes/neolithic "pieces"

173	Lotri	Prehistoric	7°42'45"N, 0°10'40"E	Destroyed	Sand-terrace
174	Lume	Prehistoric	6°43'03"N, 0°28'15"E	Fairly Intact	Probable rough sangoan tool/hand-axe (likely to be acheulian than sangoan)
175	Lunbunga	Prehistoric-Stone age	9°42'N, 1°14'30"W	Intact	silt-terrace site/disc-core/scraper/crude miniature pick
176	Lura	Prehistoric-stone age	8°09'40"N, 2°10'W	Intact	Iron slag found close to Lura/Broken perforated shale disc/grinding stone/Hand-axe
177	Maluwe	Prehistoric-stone age	8°40'N, 2°17'W	Intact	Quartz chips
178	Mamata	Prehistoric	7°59'N, 0°06'W	Intact	Sandstone chopper on a pebble
179	Mamayiri/Mamayili	Prehistoric-stone age?	9°14'N, 1°07'W	Intact	Large mound/rubber & quartz chips
180	Mampong	Prehistoric	7°04'N, 1°23'W	Fairly Intact	Oval and circular grinding grooves/celt/weathered pottery/Quartz flakes
181	Mankessim	Prehistoric & Historic	5°16'N, 1°01'W	Destroyed	Low mounds with many sherds/Iron smelting furnace/European imports
182	Manso Nkwanta	Prehistoric	6°28'N, 1°54'W	Destroyed	Reddish round-based pot with white flecks/Celts/Sherds
183	Mantukwa	Prehistoric	8°18'N, 1°34'W	Intact	Site characterized by shallow depression/Large baobab
184	Mate	Prehistoric	7°11'N, 0°37'E	Intact	Heap of iron slag towards the stream/flakes
185	Menji	Prehistoric	7°55'N, 2°23'W	Intact	Piece of rubbing-stone/grindstone/Few quartz flakes made from pebbles
186	Metaw	Prehistoric-stone age	10°34'N, 2°54'W	Intact	small point
187	Morno	Prehistoric	8°41'N, 1°32'W	Undetermined	Blur: Low image resolution/low mound/rubbing stones/plain sherds
188	Mouri/Moree	Prehistoric	5°08'N, 1°12'W	Destroyed	Sherds/Celts/Grinding stone
189	Mpaha	Prehistoric	8°44'45"N, 1°05'50"W	Intact	Sherds/2 mounds
190	Murugu	Prehistoric	9°17'N, 1°45'W	Intact	Quartz microliths/hut-mounds/sherds
191	Nabori	Prehistoric	9°08'N, 1°51'W	Intact	Quartz microliths
192	Naga	Prehistoric	10°36'N, 1°02'W	Intact	large baobab/thick plain coarse sherds
193	Nakpanduri	Prehistoric	10°38'N, 0°11'W	Fairly Intact	Grinding-grooves/Microlithic flakes/blunt-backed blade

194	Naloli	Prehistoric-stone age	9°38'N, 0°15'E	Intact	few microtranchets/few side, end & thumbnail scrapers
195	Nambiri	Prehistoric-stone age	9°54'N, 0°19'30"E	Fairly Intact	Miniature chert core-fabricators/rubbing stone/hollow scraper broken/triangular scraper
196	Nandikrom	Prehistoric	8°17'00"N, 0°05'57"W	Fairly Intact	Microliths/celts/grindstones/beadp olishers/pieces of burnt daub/sherds/cigars
197	Nangodi	Prehistoric	10°58'N, 0°37'W	Intact	celts/sherds
198	Nasia	Prehistoric	10°09'N, 0°48'W	Intact	Hollow mound/sherds
199	Navere	Prehistoric-Iron age	10°51'N, 1°49'W	Intact	Iron smelting centre- Heap of iron slag with much broken tuyere and clay furnace-lining
200	New Buipe	Prehistoric	8°46'N, 1°28'W	Intact	Characterized by terraces/Mounds/Sherds
201	Njau	Prehistoric	7°51'N, 2°21'W	Fairly Intact	Quartz microliths/silcrete side-scraper/Flakes
202	Nkatekwan	Prehistoric-stone age	8°00'20"N, 0°07'W	Intact	Slightly rolled pyramidical core
203	Nkinkaso	Prehistoric	7°20'00"N, 1°54'10"W	Intact	Crude pieces/Chisel
204	Nsawkaw	Prehistoric & Historic	7°52'N, 2°19'W	Fairly Intact	Celts/Gun-flint/African & European pipes/Whorls
205	Nsuta	Prehistoric	5°17'N, 1°58'W	Fairly Intact	Pebble-choppers/picks/celts/sherds
206	Ntereso	Prehistoric	9°07’40”N, 1°12’35”W	Fairly Intact	Site excavated/Considered kintampo culture site
207	Ntonsu	Prehistoric	6°50'28"N, 1°30'53"W	Undetermined	Cloud cover affecting imagery/Sherds/Microliths (Quartz awl)
208	Nyamibechire	Stone age	6°00'20"N, 1°46'00"W	Fairly Intact	Flakes/backed-blade/Microburin/Pebble-chopper
209	Nyanao	Prehistoric-stone age	5°48'N, 0°24'W	Intact	Perforated quartz pebble/celt/plain pots with rough surface
210	Obenemasi	Prehistoric	6°40'N, 1°10'W	Destroyed	Quartz tools - Microtranchet/small blades/blunt-backed blade/chisel/pyramidical core
211	Oblogo	Prehistoric-stone age	5°34'N, 0°19'20"W	Destroyed	Handaxe/choppers/quartzite flakes
212	Oda	Prehistoric-stone age	5°56'25"N, 0°59'50"W	Intact	Sangoan miniature pick/part of a large celt-grinder/backed blade
213	Odumasi	Prehistoric	8°14'35"N, 0°25'25"E	Intact	Unrolled quartzite flake
214	Ofuasi	Prehistoric	7°50'20"N, 0°05'52"W	Destroyed	Small heap of iron slag/sherds

215	Ohia Mankyene	Prehistoric	7°59'45"N, 0°01'20"W	Fairly Intact	Sherds/Grindstones/Pipe
216	Okponglo	Prehistoric?	5°37'25"N, 0°10'30"W	Destroyed	Quartzite pick/stone ball (sangoan?)
217	Oli	Prehistoric	10°11'N, 2°45'W	Intact	end-scrapers/side-scraper/backed blade/microtranchets/chisel
218	Onyadzi	Prehistoric-stone age	5°21'N, 0°42'W	Fairly Intact	Broken pendant made from struck flake with larger perforation/quartz pebble-chopper
219	Osenasi	Prehistoric-stone age	5°57'25"N, 0°45'45"W	Fairly Intact	Scatter of microliths/weathered sherds/hand-axe
220	Osu Marine Drive	Prehistoric & Historic	5°32'45.24"N, 0°11'21.95"W	Fairly Intact	Sherds/European pipes/Glass/Porcelain
221	Osudoku	Prehistoric?	6°01'N, 0°11'E	Fairly Intact	Grinding-groove
222	Otisu North	Prehistoric	7°38'N, 0°05'E	Destroyed	Microlithic flakes/Sherds
223	Otisu South	Prehistoric	7°37'N, 0°06'E	Destroyed	Pot/pebble pick
224	Owabi	Prehistoric - stone age	6°45'N, 1°43'W	Intact	polished stone axes
225	Paga	Prehistoric-stone age	10°59'N, 1°07'W	Intact	Quartz flake/quartz microliths
226	Pala	Prehistoric - stone age & ?iron age	9°58'N, 2°45'W	Intact	Flaked quartz pebbles & microliths/sherds
227	Palbe	Prehistoric	9°07'N, 0°33'W	Fairly Intact	Rubbing stone/coarse sherds/2 or 3 mounds
228	Paliba	Prehistoric	9°33'N, 0°14'E	Intact	Few quartz microliths
229	Papatia	Prehistoric - iron age?	8°10'30"N, 0°17'25"W	Intact	Low mounds of laterite nodules mixed with earth/a piece of iron slag/sherds
230	Peki Blengo	Prehistoric	6°31'00"N, 0°13'15"E	Fairly Intact	Quartz microlithic flakes/small sherds/perforated quartz pebbles
231	Pisi	Prehistoric	9°56'N, 2°28'W	Intact	3 large baobabs/low mounds and hollows/grinding grooves/sherds
232	Prang	Prehistoric	7°58'40"N, 0°53'30"W	Intact	microcores/microtranchet/blunt-backed blade
233	Prestea	Prehistoric	5°26'N, 2°09'W	Destroyed	Weathered celt of roughly oval section
234	Puil	Prehistoric	9°12'N, 1°32'W	Intact	sandstone hammers
235	Pusiga	Prehistoric	11°04'N, 0°08'W	Intact	Birimian greenstone expanding to a blade
236	Sabari	Prehistoric	9°20'N, 0°18'E	Intact	Shale terrace/a faceted butt/flakes
237	Sabiyi	Prehistoric - stone age	8°04'N, 2°21'30"W	Intact	

238	Sakpa	Prehistoric-Stone age/Iron age	8°53'N, 2°21'W	Intact	slag/large sherds/quartz flakes/grooved querns
239	Saltpond	Prehistoric	5°12'N, 1°03'W	Destroyed	Unrolled quartzite core/large rolled quartzite flake
240	Sanso	Stone age	6°09'10"N, 1°42'30"W	Intact	end-scrapers/blade/quartz microliths
241	Savelugu	Prehistoric	9°48'N, 0°50'W	Fairly Intact	Sherds/a dug away mound/whole pot
242	Sawia	Stone age	6°38'N, 1°32'W	Destroyed	
243	Sawla	Prehistoric	9°16'N, 2°24'W	Fairly Intact	Grinding hollows
244	Sekondi	Prehistoric	4°58'N, 1°42'W	Fairly Intact	Stone celts/fair-sized piriform axe
245	Shai Hills	Prehistoric & Historic	5°54'32.90"N, 0°3'55.29"E	Intact	Excavated site/Quartz arrows/Flakes/Perforated quartz pebbles/grindstones/sherds/celts/European clay pipes/glass bead
246	Shama	Historic	5°00'30"N, 1°37'30"W	Destroyed	Bottles/european pipe/dutch bricks
247	Shieni	Prehistoric-Iron age (iron working?)	9°09'N, 0°29'E	Intact	Slag heaps/iron ore mostly in range of the site
248	Sogakope	Prehistoric	6°00'N, 0°36'E	Destroyed	Microliths
249	Subi	Prehistoric	6°08'25"N, 0°51'00"W	Intact	Greenstone grinders/Quartz microliths
250	Sunirufi	Prehistoric-stone age	7°35'N, 0°07'E	Intact	Probable sangoan tools/flaked quartzite pebbles
251	Suruku	Prehistoric	9°38'30"N, 0°22'30"W	Intact	Several large mounds with sherds coming out
252	Swedru	Prehistoric	5°32'N, 0°44'W	Fairly ntact	Chert flake/Sherd
253	Tachikrom	Prehistoric - stone age	5°59'35"N, 1°46'15"W	Fairly Intact	Microlithic flakes/quartz pebble
254	Tafo (New)	Prehistoric	6°13'N, 0°22'W	Destroyed	Sherds/Microlith/Perforated quartz pebble/Quartz scraper
255	Takla	Prehistoric	6°38'N, 0°32'E	Intact	Low grassed mounds probably middens
256	Takrowasi	Prehistoric	6°01'N, 0°53'W	Fairly Intact	Greenstone celts/Miniature hand-axe
257	Tamale	Prehistoric	9°24'30"N, 0°51'W	Fairly Intact	Cigar/sherds/low mounds
258	Tankomia	Prehistoric	8°15'15"N, 2°13'15"W	Fairly Intact	grindstones/many sherds/quartz microliths
259	Techiman	Prehistoric & Historic	7°34'N, 1°56'W	Destroyed	Sherds/Grinding-hollows
260	Tili	Prehistoric	10°48'N, 0°32'W	Intact	Polished celt made of greenstone

261	Tiripi	Prehistoric	5°56'55"N, 0°50'35"W	Intact	Sherds
262	Tolibri	Prehistoric	10°35'N, 2°52'W	Intact	small quartz biconically perforated bead
263	Tolundipe	Prehistoric	8°56'N, 1°35'W	Intact	low mounds with many mounds/rubbing stone
264	Tongo Hills	Prehistoric	10°40'N, 0°50'W	Intact	Sherds/Grooved rocks/Awl/Grooved sandstone/celts
265	Tota	Prehistoric-stone age	6°49'N, 0°17'E	Intact	Quartzite cleaver (probably acheulian)
266	Tugu	Prehistoric	9°22'N, 0°36'W	Intact	small mounds/sherds
267	Tumu	Prehistoric	10°52'N, 1°54'30"W	Intact	Sherds/handaxe/iron smelting around Tumu area
268	Twifo Heman	Prehistoric	5°29'0.00"N, 1°31'60.00"W	Destroyed	
269	Vakpo	Prehistoric-stone age	6°50'N, 0°15'E	Intact	celts/biconically pierced quartz pebble
270	Wa	Prehistoric	10°05'N, 2°30'W	Destroyed	long oval grooves/iron-tipped arrows
271	Wasawasa	Prehistoric	8°12'50"N, 0°06'35"E	Intact	Iron slag heaps & anvil looking stones far from any settlement/grindstones/sherds/a test excavation has been conducted in 1965
272	Wasipe	Prehistoric	8°33'N, 2°12'W	Intact	blunt greenstone celt/crudely flaked pick
273	Wayanu	Prehistoric-stone age	6°35'20"N, 0°34'E	Fairly Intact	Rounded granite rocks with deep and wide grinding hollows
274	Wenchi	Prehistoric & Historic	7°44'N, 2°06'W	Destroyed	Cigars/Bead-polishers/Iron slag/quartz flakes/end-scrapers/chisels/17th-18th C Pottery
275	Wewa	Prehistoric - Stone age	8°04'N, 2°24'W	Fairly Intact	Microliths/bead-polishers/scrapers
276	Wiawso	Prehistoric	6°12'N, 2°28'W	Fairly Intact	Heavily patinated shale-pieces (possibly picks)/Celt
277	Wuru	Prehistoric	10°58'N, 1°35'W	Fairly Intact	Faceted butts/rounded end-scrapers
278	Wurupong	Prehistoric	7°10'30"N, 0°20'E	Fairly Intact	Piece of iron slag/Biconically pierced pebbles
279	Yaapese	Prehistoric - Stone age	6°27'N, 1°25'W	Intact	Quartz spear-point
280	Yefri	Prehistoric	7°42'N, 1°45'W	Intact	rubbing stone and pottery

281	Yeji	Prehistoric	8°13'42"N, 0°38'55"W	Destroyed	Sites stands on a high terrace/microliths/chisels/backed blades
282	Yendi Dabari	Prehistoric-Stone age / iron age	9°48'N, 0°56'W	Intact	Trial excavations yielded traces of rectangular buidlings/pottery/pipes/iron objects/stone cigar
283	Yikene	Prehistoric	10°48'N, 0°54'W	Fairly Intact	stamped sherds/pipe/rubbing stones
284	Yikpabongo	Prehistoric	10°14'35.19"N, 1°34'3.06"W	Fairly Intact	Excavated site- yielded Terracotta figurines/Pottery sherd/Whole pots/Iron implements
285	Yoribon	Prehistoric?	7°28'30"N, 1°18'W	Intact	Grinding hollows on a rock slab/sherds of Ashanti character
286	Yoyo	Prehistoric - Stone age	8°38'N, 2°28'W	Intact	Pottery from old mounds/Gold workings near site
287	Zebila	Prehistoric - Stone age	10°56'N, 0°30'W	Intact	
288	Zopieli	Prehistoric - Iron age	11°00'N, 2°48'W	Intact	Large slap heap

Table 4.2-1: A table presenting the sampled archaeological sites mentioned in introduction.

4.2.1.1 Spatial Analysis

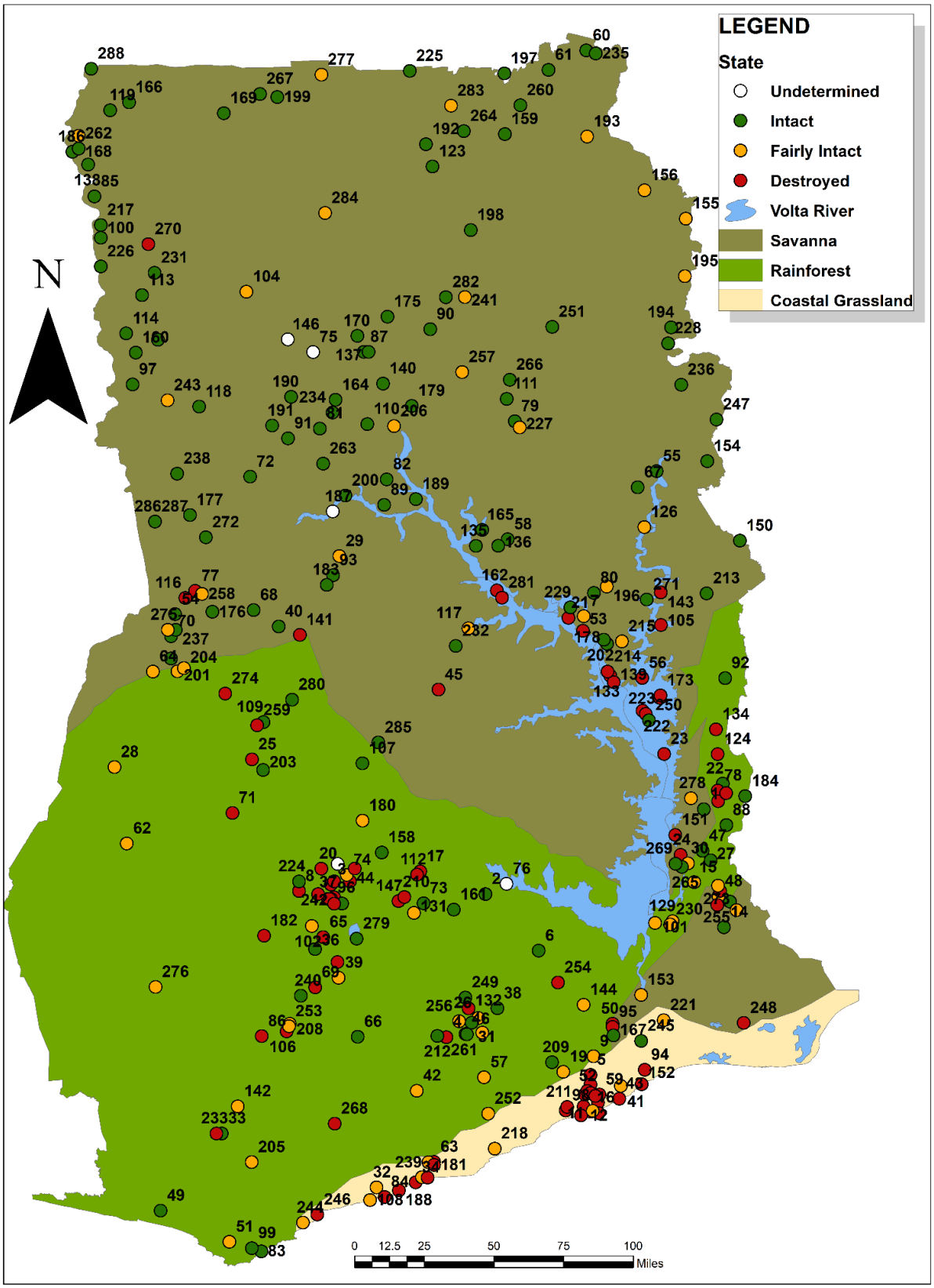
From the data in the above table, 45% (130 archaeological sites) of the sampled 288 total are intact, 30% (87 archaeological sites) are destroyed, 23% (66 archaeological sites) are fairly intact, while 2% was undetermined.

With the use of ArcGIS (see Map 4.2-1 below), it was determined that in the savannah zone a total of 152 archaeological sites fell in this zone where 97 sites are intact, 25 sites are destroyed, 27 are fairly intact and 3 were undetermined. In the rainforest zone 101 archaeological sites were found in this zone. 32 sites are intact, 38 sites are destroyed, 29 sites are fairly intact and 2 undetermined. The coastal scrub/grassland had a total of 34 archaeological sites falling in this zone. 24 sites are destroyed, 1 site is intact, and 9 are fairly intact.

Out of the sampled archaeological sites from the Ghana Field Notes, 74% of the intact archaeological sites come from this zone, 29% of all the destroyed archaeological sites are found here and 41% of the fairly intact sites come from this region. The rainforest region has the next highest number of intact archaeological sites from the sample comprising 25. 44% of all the destroyed archaeological sites and 44% of the fairly intact sites came from the rainforest zone. Only 1% of all intact archaeological sites are in the coastal scrub/grassland zone while 28% of all destroyed archaeological sites and 14% of the fairly intact emerged from this region. Overall, only one site was not situated in exactly one zone. This was the site numbered 64 (Begho) situated between the savannah and the rainforest zone.

4.2.1.2 Discussion

From the statistics gathered above, the savannah zone has the highest number of intact archaeological sites. Located further north into the Ghana hinterlands, it is the largest and least occupied area in Ghana. The proportion of that have been destroyed (25) to sites that are intact (97) is an obvious indication that the sites here are less prone to human building and construction activities. The rainforest zone has the closest margin with regard to destroyed and intact sites, an indication that sites may continuously be under threat of being destroyed. Finally, in the coastal scrub/grassland, out of the sites that happen to have fallen in this region only one happen to be intact. This does not imply that there is only one intact archaeological site in this zone but the random sampling technique and sample size affected the possible inclusion of more intact sites. The site of Begho numbered 64 fell between the savannah and rainforest zone as this is known to be the character of this site (see Posnansky, 2015).

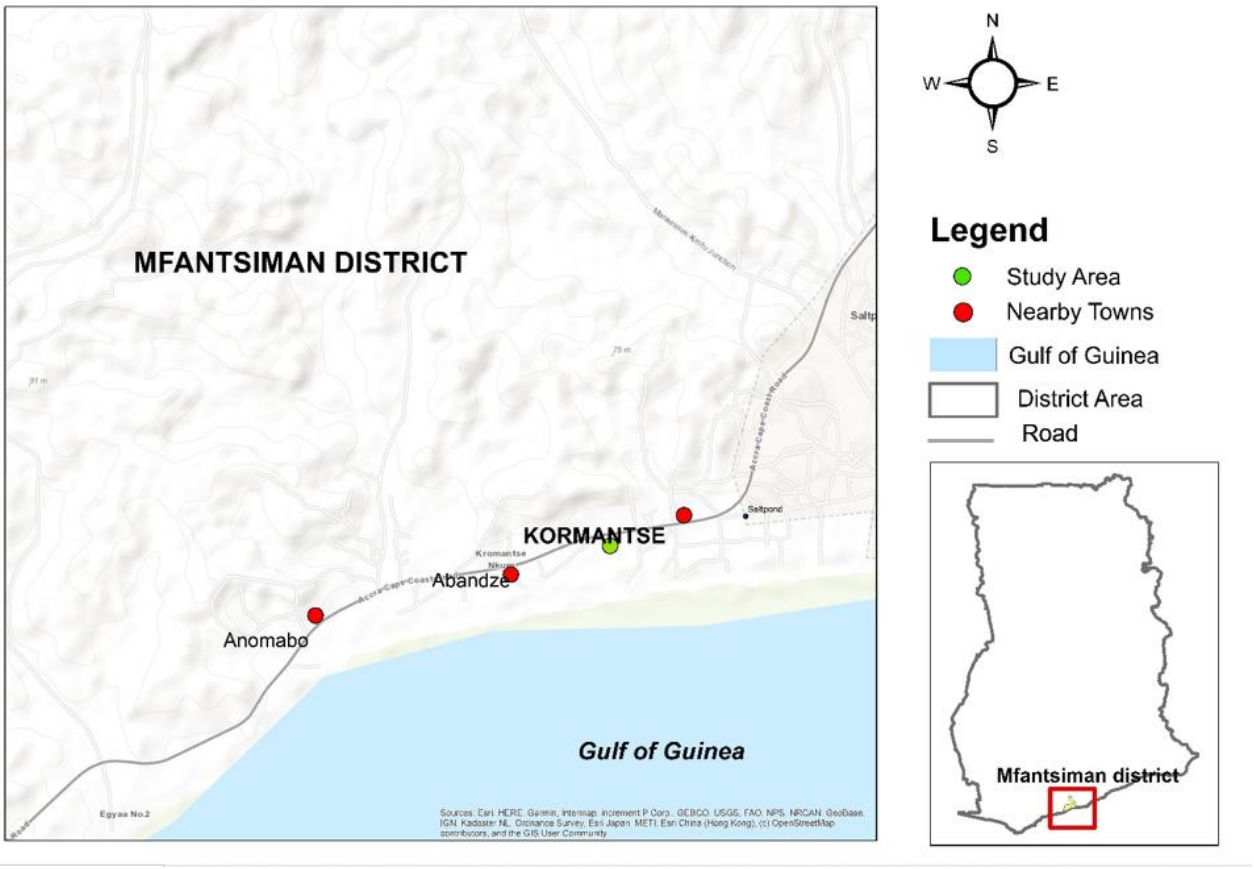


Map 4.2-1: A map showing spatial distribution and the state of archaeological sites. Produced by author.

The archaeological sites selected for profiling are shown below. These follow a format and a corresponding schema evident in each profiled site and in the entry form (see Appendix B). The profiled sites are also inventorized with the Microsoft Excel sheet in Appendix D.

4.2.2 Kormantse

Kormantse is a settlement located on a hill top in Central Region of Ghana. It lies on longitude 05°12'256" W and latitude 01°04'85" N with at an elevation of 80 meters above sea level. Kormantse belongs to the Mfantseman Municipal Assembly along with other towns such as Anomabo, Abandze and Mankessim. From scholarly discussions, many African societies of the diaspora have associated to Kormantse and see it as a place of pride. Others also have referred to it as an imaginary town. However, research into Kormantse have proven it to be the old town associated with the Transatlantic slave trade. Material remains recovered from the site is tangible evidence of the activities of old Kormantse (Agorsah & Butler, 2008, p. 13). The name of the town has different variants and maybe spelt Cromanti, Kromantin, Cormantine, Coromantee (Agorsah, 2014). This town became primarily relevant during the trans-Atlantic trade. The documentation of Kormantse goes back to the 17th century where explorers make mention of the town. Historical maps and local oral traditions have shown this site to be the same old settlement that was encountered by the early British colonials in the 1630s (Agorsah & Butler, 2008). Kormantse was being referred to as "Great Cormantyn" by William Bosman. According to Boachie-Ansah (2015), William Bosman in 1701-1702 described the town as "so large and populous that it well deserves the name great". He described the town and estimated the population as "amounting to the number 700 or 800, and sometimes 1000". Bosman also claimed that the inhabitants were either "mercantile traders" or "fishermen".



Map 4.2-2: Map showing Kormantse and its close towns. Produced by author.

Boachie-Ansah (2015) points out that the inhabitants of Kormantse played a pivotal role in the trade between Africans and the Europeans in Fort Amsterdam. William Bosman remarked that when there was a disagreement between the Europeans and the people of Kormantse, the traders from the hinterland were stopped from trading with the Europeans in the fort. The people of Kormantse denied Europeans in the fort provisions they needed (Bosman 1967 cited in Boachie-Ansah 2015). This indicated that the people of Kormantse were middlemen between the traders of the hinterland and the Europeans of the coast. Similarities in pottery between Kormantse and Fort Amsterdam confirms the interaction between these two people suggesting that pottery was supplied to the fort by the Kormantse people.

Kormantse however had existed before the arrival of the Europeans. Agorsah (2014) and Arkoh (2020) mentions that the site is characterized by a prevalence of iron slags and ore which directly suggest some amount of iron production activity. Iron metallurgy is not uncommon in West Africa and its activity predates the arrival of the Europeans (Chirikure, 2013). Therefore, evidence of its presence in Kormantse suggests it may predate the arrival of the Europeans. Secondly, the association of iron slags and ore to shrines as Arkoh (2020) mentions, supports the chronology. This because an activity must have been in existence for well long enough before it can be considered a tradition. Its presence in religious activity may suggest it was occurring before the Europeans arrived. This is however all speculative since oral tradition does not discuss iron smelting but only blacksmithing. Furthermore, archaeological research into iron working of Kormantse has not been much. The extent of archaeological research in this town is very limited unlike archaeological sites such as Begho. Nonetheless it is a relevant archaeological site due to its mentions by European explorers during the Transatlantic trade. More research will hopefully provide answers to pending questions about their role in the Atlantic trade and earlier periods.

4.2.2.1 Previous Research

The first archaeological excavation in Kormantse was from 2007-2010 undertaken by E.K. Agorsah. It was an investigation into the cultural formation and transformation of the settlement in response to change occurring through colonial era (Agorsah & Butler, 2008). With the use of ethnographic and archaeological material, the investigation sought to explicate the processes and cultural manifestations by which the settlement's population, including people who made transits in Kormantse during the trans-Atlantic slave trade period, negotiated their survival and identities.

In 2008, another research was undertaken aimed at comparing artifacts recovered earlier from Fort Amsterdam to those later recovered from Kormantse. It was to ascertain the degree to which these

two set of cultural materials differ or resemble. This was due to the relationship both the people of Kormantse and Abandze (Fort Amsterdam) had in trade. James Boachie-Ansah undertook this archaeological research.

4.2.2.2 Recent Research

The most recent research was undertaken in 2020 to bring to light prehistoric Kormantse before the coming of the Europeans. Previous archaeological researches had focused on Kormantse in the transatlantic period (Agorsah, 2014; Agorsah & Butler, 2008) and it was essential to dig further to know about other aspects of Kormantse. Iron working in Kormantse seemed like a promising area to investigate after the observation by Esi Arkoh and Agorsah's earlier claim about the abundance of iron slag and lateritic rocks in the area (Arkoh, 2020). This research was in partial fulfillment of Esi Arkoh's Master of Philosophy degree.

