

A MARKET DESIGN FOR AKYEM ODA, GHANA:

“Do Satellite Markets Conflict with Central Markets in Mid-size Ghanaian Towns?”

by

LAURA S. HAYDEN

(Under the Direction of Pratt Cassity)

ABSTRACT:

The thesis evaluates the location and design of a proposed satellite market in Akyem Oda, a mid-size town in the rain forest region of Ghana. Visits made during the summers 2006 and 2007 were part of the ongoing yearly Ghana Summer Service-Learning Studio. In 2006, the District Chief Executive of Birim South presented a document authored by an architectural planning firm that outlined recommendations and presented a design for a new marketplace in the Nkwantanum neighborhood. A separate plan by the local district planning department was presented in 2007. A review of the previous proposals, along with an alternate design solution is the focus of this thesis. It takes into consideration the following: the future economic development of Akyem Oda, the quality of the traditional open air market experience, unique West African city cultural patterns, and the preservation of sensitive wetlands. Finally, the professional's role in international development is evaluated.

INDEX WORDS: Africa, Akyem Oda, Architecture, Community Design, Environmental Design, Ghana, International Development, Land Use Planning, Open Air Market, Rural Settlement, Satellite Market, Summer Service-Learning, Urbanism, Wetlands

A MARKET DESIGN FOR AKYEM ODA, GHANA:

“Do Satellite Markets Conflict with Central Markets in Mid-size Ghanaian Towns?”

by

LAURA S. HAYDEN

BA, The University of South Carolina, 2004

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment
of the Requirements for the Degree

MASTER OF LANDSCAPE ARCHITECTURE

ATHENS, GEORGIA

2009

© 2009

Laura Hayden

All Rights Reserved

A MARKET DESIGN FOR AKYEM ODA, GHANA:

“Do Satellite Markets Conflict with Central Markets in Mid-size Ghanaian Towns?”

by

LAURA S. HAYDEN

Major Professor: Pratt Cassity

Committee: Brian Lahaie
Alex Anderson
Ben Liverman

Electronic Version Approved:

Dean of the Graduate School
Maureen Grasso
The University of Georgia
December 2009

ACKNOWLEDGMENTS

I would like to thank the people of Ghana for their hospitality and for the opportunity to learn from them about culture, history, landscapes and positive attitudes. This thesis would not be possible without the encouragement, help, support and participation of several individuals. First, I would like to thank my thesis major professor, Pratt Cassity, whose involvement, influence and above all, patience were critical. Others involved in the service learning program also helped me: Professors David Berle and Alex Kojo Anderson. Service Learning colleagues have impacted my work and include Spencer Cooper and Alex Nagel. Thanks to Ibrahim Ismaela Alhaji who found time to help me even in his busy schedule. Thanks to Frank Busumtwi for being a quintessential host and my willing interviewee on several occasions. Other informants include: Mr. William Boateng Ansong, Gladys Okyene, and the Planning Department in Akyem Oda. Many Ghanaians compelled me to do research in their country because they inspired me: Hannah Boatang and Salia ‘Lassani’ Al-Hassan. Lastly, I would like to dedicate the work to the countless industrious Africans, usually women, that I met in the markets of Ghana who I believe at the individual grassroots level will make the country a strong social, economic and political force in the world at large.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	iv
-----------------------	----

CHAPTER

1	INTRODUCTION	1
2	OVERVIEW OF GHANA.....	7
	Birim South District.....	14
	Akyem Oda	16
3	HISTORIC WEST AFRICAN CITIES	24
4	WEST AFRICAN MARKET	41
5	AKYEM ODA’S DILEMMA.....	52
	Central Market	53
	Satellite Market.....	55
	Case Study	61
	Environmental Considerations.....	65
6	RECOMMENDED SOLUTION	85
7	LESSONS LEARNED.....	91
	Why design for Africa?.....	92
	Are western planning schemes appropriate?.....	94

Conclusion	95
GLOSSARY	97
REFERENCES	107

CHAPTER 1

INTRODUCTION

Outdoor open air markets are where commerce happens daily in Africa. These lively markets are deeply embedded in the traditional culture of Africa and are vital to a community's economic survival. A visit to Ghana would not be complete without a visit to one or several of these markets. In fact, it is impossible to avoid such an experience as markets are ubiquitous. Like in other West African communities, they are a fundamental social institution and a collective force in Ghana. Therefore, this investigation of markets is a vital key to community design and economic development in Ghana and greater West Africa. After a careful literature review, there is surprisingly little research on markets both as a cultural entity and even less as a spatial configuration within the context of the greater city. The notable exception would be the seminal book, Onions Are My Husband: Survival and Accumulation by West African Market Women, in which Gracia Clark studies the market women and the open air marketplace in Kumasi, Ghana (Clark, 1994).