In July 2021, materials recovered from the Kormantse excavation was displayed during the PANAFEST 2021 International Colloquium held at the University of Cape Coast. The exhibition event was themed on returning to our roots and the display was used to explain the past activity of the Kormantse people. Kormantse is believed to be an imaginary town by many diasporans, hence physical evidence of past activity from the site demystifies this belief.

4.2.2.3 Dates

Boachie-Ansah (2015) suggests that the site probably dates from mid-18th to 20th century. This relative date is derived as result of the recovery of an 18th century Dutch smoking pipe bowl from the bottommost level. This is a testament of its contact with Europeans of the Atlantic trade period. Arkoh's (2020) research also dated smoking pipes of English and Dutch origin going back to the 18th and 19th century. Local smoking pipes that were analysed were dated to the 17th century. This

period had seen places like Kormantse being described as Fante city-states (Kea, 2000), indicating its character as populous.

4.2.2.4 Finds

From Agorsah's archaeological excavation, cultural materials such as local and imported beads, local and imported ceramics, tuyeres, and smoking pipes, human skeletal remains among others were recovered. The numerous cultural materials recovered were not all analyzed and the report on the ones analyzed is yet to be published (Arkoh 2020). Kormantse embraced the colonial slave trade and had access to substantial mass-produced local and foreign trade goods, according to preliminary research from 2007. Kormantse also served as a rallying point and an outlet for both the trans-Saharan and Atlantic trades.

Boachie-Ansah recovered from his excavation, materials such as European, Japanese and locally manufactured pottery, gun flint, glass bottles and beads. He also recovered European smoking pipes, bricks and roofing tiles, metal objects, animal bones and mollusk shells. Such variety of foreign finds in the archaeological record confirms the role of Kormantse in the transatlantic trade as mentioned earlier. Also, similar vessel forms from other sites that indicate the Asante presence on the coast were recovered in Kormantse.

Arko also recovered materials such as imported smoking pipes and ceramics, beads, slags, tuyeres, metals and potsherds. Slags and tuyeres were analysed using SEM EDX (Scanning Electron Microscopy, Energy Dispersive X-Ray Spectroscopy). According to her, the purpose of this analysis was to determine the chemical composition of the iron slag and further determine how efficient the iron working process was. This was done by inferring from the percentage of iron present in the slags. Regarding the tuyeres, this analysis was done to ascertain whether these tuyeres were used for smithing or smelting. Additionally, samples of ore that were collected from

the Kormantse settlement were analysed with X-ray fluorescence (XRF) machine. According to Arkoh 2020, X-ray fluorescence (XRF) works similarly as SEM EDX and was used to determine elemental constituents (more importantly iron) in the ore. These analyses led to an interpretation that there existed smithing and smelting activities in old Kormantse. The ethnographic research coupled with these analyses attest to the metallurgical past of Kormantse. Faunal remains recovered indicate that the variety of bones were possibly bones of rodents, goats/sheep, antelopes, deer, dogs and cats.

Samples Artifacts Recovered from Past Research

Figure 4.2-6: Tuyere with slag in its interior. Source: Arkoh 2020

Figure 4.2-7: Variety of Local smoking pipes excavated by Agorsah in 2007. Source: Agorsah and Butler (2008)

Figure 4.2-8: Molluscs samples recovered from Arkoh's 2020 excavation. Source: Arkoh (2020)

Figure 4.2-9: 19th century pipe bowls. Source: Boachie-Ansah (2015)

4.2.2.5 Current State of the Site

The archaeological site of Kormantse is located in upper Kormantse where the contemporary people still live. The spread of people from upper Kormantse to Lower Kormantse is relatively recent. The archaeological site located on the hilltop is still inhabited by the local people although they do not live on the entire site. Furthermore, much of the site is in ruins with some buildings having indications of being built on older ones or having contemporary materials applied to them. Subsequently, the currently uninhabited portions of the land are used for farming activities and a cemetery. There are crops such coconut, plantain and cassava. Recently, there were also attempts at mining activity in that area. The illegal mining activity of alluvial gold has disturbed the archaeological record. According to Boachie-Ansah (2015), there have also been looting of valuable colonial items on the site.

The settlement is characterized by several iron slags and lateritic rocks as well as pottery sherds. The chunk of iron slags and lateritic rocks are not randomly scattered but they are piled up or heaped in quantities which are found near or on compounds of households. This deliberate act is associated with their religious beliefs as highlighted by Arkoh (2020). These piles represent deities called by the local as “D’abo ano”.

Figure 4.2-10: An paranomic view of Lower Kormantse with Fort Amsterdam in a distance. Source: Author

Figure 4.2-11: Mud house in ruin. Source: Author

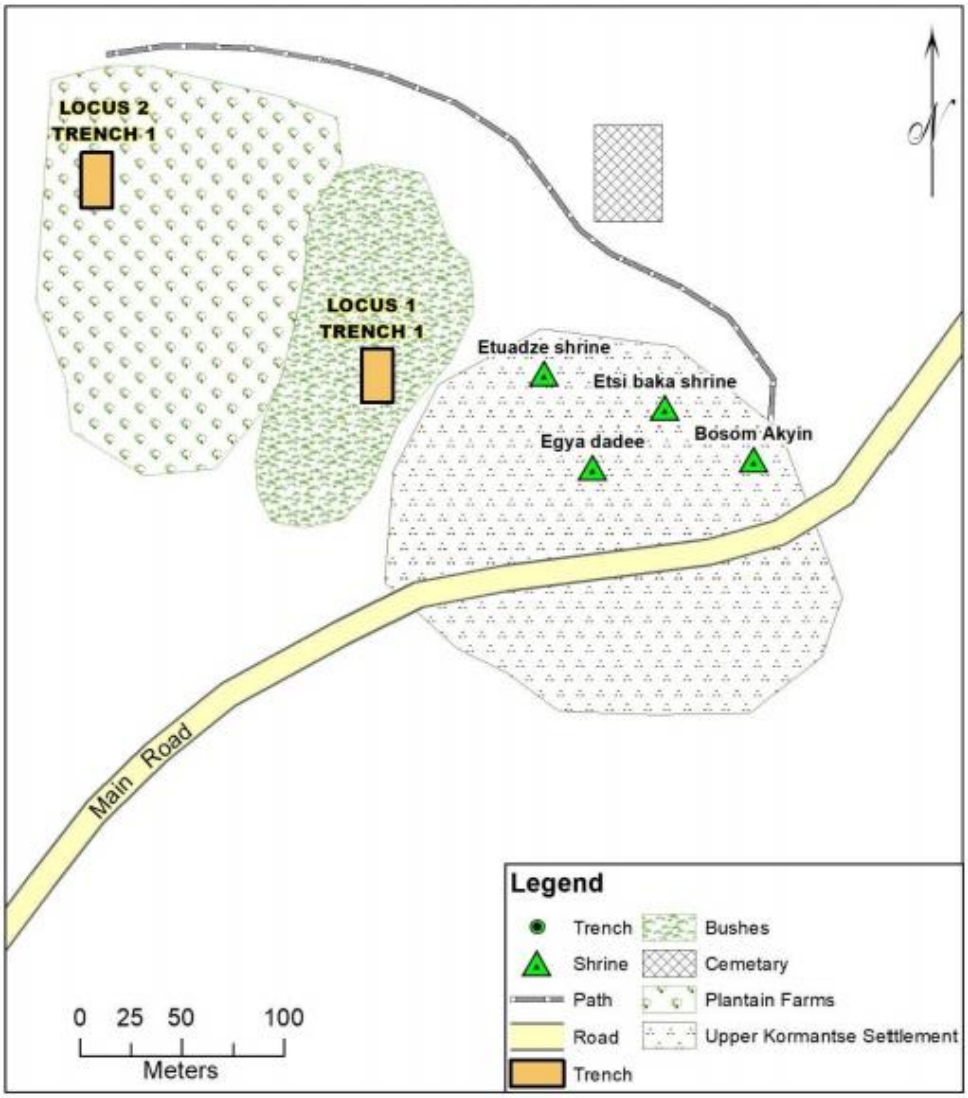
Figure 4.2-12: Mud house with contemporary materials applied to it. Source: Author

Figure 4.2-13 Cemetery (left) and a new burial (right). Source: Author

Figure 4.2-14: Iron slags and pottery sherd from surface survey. Source: Arkoh, 2020

Figure 4.2-15: Heap of iron slags and lateritic rocks representing a deity. Source: Author.

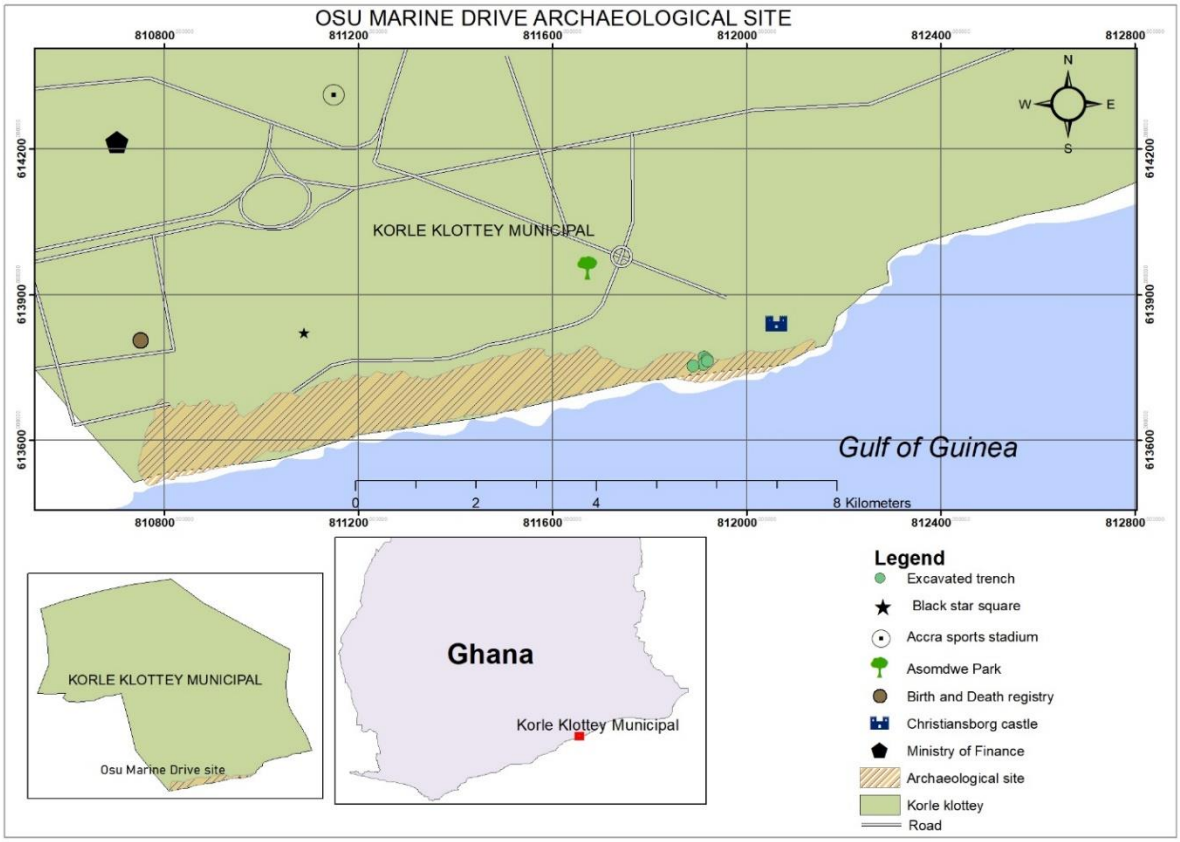
4.2.2.6 Site Map



Map 4.2-3: Site map of Arkoh's 2020 excavated area (Kormantse). Source: Arkoh, 2020

4.2.3 Osu Marine Drive

Before the arrival of the Europeans to the shores of the Gold Coast, the people of Osu were one of many indigenous groups inhabiting the coast. Being part of the various groups of the Ga-Adangme who began to spread in the lower Volta, by the 13th century (1200 AD), small settlements had been founded in the area (Odotei 1972, p.14 found in Ohene-Larbi 2017). Osu is located in the Korle Klottey district of Greater Accra. It lies on latitude 5°33'14" N and longitude 0°10'30" W and has an elevation of 29 meters above sea level. It is bounded by Labadi to the east, to the west by Independence Avenue, the Gulf of Guinea to the south and to the North, the district of Labone (Kyeraah 2012, p. 12). The early settlement of Osu (old Osu) is located much closer to the coast and the Gulf of Guinea with coordinates of 5°32'45.24"N and 0°11'21.95"W. It might not have been closer to the sea then but overtime, the sea may have expanded into the land. The movement



Map 4.2-4: A map indicating the location and extent of the Marine Drive site and proximate locations. Produced by author.

of the Osu people further away from the coast was as a result of war. The old settlement was destroyed thereby forcing them to move (Personal communication, Wazi Apoh, May 2021).

The early settlement of Osu became a major trading town due to commerce with the Akwamu, Ga Mashie, La and later the Danish merchants (Ohene-Larbi 2017). The people of Osu subsisted on fishing, hunting and salt making (Odotei, 1995). Wellington (2017) suggests that the name Osu was adopted by the migrants in commemoration of their former home called Osudoku. Also, the name "Osu" is a corrupted name of the Adangme expression "wOsu" that translates as "we have arrived". According accounts taken by Wellington (2017, p. 4), the early Osu people moved from Osudoku as a result of a dispute between two families over precious jewels. Noete Doku, the family that fled, moved southward into the Accra plains. They met Kadi, a hunter who led them to the King Odoi Akyem of Labadey. The king demarcated the coastal area between Korle and Klottey lagoons to the Noete Doku family and they named it "Osu" when they settled. Wellington however suggests that the expression "wosu" was probably used when Kadi led the migrants to the place. The archaeological site which is along the beach front may be a portion of the entire settlement of early Osu and a dump site for the castle dwellers (Personal Communication, Wazi Apoh, May 2021). As it is with settlements along coastal Ghana (DeCorse, 2001, p. 18), the settlement may have been scattered here too. From my observation, this area is characterized by loose sandy soil at the Atlantic water front and compact clay soil of which some areas of the coast have. Other areas are characterized by loam soil; especially areas close to dumping grounds.

The archaeological research into Osu is limited and in its early stages. However, other researches about the town of Osu are from historical perspectives (see Wellington 2017 and Ankomah 2014). The closest to a past archaeological work about Osu is undertaken by Rachel Engmann (Engmann, 2018). Although the research focused primarily on the Christiansborg castle, it did not avoid

discussing the context within which the castle situated (that is being situated in the same environs as the settlement). The Osu Castle is a 17th century trading post which was a colonial Danish and British seat of government and later the office of the president of the republic of Ghana (Engmann, 2018). An archaeological research relating to Osu is the Marine drive archaeological project being undertaken by Wazi Apoh. There have been three locations that have been excavated on the Marine Drive site (locus A, B and C).

4.2.3.1 Research

Archaeological research in Osu are those being conducted at the Christiansborg Castle (since 2014) and along the Marine Drive beach front (since 2017). The archaeological research at the Christiansborg is primarily centered on past human activities in and around the Castle. Rachel Engmann was the first researcher granted access to Christiansborg Castle to conduct archaeological excavations at the site. According to Engmann, "As principal investigator and a direct descendant, I work with other Danish-Ga direct descendants who trace their family genealogies, through both written archives and oral histories, to between the seventeenth and nineteenth centuries", Rachel stated (Engmann, 2018). Engmann (2018) noted that, her research was motivated by a remark from her aunt about her lineage. This sparked her interest in the history of the castle.

Wazi Apoh's research into the area was a result of the Marine Drive Tourism and Investment Project (MDTIP). The MDTIP is a development initiative by the government of Ghana to make sections of Accra's coast a tourism and hospitality area. The initiative was started during Kwame Nkrumah's era and was picked up again in the 1970s. It did not see the light of day due to financial constraints. In 2017, the project was reinitiated by President Nana Addo Dankwa Akufo Addo. The $1.2 billion project funded by the World Bank seeks to develop the beachfront space between

the Arts Center and the Christiansborg Castle. The ten-year project is expected to provide employment, revenue and attract investment. Consequently, this project was going to result in the complete destruction of the archaeological site. For this reason, archaeological research had to be immediately undertaken to salvage what is left of the site. The salvage archaeological research is aimed at investigating and documenting the legacies of the Ga-European encounter along the beachfront at Osu. Apoh first excavated the area (Locus A) in 2017. Under his guide, Beatrice Darko-Yeboah excavated one of these locations (named Locus B1) as part of her Doctor of Philosophy programme in 2018. The loci B (2 and 3) and C were excavated in 2021.

The archaeological materials recovered from the site were first exhibited in Kempinski Hotel and later inside the Christiansborg Castle. The exhibition sought to display archaeological artifacts and explain the activities of the early Osu dwellers. The exhibition displayed in 2019 was under the auspices of the Heritage and Cultural Society of Africa (HASCA) Year of Return Summit themed "Linking, Reconciling and Reuniting Communities 400 years after the start of the Transatlantic Slave Trade".

Figure 4.2-16: Showcases (right) and banners (left) displaying excavated artifacts and research activities.

Source: Beatrice Darko-Yeboah

4.2.3.2 Dates

Although the archaeological research from Osu Marine drive site is unpublished, materials recovered and analyzed suggest a relative date of 18th to 20th century. Smoking pipes, alcohol bottles and local ceramic places the site relatively in the 1700s and later (Personal communication, Wazi Apoh, 2021) while porcelain ware with the Ghana coat of arms inscribed in them suggests a 20th century period (Apoh, 2019, p. 226). Results for absolute dating is yet to be known.

4.2.3.3 Finds

From Rachel Engmann's excavation at the Christiansborg Castle, archaeological finds such as African trade beads, ceramics (Chinese, European and local), clay smoking pipes (African, Dutch, English, German and Danish), European glassware, writing slates, cowrie, faunal remains, metals and a canon. The excavation also exposed foundations of houses (pre-colonial settlement) and a peculiar area that looked like a kitchen due to the presence of three stones (a hearth) and charcoal (Engmann, 2018).

Over eight thousand archaeological finds have been unearthed from Apoh's excavation. Each locus had some significant finds and some include pottery sherds, metal artifacts, faunal remains among others. From locus A, significant finds included whole schnapps bottles and wine bottles. Locus B yielded among other artifacts such as porcelain artifacts, cowrie and other shells while Locus C produced pottery sherds, writing slate and graphite pencils, among others. The variety of local and foreign artifacts from the loci highlights the interaction between the Osu dwellers and the Europeans and also supports that the settlement was involved in commerce other local people.

SAMPLES OF ARTIFACTS EXCAVATED

Figure 4.2-17 Pottery sherds of various decorations (Incisions, groovings, stamps). Photo: Beatrice Darko-Yeboah

Figure 4.2-18 Cowrie shells. Photo: Beatrice Darko-Yeboah

Figure 4.2-19 Bones. Photo: Beatrice Darko-Yeboah

Figure 4.2-20 Small sized bottles. Photo: Beatrice Darko-Yeboah

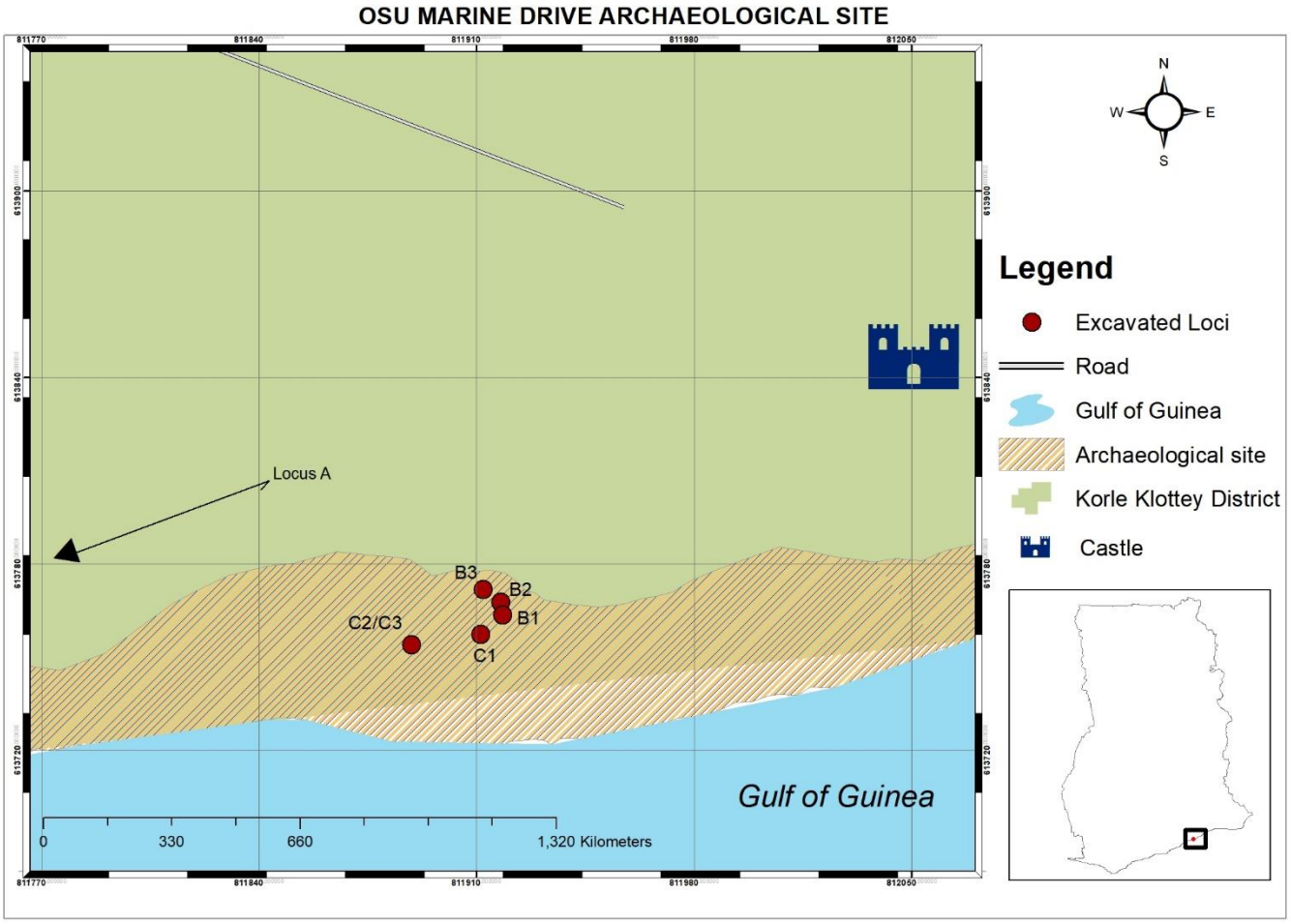
Figure 4.2-21 Broken porcelain with embossed Ghana Coat of Arms. Photo: Beatrice Darko-Yeboah

Figure 4.2-22 Metal artifacts of different sizes. Photo: Beatrice Darko-Yeboah

4.2.3.4 Current State

The archaeological site at Marine Drive has partly been bulldozed by contractors making preparations for the Marine Drive Tourism and Investment Project. This destruction begins from the area behind the independence square along the beach which is the supposed start of the site extent. The site ends behind the Christiansborg Castle. There are few human activities on the site. Some people have taken residence in the area with wooden structures. Other activities include sports activities (running and soccer) and menial fishing activities. It is also a dumping ground for refuse by the people who live nearby.

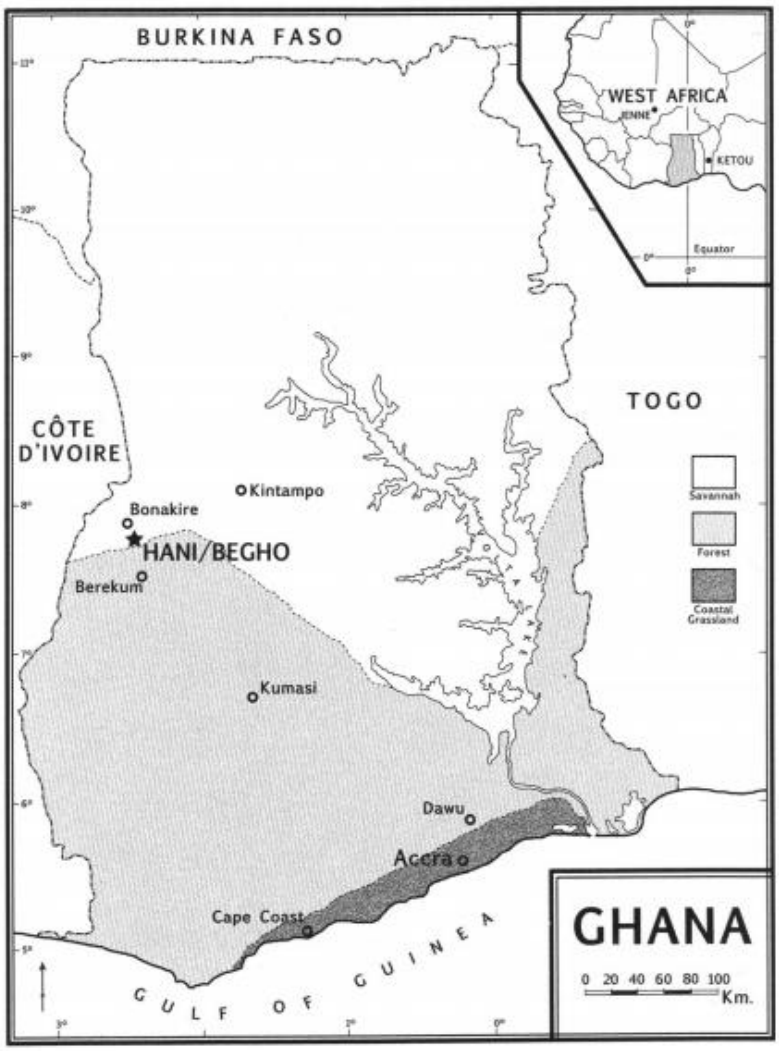
4.2.3.5 Site Map



Map 4.2-5: A site map indicating all points excavated on the site. Produced by author.

4.2.4 Begho

Begho is an ancient urban town currently located close to the town of Hani in Bono Region. Hani is a town located in the Tain District in Ghana (latitude 7°50'55.81"N and longitude 2°28'43.22"W).



Map 4.2-6: Map of Ghana showing location of Begho and adjoining sites. Source: Posnansky (2015)

Begho was a medieval entrepot located on the southern margins of Banda and is known to be the largest town in the interior of what became the Gold Coast (Stahl, 2001, p. 49). This archaeological

site was initially difficult to locate due to discrepancies in its name. Some scholars situated Begho around the area of Bondoukou in Ivory Coast while others believed it to be situated in the north-east and south-east of the present village of Namasa (Wilks, 1993). Also, referred to as Bighu in Wilks (1993) and elsewhere as Beeo and Beetu, the site is known to have existed between the 12th-19th centuries CE. (Dueppen, 2016; Posnansky, 2015).

Merrick Posnansky posits that Begho would without doubt have been "the largest precolonial town in the area of modern Ghana on present surface and excavated evidence around the middle of the second millennium C.E" (Posnansky, 2015 p. 101). This is due to at least 1500 houses with about a population estimated at 7000–10,000 organized into six distinct dispersed quarters and a central market (Dueppen, 2016, p. 252). The quarters seem to have had different functions. Posnansky (2015) talks about finds in one quarter which included crucibles for casting imported brass, stone and clay weights for measuring gold and blacksmithing debris while another quarter had evidence for Muslim inhabitants who may have specialized in indigo-dying of cloth. Posnansky (2015) talks about the site having "at least six distinct quarters" (indicating that there maybe more). He later states that, "there were two other rather nebulous quarters, where we did not work because of a lack of resources, time, and indistinctive positive surface indications such as mounds or extensive pottery scatters". The known and named quarters are the Brong quarter, the Kramo quarter, the market quarter, the Nyarko quarter, the Dapaa and the Dwinfuor quarters. Posnansky (2015) describes the quarters below:

> The main quarters were those of the Brong (where we excavated in 1970, 1972, and 1975); the Nyarko, which was probably also a quarter inhabited by a local Brong population; the Kramo quarter (excavated in 1971 and 1979); and the market quarter, which was separate from the Kramo quarter and may have been for traders of different religions and ethnicities as opposed to the Kramo

> quarter, which we assumed was for Mande-speaking Muslims and traders from the middle Niger area. Dwinfuor quarter was clearly occupied by metal workers who fabricated brass items and used clay crucibles. (p. 99)

It is through ethnohistory that we know Begho to be a state ruled by an Akan chieftain with at least five multi-ethnic suburbs (Anquandah, 1995). Archaeological research confirmed this data by excavating the site of Begho where several mounds represented the various house compounds of the suburbs. Written history has confirmed the existence of Begho as a complex society. European and Arabic sources describe Old Begho as "the location of cosmopolitan trading town-site" which linked the Akan forest producers of gold with the Sudanic Trans-Saharan trading center (Anquandah, 1995). In addition, a map drawn by a Dutch cartographer named Hans Propheet (1629) indicate the Begho area as being famous for its textile industries. Archaeological excavations were conducted from 1970 to 1979 while ethnoarchaeological research were conducted between 1970 and 1998. The ethnoarchaeological research helped to give historical interpretations to the archaeological material excavated.

Polities like Begho may have specialized in commercial practices and had more access to trade goods than surrounding communities looking at the wide variety of findings indicating trade (Dueppen, 2016, p. 252). There are evidences such as copper and copper alloyed objects, sherds of diverse local pottery ware, stone milling equipment, spindle whorls/dye holes for the textile industry, ivory bracelets and carvings, imported goods (German stoneware, Chinese porcelain, venetian glass beads) and local smoking pipes. These finds also suggest Begho was a complex society which engaged in specialization, industrial, technological and commercial activities. Iron ore was locally acquired and smelted some four kilometers from the town at Dapaa while at the Dwinfuor (artisans' quarter) brassworking was undertaken (Posnansky, 2015). Recovery of

numerous spindle whorls and dye pits suggested cloth production. The ritual nature of the Brong chieftaincy was suggested from decorated ivory trumpets and the discovery of a shrine room with inverted offering cups. The presence of weights of stone, terracotta, and beads attested to the importance of the gold trade.

4.2.4.1 Previous Research

Researchers who worked on the site of Begho between 1970 and 1998 include Merrick Posnansky, James Anquandah, D. Agyei Henaku, Osei Tutu Brempong, Emmanuel K. Agorsah, Emmanuel Effah-Gyamfi, Leonard B. Crossland, James Boachie-Ansah, Timothy F. Garrard, Rod McIntosh, Susan McIntosh, Philip de Barros, Roland Fletcher, Francis Musonda, E.N.O. Quarcoopome, Phillips James, and others. Some of these researchers were senior members, graduate and undergraduate students of the University of Ghana and University of California, Los Angeles.

On his arrival in Ghana, Merrick Posnansky needed to have a project that could run for a long time, provide a base for field schools where Ghanaian graduate students would be involved as well as provide information about a key area and topic. In his interview with Jonathan Walz (Walz & Posnansky, 2010), Merrick stated that:

> *The Vice- Chancellor wanted someone to look at the development of states in the savanna zone. I was very keen on this. We needed to know more about the area outside of the Asante and before the Asante. The state and trade were our foci. I decided to look for Begho, which seemed to me to have blossomed through trade. In 1970, we found a town presumed to be Begho. It had various quarters and scattered over its surface were bits of pottery, including those from the Middle Niger area [i.e., in southern Mali], and bits of [non-local] brass and glass beads.* (p. 192)

Merrick Posnansky was the main proponent researcher of the archaeology of ancient Begho. He spearheaded the research project conducted at Begho from 1970-1979. Aided by the Hani

community, Posnansky made sense of some findings through ethnographic research. This ensured multivariate views to aid in interpretation. Moreover, a library was built as a way of giving back to the community. One of the useful publications for analyzing ceramic pottery in Ghanaian archaeology is on pottery from the Begho-B2 site written by Leonard Crossland (see Crossland, 1989). It contains an array of pottery types analysed by Crossland.

4.2.4.2 Current Research

In recent times (2016 – present), Daniel Kumah is conducting a research in the area. The aim of his work is to reinvestigate the archaeology of Begho. He surveyed the entire Begho site, mapping mounds in the area to determine the extent of ancient Begho. Some artifacts from Begho that have been mentioned in articles cannot be located. Thus, the research also seeks to locate and identify Begho artifacts in Archaeology and Heritage Studies museum storage as well as other museums. He engaged in community archaeology by partnering with the Embassy of France in Ghana to renovate the old library built by Posnansky and Joan Dombrowski in1974. The old library was turned into a museum to display the archaeological research work of the past years (Figure 4.2-23). The museum was launched in April 2021. The event was graced by many dignitaries (Figure 4.2-24), including Hanihene (Chief of Hani), Hon. Justina Owusu Banahene Sulemana Adama (MP, Tain), Hon. Charity A.F. Dwommoh (DCE, Tain), Brodihene (Chief of Brodi) Odeneho Nana Shie Boffour II, Kwasi Mensah Yeboah (Sompahene, Nsawkaw) and Her Excellency Anne Sophie Avé (the French Ambassador to Ghana). It also attracted many people from neighbouring communities of which some were primarily curious and others interested in the archaeology of ancient Begho. A short animated documentary was made to tell the story of ancient Begho which served as an additional visual explainer to the museum display and shown during the launch. The

film is available in five languages: Twi, Ewe, Dagbani, Ga and English).(watch here: https://youtu.be/J1xPaT4jETY)

Figure 4.2-23: Hani-Begho community museum. Source: Author.

Figure 4.2-24: Daniel Kumah (second from the left) explains artifacts from the showcase to dignitaries (from the right: Hanihene, the French Ambassador, unknown dignitary, DCE for Tain and MP for Tain). Source: Author.

Figure 4.2-25: Daniel Kumah explains artifacts from the showcase to dignitaries and other visitors. Source: Author.

4.2.4.3 Dates

Begho dates back to the 11th century AD (Anquandah, 1995b; Meyerowitz, 1952). However, twelve radiocarbon samples from different years of excavations (1970, 1971, 1972, 1975, and 1975-76) by the Department of Archaeology and Heritage Studies indicate different. The samples indicate that some parts of the ancient site (Nyarko quarter) dates to the 12th and 14th century while other dates fell in the 15th- 18th century. Such a date range is confirmation of the existence of the urban town of Begho around this period. Ultimately, ancient Begho existed between 11th and the 18th century AD.

4.2.4.4 Finds

Over the past 9 years of archaeological research (1970-1979) at ancient Begho, several finds were recovered at different quarters of the site. Of these finds, features such as house foundations were exposed. Movable finds that were recovered included ceramics, ivory, metal objects, beads, fauna and flora remains. These ceramics included locally made pottery and those of middle Niger, Northern Ghana and Chinese origins. Locally made spindle whorls, smoking pipes (dating after 1650) and gold weights were also recovered. Ivory-made artifacts such as bracelets, combs and

trumpet were present in the archaeological record of ancient Begho as well as metals such as iron tools, arrow heads and brass jewelry. Fauna and flora remains recovered which suggest dietary pattern include snail shells, bones of cattle, goat, poultry, and grasscutter as wells as the cultivation of sorghum and/or millet and oil palm. Horse bones and teeth as well as a pot with chicken bones were recovered which indicate chieftaincy and ritual associations.

Some Artifacts from the Begho Site

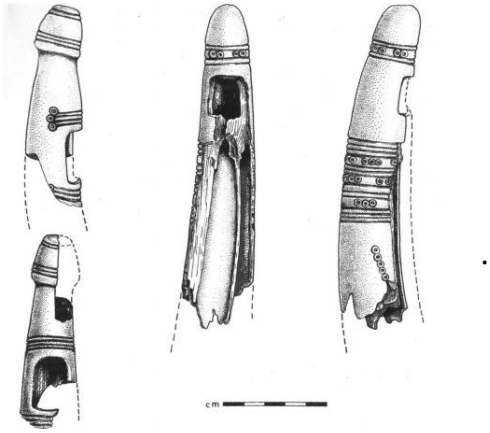


Figure 4.2-26: Mouth ends of two ivory side-blown trumpets found from Brong Quarter. Source: Posnansky 2015

Figure 4.2-27: Ivory objects, comb, beads and bracelet. Source: Posnansky (2010).

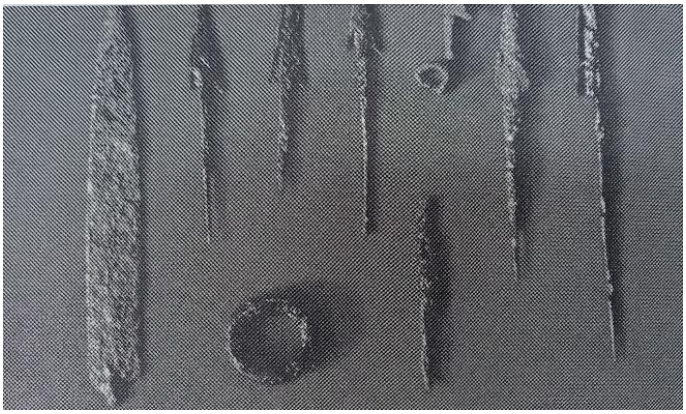


Figure 4.2-28: Iron objects, Knives, arrowheads and ring found on Brong site. Source: Posnansky 2010

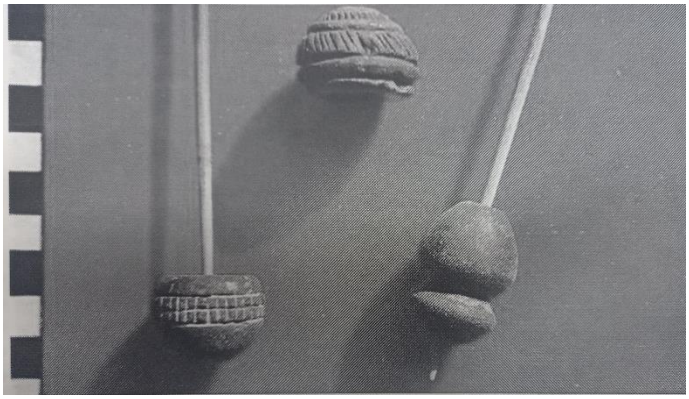


Figure 4.2-29: Clay spindle whorls excavated from Brong quarter. Source: Posnansky 2010

Figure 4.2-30: 19th century imported pipe. Source: Posnansky 2010

Figure 4.2-31: 17th Century tobacco pipes from Brong site. Source: Posnansky 2010

4.2.4.5 Current State of the Site

The ancient town of Begho is divided into quarters. Primarily, the Dwinfuor quarter is currently being encroached by the Hani people. There are several scattered potsherds and lateritic rocks or iron ore. From the start of the site (7°50'57.23"N, 2°28'18.14"W, entering into Hani on the left), there is a clinic built on that quarter. As you walk ahead, there are also significant amount of homes built on this quarter as well as a school. Some of the recent buildings put up have sherds buried in their walls. The town keeps expanding from the center, thereby causing this level of intrusion.

Nyarko quarter (2°28'27.8"W, 7°51'6.599"N), which is located meters from the Dwinfuor have begun seeing changes as result of new structures built in the area. Farming activities have also affected some parts of the quarter. This quarter is characterized by potsherds and other ancient human settlement indicators such as a baobab tree.

The Brong quarter site has seen an enormous amount of change through farming activities. There are vast Cashew farms in the area. Farmers have made use of the soil by digging the ground to create yam and cassava mounds.

The Kramo quarter is fairly intact with minimal cashew farming activity and a road constructed through the site. It is characterized by small and large fairly conserved mounds where some of these mounds are visible from a distance.

At the Dapaa site which is quite distant from the Hani town, the quarter is close to the neighbouring Debibi town who also have their roots in ancient Begho. The town elders have prohibited any farming activity on the site. This has therefore left the site undamaged and conserved.

Figure 4.2-32: Farming activity on the Brong quarter site. Source: Author

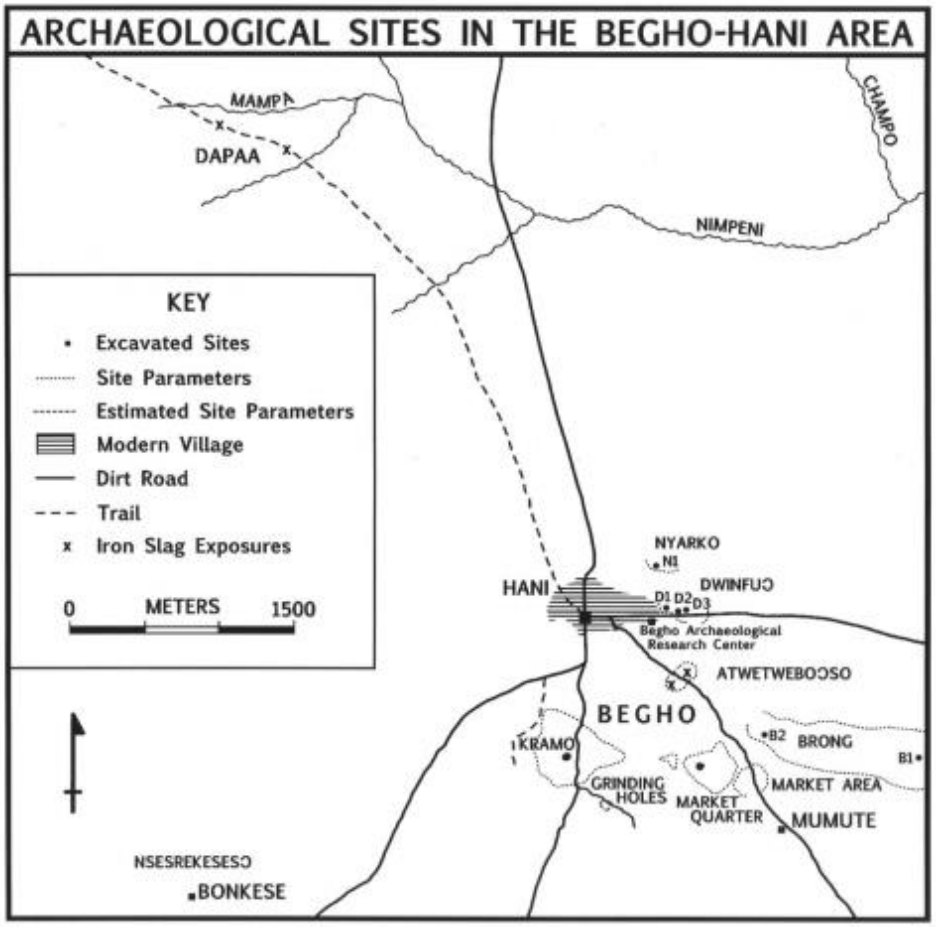
Figure 4.2-33: Yam mounds on Brong quarter. Source: Author.

Figure 4.2-34: Remains of an iron smelting furnace close to a modern hearth on Dwinfuor site. (Photo: Author)

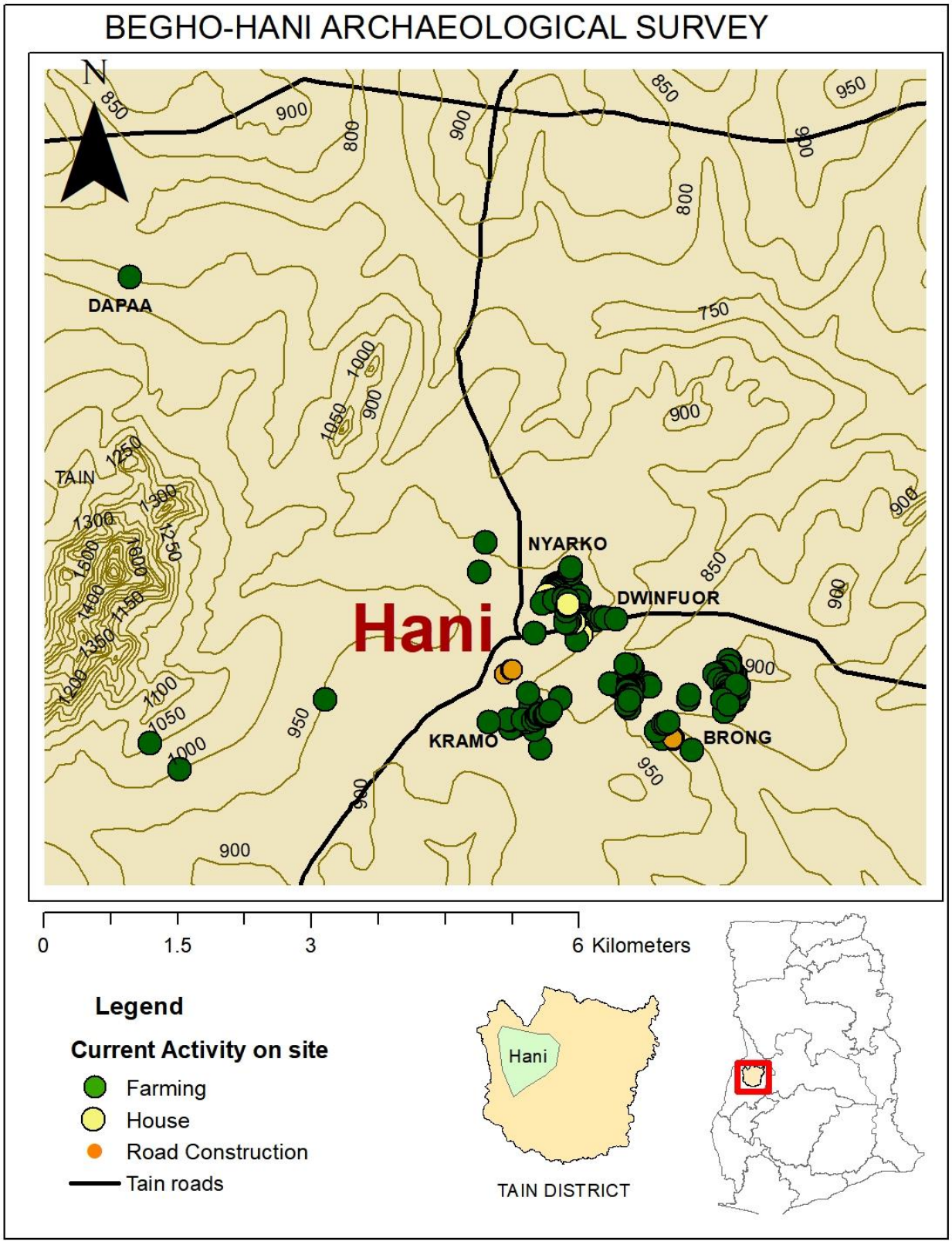
Pot sherd distribution on both Brong (left) and Dwinfuor (right) sites

Figure 4.2-35: Clinic built on the Dwinfuor site. Source: Author

4.2.4.6 Site Maps



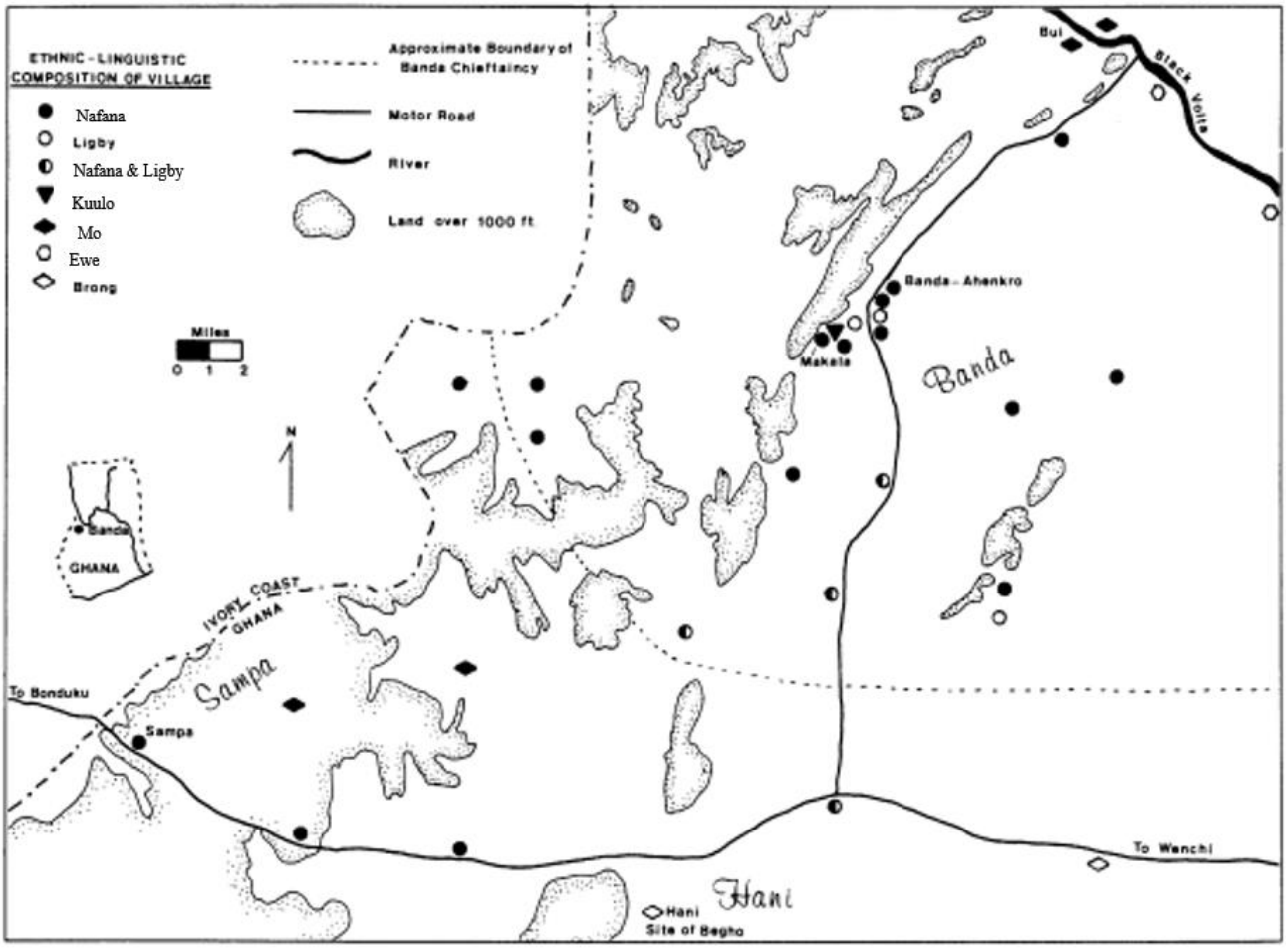
Map 4.2-7: Plan of excavations at Begho showing quarters and modern village of Hani. Source: Posnansky (2015)



Map 4.2-8: A map showing current activity on various Begho-Hani quarters.

4.2.5 Banda

Banda is an old and contemporary area located in the Bono region of Ghana. It has existed in the period of the Saharan trade to the present and known to manufacture and supply pottery to other towns far and near as well smelt iron. Findings from the area prove that there is continuity between the past and the contemporary people of Banda. Banda lies on a latitude of 8° 8'55.32"N and a longitude of 2°21'44.96"W. The Banda area used to be part of the Tain district but now on its own as the Banda district. Twenty-four villages make up the Banda paramount chieftaincy and five ethnic-linguistic groups exist in this chieftaincy (Stahl & Logan 2014, p. 46; Stahl 1991, p. 252). These groups are the Nafana, Ligby, the Mo, Ewe and the Kuulom speakers. Villages/towns in the area include Banda-Ahenkro, Dumpofie, Sase, Makala, Kabruno, Kanka, Wewa, Samwa, Fawoman, Sabiye, Ngre, Bofie, Dorbour, Dumboli, Bui among others. Banda-Ahenkro is the largest settlement in the Banda area with a population of about 2,5000 people. The present diversity of cultural groups indicate that Banda has been a settlement for immigrants from surrounding areas for a long time. Ethnographic data collected from researches (see Stahl 2001; 1994) show that these groups have been living in Banda a long time and continuity can be established between the contemporary and the earlier dwellers. For example, the Nafana who came from Ivory Coast have been living in Banda for the past three centuries (Stahl 1991, pp. 259, 267).

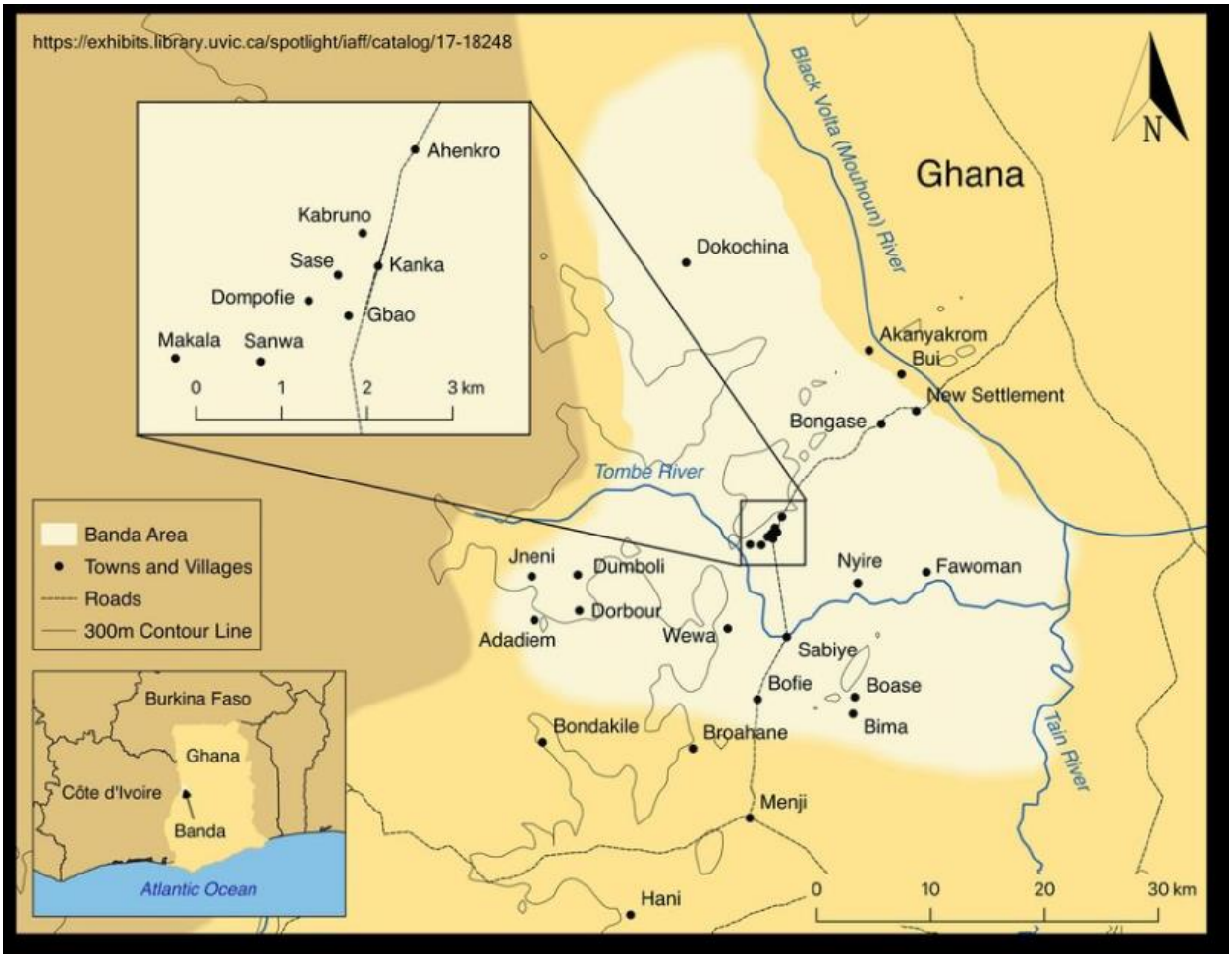


Map 4.2-9: Distribution of Linguistic groups in the Banda area. Source: Stahl 1991

Banda is characterized by archaeological sites scattered in the area. Nearly every village in the area is linked with a nearby archaeological site known to the locals as "Kataa" (Stahl 2001, p. 47). These ancient places or Kataa were abandoned in the 1920s when people were encouraged to create new villages in accordance to the British planning principles.

The Black Volta river is close to the area lying to the northern extent of Banda. The area of Banda is characterized by hills made of metamorphic rocks lying to its west whereas to the east, a low undulating landscape. "The hills trend north-east-southwest and present a barrier to east-west movement for a distance of some 50 kilometers south of the Black Volta" (Stahl 2001, p. 45). The

valleys between the hills are suggested to have been occupied by ancient Banda people to seek refuge during wars. From surveys, refuge-seeking behaviour was prevalent in valleys than on the hill tops (Smith, 2008). The closest waterbodies running through the area are the Tombe and Chen rivers. The Tombe river is found close to some villages such as Ngre, Sabiye, and Makala whilst Bofie is closest to the Chen river. Banda is located about 20km north of the ancient site of Begho, the largest town of the gold coast interior and a medieval entrepot (as described by Stahl 2001 p. 49).



Map 4.2-10: A map of Banda area showing various towns.

Source: (https://exhibits.library.uvic.ca/spotlight/iaff/catalog/17-18248)

Banda in the Saharan trade period (13th- 16th century) was very involved in craft production and produced a large scale of variety of goods that exceeded the needs of the villagers. There was production of clay ceramics and evidence of metallurgical activities on some areas in Banda. With regard to agriculture, the Saharan period farmers of Banda grew crops like pearl millet, sorghum, cowpea, okra and shea butter nut (Stahl & Logan, 2014). During the Atlantic period, villagers seemed to be more invested in craft production than later periods (18th-19th centuries). The amount of iron slags found from some sites suggest that iron was being produced at a scale that exceeded local needs. Banda is also known to have been under the control of the Asante by the late 18th century and throughout 19th century. The hegemony and influence of the Asante is currently reflected in Banda's chieftaincy structure. This period also saw the consumption of American crops as they were introduced to Africa in the early Atlantic phase. There is evidence that the area of Banda was no exception, as archaeological traces of maize and tobacco were excavated. Up until now, tobacco has been one of the primary crops cultivated in the area.

4.2.5.1 Previous Research

Ann Brower Stahl is the main proponent of Banda archaeological studies. Through her, the Banda Research project was made possible. As a graduate student pursuing archaeological research in 1982, she was in search of a site for her dissertation which themed around the Kintampo culture (the period of transition of hunting-gathering to sedentary lifestyle, see Stahl 1985; Anquandah 1982). During her stay, she was intrigued by the area's ethnic complexity and her next trip was motivated by an attempt to understand the relationship between ethnicity and material culture (Stahl 2001, p. 77). In 1986, she returned to Banda and as an academic and collected oral history of the recent Banda people. This was the beginning of the Banda Research Project aimed at studying the dynamism of village life in Banda through oral historical, documentary and

archaeological evidence. During the summers of 1989, 1990 and 1994, excavations were undertaken in Makala Kataa with excavations being an expansion of the earlier. In 1995, Ann Stahl returned to excavate an earlier site of Kuulo Kataa with the goal of extending the chronology of Banda further back in time (Stahl 2001, p. 78).

An ethnoarchaeological research followed by excavation of middens in the contemporary Banda-Ahenkro village was conducted by Andrew Black in 1992. The ethnoarchaeological research sought to investigate changes that occurred in faunal consumption between the 19th-20th centuries. He amplified his research with the excavation undertaken at contemporary Banda-Ahenkro and compared archaeozoological samples from this excavation to those from Makala Kataa (Stahl & Logan, 2014).

In 1994, a study was conducted on contemporary potting in the villages located to the west of Banda hills by Maria Cruz. It focused on an "ethnographic study of contemporary potting villages as a basis for an ethnoarchaeological study of contemporary ceramic production" (Cruz, 2003). To assess change and continuity in production and consumption through time, the ethnographic data gathered was used as a model to compare the archaeological material recovered from the site of Makala Kataa.