The use of the term, market, is most often limited to the economic term and not to an actual location. For those tasked with the physical design and layout of a market, there are currently no written standards. This is an attempt for the future, to give guidance. Cultural sensitivity with particular consideration of site specifications unique to African opportunities and

constraints would advance improved community design in Ghana. This thesis will form a basis for providing more sensitive site criteria for the design and relocation of new markets in Ghana.

The proposal for a new community marketplace in Akyem Oda, a town in the Birim South district of Ghana, provides a model to begin the process. Oda is a small town of about 39,000 people. The author first visited Oda in 2006 and then again in 2007 as part of the ongoing University of Georgia (UGA) Ghana Summer Service-Learning Studio. Service-learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. Through the UGA service-learning program, many projects were initiated including topics such as: “Computers for Ghana” which looked at potential technology donors for local schools, an erosion control study with recommendations for improvement of the Zongo community (the Islamic settlement), and creating the *Gye Nyame* Scholarship Fund, which provides financial support to children attending local schools.

Frank Busumtwi, District Chief Executive of Birim South and the primary program contact, presented a proposal to the author. It was a plan, created in 2005 by Accra’s Sutherland & Sutherland and S. Tete & Associates, architects and planners, outlining a new scheme for a market in an area of Oda called Nkwantanum. The proposal was met with some controversy because the new location was viewed as competition for the traditional market. In addition, the proposal introduces new commercial zoning for the “satellite” market. Land use zoning, not unlike its introduction in America, is a contentious issue in Ghana. Government regulation is viewed with suspicion and implies new ways of managing change. Oda’s local government will have difficulty making the new ideas acceptable.

The “Proposed New Market at Nkwantanum, Akyem Oda” intends to (Sutherland et al 2005):

1. Promote diverse commercial activity,
2. Simplify the upkeep of a clean and hygienic environment and facilitate refuse management,
3. Give a more pleasant shopping experience,
4. Enhance the business and revenue generation potential of the given site,
5. Facilitate the management of emergencies such as fire.

To achieve these goals the market layout is designed:

1. In functional zones for each class of commercial activity in such a manner that the zones relate,
2. With a hierarchy of circulation to facilitate user orientation and give a logical pattern to the spaces,
3. With building types to suit the commercial value of their location within the market,
4. With segregated vehicle parking at suitable vantage points,
5. With a phased development that allows the growth of the market from a basic foodstuffs market to commercial services area with more sophisticated goods and services made available,
6. With civil works structures like drains and paved walkways that channel pedestrian traffic and storm water in a manner suited to the topography,
7. With architectural features that give character to the location.

During a visit in 2007, an opportunity for further investigation in Akyem Oda revealed conflicts between the traditional existing and operating central market and the new location. Interviews were conducted with citizens of Oda, the Honorable Frank Busumtwi, at the time still appointed DCE, market women, local planning staff, banking representatives who were familiar with the loan structure for market sellers known as ‘su-su,’ and several other decision makers familiar with the proposal for the market.

Since the previous visit in 2006, a new simplified and significantly less expensive plan was drafted by the planning department as an alternative to that of Sutherland & Sutherland and S. Tetch & Associates. This plan, presented by the planning department, is the most recent version “on the books” at the time of this writing in 2009. A funding shortfall has stalled the construction of the new market.

A market design for a mid-size town in a developing West African country will be successful if the socioeconomic, historical-cultural and environmental aspects are addressed with both sound research and methodology. In this case, the methodology is an interdisciplinary academic investigation spanning the fields of anthropology, history, international development, landscape architecture, and urban planning. This thesis is concerned with evaluating and achieving open air market design that is contextual and reflects Akyem Oda. This work is divided into seven chapters which includes a new design for the market.

In this first chapter, the author’s experience in the country was discussed, explaining how the project was first initiated and how that interest was sustained. The second chapter gives an overview of Ghana, its geography, history and its contemporary international situation. The

chapter also gives the geographic and socioeconomic information for the Birim South District and Akyem Oda, as well as a personal description of the latter.

The third chapter identifies significant historic West African cities and the common patterns that define them. The city, a cultural landscape, has its own unique patterns of development. These patterns relate to markets in Ghanaian cities, historically and socially. This chapter also shows how markets fit into the larger African urban framework. The fourth chapter introduces the topic of markets and provides a description of West African open air markets. The market is one of the most important physical features in West African society. A description of the central market in Kumasi establishes the spatial configuration and socioeconomic aspects of West African markets. This chapter concludes the literature review portion of the thesis.