An expanded archaeological survey focusing on the Banda hills in 1996/97 was conducted by John Leith Smith who was a member of the Banda Research Project. Subsequent surveys followed in 1999 and 2001 where a regional survey and testing, to document occupation in areas west of the Banda hills and the south of the Tombe river (Smith, 2008). There were subsequent investigations in 2008 and 2009 which expanded the chronological depth at the sites of Ngre Kataa and Banda 13.

An ethnoarchaeological research was undertaken in 2009 by Amanda Logan (see Logan, 2012) which focused on food change. The research aimed to reconstruct food practices using archaeological, ethnographic and historical sources. Interviews were conducted across six villages to elicit oral histories and memories of food insecurity, wild plant use and the adoption of new foods and technologies (Logan, 2012).

4.2.5.2 Current Research

With the enormous contribution of knowledge about the archaeology of Banda to Ghanaian archaeology, there was also the need to contribute to community development. As way of engaging the community and contributing to its development, Stahl has spearheaded a project named "*Improving African Futures Using Lessons from the Past"* since 2016. This is a research and training partnership funded by the Social Sciences and Humanities Research Council (SSHRC) of Canada. The aim of this project is to make cultural heritage resources and insights accessible to descendant communities; the data on which they are based must be sustainably curated and archived; and, where appropriate, the lessons drawn and sources of insight shared with broader audiences as a means to improve futures. A web portal hosted by the University of Victoria hosts some of these resources (photographs, oral histories, etc.) so they can be digitally accessed here: (https://exhibits.library.uvic.ca/spotlight/iaff). The partnership brings together scholars, heritage professionals and communities motivated by recognition that cultural heritage resources sustain relationships to place and foster community well-being through knowledge revitalization. It also aims to produce educational benefit by developing English and first-language heritage curriculum for Ghanaian schools, fostering both literacy and digital literacy. Banda is the first community focused on in this project however the project seeks to include other communities.

4.2.5.3 Dates

Dates from the Banda archaeological sites vary due the extensive amount of research and the number of site types found. These dates derived from the Banda are absolute dates. The earliest date from the area goes as far back as 1000-1280 AD. The most recent date is between the late 19th and the early 20th centuries. Logan (2012, p.69) created temporal units to fix sites that were worked on. Sites were attributed their date ranges and phases. Between AD 1000-1280 (Volta phase), sites that dated within this period were Banda 13 and Banda 27. Within the Ngre period (AD 1210-1450), sites such as Ngre Kataa, Kuulo Kataa, Banda 41, A-94, B-123, B-143 existed. The period of AD 1350-1650 (Kuulo phase) had sites such as Kuulo Kataa, ngre Kataa, A-212, A-216, and A-235. Sites that dated between the period of AD 1720-1820s (early Makala) included Makala Kataa, A-212, A-B112, Ngre Kataa, Banda 12, A-233, A236, B-145. Finally, dated between the period 1820s-1920s are the sites of Makala Kataa, B-2, Bui Kataa, A-9, Ngre Kataa, Banda 12, Banda 44 and B-145 named the Late Makala phase.

From these phases, it is evident that some ancient places existed as far as between the 11th-13th century (the period of Saharan trade) while others were also occupied during the Atlantic trade period through to the early 20th century.

4.2.5.4 Finds

Archaeological finds from Banda are voluminous considering the extent of research and excavation activity undertaken in this area. Some of these finds will be subsequently named with its associated ancient place.

At the archaeological site of Ngre Kataa, artifacts that were recovered included copper alloy (mostly brass), cowrie shells and glass beads, pottery sherds with slags in their fabrics, iron bangles and iron blades. This site indicates some level of metallurgical activity. There were some faunal

remains which from analysis indicated that they were bovids (sheep/goat and cattle). (Stahl and Logan 2014, p. 56). Calibrated radiocarbon dates of some artifact samples date ancient place of Ngre to the Saharan and the Atlantic trade period. The variety of archaeological material recovered show that Banda people of the Saharan period were intensely involved in craft production. The recovery of a workshop for metalworking offers a clear understanding into the way the workshop space was organized and its associated ritual practice. It also shows Banda's involvement in ironworking activities.

At the nearby village of Kuulo Kataa at Banda, a spindle whorl, pottery sherds and few brass items were recovered in excavations (Dueppen, 2016, p. 252). Analysis indicate that pottery from Kuulo Kataa is stylistically similar to Begho ware (Asamoah-Mensah, 2013, p. 31). This similarity in style confirms the interaction between ancient Begho and old Banda. The site of Makala Kataa yielded pottery sherds and the use of Instrumental Neutron Activation Analysis (INAA) has indicated that pottery dating between the late 19th and early 20th century was made at sites both east and west of the Banda hills. There is an indication of exchange across villages east and west of Banda hills. Makala Kataa has dates going back to the 19th – 20th century but also has earlier dates of the 18th to 19th century. There was also the recovery of imported beads found in ritual contexts dating to the 20th century indicating the incorporation of imported goods into indigenous lifeways. A number of spindle whorls recovered suggest some manner of thread or cloth making. Turning to dietary pattern, archaeological traces indicate that pearl millet, sorghum, cowpea and probably yams were relied on in the early 19th century. However, by the late 19th century, there had been a shift to the consumption of American crops. According to Stahl (2001), the American crops grew faster and in the midst of food shortages and political instability, it was their best solution to shortages.

SOME ARTIFACTS EXCAVATED FROM BANDA

Figure 4.2-36: Red-slipped vessel with a trapezoidal design on its base. Source: Stahl 2013

Figure 4.2-37 Perforated vessel with lid. Source: Stahl 2013

Figure 4.2-38 Iron bangles. Source: Stahl 2013

Figure 4.2-39: Serpentine point and serpentine ring. Source: Stahl 2013

Figure 4.2-40 Copper Alloy figures. Source: Stahl 2013

Drawings of some ceramic pottery bowl forms and a smoking pipe. Source (Stahl, 2001)

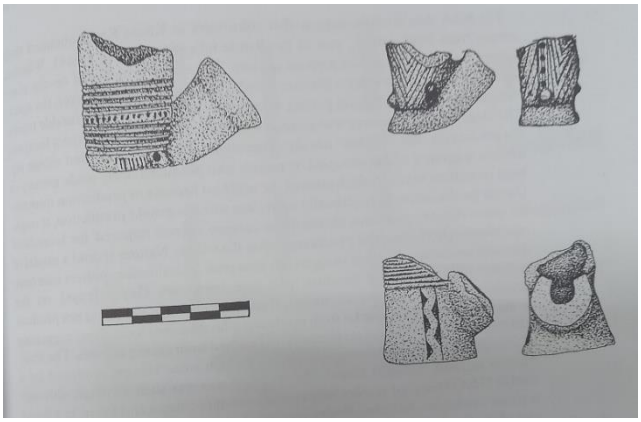


Figure 4.2-41: Bowl of smoking pipe

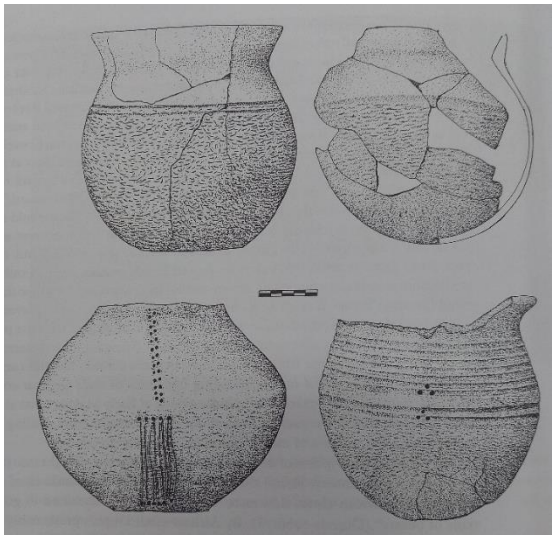


Figure 4.2-42: Jar

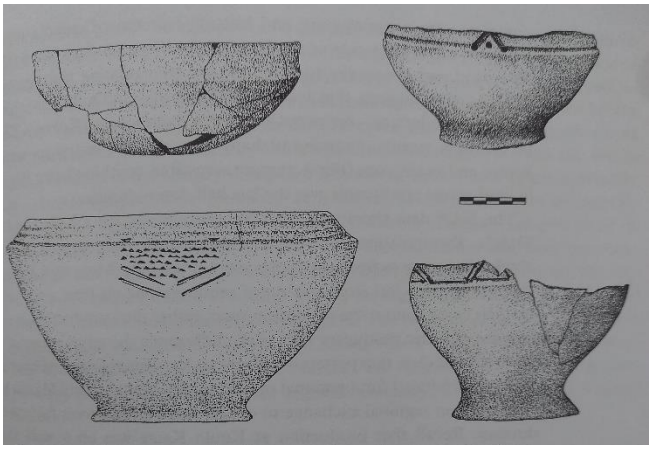
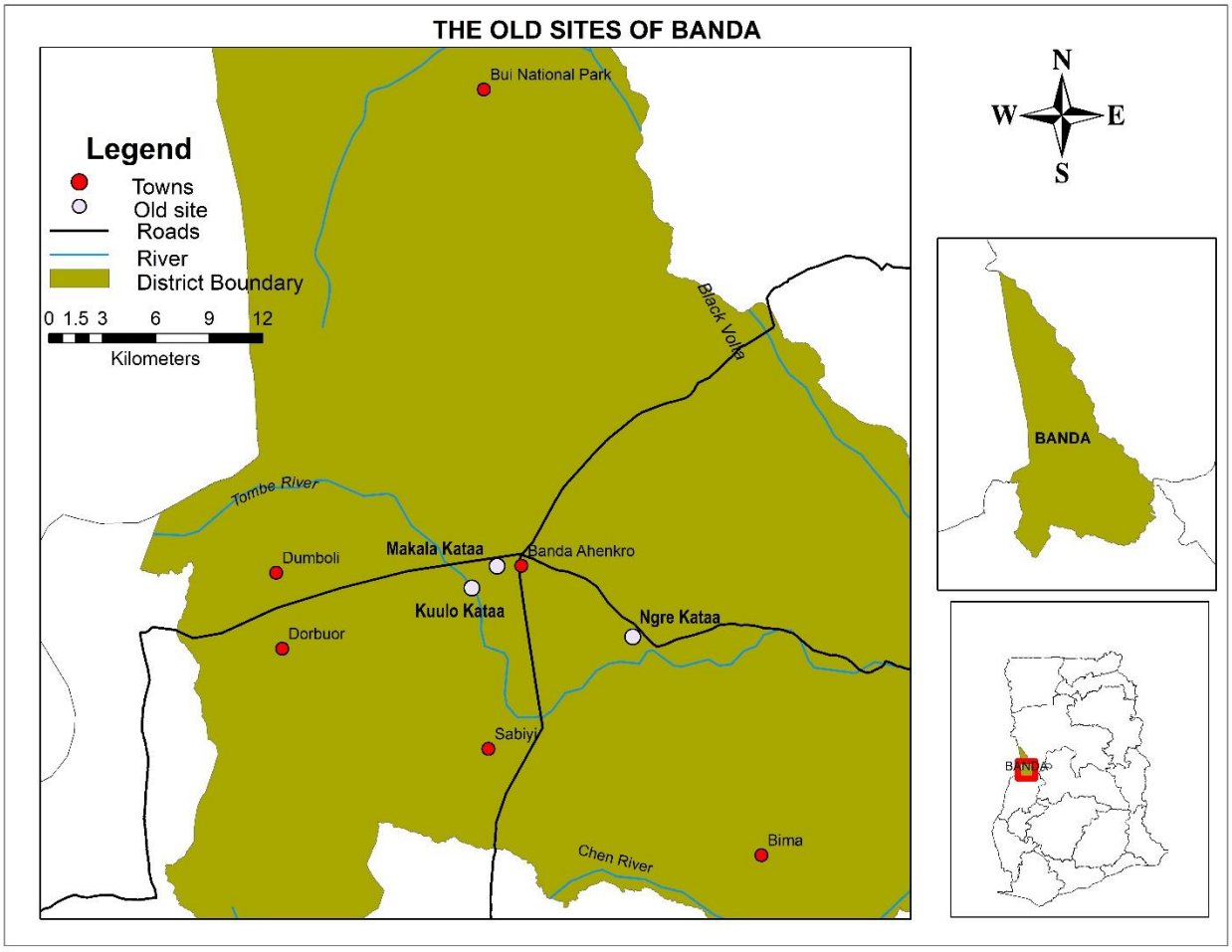


Figure 4.2-43: Bowl

4.2.5.5 Current State of the Site

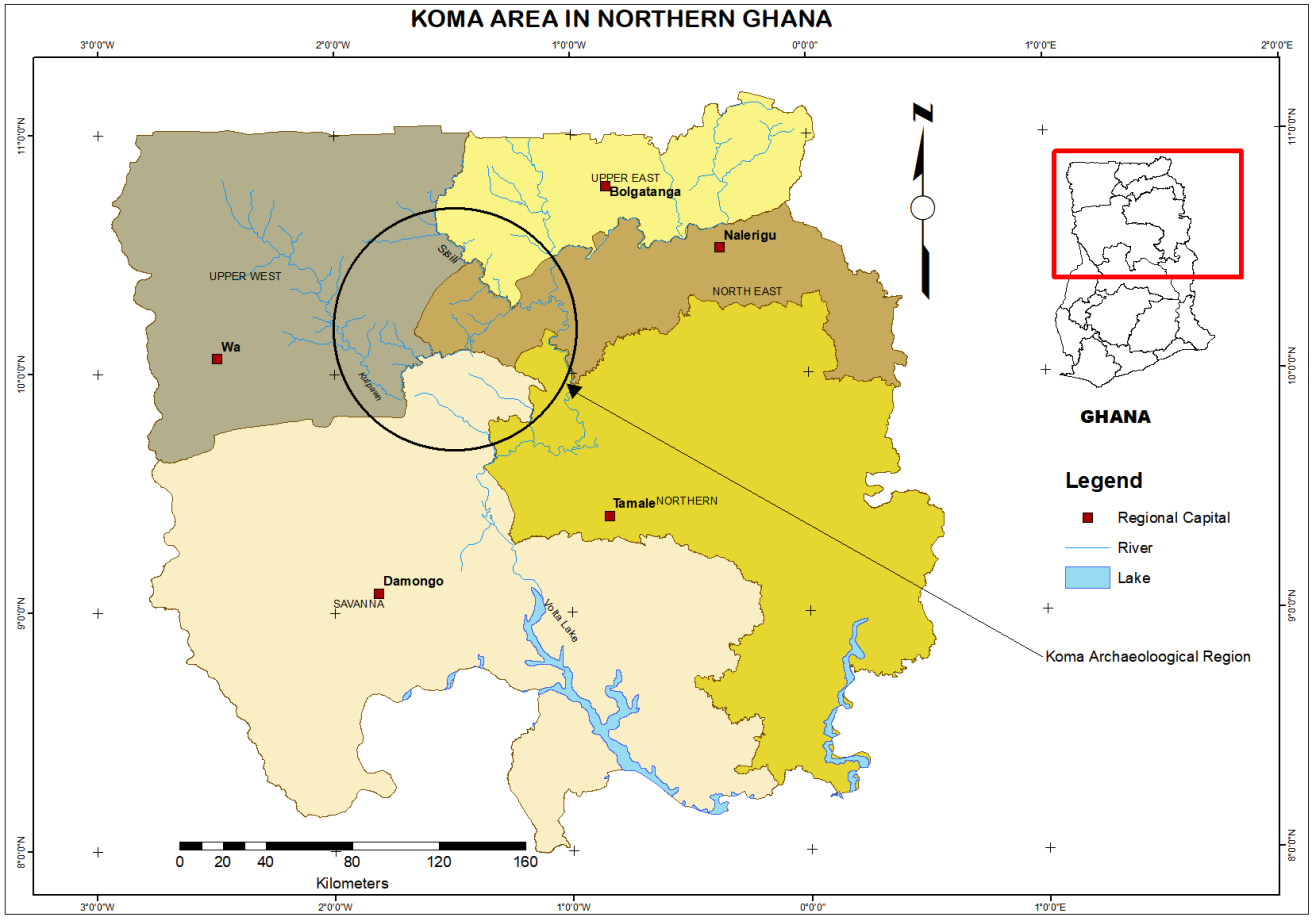
The ancient sites, "old place" or Kataa as is referred to in Nafaanra have mostly been abandoned. Banda had been subjected to a series of wars with other places like Nkoranza and Gaman by the mid-19th century and this contributed to the abandonment of some of the old sites (Stahl, 1994, p. 197). Some of the sites were also abandoned in the early 20th century due to British influence. The old sites are now predominantly farmlands of the contemporary people of Banda. Some parts of the area are burned annually to prevent uncontrolled bushfires and there is extensive cutting of trees in the area. The Bui area however has seen some changes due to the Bui Hydroelectric dam constructed in the area. After the construction of the dam, some indigenous people had to relocate as the dam flooded parts of the area.



Map 4.2-11: A map of Banda showing the ancient sites

4.2.6 Koma Land

Koma land is located in the Northern part of Ghana and stretches as far as portions of the five northern regions in Ghana; the Upper West, Upper East, Savannah, Northern and North East. Before the new regional demarcations, it covered portions of all the three northern region (Upper West, Upper East and Northern). It covers an area of about 100 × 100 km within the basins of the Sisili and Kulpawn Rivers in the northern regions of Ghana. Koma land is characterized by several sites and within them mounds which indicate past human (especially ritual and religious) activities in the area (Kankpeyeng, Nkumbaan, & Insoll, 2011). This extent therefore makes this location an archaeological region.



Map 4.2-12: A map of Northern Ghana showing the Koma archaeological region

The knowledge of the place was first in 1984 as result of a report made by a student named Ben Saibu about clay artworks in his village. Another report was made by Franz Kroger researching the area. The German anthropologist made a report about the existence of these clay artworks known as terracotta figurines. Following the report of Kroger, James Anquandah researched and excavated the area in 1985.

One of the crucial archaeological material of Koma land is its clay or terracotta figurines. The initial archaeological research and results of figurines were interpreted as part of the personal belongings of deceased and buried people (Anquandah & Van Ham, 1985) but further studies have proven it is tied to ancient shrines as well (Kankpeyeng & Nkumbaan, 2008). Studies in the area sought to assess the material culture contained in stone circle mounds, ceramic art forms and its association with past shrines in Koma land sites of the northern region of Ghana. The name Koma is gotten from the present-day people in the region but they are not connected to the past makers of the figurines. The ethnographic and ethnoarchaeological investigations undertaken in the area puts forth the suggestion that the present people of the area may not be descendants of the ancient Koma people. Therefore, archaeologists have used analogies where applicable and which is reasonable to provide some sound answers or interpretations to the Koma land puzzle. Most these analogies are African-based and more sub-Saharan based. Example is the Nok culture of Ile Ife in Nigeria and the megalithic culture of Senegal and Gambia, all in West Africa as well other sites in Central Africa. The context in which these clay figurines are found indicated some form of ritual and religious underpinning (that is, a shrine context). This context suggests that there might have been shrines that served multiple functions ranging from healing, protection, fertility to possible witchcraft exorcising. In some instances, there are an abundance of querns and grinding stones found in association with figurines and this may reflect processing of medicinal plants (roots, herbs

and tree barks). We can glean from ethnographic studies that the medicinal plants may have been ground into powder form and applied on the affected part of the body or mixed with water or local brewed drinks so the sick will consume. Also, the artistic and external nature of these figurines indicate some form of connection to healing, fertility and protection. “The presence of phallic objects, and motifs on the heads and bodies of the human figures that portray female and male genitalia, are also connected with fertility rituals and related healing processes”- (Kankpeyeng, Nkumbaan, & Insoll, 2011, p. 210). In addition, the human figurines depicting bird features (i.e., wings) may relate to exorcising witchcraft from witches or people who are haunted by them. Some anthropomorphic figurines may depict diseases of the area such as elephantiasis because they (figurines) have their limbs disproportionate. Some of the figurines may also have been for disease transference purposes. Diseases are believed to be linked to spiritual issues (caused by malevolent spirits). The healer will need to lure said spirit by sorcery into an inanimate object if s/he perceives the spirit to be very strong.

Internally, terracotta figurines hold as much meaning as their external features. Visual examination has identified stains that might provide clues to the organic substances, including medicinal ones. Computed Tomography Scanning has revealed that there are holes or cavities inside these figurines (Insoll, Kankpeyeng, & Fraser, 2016). The recurrence of cavities or holes on some of the figurines yield the remains of the substances applied inside the figurine. By the use of ancient DNA analysis, the substances are known to include banana, cereal and a particular species of pine (Robinson, Insoll, Kankpeyeng, Brown, & Brown, 2017). These substances found in there suggest an act of libation. The libation is offered to appeal, appease or pacify gods or ancestral spirits. The cavities made on them are indications of sight, smell or taste since the figurines are regarded as conduits for ancestral spirits. It is important to understand that the figurines are not in themselves the

ancestors or gods but rather conduits for the ancestral spirits. This could be why there are fragments of figurines in the archaeological record. For the figurines could be fragmented by its users after its purpose is achieved.

4.2.6.1 Previous Research

The first archaeological survey and excavation in Yikpabongo (Dzikpiebongo) was conducted by James Anquandah in 1985 (see Anquandah & Van Ham, 1985). Anquandah sought to establish the extent of stone circle mound sites in the area and also to establish chronologies for when people occupied the area.

Subsequent survey and excavations in Yikpabongo followed about two decades later. This was led by Benjamin Kankpeyeng in 2006 in partnership with the National Commission On Culture, aimed at understanding of the distribution of material culture within the stone circle mounds and to establish a chronology for the site (Kankpeyeng and Nkumbaan 2008, p. 96). Many research works were subsequently undertaken in the area by graduate students to contribute to the Koma land puzzle. Hannah Asamoah-Mensah and Siaw Appiah-Adu (in 2012) conducted archaeological research in Yikpabongo.

At Tando Fagusa, another research and excavation in 2008 to 2010 was conducted by Samuel Nkumbaan. The research sought to examine the terracotta figurine cultural traditions that characterize the Koma area archaeological region (Nkumbaan, 2015). There were also test excavations in the Tando town itself. Jobila Zakari Mohammed (2010) carried out archaeological research in 2009 at Tando-Yikora.

After the preliminary research in 2007, yearly field schools headed by Benjamin Kankpeyeng for final year undergraduate students had been going on in Yikpabongo until recently (2018).

In October 2013, a museum exhibition was held at Manchester Museum in England to exhibit sampled Koma land clay figurines. This project on exhibiting results of archaeological fieldwork in Koma land began a year earlier with the University of Manchester, the University of Ghana and the GMMB.

4.2.6.2 Finds

The Koma clay figurines also known as Koma terracotta figurines is a key aspect of the archaeology of Koma land. Koma land has provided different forms of terracotta figurines from the several house and stone circle mounds which are found in association with other materials such as skulls, grindstones, querns and pottery. These figurines had anthropomorphic (human looking) and zoomorphic (animal looking) forms. Apart from clay figurines, Anquandah obtained other objects such as beads and cowries, local pottery fragments, grinding stones, metal bracelets and tools from his 1985 excavation.

From the 2007/08 excavation by Benjamin Kankpeyeng, terracotta figurines similar to those recovered in 1985 were excavated, as well as local ceramic sherds, a human skull, metals, and glass fragments (mid-20th century downward).

In Tando Fagusa [translated as Tando forest], Samuel Nkumbaan in 2008 recovered similar archaeological materials but he indicated that the contextual arrangements were distinctly different from that of 1985 (Nkumbaan 2015, p. 9). Archaeological finds recovered from this site include local ceramic materials, terracotta figurines, terracotta cigars, bones and shells, beads, lithic materials and human skeletal remains.

Figurines from Koma Land

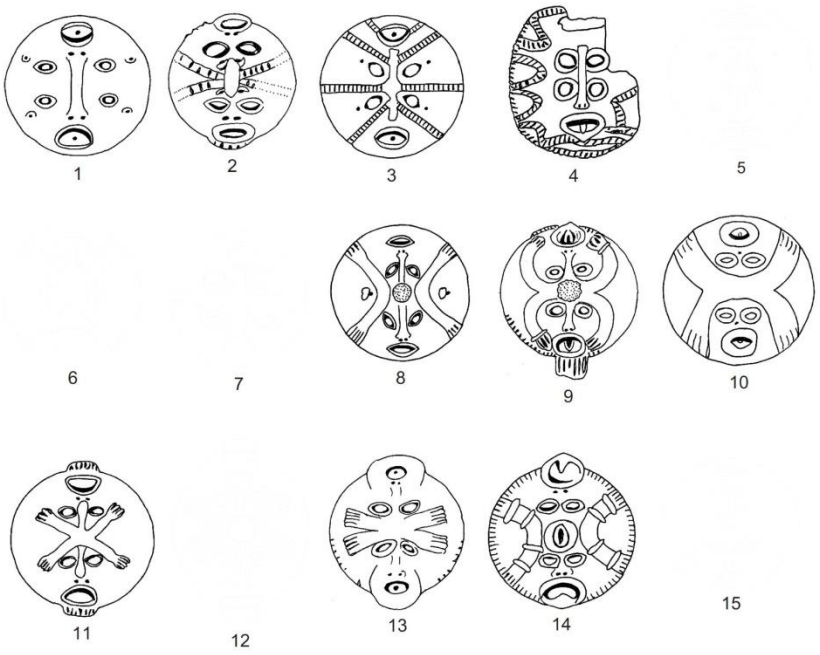
Figure 4.2-44 Head of figurine. Source: (Sitch, 2013)

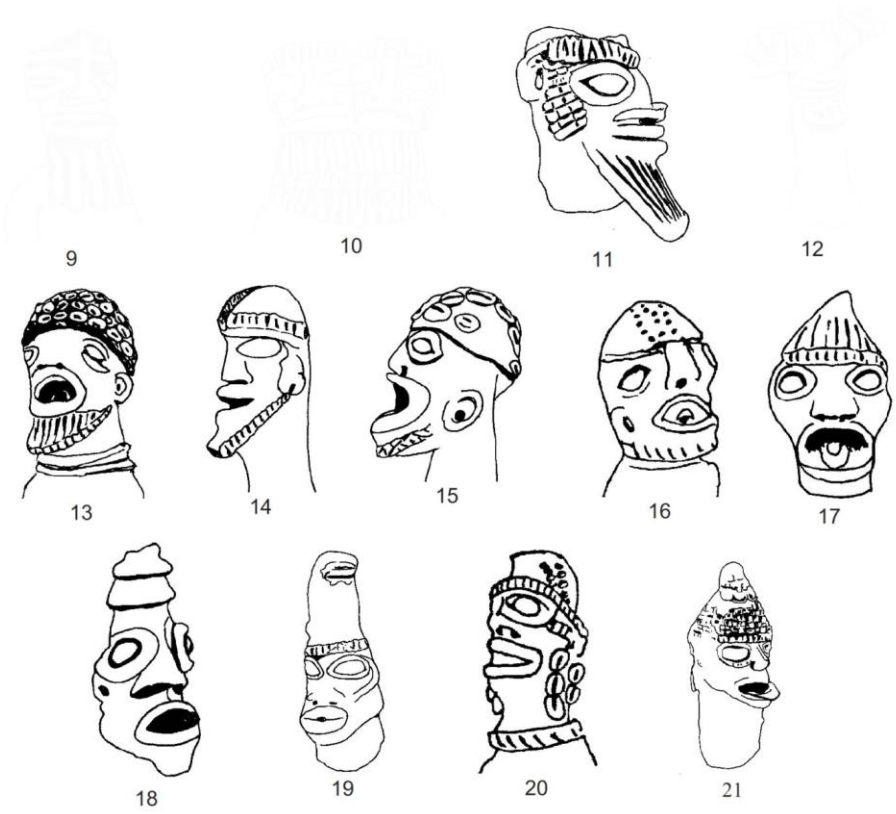
Figure 4.2-45 Head of man wearing a cap. Source: (Sitch, 2013)

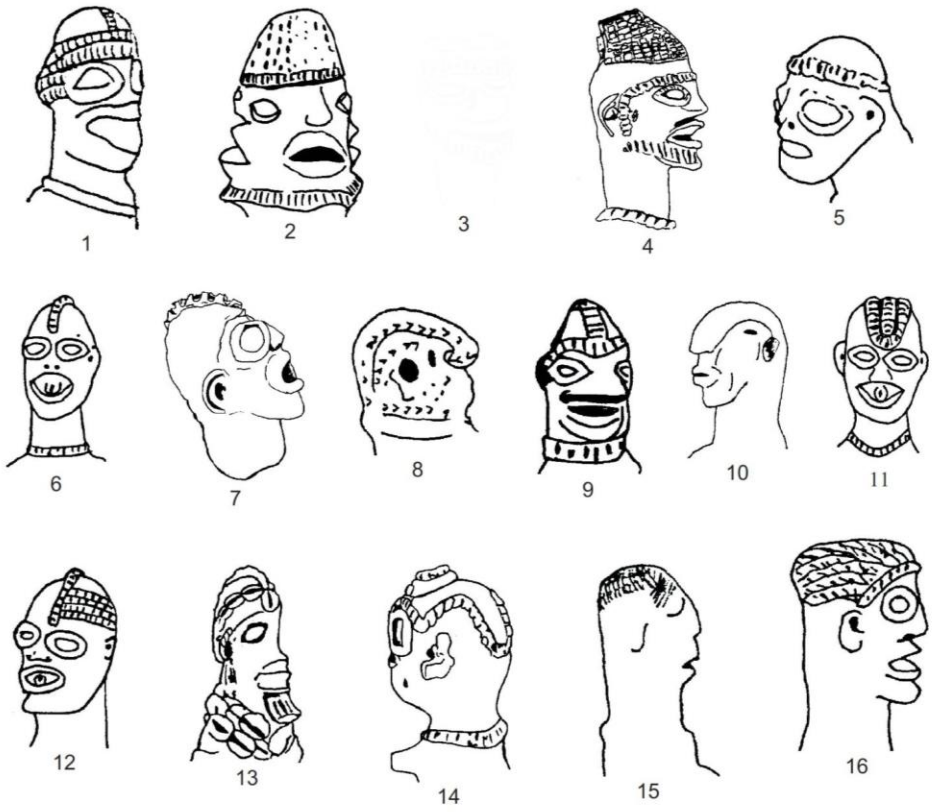
Figure 4.2-47:Two-faced or Janus figurine. Source: (Sitch, 2013)

Figure 4.2-46: Figurine of Horse or Camel rider. Source: (Sitch, 2013)

Sketch drawings of Koma Land terracotta figurines retrieved from Hausinafrica.com







4.2.6.3 Dates

Koma land previously had a thermoluminescence date of 1200 to 1800 (Anquandah, 1998). The procedure was performed on some looted figurines. This date was later revised using radiocarbon dating with the earliest date going back to the 6th century and the recent in the 12th century AD. (Kankpeyeng and Nkumbaan 2009, p. 195, 200). Bone and charcoal samples were used for the radiocarbon dating. These new dates correspond with Iron Age in West Africa and the Saharan trade period.

4.2.6.4 Current State of the Site

The state of the entire Koma archaeological region is yet to be ascertained due to the large extent of the region. It covers portions of the five Northern Ghana regions. The sites are spread across the area therefore the state of the sites that were surveyed or/and worked on is known. The remaining undiscovered sites on the other hand are unknown. Several mounds from sites such as Yikpabongo, Barisi, Tuvuu, Tantali, Tando, Zoboku, Janga exhibited mounds that were intact and others that were not (Nkumbaan 2015, p. 8 & 56). On many of these sites, farming activities were taking place while others were untouched by any activity. Tando Fagusa, which is a forest and serves as farmlands for the Tando people have their mounds intact. Although farming activities go on in Fagusa, the local people ensure it does not affect these mounds.

The site of Yikpabongo on the other hand has been affected by construction activities where the local people have dug and destroyed many mounds to build houses. Also, after the initial work of archaeologists in the area, children began digging up these mounds for artifacts with the mindset of doing the researchers a favour. This was however a problem because archaeologists did not know and were not able to record the context within which these artifacts were found.

4.3 Cultural Heritage Sites in Ghana

A cultural heritage site can be said to be a place that people attach cultural value or meaning to. As already stated, these sites are characterized by outstanding features such as architecture and landscape. An estimation of the number of cultural heritage sites was difficult to make due to the idea that several places can be valued as cultural heritage for different people (see Kiriama & Onkoba, 2020). Nonetheless, gleaning from several written publications about cultural heritage sites and internet sources, an estimate of about 171 sites have been counted. Similar to archaeological sites, 15% (30) of the estimated 171 cultural heritage sites have been tabulated with Excel (see Table 4.3-1) and plotted with ArcGIS (Map 4.3-1). The Excel table contained field elements including site number, site name, coordinate, location. Four of these sites have been selected and adequately profiled. Similarly, a spreadsheet of the four profiled cultural heritage sites has been made (seen in the appendix).

SITE NO.	SITE NAME	COORDINATE (LATITUDE)	COORDINATE (LONGITUDE)	LOCATION (REGION)
1	Akonedi Shrine	5.9322	-0.073	Eastern
2	Akwamufie Palace Museum	6.2786	0.077	Eastern
3	Asante Traditional Buildings	6.7083 6.7238	-1.606 -1.45	Ashanti
4	Banda Nkwanta historic Mosque	8.3508	-2.136	Bono
5	Boabeng Fiama	7.5584	-1.712	Bono East
6	Bole Historic Mosque	9.0303	-2.468	Northern
7	Bulanga Ancestral Caves	10.056	-2.51	Upper West
8	Cape Coast Castle	5.105	-1.247	Central
9	Christiansborg Castle	5.5472	-0.183	Greater Accra
10	Elmina Castle	5.0833	-1.35	Central
11	Fort Amsterdam	5.1922	-1.093	Central

12	Fort Fredericksburg	4.8667	-1.783	Central
13	Fort Orange	4.9358	-1.707	Western
14	Fort St. Sebastian	5.0108	-1.629	Western
15	Gwollu Defense Wall	10.982	-2.219	Upper West
16	James Fort	5.5337	-0.211	Greater Accra
17	Kassana Slave Market	10.954	-1.857	Upper West
18	Kweku Fri shrine	7.7359	-2.102	Bono
19	Larabanga Mosque	9.2203	-1.86	Savannah
20	Larabanga Mystery Stone	9.2207	-1.865	Savannah
21	Maluwe Historic Mosque	8.6695	-2.292	Savannah
22	Manhyia Palace	6.7036	-1.615	Ashanti
23	Nakore Historic Mosque	10.022	-2.547	Upper West
24	Nzelezu Stilt Settlement	5.0205	-2.598	Western
25	Pikworo Slave Camp	10.964	-1.117	Upper East
26	Salaga Slave Market	8.5495	-0.52	Northern
27	Shai Hills Resource Reserve	5.8982	0.0609	Greater Accra
28	St. Francis de Sales Cathedral	5.107	-1.245	Western
29	Tengzug Cultural Landscape	10.673	-0.814	Upper East
30	Wuriyanga Mosque	10.892	-0.068	Upper East

Table 4.3-1: A table listing some cultural heritage sites in Ghana with their coordinates

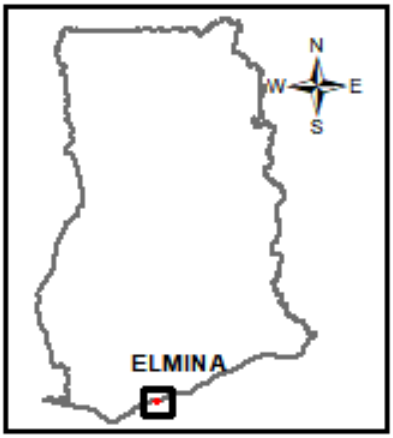
Map 4.3-1: Map showing the spatial distribution of sampled cultural heritage sites. Produced by author.

The cultural heritage sites selected for profiling are shown below. These follow a format and a corresponding schema evident in each profiled site in the entry form (see Appendix C). The profiled sites are also inventorized with the Microsoft Excel sheet in Appendix E.

4.3.1 Old Elmina and The Elmina Castle

4.3.1.1 Old Elmina

Elmina, the town which hosts St Georges castle lies along the coast of West Africa and in Ghana, south of the Benya lagoon to be precise. The name "Elmina" may have resulted from the confusion from Portuguese, Italian and Spanish sources referencing the area where gold could easily be



Map 4.3-2: A map of Ghana showing the location of Elmina. Produced by author.

Figure 4.3-1: An idealized view of St. Georges castle with Old Elmina town in proximity. Source: DeCorse (2001)

traded. The settlement's African name before European contact is uncertain. Elmina as a West African settlement in the coastal region of Ghana embodies years of European contact, colonization as well as trade than any other settlement in Africa. It is one of the best-illustrated and described African settlements of sub-Saharan Africa (DeCorse, 2001, p. 1 & 2). Despite this,

there are still many written records or documentations of old Elmina which are vague and hardly complete. Some existing records usually pertain to trade or European dealings. Others occasionally give mentions to specific individuals. This makes European documentation on old Elmina unreliable to an extent.

Documentary records supported by oral histories/traditions, ethnographic as well as archaeological data has bridged the gap of inconsistencies and has made the study of African societies more holistic. From research, settlements along the coast of Ghana were scattered and of less population as compared to the hinterland especially before the transatlantic trade (Pietruszka, 2011; DeCorse, 2001). As so is the case of old Elmina, another town of such example is early Osu. According to DeCorse (2001), sites with a dispersed settlement nature date as far back as 1000 years or earlier.

This may be attributed to the trans-Saharan trade prospering in the hinterland before the effect of the transatlantic trade. The settlement of old Elmina had grown significantly by the mid-19th century due to the flourishing transatlantic trade. The population grew from a few hundred to about 18,000 to 20,000 inhabitants by that time (DeCorse, 2001). This change is noted through archaeological research on the settlement sizes. From archaeological data, pre-European-contact coastal sites were characterized by stone beads, a low concentration of scattered ceramics, iron artifacts and iron smelting fragments. Arca senilis shells and scatter of ceramics recovered from the Elmina site suggest the occupation of the site before the European arrival (DeCorse, 2001, p. 89).

The precise nature of Elmina before the 15th century might probably never be known due to its subsequent significant influence of Europeans. Nonetheless, it can be inferred as is the character of settlements along the Atlantic coast that people of Elmina may have engaged in small fishing and farming activities before contact with Europeans. The examination of ethnographic data and

oral tradition also puts forth the idea that there is continuity among the past and present people of Elmina. Researchers used this advantage to infer into the past of Elmina to answer some questions relating to aspects like kinship, subsistence and religious beliefs (DeCorse, 2001). In addition, the similarity in ideological, sociocultural and ritual features of Akan groups found from the coast to the interior serve as a means for good inference about the nature of the Elmina people (a Fante-speaking Akan group). From these approaches, it was arrived that old Elmina was a small polity who were subservient to Eguafo and Fetu. Some oral traditions indicate that half of Elmina was under the command of Eguafo while the other was under Fetu (DeCorse 2001, p. 39).

Additionally, the people of old Elmina being an Akan group recognize matrilineal descent. The matrilineage is the locus of one's identity, the determinant of property inheritance, spirituality or sociopolitical status. The Fante who are an Akan group are also made up of clans or "mmusua" bearing some similarity to mmusua of other Akan groups like the Asante.

Turning to religious beliefs and worldview, the people of Elmina wrap their dead with mat or clothe to bury them in their houses. During such burials, the dead is buried with goods that they (the dead) used when they were alive. Archaeological excavations have proven this true and this practice has been dated to the early 17th century (DeCorse, 2001). This indicates the practice may have well been in existence before the 15th century. Moreover, this practice was also previously prevalent among other Akan groups along the coast. Their belief in a supreme being (Onyame), other deities (Abosom) and ancestral spirits (Asaman) also align with the beliefs of other Akan groups. Ritual offerings are given to groves, rocks, waterbodies or other features believed to be the origin of these deities. Inferring from ethnographic data of contemporary Elmina people as well as other Akan groups provides insight to what the people of old Elmina believed in before the introduction of Christianity. The survival and continuation of some of these practices such as the

burial of some chiefs in homes, the periodical celebration of deities indicates the longstanding nature of some these traditions. The annual Bakatue festival (held in June or July) was and is still celebrated in Elmina to pay homage to the god of the Benya lagoon. This is done to show appreciation for fish caught in the previous year and to ask for bountiful fish in the coming year. Although Bakatue is not recorded in documentary sources until the mid-19th century, a similar ritual was recorded in the early 17th century. De Maree in 1602 describes a ritual practiced to guarantee bountiful fish and other practices performed by the lagoon (de Maree 1987 in DeCorse 2001, p. 182).

These non-European aspects of the Elmina people points to a likely ancient tradition. Although there are no pre-15th century documentary records which were particular about the lifeways of the Elmina people, later records seemed to have recorded practices which may had existed before the arrival of the Europeans. Practices may have seen some changes (especially in material culture) but it does not eliminate the likelihood of a longstanding practice.

Despite the speculative small beginning of Elmina, it became an independent state at the turn of the 17th century ongoing due to its alliance to the Portuguese and Dutch. The old settlement was

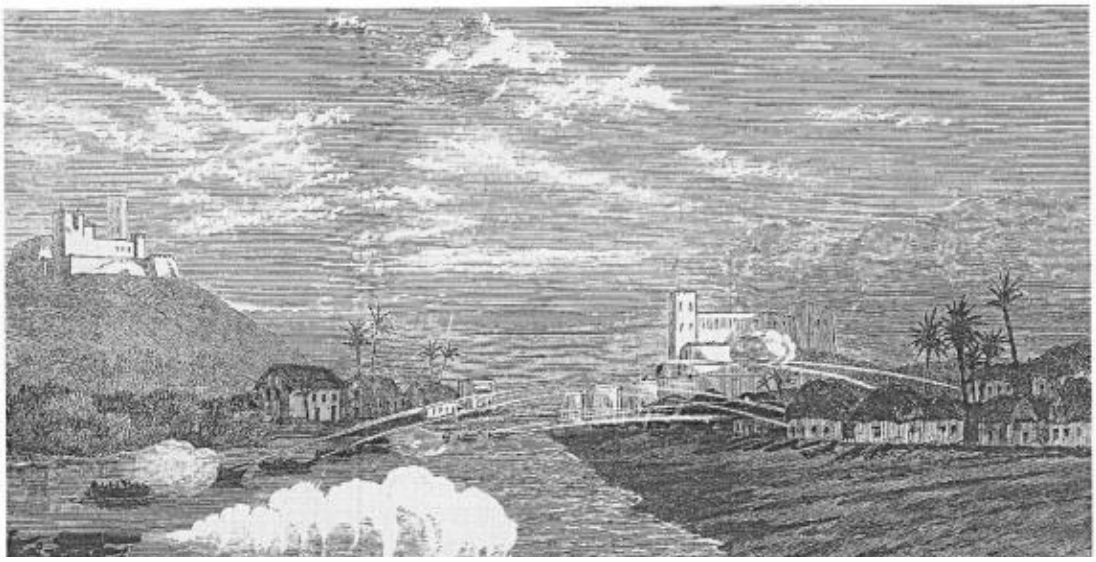


Figure 4.3-2: The 1873 Bombardment of Elmina by launches from British warships. Source: DeCorse (2001)

destroyed by the British in 1873 and was abandoned as a result. This explains the location of the contemporary settlement.

4.3.1.2 The Elmina/ St. Georges Castle

The castle originally named Castelo de Sao Jorge da Mina (Figure 4.3-3) was erected adjacent to the old Elmina settlement within the Komenda Edina Eguafo Abrem (KEEA) Municipality. It was built to serve as a trade post in Sub Saharan Africa and this now white washed fortress played a crucial role in the attempt by the Portuguese to monopolize trade activities in Coastal Ghana until they lost the site to the Dutch in 1637. The castle was built solely for commercial purposes to enhance the trade and dealings of the Europeans with the Africans. According to Anquandah (1999), St George's castle, popularly known as the Elmina Castle is the oldest structure built by the Europeans in Sub Saharan Africa. There are no known records of Elmina Castle's architectural plan until the arrival and capture by the Dutch in 1637.

Figure 4.3-3 A view of Elmina Castle. Source: Pietruszka (2011)

Several factors influenced the decision of the Portuguese to build the castle in Elmina. One such factor was said to be the availability of cheap labor due to the presence of a sizeable settlement now known as the Old Elmina. Also, the castle sits on a rocky peninsula formed by the Benya lagoon and the ocean. The Elmina castle sits on a rock at the coast in front of the Benya lagoon and the fishing port, connected by a busy thoroughfare, running between Elmina townships (see Figure 4.3-4). The lagoon aided in safe anchorage and the cape provided an easily defendable position. The availability of resources such as the abundance of stones in the area was a plus since they could be quarried and used in the castle's construction (DeCorse, 2010, pp. 215-219). Construction of the castle begun in January 1482 when Diego de Azambuja sailed to Elmina after several negotiations with an individual described as the "lord" of Elmina at the time; Nana Kwamena Ansah popularly referred to as Caramansa (Hair, 1994b).

Figure 4.3-4: Aerial view of Elmina showing the Castle and the Old town site. Photo: Ghana Photo Academy

Red bricks and some precut stones imported from Portugal and others quarried from the land of Elmina (van Ditz, 1999). The red bricks were used as finishing of the doors and windows. The main feature of the 1482 building was a two storeyed rectangular block containing a courtyard and flanked by towers projecting from two corners. Despite the fact that the castle has gone through several modifications and additions, it still conforms to the basic plan of the Portuguese. The castle houses an European cell, a condemned cell for the troublesome black slaves, male and female dungeons for the slaves, soldiers' barracks, watch towers, Governor's residence, restaurant, a yard and a church. Portuguese church in the central courtyard was remodeled by the Dutch and used as a ware house and soldier's mess. The slave dungeons could house as many as 200 inmates at a time with poor ventilation and not enough space to even lay one's head.

In 1637, the Dutch succeeded in taking the castle from the Portuguese by attacking it from the St Jago hill after several unsuccessful attempts in 1595 and 1625 (DeCorse, 2001, p. 23). The Dutch moved their trading headquarters from the fort they built at Mori in 1612 (Feinberg, 1989) to Elmina in 1637. Trading activities were booming under the Dutch control and all commodities except slaves along the coast were sent to Elmina. In 1872, the Dutch ceded the castle to the British after they had been in possession for 274 years (Chouin, 1998). The castle which was built purposely to protect gold trade, served the Dutch slave trade with Brazil and the Caribbean after its capture by the Dutch. By the last half of the seventeenth century, the business of slave trade surpassed gold and became the primary source of trade as other Western Europeans took interest in that area. The Elmina castle became a hub for the slave business and by the eighteenth century, the impact of African slave trade was felt both socio politically and economically. The slave trade led to the expansion of industries in Europe and America till it was abolished in the 19th century.

4.3.1.3 Value of the Elmina Castle and the Old Elmina Site

Economically, the castle generates revenue for the country. The castle belongs to a group of heritage sites which mainly commemorate the Atlantic slave trade. As a tourist site enumerated under the World Heritage Monuments by UNESCO, the castle attracts people from far and near and it offers daily historical tours which visitors pay for. The Elmina castle is managed and preserved by the Ghana Museum and Monument Board. Its presence in contemporary Elmina has an economic impact on the local people as visitors will purchase from the local people.

Socially, the Elmina castle possesses strong ties to both local and foreign people. It is a typical and literal embodiment of the Atlantic slave trade and its dark history. It has become a popular destination for African Americans seeking closure and wanting to connect with their heritage. The old town site is also visited by chiefs and a durbar is held during the Bakatue festival. After the boating display and other activities by the Benya lagoon, the chiefs hold a meeting in front of the castle which is constituent of the old town site.

Scientific value old Elmina and the Elmina castle is quite clear. Both the castle and the settlement of Elmina have been quite researched by scholars such as Cook (2014), Decorse (2001), Chouin (1998a), Davies (1976), among others. The sites provide insights to the connection between Europeans and Gold Coast West Africans. DeCorse worked extensively in Elmina (between 1985-2001). One of the objectives of the Elmina research was to examine Elmina in context with European presence; that is, how it changed socio-culturally with European influences. Additionally, the old site of Elmina was researched to know more about the everyday life of the Elmina people before its contact with the Europeans. The recovery of house foundations, metal fragments, bottles and bone provide an understanding of settlement, craft specialization, trade

contacts and dietary pattern. The recovery of other archaeological materials provide insight into other activities pertaining to beliefs and worldview.

Research in a less explored branch of archaeology in Ghana- maritime archaeology- also revealed that economic trade patterns between Africans and Europeans changed African socio-political aspects. This is known through the examination of shipwrecks and their cargos. The use of documentary records may not provide answers to investigations. However, ships that may have wrecked along the coast of Elmina harbour the answers to some of these puzzles. For instance, the shipwrecks will reveal illegal goods being traded but it would not have been recorded in ship logs or inventories (Pietruszka, 2011, pp. 78,79).

There were marine archaeology researches by Greg Cook (Cook 2014 and 2012), Andrew Pietruszka (Pietruszka, 2011), Rachel Horlings (Horlings, 2011). Evidence show that two vessels from different centuries have likely sank around the Elmina area (see Cook 2012 and Pietruszka 2011). Over one thousand finds were recovered from the Elmina shipwreck site and they included brass basins, brass pins, beads, ceramics, cowrie shells, martavan jar (storage jar of southeast Asian or Chinese origin), pewter bottle caps, lead bale seals, a brass fish hook and a pipe bowl (Cook 2012, Pietruszka 2011) (see Figure 4.3-6 to Figure 4.3-7).

It is therefore a letdown that the Elmina Castle is paid attention to but forgetting the context within which it is located. The settlement of Elmina has been archaeologically well researched and its importance must be highlighted especially at the castle museum and during tours. Additionally, the marine archaeology research indicating probable underwater sites along the coast of Elmina is not highlighted by tour guides (see Map 4.3-3). All these keep playing an important role in understanding the dynamics of the relationship between Europeans who were in contact with the early settlers of Elmina and as well as Elmina's social, cultural and political evolution.

Some Artifacts Recovered from Elmina Wreck Site

Figure 4.3-5 The basin assemblage from the 2005 Elmina wreck investigation. Source: Cook (2012)

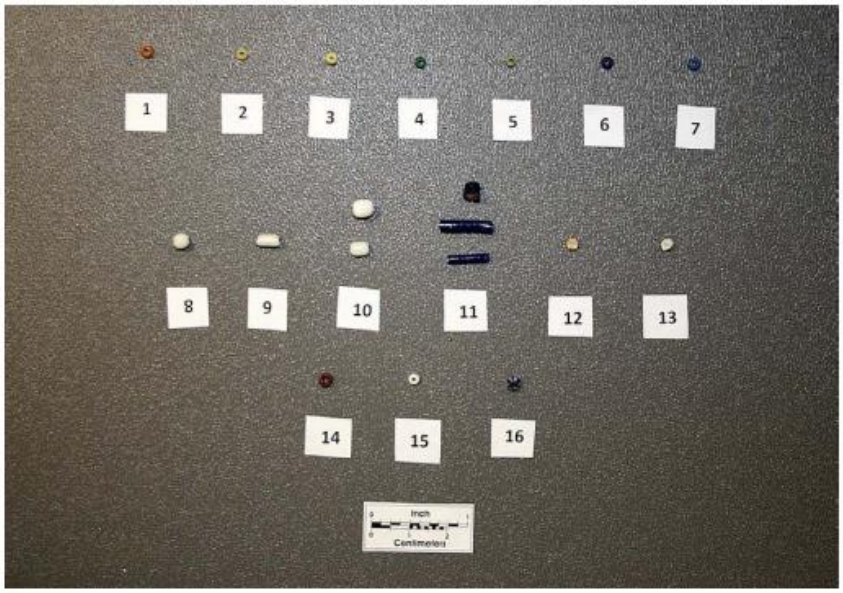


Figure 4.3-6 Bead assemblage from the Elmina wreck site. Source:

Pietruszka (2011)

Figure 4.3-7: Brass pins recovered from Elmina wreck site. Source: Cook (2012)

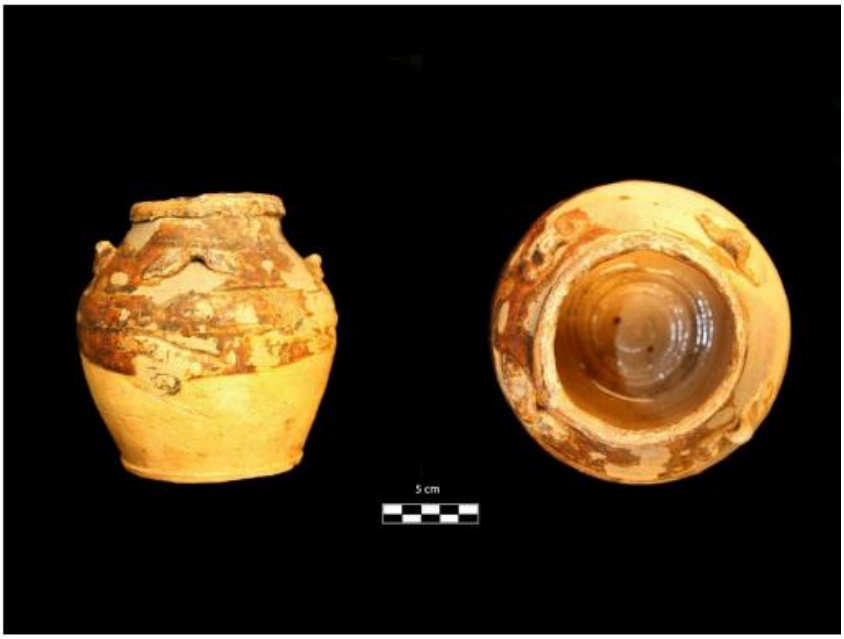
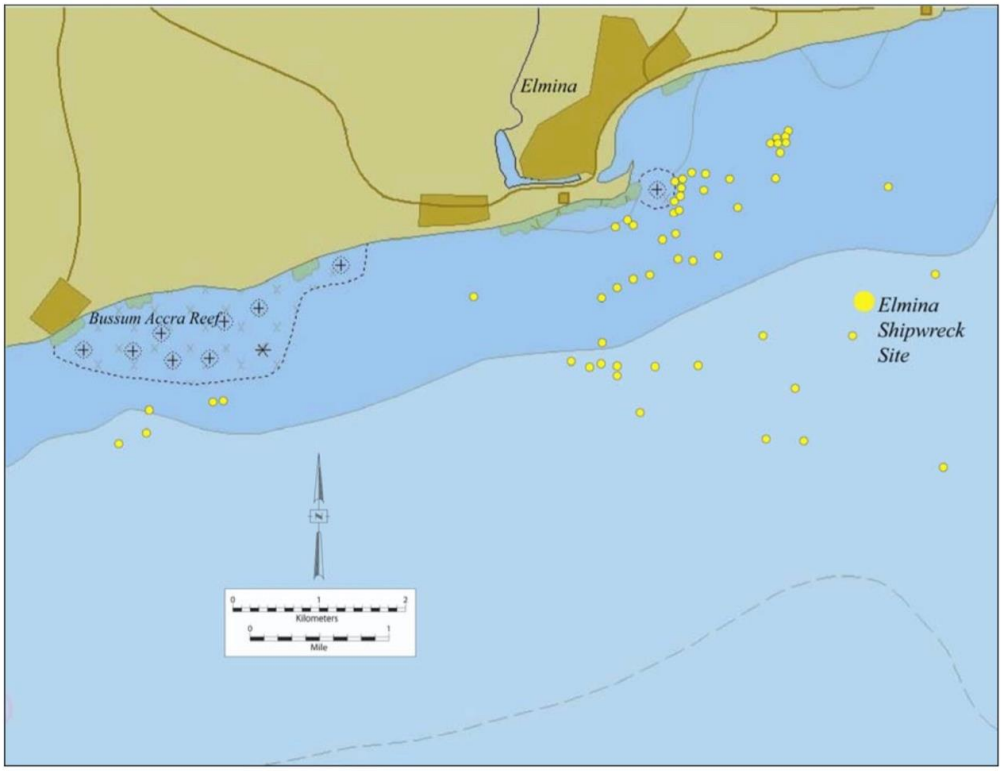
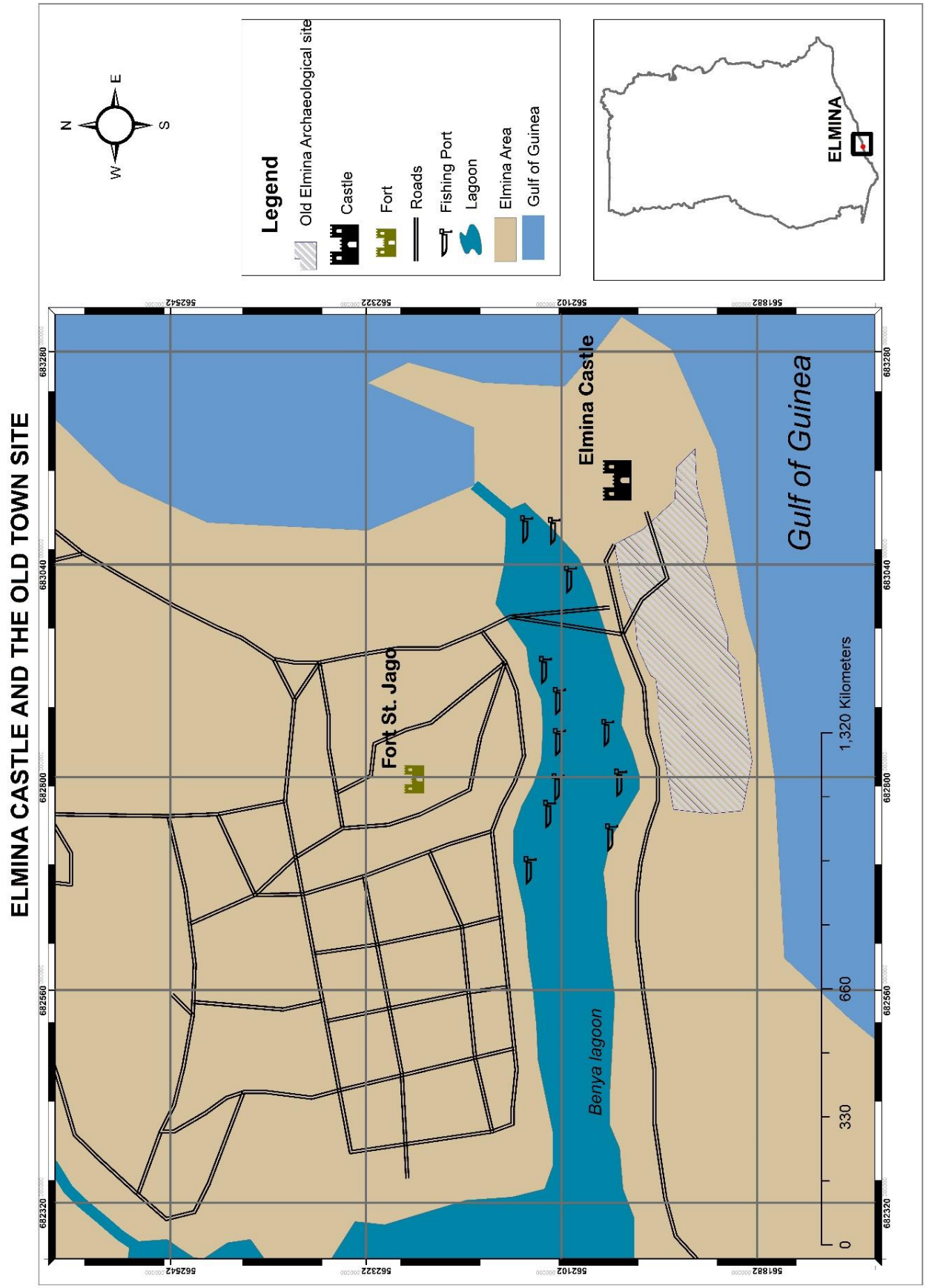


Figure 4.3-8: Martavan jar recovered from the Elmina shipwreck. Source: Pietruszka (2011)



Map 4.3-3: A map showing plotting of sonar targets from the 2003 marine archaeology survey. The researcher scanned a portion of the Gulf of Guinea close to the Elmina castle. Source: Cook (2012)

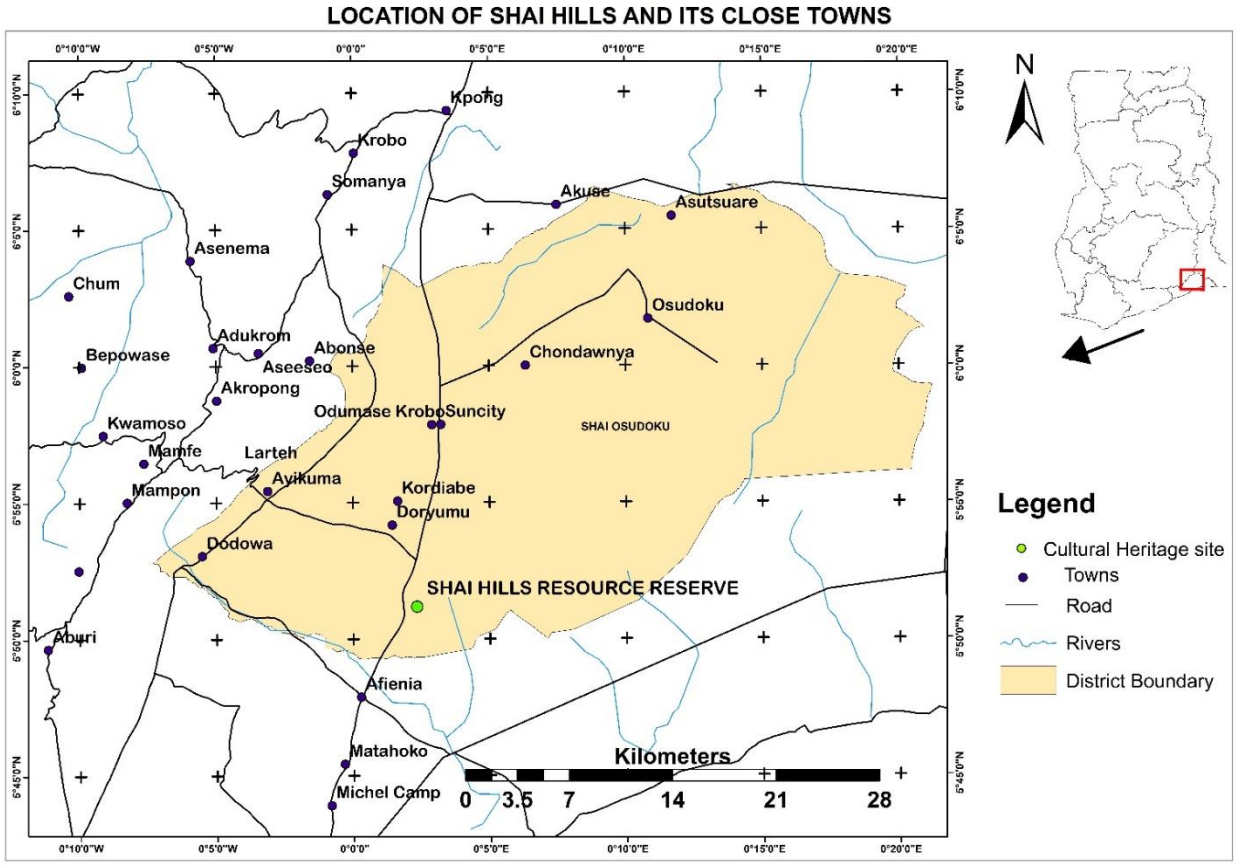


Map 4.3-4: A map showing the Elmina castle, the old town archaeological site and other features.