The fifth chapter explores the issues surrounding Akyem Oda's new proposed market as well as socioeconomic conditions and the relatively new African concept of village sprawl. Economic development is the capstone issue and ultimate lens through which the changes in market function is analyzed historically and socially. Both central markets and satellite markets are discussed. Existing site conditions for the new market, the original 2005 proposal created by the architectural firm in Accra and a second more simplified plan developed by the local planning department in 2007 are presented in this chapter. A case study from Cape Coast and then satellite market examples from Accra are provided to establish whether such a market would be successful in Akyem Oda. The environmental aspects of the new market site are explored. First, the environmental challenges in Ghana and then, wetlands, water quality, public health, erosion control management and the use of culverts are evaluated.

The sixth chapter proposes a third alternate plan. Consideration is given to the sensitive environmental features of the site, which includes a stream, wetlands and steep slopes. The concept for redevelopment is based on previous chapters and attempts to maintain traditional Ghanaian market forms. The emphasis is shifted from designing a satellite market to a neighborhood market in which the orientation is to the immediately adjacent Nkwantanum community.

The final chapter calls for landscape architects to be international development professionals. The mandate focuses on ethical responsibility and demonstrates the relevance of this project. Three questions are answered: Why design in a developing country? Can sprawl happen in Africa? And are Western planning schemes appropriate for Akyem Oda? Finally, the last chapter establishes a philosophical and ethical foundation for international development. In the concluding remarks, ways to advance the project, such as funding, are presented. Lastly, other research and design opportunities that the author observed through involvement on this project are suggested for future work.

CHAPTER 2

OVERVIEW OF GHANA

The Republic of Ghana, formally the Gold Coast governed by the British, is located in the middle of the Guinea Coast, near the equator (figure 2.1). Its capital city, Accra, is located 5° 33' 0" north of the equator and 0° 12' 0" west of the Greenwich meridian line. Ghana is bordered to the North by Burkina Faso, to the east by Togo and to the west by Cote d'Ivoire. Its land area is 238,533 sq. km and is slightly smaller than the state of Oregon (CIA 2009).

The country can be divided by the Kwahu Plateau into two distinct climatic and environmental zones, the north and the south. The north is the grassy, dry, treeless savannah flatlands. It has two distinct seasons. The harmattan season is dry and hot during the day with relatively cool nights and occurs from November to late March or April. The harmattan refers to a dry and dusty trade wind that blows south from the Sahara. This dry season is followed by a wet season that reaches its peak in late August or September.

The south consists of the dense vegetation zone (Figure 2.2), grassy, dry, treeless savannah flatlands. There are four separate seasons. Heavy rains fall from about April through late June. After a relatively short dry period in August, another rainy season begins in September and lasts through November. Then, the longer dry season sets in to complete the cycle (Kuada 1999).

The southern coastline is unique among West African countries since it features a number of natural harbors. This fact alone, augmented by abundant natural resources of gold, timber, diamonds and agriculture, made Ghana attractive to Europeans for commerce. A prosperous economy stimulated substantial urbanization. Even before European colonization, the population was increasing rapidly starting in the 13th century when trading activities made the area attractive to people living in neighboring countries. Likewise, it was a major trading center on the West African coast during 17th Century slave trade. While the region remained autonomous from European powers for several hundred years after first contact, Ghana was annexed under British rule during the late 19th Century (Kuada 1999). It was Ghana's unique combination of geography, environmental attributes and natural resources that encouraged its early urbanization and relative economic prosperity.

The region has been inhabited for as long as 4,000 years, when nomadic tribes moved into the area. They brought with them cultural elements still common throughout West Africa today such as the tribal structure, agriculture practices, architecture, chieftaincy, matrilineal inheritance and spiritual beliefs (Insoll 2008). This culture is linguistically rooted in the Niger-Congo language family (Bendor-Samuel 1989). Currently, there are nine government sponsored languages: Akan, Dagaare/Wale, Dagbane, Dangme, Ewe, Ga, Gonja, Kasem and Nzema (Bureau of Ghana Languages 2009). Two dialects of Akan, Twi and Fante, along with Hausa among Muslims, serve as the lingo franca.

Historically, the most significant ethnic group was the Ashanti. The Ashanti Kingdom was consolidated in the late 17th century in Kumasi by Osei Tutu, a military leader and head of the powerful Oyoko clan. The Golden Stool and its symbolism were integral to the creation and maintenance of Ashanti nationhood. According to the legend, the golden stool was commanded

down from heaven by the priest, Okomfo Anokye, and landed in Osei Tutu's lap. He swore allegiance to the stool and was named the Asantehene (Asante King). It is believed to contain the 'sunsum' or spirit of the Ashanti people. Later, the Ashanti were one of the few African states to strongly resist the European colonizers (Carmichael 1993).

Outside non-African influences have also played a major part in shaping present day Ghana. The Northern part of the country is influenced by Islamic culture. This cultural influx created trading relations across the Sahara and the merchants contributed the spread of Islam (Insoll 2008). 16% of the current population practices Islam (Ghana Census 2002). Some put the estimates much higher. Islam has also impacted the built environment. In the northern town of Larabanga, there is a white-washed earthen mosque built in the style of former western Sudanese empires (Prussin 1969). This combination of the mosque with an ancient African building style illustrates the grace with which Ghanaians incorporate other cultural influences.

European influence began in 1482 when the Portuguese landed on the coast. With European gold mines dwindling, they were searching for new gold deposits. In 1482, they established the coastal city of Elmina, which is located about 12 kilometers west of Cape Coast, another significant town of early European colonization. They built Elmina Castle, also known as Sao Jorge de Mina (St. George of the Mine) as the first trading post built along the Gulf of Guinea (Figure 2.3). The Dutch seized the castle in 1642 and held it until the British Empire took possession of it in 1871. In all, more than 30 forts and castles were built along the coast by the Portuguese, Dutch, Danish and British traders. In addition to trading in gold, diamonds and ivory, these forts served a much darker purpose as posts for the Atlantic Slave Trade (Hair 1994).

Today five major tribal influences dominate Ghana. They are the Akan, the Ga-Adangme, the Ewe, the Gonja (Guan), and the Mole-Dagbani. The Akan are the most numerous,

at over 44%, and live in the southern parts of the country. The Akan includes the Ashanti, Akyem and Fante subgroups. The Akan and the southern communities have the longest and most far reaching contacts with Western religion and education. Most of the southern communities are predominantly Christian although there are many adherents of traditional animistic faiths. Significantly, due to European contact and influence, these communities have schools that were established eighty years earlier than their northern counterparts (Kuada 1999).

During the past fifty years, since gaining independence from Britain on March 6, 1957, there has been a major development in the country involving the migration of its citizens from rural areas to the cities. This is consistent with continental trends attributed to education improvements, access to public services, and more abundant and diverse job opportunities that cities provide. The major cities of Accra, Kumasi, Sekondi-Takoradi and Tamale have seen the most overall growth. However, even smaller towns such as Akyem Oda have grown tremendously (Ghana Census 2002).

The attitude of the people is also changing. Today's Ghanaian expresses a sense of renewed hope, pride, anticipation, and anxiety that only seems to grow. Since first conducting research in 2006 and then again during the summer of 2007, there has been noticeable increase in discussions concerning growing prosperity within the country. People speak of Ghana's rise onto the global scene. Ghana's recent international reputation was established by Kofi Annan, the former United Nations Secretary-General, and also by national heroes like the soccer star, Michael Essien, notable for his performances during the 2006 World Cup Championship in Germany.

These contemporary public figures add to a growing list of notable Ghanaians. Kwame Nkrumah who was the prime minister in 1952 became Ghana's first president from 1957 until

1966. He was critical in the global Pan African Movement as well as Ghanaian independence (Birmingham 1998). During the 1950's and 1960's, E.T. Mensah was a world famous bandleader and trumpeter who performed and created songs in the Highlife musical genre (Collins 1996). Ghana also attracted important members of the African Diaspora. W.E.B. Dubois, American civil rights activist, became a naturalized Ghanaian citizen in 1963 (Lewis 2000).

In 2007, the 50th anniversary of independence marked the beginning of a new era (Quist-Arcton 2007). The African Union Summit was hosted in Accra in July 2007. The expression of 'African Unity,' the pan-African vision of the first Ghanaian president, Kwame Nkrumah, was the common theme during the Summit's talks and heard on the streets throughout the country. 'Unity' continues to be a popular theme (BBC 2007, July 1).