Produced by author.

4.3.2 Shai Hills Resource Reserve

The resource reserve is a major archaeological site and this supports its status as a mixed heritage site. Its character as a natural resource element is generally known and appreciated but the archaeological aspect is not. It is located in the Shai Osudoku District in the Greater Accra region of Ghana. Shai is characterized by a scenic series of hills which extend over 10 km roughly in a North-South direction (5°51'N to 5°56'N; 0°02'E to 0°05'E). The resource reserve covers an area of 53 square kilometres and is also characterized by archaeological remains, caves, wildlife and a recently renovated Museum of Natural and Cultural Heritage. It was established as a resource reserve in 1962 and this has helped preserve the archaeological component of the site.



Map 4.3-5: A map of Shai Osudoku District indicating Shai Hills Resource Reserve with some close towns.

Produced by author.

Oral traditions documented in 1978-79 in Dangmeland have identified the Shai Hill ruins as the remains of the old Dangme township called Se/Shai, contemporary with Ladoku (Anquandah 1982, p. 15). The urban town of Shai existed some several hundred years ago and consisted of 15 Dangme settlements with a population of approximately 10,000 people (Anquandah 1997, p. 294). The people of Shai are especially known for their specialization in pottery production which they supplied to Accra, Tema, Akuapem to exchange for fish and agricultural produce (Anquandah, 1997). The availability of clay soils and the small amount of loam in the area confirms their specialization in pottery manufacturing and their import of agricultural produce. They have also been known to have had contact with the Europeans at the Accra-Prampram coast.

The Shai settlements have been mentioned by Europeans in several written records due to their proximity to the coast. In certain records, Shai was described as comprising "two large populous hill principalities" (see Anquandah 1995b). There have also been records which document the lifestyle of the Shai people in relation to medicine, obstetrics and nutrition. In the 18th and 19th centuries, the settlement was visited by two Danes (a botanist and a physician) from Copenhagen, P. Isert and Thonning, who chronicled ethnonutritional and ethnomedical practices of the Se people. Two hundred specimens of six hundred species of plants were collected, with their local names and their medical/nutritional uses recorded, as well as their botanical identity (Anquandah, 1997, p. 295).

European writings further point the Shai and La as societies who benefited from organized trade with the European nationals (gold and slaves in exchange for velvets and printed calicoes). The evidence of local pottery (known as the classic Shai ware) and different types of pottery ware indicate its contact with other local locations. These other places such as Krobo, Ladoku (Boachie-Ansah 2006), Akuapim (Osei-Tutu 1987, Kwamena-Poh 1973, Shaw 1961) have also had evidence

of classic Shai ware which confirms their contact. Fragmentary remains of mud and wooden houses, numerous milling stones, copper and iron objects, local smoking pipes, imported European pottery and cowrie shells are all indications of urbanism and sociopolitical complexity (Anquandah, 1995b).

In 1892, the British colonial army acting on the report of the Basel Missionaries, expelled and ran the entire Shai settlement out of the hills on the basis of alleged ritual murders. This event caused the Shai people to be scattered around southern Ghana with some people establishing new villages and settlements nearby the hill areas. Other moved as far as Agona Swedru and Akuapem. The proximity to the hills enabled newly established settlements to visit their deities and ancestors (on the hills) to perform yearly ceremonies. Some of these modern communities include Ayikuma, Dodowa, Doryumu, Agomeda, Kodiabe etc.

4.3.2.1 Landscape

Twenty-five hills have been identified in Shai and some of these include Pianoyo, Mampong, Adwuku, Tetedwa, Nanne, Mogo and Hioweyo with Pianoyo being the highest hill (948 feet above sea level). The Shai Hills are a series of inselbergs, (mountains that have been largely worn away). It is characterized by a mixture of forest, thickets and grassland with unique low stature dry forest being mainly found in the intervening canyons. The hills are surrounded by savanna-covered plains, at about 60m elevation. There are no permanent rivers or streams in the reserve.

The landscape and environment of Shai is home to over one hundred species of birds as well as over three hundred species of plants. Zebras, ostriches, antelopes, monkeys and baboons are among the most noticeable animals on the reserve. However, there exists uncommon animals such as pythons, hyenas and jackals. Additionally, evidence that the Shai people occupied this area is seen in the form of surface scatter of archaeological materials such as potsherds and grindstone.

Additionally, there are also traces of house foundations at places such as Adwuku and Hioweyo Hills which strongly attest to existence of the Shai people in the area. The Shai Hills also have ancestral caves where the descendants of Shai visit periodically. Especially during long rainy season (April - June), the green nature of the reserve is vividly seen.

Some Wildlife on the Shai Hills Resource Reserve

Figure 4.3-9 Baboon with its offspring.

Photo: Author

Figure 4.3-10 Zebras grazing. Photo: Author

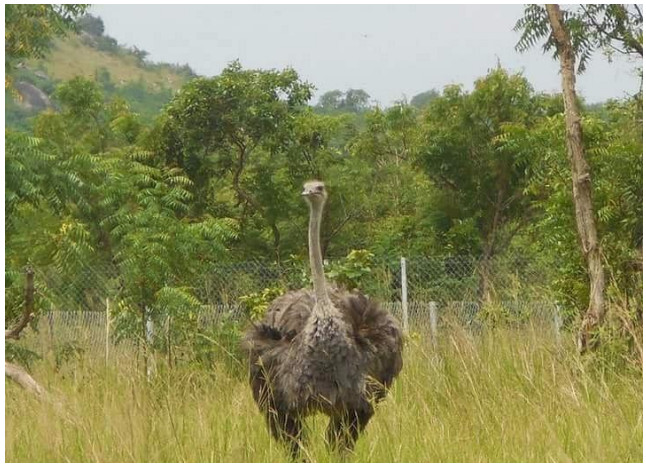
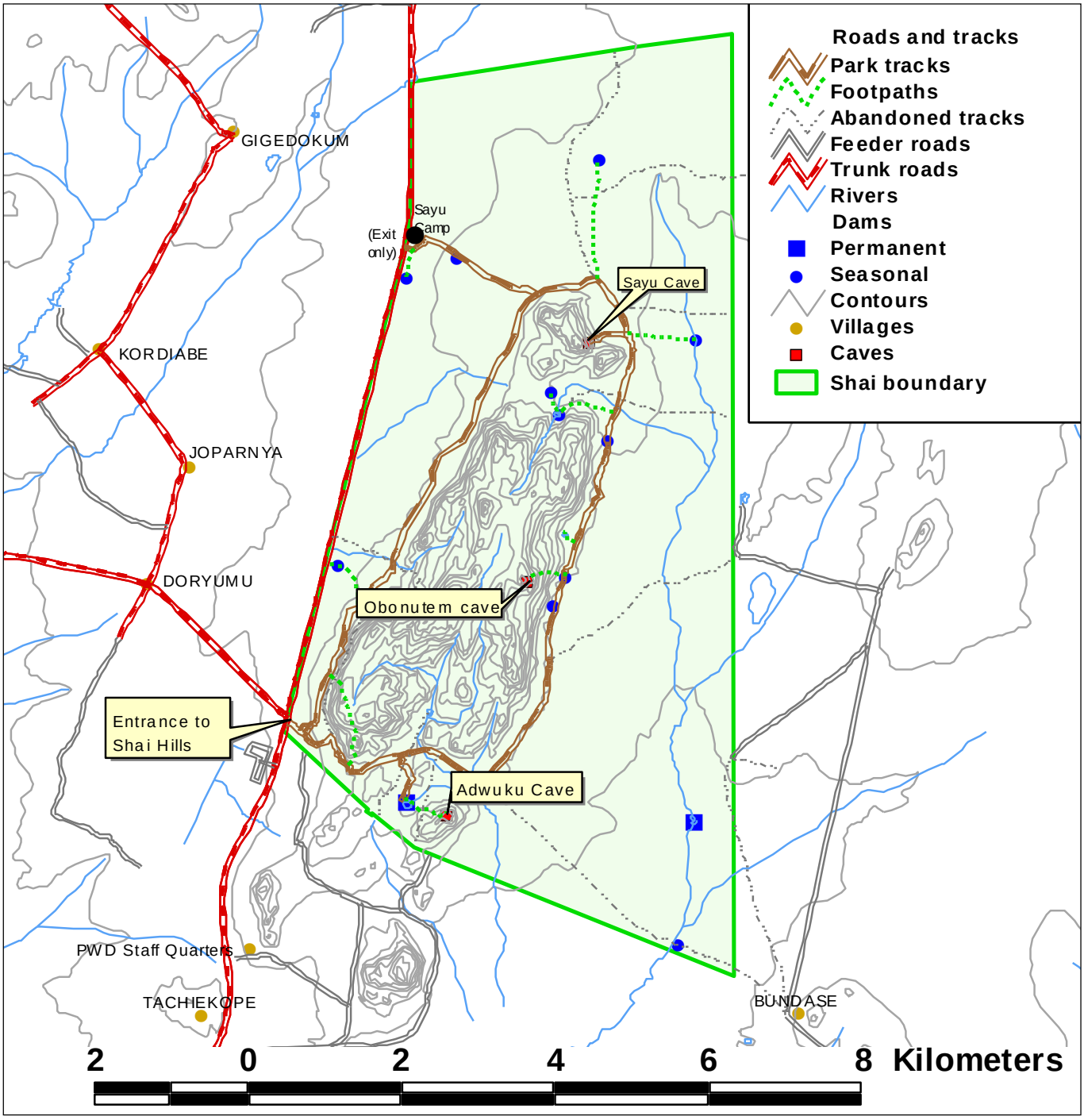


Figure 4.3-11 Ostritch. Photo: Author



Map 4.3-6: A map showing the Shai Hills Resource Reserve and some features within. Source: Shai Hills Management Plan 2006

Figure 4.3-12 Archaeological finds protruding on the surface. Source: William Gblerkpor

Figure 4.3-13: A panoramic view of a section of the Resource Reserve from the vantage point of Mogo Hill. Source: Smithsonian Magazine

4.3.2.2 Value of Shai Hills Resource Reserve

Assessing Shai Hills Resource Reserve indicate that it possesses values of social, scientific, aesthetic and economic character. The social value of Shai resource reserve lies in its importance to the descendants of the early hill settlers of Shai. Annually, the hills are visited by the descendants in commemoration of their ancestors. They have cultural as well as spiritual ties to the place. The Makpin shrine in particular is significant for annual rites and it is only entered by selected persons. Fortunately, the hills being declared as a resource reserve has further safeguarded the site which in effect protect their spiritual place. This value is also recognized by "non-descendants", as visitors also come to witness the ceremonies.

Shai Hills has been the target for archaeological research for over 30 years and a site for yearly field school for final undergraduate archaeology students (see Anquandah 1997, 1982; Ozanne 1962). Ethnographic research from contemporary Shai people combined with archaeological research on the Shai Hills confirm the site as a place occupied by the Shai people. From research, Shai has also been known to have existed around the 14th– 15th century (Anquandah 1982) which falls in the Saharan trade period and also a period of Iron Age in West Africa. Other dates (18th –

19th centuries) suggests a transatlantic trade period (Anquandah, 1997) and such date is corroborated by European texts that mention the urban settlement of Shai. Archaeological finds recovered from previous have been displayed at Museum of Natural and Cultural Heritage. This museum was first built through funding gotten by James Anquandah who researched the area. It was not functional until it was renovated by Dr. William Narteh Gblerkpor of the Department of Archaeology and Heritage Studies in collaboration with the Wildlife Division of the Forestry Commission. The archaeological sites of Adwuku, Hioweyo and Sayu are used for educational and touristic purposes.

Aesthetically, Shai Hills resource reserve has one of the scenic landscapes in Ghana. This attracts several people (local and foreign). Field trips or excursions are taken to the site whereby people stay for more than three days for the serene environment. Tents have been built on the site so this makes staying possible. There are a variety of activities undertaken by visitors and these include bird watching, rock climbing, nature walk and exploring the caves. The Sayu cave also known as the Bat Cave and the Mogo Hill are regularly visited by tourists.

The value stated above in turn provides economic value as people pay to visit the site. Visitors are charged on an hourly basis to be taken around by a guide. They visit places such as the Sayu ancestral cave and the Mogo hill (easier to hike due to its gentle slope). These visits, in turn provide income for local people as visitors purchase stuff they sell. The site generally is a source of revenue for the government of Ghana.

This site may have borne a close resemblance to the cultural landscape of Tengzug if not for the unfortunate expulsion of the early Shai people. This comparison is due to the fact that Tengzug is still occupied by the descendants of its original dwellers. It would have been insightful to see how

the Se/Shai people make use of their natural environment on the reserve and how it is interwoven with their worldview.

Figure 4.3-14 Gmayemi (millet-eating) Festival/Pilgrimage at the Shai Hills. Photo: William Gblerkpor

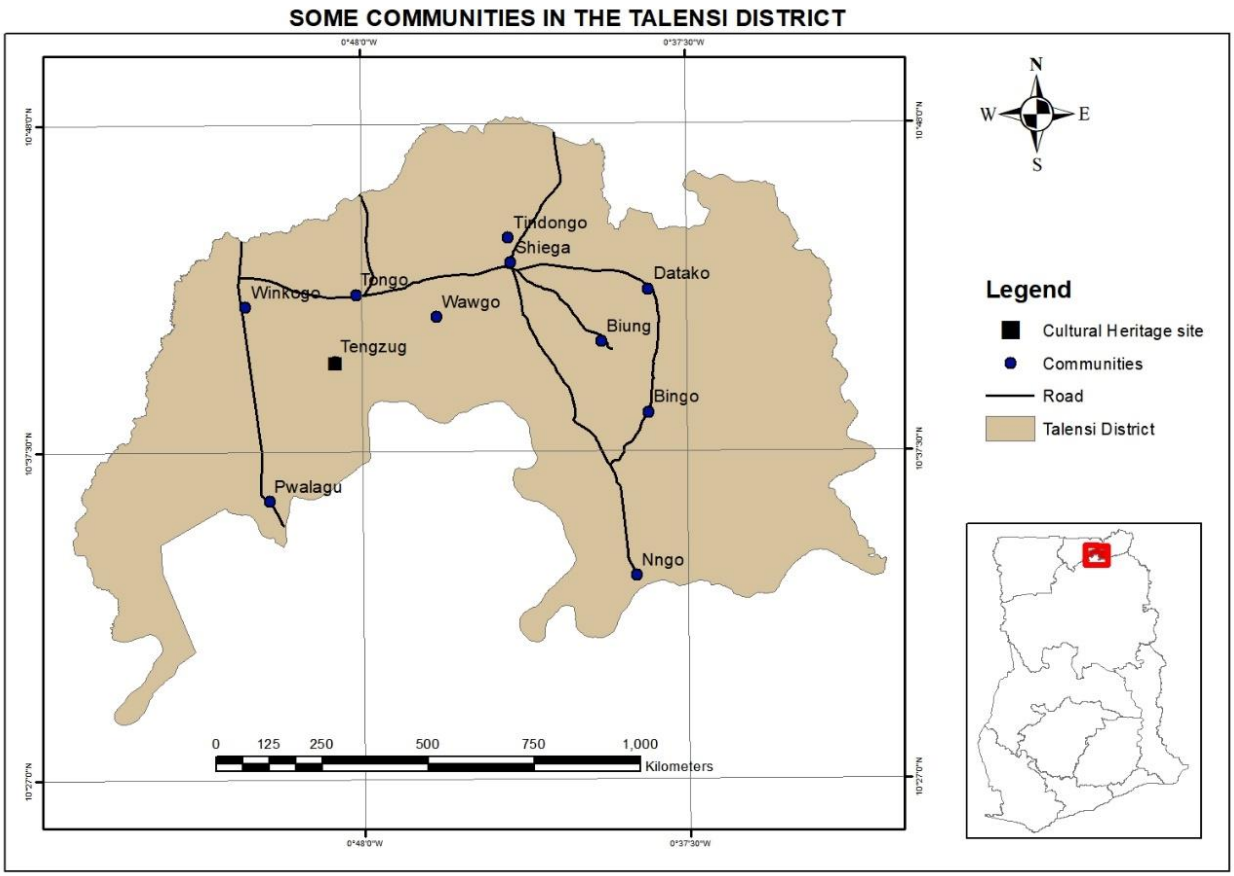
Figure 4.3-15 An aerial view of nature of Shai Hills during the annual pilgrimage. Photo:William Gblerkpor

Figure 4.3-16 Visitors taking a bicycle hike. Source: tripadvisor.com

Figure 4.3-17 Available Tents on the Resource Reserve. Source: tripadvisor.com

4.3.3 Tongo-Tengzug Cultural Landscape

The Tongo-Tengzug Cultural Landscape is a unique site that has been occupied since the late first millennium BC, a date that has been established through archaeological studies in the area (Insoll, Maclean, Kankpeyeng 2013, p.18). This tentative UNESCO World Heritage site is associated with the Talensi/Tallensi people. It is located on the Tong Hills in the Talensi District in the Upper East Region of Ghana, ten miles to the southwest of Bolgatanga. The Talensi District is made up of 30 communities which include Tengzug, Pwalugu, Tongo, Winkago, Tindongo, Shiega, Datako, Wawgo, Biung, Bingo, Nngo etc. Spelled in scholarly works as "Tongo-Tenzugk" (Amekudi 2008), "Tengzuku" (Forte [1949]1967), Tengzug (Eyifa 2016), it is geographically coordinated at latitude 10°40'23.84"N and longitude 0°48'51.78"W. It is characterized by a tropical climate.



Map 4.3-7: A map of the Talensi District showing Tengzug and other communities. Produced by author.

According to Eyifa (2016), Tengzug is translated as “head” (zug) of the “land” (teng). Tongo-Tenzug has eight clans located in the area and these are Bunchiug, Kpatare, Gundaat, Nanchet-yire, Sakpee, Samit, Tamboug and Santeng (who relocated to the base of the Tong Hill). These clans are each headed by a Tendaana (Eyifa 2016, p. 34).

This site is complex as its natural features which make part of their natural heritage is woven into or intertwined with their cultural heritage. It is a community that believes in ancestral veneration and the worship of Earth deities. Due to this, strong spiritual connections exist between properties, lands, and groves inherited from ancestors, at personal, family, clan, and community levels. This affects the status of the site regarding its natural heritage because it cannot stand alone as a natural heritage site, although it has characteristics of natural heritage. Due to this, the area can primarily be regarded as a cultural landscape. Tengzug in the central valley of the Tong Hills is a place characterized by a rich cultural heritage. Cultural heritage is not only seen in their material culture but includes the memories or oral traditions, folklore, music, songs, dance, social practices, religious and curative rituals, festive events, knowledge and practices concerning nature and the universe, traditional craftsmanship, and philosophies. The distinct architecture (only flat mud roofed houses) of the settlement characterizes an aspect of heritage of the area.

4.3.3.1 Architecture

The architecture of homes in Tengzug is quite an interesting one. It is interwoven with functional and scientific reasons. The courtyards are living spaces which serve general domestic purposes (see Figure 4.3-20). They are cement-like floors where all other structures are open on to. Other structures or components of the compound include kitchens, granary, store rooms, grinding room and bath house and sanitation room. The gateway of compounds/courtyards is oriented towards the west or the southwest facing the setting sun. This phenomenon has a functional underpinning

in that, rains move from east to west and an east facing gateway would consequently admit rain into the courtyard. Furthermore, the west orientation of the gateway aids work in the courtyard by providing light during sundown (the sun setting on the west), (Eyifa, 2016 p. 20). Additionally, the circular architecture of the building walls has a scientific rationale. The east-west direction of the sun along with its heat radiation affect the walls at a minimal rate because of the circular nature of the walls. As compared to rectangular walls, the impact of the sun is heavier on rectangular walls. The flat roof building code (Figure 4.3-18) is influenced by the topography of the environment. The topography of the area is characterized by higher and lower hills. The community finds itself on the lower parts. Flat roof buildings are deliberately made to save buildings from destruction during wind storms. Building of high thatched roofs would be a danger to the inhabitants of the area.

The architecture of the Talensi in Tengzug is not just seen on face value but they have their social connotations. The organization of lineage or bloodline strongly affects the nature of the compound and its layout of the Tallensi. These kin- and clan-based groups are patrilineal in social affiliation. The proximity of the courtyards reflects the relationships that exist between the residents. Courtyards will be close to each other based on the closeness of two relatives. These courtyards have passages that connect both courtyards (Gabrilopoulos, Mather, & Apentiik, 2002).

Figure 4.3-18: Elevated view of a Tengzug compound. (Photo: Google Maps)

Figure 4.3-19: Tenzug architecture (Flat roofed). Source: Getrude Aba Mansah Eyifa Dzidzenyo

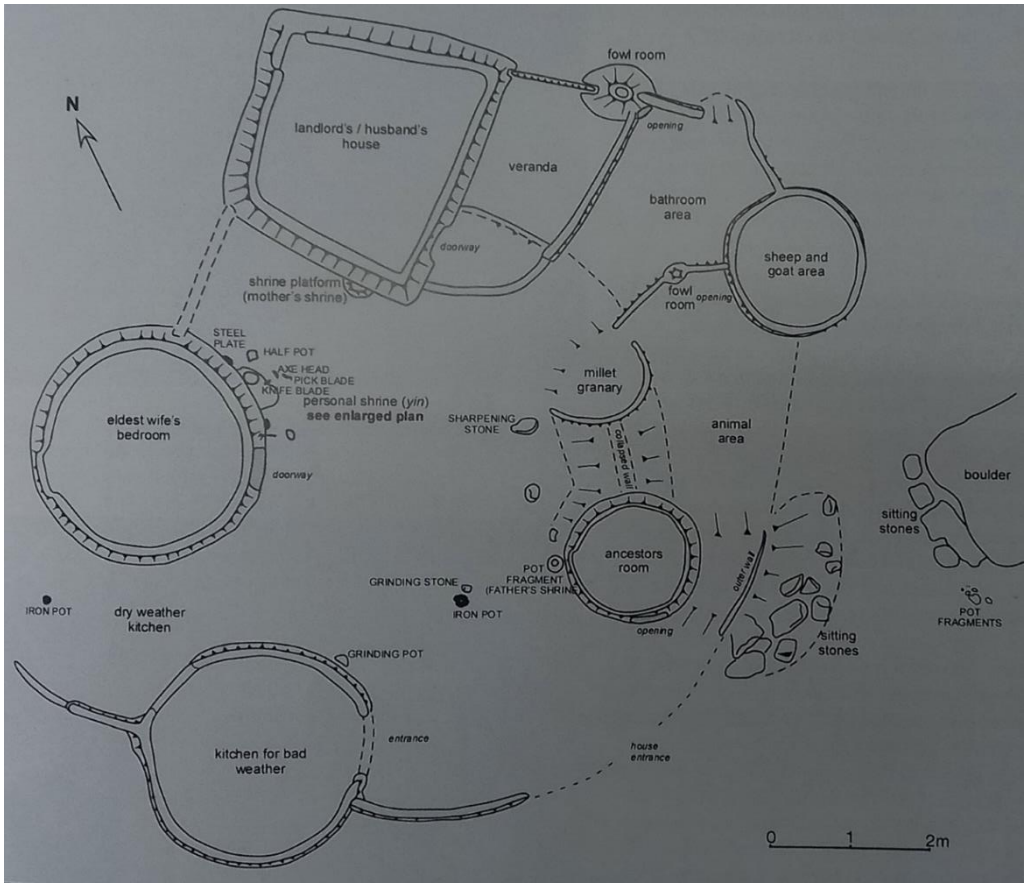


Figure 4.3-20: Architectural plan of a Typical Talensi compound. Source: Insoll et al 2013.

4.3.3.2 Landscape

The landscape of Tongo-Tengzug is characterized by an outcrop of rocks with patches of arable land for farming and settlement. These rocks although are naturally formed, are incorporated into the socio-cultural values of the indigenes and maintained through traditional norms and taboos. Some of these rocks are used as seats for daily activities and they serve as surfaces for grinding and pounding foods (see Figure 4.3-23 and Figure 4.3-24). Some of these rocks are used as terraces, burial markers, fire stones and animal troughs (Eyifa 2016, p. 28). Rock shelters used to serve as refuge in the past (see Figure 4.3-22).

There are also various valued tree species in the area that are of ritual/religious, cultural, medicinal and nutritional significance. Eyifa (2016) identified some of these nutritional tree types and they

include dawadawa tree, baobab, mango, black and red berry and kapok trees. Some of these trees like shea trees provide shade for humans and animals while some tree species serve as materials for construction and fuel for charcoal (pp. 25 & 26).

Moreover, the landscape possesses a cluster of groves which are representations of shrines and variety of deities and are used during ritual/religious ceremonies. Such groves/shrines include Bonaab, Yelwom, Gaanab shrines. Nonetheless, Tonna'ab, Bonaab, and Nyoo are three of the important shrines in Tengzug (Kankpeyeng, Insoll, & MacLean, 2010).

Even though Tengzug was not under immediate threat by development projects, the failure of government to consider the lifeways and architecture of the settlement during its attempt to develop the area endangered the heritage of Tengzug. For example, the roof for the school constructed with funds from the Ghanaian government, which is located at Bonchiig, was made from contemporary material: galvanized steel sheets. As a consequence, the school roof has been ripped off on two occasions by the wind (Kankpeyeng, Insoll, & MacLean, 2010, p. 4). It is clear that the building code of the area is a deliberate effort by its people to protect themselves from natural occurrences. Apart from governmental development, a smaller scale setup involved in stone quarrying was encroaching on Tengzug territory.

Tengzug has a lot in the name of tangible cultural heritage that need to be preserved such as architecture, and environment/landscape as well as intangible cultural heritage such as religion, folklore, songs, among others.

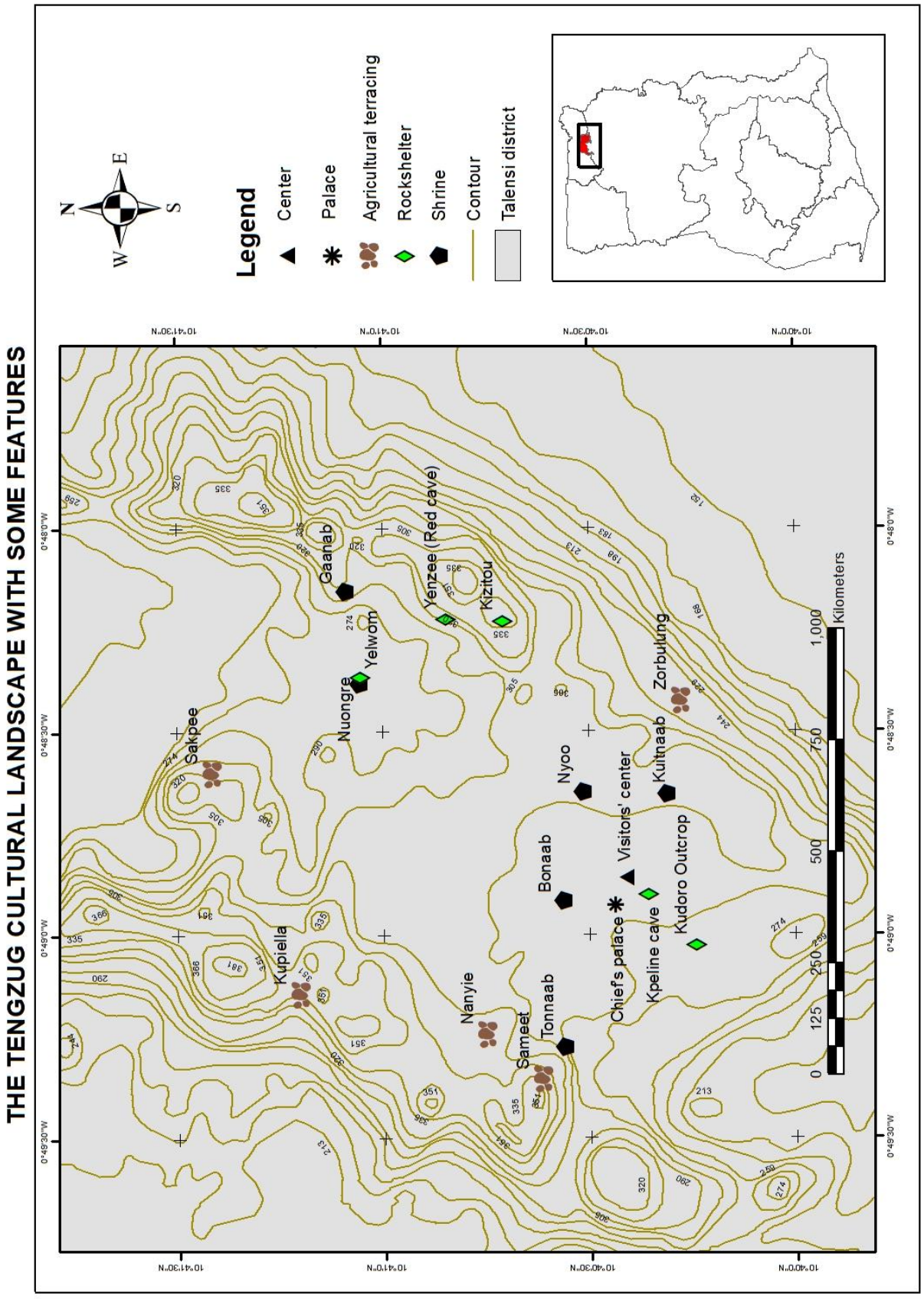
Figure 4.3-21: Rock features. Source: Getrude Aba Mansah Eyifa Dzidzenyo

Figure 4.3-22 One of many rockshelters in Tengzug. Source: Getrude Aba Mansah Eyifa Dzidzenyo

Figure 4.3-23: Ongoing shea nut cracking on a boulder/rock. Source: Getrude Aba Mansah Eyifa Dzidzenyo

Figure 4.3-24: Pounding cereal on rock. Source: Getrude Aba Mansah Eyifa Dzidzenyo

Figure 4.3-25: Paranomic view of the Santeng section of Tengzug. Source: Getrude Aba Mansah Eyifa Dzidzenyo



Map 4.3-8: A map of Tengzug showing some of its features. Produced by author.

4.3.3.3 Value of Tongo-Tengzug Cultural Landscape

Tongo-Tengzug has a distinctive environment or landscape as mentioned above. It is characterized by several rock formations, rock shelters and caves and green environment especially in the rainy season. The environment in Tengzug is pleasing to the eyes. The architectural style of buildings on the site is unique but the uniformity in architecture makes an additional contribution to Tengzug's aestheticism. This factor therefore makes the gradual introduction of contemporary buildings, building materials and architectural styles a serious threat (see Figure 4.3-26).

Figure 4.3-26: Modern architecture combined with indigenous Tengzug architecture.

Source: Getrude Aba Mansah Eyifa Dzidzenyo

Tengzug's social value can never be overlooked because it is a fundamental aspect of the place. The Talensi find value in almost every natural feature in the environment. Examples are the use of

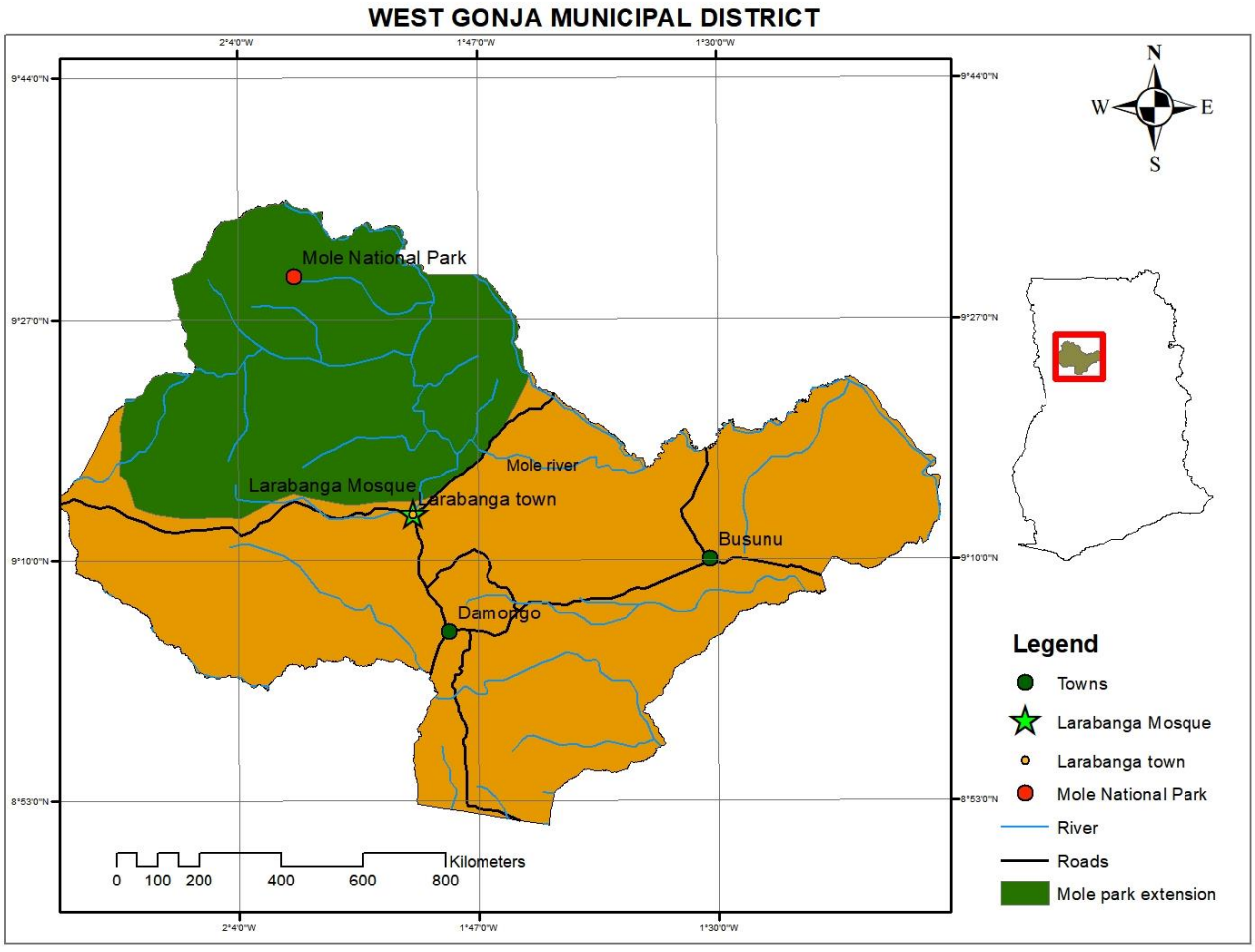
groves as shrines and deities as well as the use of some rocks as burial markers or terraces. They have very strong spiritual and cultural ties to this site. Outside of this, people from other places as far as Kumasi (Ashanti region) visit shrines for purposes of spiritual and physical healing, boosting business among others. Furthermore, festivals are celebrated which portray both tangible and intangible heritage. For instance, animals are used for rituals and offering sacrifices to the ancestors and deities during festivals while cultivated millet is used to brew pito for the celebration of these festivals. The festivals attract both local people from afar and nearby as well as foreigners outside of Ghana.

On the scientific front, several studies from archaeological to ethnohistorical researches have been undertaken in this area to understand its inhabitants and their relationship with their environment (E.g. Eyifa 2016, Insoll et al 2013, Eyifa 2007, Gabrilopoulos et al 2002,). For example, we know Tengzug to have been occupied in the late first millennium BC through archaeology.

Economically, the value of this place lies in the environment and landscape of the site. It is a tourist attraction centre. According Eyifa (2016), tourists pay at the visitor's centre to be taken around by a local tour guide. They visit places like the chief's palace, some shrines and caves as well as a model courtyard. The local people find economic value from the environment by selling to visitors some of the end products (such as shea butter) of their harvested produce.

4.3.4 The Larabanga Mosque

The Larabanga Mosque is a true testament to how time and tide has changed along the years and how the very facets of life such as engineering and architecture has changed with time. History reveals that the Larabanga Mosque (Figure 4.3-27) is the oldest mosque in Ghana and also known to be part of the older mosques of West Africa (Apotsos, 2016). The mosque is located in Larabanga in the West Gonja Municipal District of the Savannah region. It lies on latitude 9°13'13.08"N and longitude 1°51'35.64"W. The site is just some 5km from Ghana's biggest game reserve, the Mole National park. The World Monuments Fund (WMF) has listed it as one of the 100 Most Endangered Sites.



Map 4.3-9: Map of West Gonja District showing the Larabanga Mosque and surrounding places.

4.3.4.1 Architecture

It is believed to have been built in 1421 using only clay, sand and loamy soils with wood. These were the primary source of building materials at that time as civilization had not yet progressed and the use of modern technology or materials were not available (Apawu, 2012). There is doubt as to the authenticity of the date of construction where other literature have established that the mosque may have been constructed in the 17th century (Haun, 2018). The roof is supported by timber frames and has a length and width of 8 meters and 8 meters and has two tall towers (the minaret and mihrab) in the shape of a pyramid. The mihrab faces towards Mecca forming the facade on the east and the minaret in the northwest corner (Figure 4.3-27). It is also characterized by 12 buttresses of conical shape on the external walls which are strengthened by horizontally-aligned timber elements (Ghana Tourism Authority, n.d.).

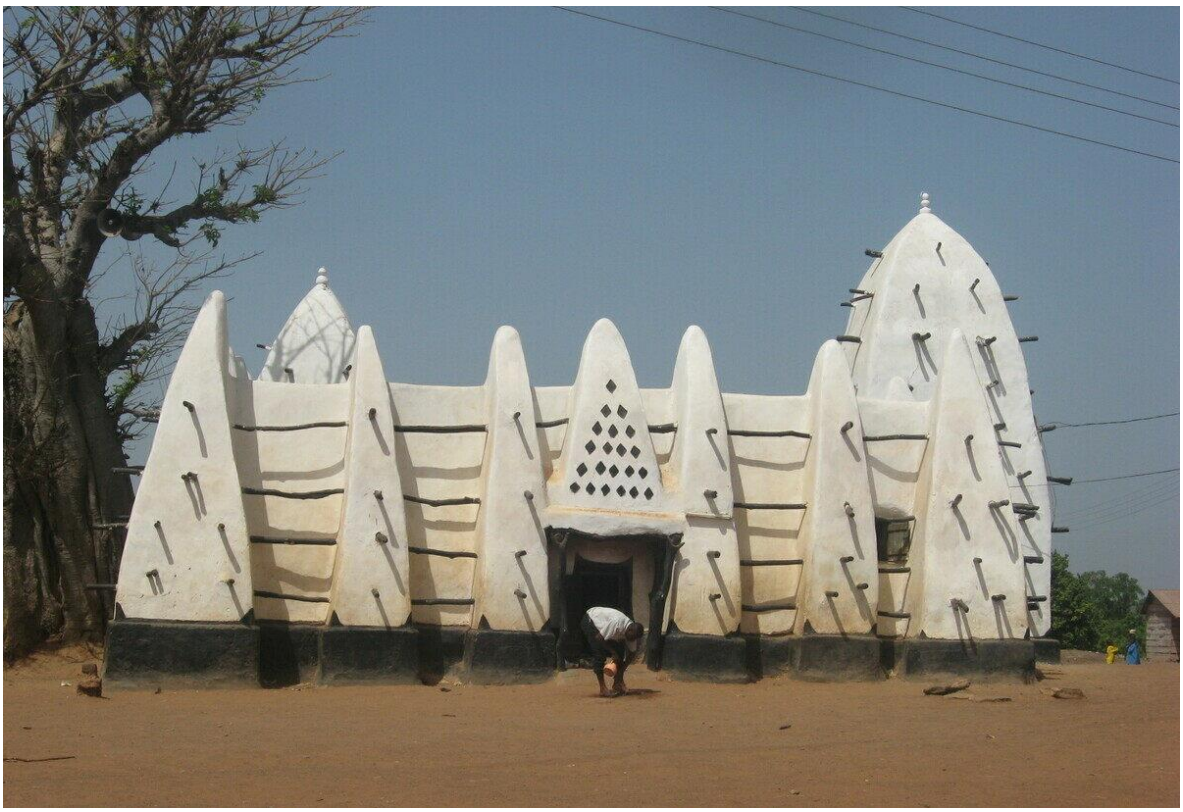


Figure 4.3-27 The front view of the Larabanga Mosque showing the front entrance and the minaret (far left) and mihrab (right) towers. Source: Atlas Obscura

An interesting finding as shared by both Apostos (2016) and Apawu (2012) has to do with the entrances of the mosque. According to the elders and people of the community as shared by Apawu (2012), “the entrance to the west is for women, the southern entrance is for the men. The Imam enters the mosque through the east gate and the moazin (who calls believers to prayer) enters through the north gate. The mosque itself is divided into two parts. The men take the front part while the women take the back part during prayers” (see Figure 4.3-28).

Figure 4.3-28 Side view of the Larabanga Mosque showing the east entrance and tower. Source: Atlas Obscura

The true history of the origin of the mosque itself has changed through time but one story that has reigned throughout is: The mosque was built by a Mallam locally known as Ibrahima but whose real name is Yidan Braimah, a man whose origin can be traced to Saudi Arabia and a spiritual advisor to the legendary warrior Ndewura Japka (Apawu, 2012).

Ndewura Jakpa, required his assistance in conquering the town of Kango on the border of present-day Ghana and Côte d'Ivoire. With the help of Braimah, he was able to defeat the town and go on to defeat may other towns along the way. As a reward, and after the death of Japka, Ibrahima went ahead to find a place to settle. At a point, he threw a spear stating that wherever the spear landed was where he was going to settle. The spear travelled for several days landing in Larabanga, the present site of the mosque.

There is conflicting evidence as to how the mosque was erected with Apotsos (2016) describing it to be "The spear traveled for several days before embedding itself into an area of high, fertile ground known by area people as Zuriyir, and as Braimah approached he noticed a certain brightness or Nura around the site that seemed to emanate from the very earth itself. This area became the foundation on which Braimah built both Larabanga's historic mosque and his home, and the surrounding space eventually became the first section of the town, fittingly named Yirikpani or "the landing of the spear." He also named this emergent community "Larabanga" or "land of the Arab," possibly in reference to his ancestry as the descendent of a powerful spiritual leader named Ayuba, who came to the Sahel from Medina in the early histories of the medieval West African empires" (Apotsos, 2016).

Apawu also describes his findings on the origin of the mosque as:

> "During their journey and battles, Ibrahima mentioned to the warrior Ndewura Japka that as they fought on, they would cross two rivers together, but not cross the third. So they fought through two rivers including the Black Volta, but when they got to White Volta, the warrior was killed in battle, leaving Ibrahima unable to return to Saudi Arabia. He then moved southwards to find a place to settle. He first settled at the current location of the mystic stone, a sloppy and rocky place. It was very difficult to erect structures to house people. Mallam Ibrahima, after offering prayer, threw a

> spear promising that wherever the spear lands, is where he would settle and build an accommodation. He threw the spear and it landed on the current location of the old mosque. The foundation of a mosque was already there, but with no indication of a previous settlement. He went around the mosque and found an inscription in Arabic that said, this is where God has assigned him to settle and the procedures to build the mosque. During this period, he returned to the mystic stone area to sleep and pray until the mosque was completed". (Apawu, 2012, p. 33).

Though certain aspects of the origin story seem similar, the true origin of the mosque differ slightly from literature to literature and even from indigenes of the village. According to other sources, a Moorish trader named Ayuba in 1421 travelled across the Sahara where he spent the night in Larabanga. He was instructed through a dream to construct a mosque in the village and found that the foundations had already been set for him upon waking up. Ayuba lived the rest of his life in Larabanga where his remains were buried under a nearby Baobab tree (Atlas Obscura, n.d.).

4.3.4.2 Value of the Larabanga Mosque

The immense value of the mosque to the Islamic people of the Larabanga cannot be overstated. Its value is on three fronts which are aesthetic, social and economic. Aesthetically, Larabanga mosque is characterized by a Sudano-sahelian architecture which is an ancient form of architecture and currently a rare one in Ghana. It is one of the six historic mud mosques with similar Sudano-sahelian architecture in Ghana. The other historic mud mosques are Banda Nkwanta (Bono region), Nakore (Upper West), Maluwe (Savannah region), Wuriyanga (Upper East) and Bole (Northern region) (see Figure 4.3-29 to Figure 4.3-33).

On the social front, the mosque is seen as a spiritual sign, a sign that Allah lives with and within the people of Larabanga. The mosque is a constant reminder to the people not to lose their faith and to be steadfast whenever their faith is tested (Preko et al., 2020). According to studies, visiting

the mosque seems to renew the faith of both local people and Islamic tourists thereby drawing them closer to Allah.

The passion and commitment which the people of Larabanga exhibit toward the religion of Islam is much more compared to other Islamic communities. This is due to the fact that the people of Larabanga owe it to Braimah to continue his legacy and to uphold their Islamic values (Apawu, 2012).

The mosque also serves as a cultural construct. To the people of Larabanga, the Kamara group who are the indigenous people of the land are responsible for protecting the image and value of the mosque. Kamara of Larabanga have traditionally governed themselves according to specific social protocols and regulations that in many ways make access to Kamara culture as onerous and exclusive as access to the mosque space itself. The Kamara are thought to be one of the earliest Mande clans in West Africa, first appearing in the 11th century in the area of Sebi, located in Mali's present-day Mopti region. (Apotsos, 2016). Each family has historically resided within a specific location of the community, where they live, build, and farm, and should a stranger move to the town and wish to settle on Larabanga land, they either have to move themselves to the Zongo part of the town, which is found on the outskirts of the village near the new government school, or obtain permission from the elders to build in a clan-controlled area (Essam, 2021).

Larabanga Mosque serves also as a tourist site and therefore has economic value. The mosque has been a constant source of income to the people of Larabanga owning to its proximity to Mole National park. Tourists are charged GHc 10.00 per head (Essam, 2021). Apotsos (2016) clearly iterates the conflict that has emanated from the mosque a serving as a national heritage site. In an effort to preserve the mosque from its deteriorating state, plans were made to reconstruct the mosque as early as 1970s when the Ghanaian public works department began applying layers of

sand-based cement to many historical earthen structures in the region, the Larabanga mosque included. As a result of this moisture was trapped under the surface of the cement, which caused the earthen material underneath to rot, and resulted in the collapse of the Larabanga mosque during a storm (Apostos, 2016). The mosque was however returned to its former glory, "After a few months of intensive reparations, which included retraining the local population in mud-brick architectural technology, the mosque was rebuilt and the restorative project was hailed as a success. However, less than a year later, the community had returned the mosque to its cement-covered state and applied a coat of white paint to the surface as well". (Apotsos, 2016, p. 25)

In an attempt to create monetary value for the mosque, some truly believe that the cultural and religious value of the mosque is declining, factors that will continue to relate to each other unless a perfect balanced has been reached, to both preserve the site and to make money out of it (Preko et al., 2020).

Figure 4.3-29: A drone shot of Wuriyanga Mosque showing its single tower. Source: HaunsinAfrica.com

Figure 4.3-30: Front entrance of Banda Nkwanta Mosque. Source: HaunsinAfrica.com

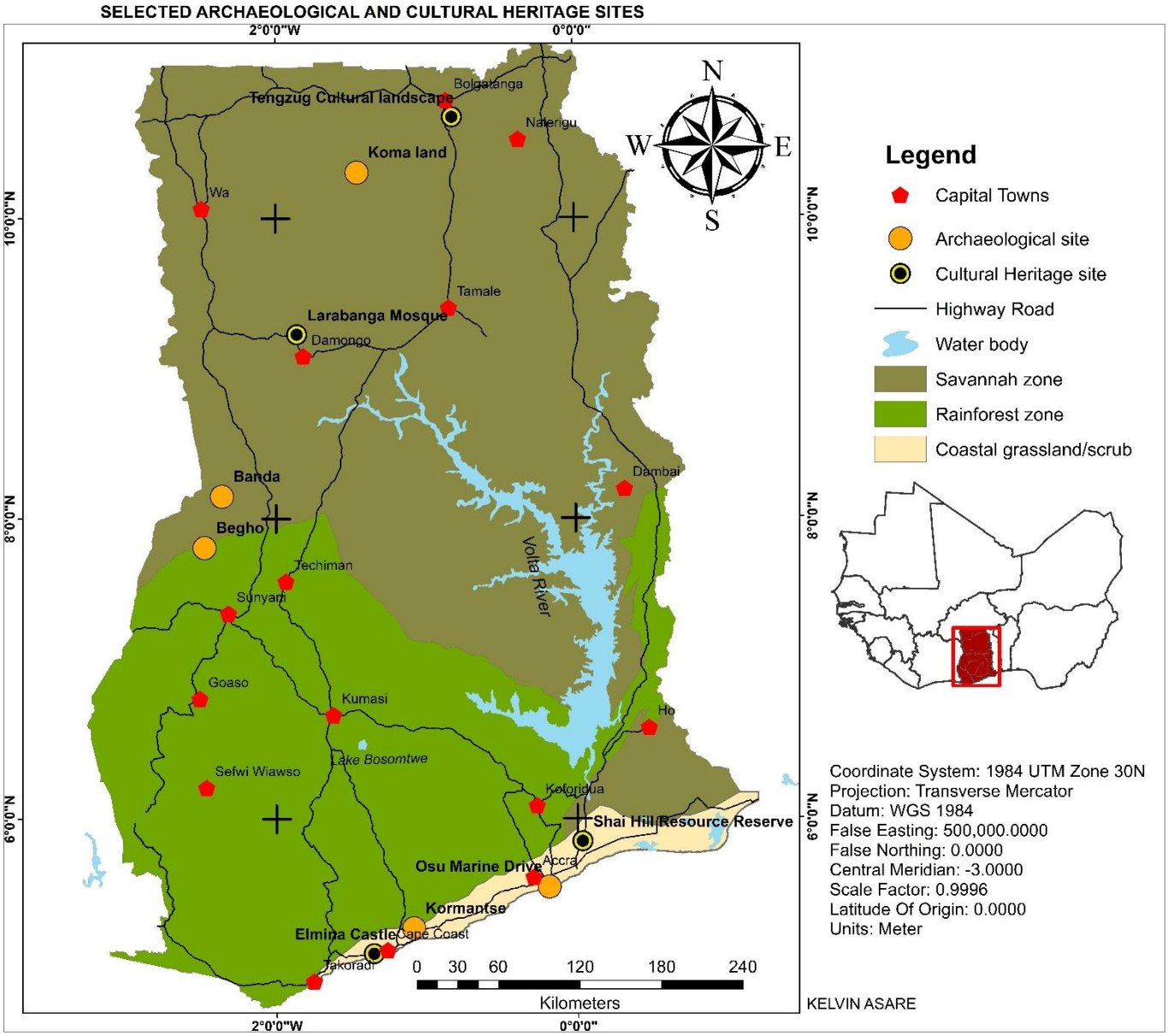
Figure 4.3-31: A drone view of Maluwe Mosque facing the entrance with its two towers. Source: HaunsinAfrica.com

Figure 4.3-32: Aerial view of the front of Nakore Mosque. Source: HaunsinAfrica.com

Figure 4.3-33: Aerial view of Bole Mosque facing its entrance. Source: HaunsinAfrica.com

4.4 A Map of Ghana Indicating Profiled Archaeological and Cultural Heritage Sites

This map provides a visual summary of the structure of this chapter.



Map 4.4-1: Cartographic presentation of selected archaeological and cultural heritage sites.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The concluding chapter of this pilot digital heritage inventory project, summarizes the issues discussed, research problem raised, research objectives, results of the study, and recommendations. Given the vast and diverse archaeological and cultural heritage resources of Ghana, it is important that inventory compilations of archaeological and cultural heritage sites are made in Ghana. Heritage inventories are beneficial for many reasons, including increased public awareness, promote conservation, and encourage management and sustainable tourism development. When there is understanding of what is there and why it is important, it encourages public interest, cultural tourism and generate revenue. Most archaeologists in Ghana admit to the difficulty of the practice of archaeology in Ghana (Gavua, 2006). The profession is generally misunderstood even among academic circles in Ghana. Therefore, the relevance of the work is not widely appreciated. The documentation of "what is there" in turn highlights the importance of archaeology and heritage studies in Ghana because these professionals have a hand in their discovery and research of Ghana's past. People should know the importance of the kind of work archaeologists are doing. People must know the essence of archaeology to uncovering the Ghanaian past. This pilot inventory project provides a model that could be expanded to help document, manage, and promote the cultural and archaeological heritage sites and resources of the country. For example, ancient Begho, the prominent city-state of central Ghana that participated in the trans-Saharan trade period is critical; likewise, Old Elmina, a polity that gained prominence during the trans-Atlantic trade, and continues to attract visitors from home and abroad.

5.2 Conclusion

This study set out to create a digital heritage inventory of selected archaeological and cultural heritage sites in Ghana through systematic documentation, annotation, and mapping. This objective was met with three supporting component objectives. First, an estimated 2,091 archaeological and cultural heritage sites were recorded, although many more may remain undiscovered. Based on Oliver Davies' Ghana Field Notes, two hundred and eighty-eight sites were sampled and explored. The analysis was to determine the current state of conservation and integrity, using satellite imaging software -- Google Earth Pro. Also, there was a profiling and annotation of selected archaeological and cultural heritage sites in Ghana compiling them into one document. A workable digital inventory has been created for the selected archaeological and cultural heritage sites. This inventory while in a non-digital format for this thesis, has a digital version. Microsoft Excel, a spreadsheet software was used to record the selected sites and their attributes in a tabular format. The use of ArcGIS facilitated spatial analysis and the visualization of the data acquired for this study by way of creating maps. The maps in conjunction with photographs added a visual touch to the site profiling. The programme also enabled the creation of GIS data (shapefiles) of archaeological and cultural heritage sites by way of site extents, locations, and/or current activity.

The approach of profiling of archaeological sites were slightly different from cultural heritage sites in terms of some sub-themes such as current activity of the site and the value of the site. Nonetheless, the general character of the two categories of the sites were adequately underscored. The use of inventory and survey data 'entry forms' adopted for this study guided the components captured in the profiling. This inventory compiled a total of nine heritage sites of which five are considered archaeological sites and four are cultural heritage sites. These include Tengzug Cultural

Landscape, Larabanga Mosque, Shai Hills Resource Reserve, Old Elmina/Elmina Castle, Koma land, Begho, Banda, Kormantse and Osu Marine Drive. It is important to note that two of the sites (Old Elmina/Castle and Shai Hills Resource Reserve) considered cultural heritage sites have archaeological components.

The research question in this study has adequately been answered. The act of inventorying and the use of GIS software does facilitate conservation of archaeological and cultural heritage sites. Documentation of the character of sites to make an inventory showing what Ghana possesses goes a long way to educate stakeholders and is going to form the basis for when sites are being designated as national heritage sites. [WNG1]That is to say, when decisions are being made on selecting sites of national value, the character of these sites will be paid attention to and analytically compared. Additionally, digital maps have much greater value as compared to printed paper maps. This is because digital versions of maps can be combined with other sources of data for analyzing information with a graphical presentation. Such a feat can be useful in decision making and planning that affects archaeological and cultural heritage sites. In the light of uncontrolled development projects in Ghana, this pilot digital heritage project makes a strong case for prioritizing the management of archaeological and cultural heritage sites and resources. The project also demonstrates the importance in using available consumer technology for systematically documenting, profiling, annotating, visualizing, managing, and promoting the nation's heritage. It is hoped that this pilot project will inspire many more students of archaeology and heritage studies in the country, to make archaeological and cultural heritage management a major goal of the discipline.

5.3 Recommendations

This study offers recommendations on inventory compilation to the Department of Archaeology and Heritage Studies, the Ghana Museums and Monuments Board, and the government. These are also recommendations that experts and researchers should make a component of in their projects. [WNG2]

First and foremost, this inventory compilation should be continued and more sites should be added to this inventory. In the conduct of field work, the inventory forms used in this project should be adopted and use in data collection and organization. Descriptions of sites and artifacts inventories are usually made during field work, however, the adoption of this form would ensure uniformity and consistency on what is recorded on all sites. It also enhances easy readability and access as the forms are constantly compiled into a single document. Moreover, standardization in documentation will make it easier to be used in digital systems. These entry forms do not have to be set in stone—some changes can and should be made if need be.

From personal observation gotten from this study, most of the archaeological sites where its local people still occupy (for example Tongo-Tengzug, Kormantse and Begho) have unique cultural underpinning and it is essential that we (archaeologists and heritage experts) push for these sites and similar ones to be considered national heritage sites. [WNG3]Additionally, sites such as Tongo-Tengzug, which have been listed on the Tentative List of UNESCO World Heritage Sites be revisited and promoted to be designated as World Heritage Sites. There is a cliché about sub-Saharan Africa as place of natural heritage (see Stahl 2005). Most people of foreign origin perceive sub-Saharan Africa and Africa generally, as place of nature and wildlife (Stahl, 2005, p. 1). This imagery is not entirely true as it evident from this study that there are unique sites with major cultural component.

Ghana has to take seriousness in creating inventories for sites because documenting what we have informs right decision making. Such decisions may be to enhance heritage places or increase their safeguarding which in turn contribute to tourism. [WNG4]As at 2019, travel and tourism contributed 3.8 billion US dollars to Ghana's GDP (Knoema, 2019) and in 2018, it was the fourth highest foreign exchange earner for the country (MOTAC, 2019). This revenue can be increased if attention is paid to inventorying, analyzing, conserving and managing archaeological and cultural heritage sites across the country. The government needs to revise the legislations and policies pertaining to archaeological and cultural resources and make it an integral part of development, and land-use (Kankpeyeng & DeCorse, 2004). Also, with the number of archaeological sites in Ghana, it is surprising that there is not a single one mentioned or displayed on the Ghana Tourism Authority website. This shows the minimal level of investment and interest into heritage resources by the government. Meanwhile, archaeological sites given a good conservation and management plan can also be a source of tourism.

As scholars such as Eyifa (2016) have called for some sort of national register, it is recommended that an inventory that captures archaeological, cultural and natural heritage assets must be made. Furthermore, inventorying should not end with sites on land. Government should sponsor marine archaeological researches as the coast of Ghana has potential of more underwater sites to be discovered. The Elmina wreck site may just be the start to discovering more. As these underwater sites are being discovered, inventories should subsequently be made for them.

It is not enough to compile an inventory; a successful inventory aimed at conserving and managing sites is also dependent on public support. If you need sites to be protected, you also need to involve the public but the public can only be involved if they take genuine interest in safeguarding sites

and they have a stake in it. This can be done if they understand their importance. I recommend education at levels spanning from basic schools to tertiary and onwards.

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APPENDIX A

EXCERPTS FROM THE GHANA FIELD NOTES

DR. OLIVER DAVIES, FIELD NOTES

GHANA PART 4, SOUTHERN GHANA

COMPRISING THE FORMER AREA OF THE GOLD COAST COLONY, SO INCLUDES THE THREE FORMER SOUTHERN PROVINCES AND TRANSVOLTA

References to my articles in these notes are:

O.D. (1) Archaeology in Ghana
O.D. (4) Notes africaines 63 (1954), p.65
O.D. (5) II Panafrican Congress, p.259
O.D. (6) South African Journal of Science 52 (1956), p.147
O.D. (7) Quaternaria 3 (1956), p.91
O.D.(10) I.F.A.N. Bulletin 19B (1957), p.592
O.D.(11) C.O.W.A., Accra 11-1 (1958)
O.D.(13) Notes africaines 86 (1960), p.37
O.D.(14) Trans. Historical Society of Ghana IV ii p.14
O.D.(16) Ghana Journal of Science 1 (1961), p.69
O.D.(17) Con. int. des Sciences prehistoriques et protohistoriques
O.D.(19) IV Panafrican Congress ii, p.291
O.D.(20) Ghana Journal of Science 3 (1963), p.1
O.D.(21) Bull. Ghana Geographical Association (1964), p.28
O.D.(22) Ashanti Research Project, First Conference (1963), p.44
O.D.(23) VI Inqua Acts i, p.279
O.D.(24) Rivista di Scienze preistoriche 19 (1964), p.1
O.D.(27) South African Journal of Science 50 (1953-4), p.273

Q.C.G. The Quaternary in the Coastlands of Guinea
W.A.B.E. West Africa before the Europeans

INDEX

The arrangement is alphabetical by place-names. Collection-numbers are set out in the index as follows:

a) Department of Archaeology, Legon
b) Material numbered on the same system as a) and in 1957 transferred to the Ghana Museum. It is believed to have been renumbered, but I have no record of the new numbers.
c) Achimota Museum. Nearly all the items were transferred to the Ghana Museum and renumbered. A very few pieces may be in the Department of Archaeology, Legon.
d) Ghana Museum, acquisitions since 1957.
e) Geological Survey of Ghana. Some of this material is at Legon or elsewhere; for these pieces both numbers are recorded.
f) Geological Survey of Ghana, inventories of collections.
g) British Museum, Department of Ethnography.
h) British Museum, Gold Coast Geological Survey collection stored in the Department of Ethnography.
i) Pitt-Rivers Museum, Oxford
j) Cambridge Museum of Archaeology and Ethnography.
k) Cheltenham Museum.
l) Horniman Museum, Forest Hill, London.
m) Manchester Museum.
n) Basel, Museum fur Völkerkunde.
o) Basel Mission Museum
p) Bernisches historisches Museum.
q) Jos Museum, Nigeria
r) Johannesburg, Archaeological Survey collection, S.Africa.

A reference with an asterisk indicates an illustration.

Field-notes, Ghana, Ashanti. p.35.

Dept.Arch. 53.223
Small quartz bead from Dadiasi, coll. Bullwinkle.

Ghana Mus. 56.992
Two small perforated quartz pebbles from near Bekwai, probably from Dadiasi; the smaller is of bead-size.

DAKWA JACHI 1/62500 126, 6°43'N 1°31'W
Dept.Arch. 52.274
Celts presented from the village

Ghana Mus. 56.662
Pipe presented from the village.

DANSO 1/62500 167, 7°17'N 1°51'W
Geol.Surv. inv.coll. 1915-6 5751-2
Celts from near Danso.

DAWADAWA 1/250000 Kintampo, 8°21'N 1°32'W
Achimota Mus. 1683 = Ghana Mus.; Geol.Surv. inv.coll. 1915-6, 4679-4731
Collections by the Geological Survey of quartz microliths made from pebbles. The former comes from Portaw - Black Volta; the latter from Down - Portaw. Portaw = O.S. Pawia; Down probably = what an old map called Dawa = modern Dawadawa. The Geological Survey inventories quartz and quartzite knives, rubbers and sherds "Down - Portaw".

DAWADAWA Dept.Arch. 53.206 O.D. Mar.'54.
About 1 mile north of Dawadawa, at Mile 154½ and 200 yds. east of the road, is a very large mound with a clump of trees and one forest-tree, while all around is open bush. It is flat-topped and 10-15' high, base-diameter c 100 yds. The top has one or two spurs breaking the circular plan. It appears to be of sand, and very few sherds are seen on its surface. There seems to be round it a shallow moat or ponds c 3' deep.

DEBIBI 1/250000 Sunyani, 7°53'N 2°33'W O.D. Dec.'55.
I found west of Dumboji River, several small scrapers, 1 bec-de-flûte burin:
Dept.Arch. 53.270
on gentle descent from east to Mumpa River, several small scrapers, one ? roughly tanged; bladen and awl:
Dept.Arch. 53.271; Q.C.G. fig.76 16-8
on rise s.w. of Mumpa R., microliths extending for 200 yds. and more scattered than at the other sites; end-scrapers, hollow scrapers, backed blade, crescent.

DEBIBI Geol.Surv. Cooper F.N.B. 18/3/23
On top of Kulla Hill south of Debibi a large smooth implement, apparently a very large celt. Kulla is not marked on O.S.; it probably = Kasakaw.

DEDUAKO 1/62500 126, 6°39'30"N 1°33'W
Dept.Arch. 52.250, 52.256
Celts presented from the village.

DEGEDEGE 1/250000 Sunyani, 7°48'N 2°26'W
Dept.Arch. 53. 261 O.D. Dec.'55
Beside the road 100 yds. on the Nsawkaw side of Degedege village is a thin layer of black earth with sherds which do not look very old, but not normal Ashanti ware. The village may formerly have extended farther in this direction.

KINO 1/50000 256, c.8°28'N, 0°30'W
O.D. February 1955

Some iron slag on the road.

KINO 1/50000 256, c.8°28'N, 0°30'W
Geol.Surv. Cooper F.N.B. 14/4/20

There is a village-site near Kambisera, east of Kino (not on map). 2 miles north Kanbisera is a small slagheap, and near by near River Kutubu a bilaga.

KISOTO 1/50000 292, 8°48'50"N, 1°05'15"
O.D. November 1963

Opposite the village are rocky rapids and large sandbanks accumulated at the mouth of River Jinasangi.

The outer sand-terrace on the White Volta is c.20' l.w., with rather sandy blue muds on the rocks beneath the sand. The muds are slightly mottled, near base contain a few pebbles and fair-sized pieces of carbonised wood. They must have formed in swamps on the rocks in sub-pluvial III, before deposition of the sand of the outer sand-terrace. This deposition must therefore have started at a definite stage.

The village stands back from the river on a high ridge at 35 - 40' l.w., apparently the inner silt-terrace, separated from the outer by a slight depression. South of the village the inner silt-terrace probably extends inland as far as River Jinasangi. Immediately opposite the village the south bank of River Jinasangi is rock; but I consider that the old valley of the Volta incorporates the Jinasangi nearly as far upstream as the village, and only close to the village does the Jinasangi valley diverge as a separate valley.

On north bank c.10' above River Jinasangi is a large spread of small and poorly rolled gravel. No implements seen. This seems to be a terrace-gravel of the Jinasangi; but it is coming down a slope to west, south-west of the village, which seems to be rock-based and probably forms the boundary of the old Volta valley above where it coalesced with the Jinasangi valley before the time of the inner silt-terrace. Thus this gravel, though at base reworked by the Jinasangi, seems derived from a terrace of the Volta not lower than the Middle Terrace; its extreme top could not be determined or measured.

KISOTO
Dept.Arch.63.314 - 6 O.D. November 1963

On the inner slope of the inner silt-terrace is a large site with many scattered sherds, most from plain jars and bowls, a few comb-stamped and grooved, one or two polished, but rare. The main concentration is just behind the village, overlooking River Jinasangi and out of site of River Volta. Odd patches of sherds are found along the slope of the Jinasangi for nearly 1 mile upstream, suggesting many outliers of the main village. The sherds appear to be coming out at a depth of c.3". There are a good many laterite nodules and microliths, probably from the same level of erosion. Nearly all the microliths are quartz and most are formless: awl, chisels, blade.

KISOTO
Dept.Arch.63.317 O.D. November 1963

On north slope of the inner silt-terrace just below the village is a little similar pottery; probably an outlier of the main site, perhaps only very few houses. On this slope were hardly any microliths.

DR. OLIVER DAVIES, FIELD-NOTES

GHANA PART 2, NORTHERN GHANA
COMPRISING THE AREA OF THE
NORTHERN TERRITORIES BEFORE INDEPENDENCE

References to my articles in these notes are:

O.D.(1) Archaeology in Ghana
O.D.(2) The Quarternary in the Coastlands of Guinea (also Q.C.G.)
O.D.(3) West Africa before the Europeans (also W.A.B.E.)
O.D.(4) Notes africaines 63 (1954), p.65
O.D.(9) III Panafrican Congress, p.1
O.D.(10) I.F.A.N. Bulletin 19B (1957), p.592
O.D.(12) I.F.A.N. Bulletin 21B (1959), p.102
O.D.(13) Notes africaines 86 (1960), p.37
O.D.(17) Congrès int. des Sciences préhistoriques et protohistoriques 5, p.230
O.D.(19) IV Panafrican Congress ii, p.291
O.D.(21) Ghana Geographical Association Bulletin (1964), p.28
O.D.(22) Ashanti Research Project First Conference (1963), p.44
O.D.(25) Ghana Historical Association Transactions 7 (1964), p.4
O.D.(26) Ascqua vii, p.6 = I.F.A.N. Bulletin 28A (1966), p.406

INDEX

The arrangement is alphabetical by place-names. Collection-numbers are set out in the index as follows:

a) Department of Archaeology, Legon; including material with numbers of the same type, which in 1957 was transferred to the Ghana Museum, and later renumbered. I have no record of the new numbers.

b) Athinota Museum; except for a very few items, this material was transferred to the Ghana Museum [illegible] renumbered.

c) Ghana Museum.

d) Geological Survey of Ghana. Some of this material was transferred to Legon, when both numbers are recorded. This group also includes an inventory of collections; these specimens have not been seen (save for a very few in the British Museum), and the numbers are taken from a TS list in the archives of the Survey.

e) British Museum Department of Ethnography; includes items deposited there by the Geological Survey of the Gold Coast, some of which are unnumbered.

f) Pitt-Rivers Museum, Oxford.

g) Museum of Archaeology, Cambridge.

h) Cheltenham Museum.

i) Museum für Völkerkunde, Basel.

DEPARTMENT OF ARCHAEOLOGY, LEGON

Number	Place	Page	Number	Place	Page
51/P.1	Danongo	37	52.319-20	Lungbunga	109
52.300	Busunu	25	52.321	Grupe	61
52.302	Danongo	36	52.322	Danongo	36
52.303	Yapoi	172	52.323	Larabanga	105
52.304	Yipara	176	52.324	Nabori	117
52.305	Kananto	78	52.325	Danongo	39
52.308	Daboya left bank	33	52.326	Danongo	36
52.309	Kandinga	79	52.327	Tugu	158
52.313	Daboya	33	52.327a	Tugu	158
52.314	Kandinga	80	52.328	Pwalugu	137
52.315	Bopanno	15	52.329	Shiga	148
52.316	Kwayasi	100	52.330	Ntereso	125
52.317-8	Yeji	174	52.331	Ntereso	126

APPENDIX B

COMPLETED ARCHAEOLOGICAL SITES INVENTORY FORM

Project: Municipality/District: **Mfantseman municipal**
Site Name: **Kormantse archaeological site (KTSE)**
Field No
Location
Elevation: **80m above sea level**
Coordinate: **01°04'85''N, 05°12'256''W**
Land Owner: **Chieftaincy of Kormantse**
Environment/Site Setting
Waterbody: **Otsi lagoon, Gulf of Guinea (Atlantic Ocean)**
Landform Terrace Ridge Hill Knoll Knob and Kettle terrain Plain
Sediment Boulder Cobble Gravel Sand Silt Clay Loam
Vegetation **Coastal scrub/grassland**
Description
Sub-Type Surface Subsurface Underwater Stratified Undetermined
Component Single Multi Undetermined

Site Type Campsite Stone feature Killsite Workshop Quarry Rock art Burial Palaeoenvironmental Settlement Dwelling Urban Trading post Mission School Ceremonial/religious
Calendar Date (A.D./B.C.): **mid-18th century- 20th century** Radiocarbon Dates
Disturbance Factors (natural, human, current, potential) **Natural factors- Erosion** **Human factors- farming activities, mining activity**
INSPECTION STATUS
Permit Holder/Researcher: **E.K Agorsah (2007-10), James Boachie-Ansah (2008), Esi Arkoh (2020)**
Observed by/Date: **E.K Agorsah (2007-10), James Boachie-Ansah, Esi Arkoh (2020), Kelvin Asare (2020)**
Collected by/Date: Kelvin Asare
Tested by/Date
Excavated by/Date: 2007-2010, 2008, 2020
Form completed by/Date: Kelvin Asare (2021)

Project: **Marine Drive Archaeological project** Municipality/District: **Korle Klottey**
Site Name: **Marine drive (MD)**
Field No
Location
Elevation: **29m above sea level**
Coordinate: **5˚32'45.24"N and 0˚11'21.95"W**
Land Owner: **Government of Ghana**
Environment/Site Setting
Waterbody: **Atlantic Ocean**
Landform Terrace Ridge Hill Knoll Knob and Kettle terrain Plain
Sediment Boulder Cobble Gravel Sand Silt Clay Loam
Vegetation **Coastal scrub/grassland**
Description
Sub-Type Surface Subsurface Underwater Stratified Undetermined
Component Single Multi Undetermined
Site Type Campsite Stone feature Killsite Workshop Quarry Rock art Burial Palaeoenvironmental Settlement Dwelling Urban Trading post

Mission School Ceremonial/religious
Features: **Dump**
Calendar Date (A.D./B.C.): **18th century – 20th century** Radiocarbon Dates:
Disturbance Factors (natural, human, current, potential) **Human factor- construction**
INSPECTION STATUS
Permit Holder/Researcher: **Wazi Apoh, Beatrice Darko-Yeboah**
Observed by/Date: Kelvin Asare
Collected by/Date
Tested by/Date
Excavated by/Date: **2017, 2018, 2021**
Form completed by/Date: Kelvin Asare

Project: **Begho archaeological project** Municipality/District: **Tain district**
Site Name: **Nyarko, Dwinfuor, Dapaa, Brong, Kramo quarters**
Field No
Location
Elevation: **150m above sea level**
Coordinate: **7°50'55.81"N, 2°28'43.22"W**
Land Owner: **Hani chieftain**
Environment/Site Setting
Water Source:
Landform Terrace Ridge Hill Knoll Knob and Kettle terrain Plain
Sediment Boulder Cobble Gravel Sand Silt Clay Loam
Vegetation: Savannah & Rainforest
Description
Sub-Type Surface Subsurface Underwater Stratified Undetermined
Component Single Multi Undetermined
Site Type Campsite Stone feature Killsite Workshop Quarry Rock art Burial Palaeoenvironmental Settlement Dwelling Urban Trading post

Mission School Ceremonial/religious Industrial
Calendar Date (A.D./B.C.): **11th century - 18th century** Radiocarbon Dates:
Disturbance Factors (natural, human, current, potential) **Human factors- Building, farming activities**
INSPECTION STATUS
Permit Holder/Researcher: **Merrick Posnansky, Emmanuel K. Agorsah, Effah-Gyamfi, Leonard Crossland, … Daniel Kumah**
Observed by/Date:
Collected by/Date: Kelvin Asare
Tested by/Date
Excavated by/Date: 1970-1979, 2017-present
Form completed by/Date: Kelvin Asare

Project: **Koma Land Archaeological Project** Municipality/District: **Northern Ghana**
Site Name: **Yikpabongo/ Tando/ Tando Fagusa**
Field No
Location
Elevation:
Coordinate: Between **10°0'N to 11 0'N – 2°0'W to 1°0'W**
Land Owner: **Community**
Environment/Site Setting
Waterbody: **Kulpawn river, Sisili river**
Landform Terrace Ridge Hill Knoll Knob and Kettle terrain Plain
Sediment Boulder Cobble Gravel Sand Silt Clay Loam
Vegetation: Savanna
Description
Sub-Type Surface Subsurface Underwater Stratified Undetermined
Component Single Multi Undetermined
Site Type Campsite Stone feature Killsite Workshop Quarry Rock art Burial Palaeoenvironmental Settlement Dwelling Urban Trading post

Mission School Ceremonial/religious
Feature **Stone circles, Mounds, Burials, House remains**
Calendar Date (A.D./B.C.): **6th century – 12th century AD (AD 535-900, AD 680-880)** Radiocarbon Dates:
Disturbance Factors (natural, human, current, potential) **Human factor (Looting of clay figurines)** **Overflow of river banks causing erosion on sites**
INSPECTION STATUS
Permit Holder/Researcher: **James Anquandah, Benjamin Kankpeyeng, Timothy Insoll, Samuel Nkumbaan**
Observed by/Date:
Collected by/Date: Kelvin Asare
Tested by/Date
Excavated by/Date: **James Anquandah (1985), Benjamin Kankpeyeng (2007, Timothy Insoll, Samuel Nkumbaan, Siaw Appiah-Adu, Asamoah-Mensah**
Form completed by/Date: Kelvin Asare

Project: **Banda Research Project** Municipality/District: **Banda district**
Site Name: **Ngre Kataa, Kuulo Kataa, Makala Kataa, Bui Kataa**
Field No
Location
Elevation:
Coordinate: **8° 8'55.32"N, 2°21'44.96"W**
Land Owner: **Banda chieftain**
Environment/Site Setting
Waterbody: **Tombe river, Chen river**
Landform Terrace Ridge Hill Knoll Knob and Kettle terrain Plain
Sediment Boulder Cobble Gravel Sand Silt Clay Loam
Vegetation **Savannah**
Description
Sub-Type Surface Subsurface Underwater Stratified Undetermined
Component Single Multi Undetermined
Site Type Campsite Stone feature Killsite Workshop Quarry Rock art Burial Palaeoenvironmental Settlement Dwelling Urban Trading post

Mission School Ceremonial/religious
Calendar Date (A.D./B.C.): **11th century AD- 20th century AD** Radiocarbon Dates: **cal AD 1000-1280, cal AD 1350-19th, cal AD 1210-1450**
Disturbance Factors (natural, human, current, potential) **Human factors – Farming activities, Dam construction**
INSPECTION STATUS
Permit Holder/Researcher(s): **Ann Stahl, Andrew Black, Maria Cruz, Amanda Logan, Leith Smith**
Observed by/Date: **Ann Stahl**
Collected by/Date:
Tested by/Date
Excavated by/Date: **1989, 1990, 1994, 1996, 2001, 2008**
Form completed by/Date: Kelvin Asare (2021)

APPENDIX C

COMPLETED CULTURAL HERITAGE SITES INVENTORY FORMS

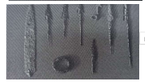
Project/Site Name: **Elmina Castle** Municipality/District: **Komenda Edina Eguafo Abrem Municipality**
Location: **Central region** Coordinate: **5° 4' 57.7956" N, 1° 20' 53.6316" W** Proximity to: **Old Elmina archaeological site**
Construction date/ Established date/ Significant dates **1482** Associated People: **Fante, Europeans** Associated events:
Materials **Brick, metal, wood** Condition/Threats Setting/Associated resources **Beach, Benya Lagoon, Fishing harbour** Value of site: **Economic, Social, Scientific**

Project/Site name: **Tongo-Tengzug Cultural Landscape** Municipality/District: **Talensi District**
Location: **Upper-East region** Coordinate: **10°40'23.84"N, 0°48'51.78"W** Proximity to:
Construction date/ Established date/ Significant dates: **726-256 BC (Late first millennium BC)** Associated People: **The Talensi/Tallensi** Associated events: **Gologo festival (February-March)** **British altercations (1911 & 1915)**
Materials: **Mud for flat roof building** Condition/Threats: **Stone quarry by small scale setups encroaching on Tenzug territory** Setting/Associated resources: **Flat roof buildings, Stone terraces, rock shelters and caves, shrines and sacred groves.** Value of site: **Aesthetic, Social, Economic, Scientific**

Project/Site Name: **Larabanga Mosque** Municipality/District: **West Gonja District**
Location: **Savannah region** Coordinate: **9°13'13.08"N, 1°51'35.64"W** Proximity to: **Mole national park**
Construction date/ Established date/ Significant dates: **1421 (debatable)** Associated People: **The Kamara** Associated events
Materials: **Adobe, clay, sand, wood** Condition/Threats: **Humidity affecting earthen material causing rot** Setting/Associated resources: **Baobab tree, smaller structures in close proximity** Value of site: **Economic, Social, Aesthetic**

Project/Site Name: **Shai Hill Resource Reserve** Municipality/District: **Shai Osudoku District**
Location: **Greater Accra** Coordinate: **5˚51'N to 5˚56'N; 0˚02'E to 0˚05'E** Proximity to:
Construction date/ Established date/ Significant dates: **Settlement- 2nd Millineum AD** **Reserve - 1962** Associated People: **Dangme Shai people** Associated events: **British evacuation - 1873**
Materials Condition/Threats Setting/Associated resources **Wildlife, Caves, Hills, Grassland, Shrine** Value of site: **Social, Scientific, Economic, Aesthetic**,

APPENDIX D
ARCHAEOLOGICAL SITE INVENTORY

SITE NAME	QUARTER	COORDINATES	ELEVATION	CURRENT_STATE	RESEARCHER	YEAR	FINDS/ARTIFACTS	SITE_TYPE	REGION	DISTRICT
BEGHO										
	Nyarko	-2.469917 w, 7.804111 n			Merrick Posnansky	1975	Locally made Tobacco pipes  Locally made tobacco pipes			
	Brong	-2.468722, 7.842167		Farming, new building structu	Merrick Posnansky	1970, 1972, 1975	Ivory bracelets, Drawn blue bead, burials combs and trumpet, locally made tobacco pipes  Ivory made objects  Iron made implelments	Urban		
	Dwinfuor	7°50'57.23"N, 2°28'18.14"W		Farming			Clay crucibles, brass rings, earrings, bracelets, leglets, imported and locally made pottery discs  Spindle whorls	Urban settlement		
		-2.475667		Clinic, houses, school	Merrick Posnansky	1971, 1972, 1975	Human Burials	Industrial		
	Kramo	7.841472		Farming	Merrick Posnansky	1971, 1979	Smelting furnaces, tuyeres, pottery, tobacco pipe, iron made rings, arrowheads and knives	Religious	**Bono**	**Tain**
	Dapaa			Farming	Merrick Posnansky			industrial ,iron workin		
BANDA										
SITE NAME	COORDINATE	ELEVATION	CURRENT_STATE	RESEARCHER	YEAR	FINDS/ARTIFACTS		SITE_TYPE	REGION	DISTRICT
Ngre Kataa	8.11277778, -2.30611111		Farming activities	Ann B. Stahl,		copper alloy (mostly brass), cowrie shells and glass beads, pottery sherds with slags in their fabrics, iron bangles and iron blades.  Serpantine points and ring  Perforated ceramic vessel	Settlement	**Bono**	**Banda**
Kuulo Kataa	8.14847222, -2.37472222		Farming activities	Ann B. Stahl,	1995, 2000	Spindle whorl, brass items		Settlement		
Makala Kataa	8.142573, -2.381145		Farming activities	Ann B. Stahl,	1989, 1990, 1994	Ceramics, imported beads, floral remains, bovid remains		Settlement		
Banda Hills				Leith Smith	1996-1997, 1999, 2001	Regional survey & testing				
Bui kataa			Construction of Bui dam		2008	Testing  Iron bangles				
KOMA LAND										
SITE NAME	COORDINATE	ELEVATION	CURRENT_STATE	RESEARCHER	YEAR	ARTIFACTS		SITE_TYPE	REGION	DISTRICT
Yikpabongo				James Anquandah	1985	Terracotta figurines, beads and cowries, local pottery fragments, grinding stones, metal bracelets and tools				
Tando Fagusa				Benjamin Kakpeyeng	2007	local ceramic sherds, a human skull, metals, and glass fragments				
Tando				Samuel Nkumbaan	2008	local ceramic materials, terracotta figurines, terracotta cigars, bones and shells, beads, lithic materials and human skeletal remains  Head of figurine  Man on horse or camel back  Head of man wearing cap	Settlement, Religious	**Northern Ghana (Upper West, Upper East, Savannah, Northern East)**	
OSU MARINE DRIVE										
SITE NAME	COORDINATE	ELEVATION	CURRENT_STATE	RESEARCHER	YEAR	ARTIFACTS	PHOTOGRAPHS OF SOME ARTIFACTS	SITE_TYPE	REGION	DISTRICT
				Wazi Apoh	2017	Whole wine & schnapps, pottery sherds, metal artifacts	 Pottery  Metal artifacts			
			Construction activity, Sporting activities, Settlement, fishing activity	Beatrice Darko-Yeboah	2018	Porcelain ware, potsherds		Transatlantic		
		29m above sea level		Wazi Apoh	2021	Slate, graphite pencil, cowries, pot sherds, porcelain ware, cowrie shells, snail shells		Transatlantic		
	5°32'45.24"N and 0°11'21.95"W						 Porcelain  Cowrie		**Greater Accra**	**Korle Klottey**
				Rachael Engmann	2014-					
KORMANTSE										
SITE NAME	COORDINATE	ELEVATION	CURRENT_STATE	RESEARCHER	YEAR	ARTIFACTS		SITE_TYPE	REGION	DISTRICT
				E.K. Agorsah	2007- 2010	local and imported beads , local and imported ceramics, tuyeres, and smoking pipes, human skeletal remains  Imported Smoking pipes		Settlement, Transatlantic	**Central**	**Mfantseman**
				James Boachie-Ansah	2008	European, Japanese and locally manufactured pottery, gun flint, glass bottles and beads European smoking pipes, bricks and roofing tiles, metal objects, animal bones and mollusk shells.  Local pipes			
				Esi Arkoh	2020	Local and imported smoking pipes, local pottery sherds, imported ceramics (porcelain, stoneware), molluscs, bones (rodents, goat/sheep, antelope)  Molluscs				

APPENDIX E

CULTURAL HERITAGE SITE INVENTORY

SITE_NAME	COORDINATE	DISTRICT/MUNICIPALITY	REGION	SITE_TYPE	EST_YEAR	ARCHIT_STYLE	MATERIALS	SETTING	ASSCTED_PEOPLE	ASSOCIATED_EVENTS	Photographs
Larabanga mosque	9°13'13.08"N, 1°51'35.64"W	West Gonja	Savannah	Religious	1421	Sudano-sahelian	Clay, Sand, Loam,wood, adobe	Baobab tree, smaller structures in close proximity	The Kamara people		
Tongo-Tenzug cultural landscape	10°40'23.84"N, 0°48'51.78"W	Talensi district	Upper East	Settlement, Religious		Flat mud roof house		Flat roof buildings, Stone terraces, rock shelters and caves, shrines and sacred groves.	The Talensi/Tallensi		
Shai Hills Reserve Resource	5°51'N to 5°56'N; 0°02'E to 0°05'E	Shai Osudoku	Greater Accra	Settlement, Religious, wildlife	Settlement- 2nd Millineum AD Reserve - 1962			Wildlife, Caves, Hills, Grassland, Shrine	The Dangme	British evacuation - 1873	 
Old Elmina/Elmina castle	5°5'23.755"N , 1°21'6.427"W	Komenda Edina Eguafo Abrem Municipality	Central	Settlement Historic feature	Castle- 1482	European	Castle- Brick, metal, wood	Beach, fishing harbour	The Fante and Europeans	Old Elmina bombardment