The feeling of hope comes with an undercurrent of tension. One source of anxiety is the increased use of the sometimes undependable electricity sources. Lake Volta is created by the Akosombo Dam, officially known as Akosombo Hydroelectric Project, which is located in the Eastern Region. The lake is notable for being the largest artificial reservoir in the world. Water levels fluctuate and electricity does not always meet the national demand. The Akosombo Dam was constructed to provide electric power for the entire region, but the system was based on estimates for 1960's power usage. Power shortages and power rationing occurred weekly in 2007. These shortages remind citizens that there is much to be done to achieve full 'modernization' (French 2007).

The problem and promise of energy is much broader than the Lake Volta dilemma. Recently, the discovery of offshore oil reserves in June 2007 has encouraged expectations for major economic growth (BBC 2007, June 18). There is also caution. In recent African history, the discovery of abundant natural resources has not necessarily resulted in the people's

prosperity. Kofi Annan expressed this concern best: “Instead of being exploited for the benefit of the people, Africa’s mineral resources have been so mismanaged and plundered that they are now a source of misery.” (Annan 2000)

A new president was elected in 2008 and confirmed in 2009. This was a race to succeed the presidency of John Ayekum Kufuor Ghana’s president from 2001-2008, a member of the National Patriotic Party (NPP). The opposition, NDC (National Democratic Congress) party, elected John Atta-Mills as president. This comes at a time when the country is anticipating new revenue generated by offshore oil drilling. Government oversight to avoid corruption is needed to ensure Ghana’s continuing success (BCC 2009, January 3).

In many respects, economic data suggests that Ghana is out-pacing many African nations. However, the World Bank classifies Ghana as a country with a ‘low income economy,’ which means that the Gross National Income per capita is US \$975 or less (World Bank 2009). Ghana’s national economy is organized around local, resource-based manufacturing with an emphasis on services and processes in the forestry and agricultural sector (Ghana Ministry of Trade 1997). Annual Gross Domestic Product (GDP) growth increased from 3.7% in 2000 to 6.2% in 2006, and the GDP is expected to continue increasing through 2009 (International Monetary Fund 2007).

In 2006, Ghana’s population was estimated at 22.5 million, with annual growth of 1.9%. It is the second most populous African state after Nigeria. The total labor force in Ghana was estimated at 11 million (CIA, 2009). No reliable data is available on unemployment, but the African Development Bank estimates that general unemployment falls between 10% and 20%, and general youth unemployment between 20% and 30% (African Development Bank 2006). The United Nations Development Programme (UNDP) Human Development Index (HDI) ranks

Ghana at 135 of 177 countries and shows a steady increase between 1975 and 2000, with a slight decrease between 2000 and 2005 (UNDP, 2007). The Human Development Index combines three variables: the measure of life expectancy at birth, adult literacy rate and combined primary, secondary, and tertiary gross enrollment. By these Human Development Index (HDI) measures, Ghana has consistently performed above average for sub-Saharan Africa over the past three decades. Ghana ranks 65 on the UNDP Human Poverty Index list, which places it substantially higher than any other West African country in the World Economic Forum's 2004 Africa Competitiveness Report (World Economic Forum, 2006).

There are indications that point to a country that has failed to create a strong economy with a more equal distribution of wealth. The slow increase of Gross Domestic Income (GDI) is an example. In 1957, the income level measured US \$200; yet, after forty years later, it is measured US \$420. Compare this to South Korea, who's GDI equaled Ghana's in 1957 but achieved a level of US \$4,400 in 2007 (Ayittey 2008). Consider the following statement by the President, John Kufuor:

“Ghana was the first sub-Saharan nation to win its independence from a colonial power in 1957. Yet the average per capita income of my people is lower now than in the 1960's, four decades after independence. Some of the blame for this we Ghanaians must accept. My country must acknowledge that corruption has been a canker on our public and economic life and must be contained. One hundred years ago, our trading was limited to the supply of raw materials, mainly gold, timber, and cocoa. I must admit that Ghana's path to self-reliance has not been smooth. I am painfully aware that our past can be characterized by one step forward and two steps backward.” (Kufuor 2002)

Ghana remains unattractive for some investors due to poor infrastructure. Many firms know that to set up business entails that they must “BYOI,” an acronym for “bring your own infrastructure.” Ironically, despite the initial large investment, African rates of return are among

the highest. Former president of Tanzania, Julius Nyerere states summarily: “Most African countries still lack the necessary physical infrastructure for rapid economic and social development. This in my view is the most important factor militating against significant flows of foreign direct investment to Africa.” (Nyerere, 1998) Designers, engineers, and architects can create needed infrastructure. Without a visionary plan for predicting infrastructure demands in twenty to fifty years, Ghana will face the same issues it deals with now related to Lake Volta and the Akosombo Dam.

Birim South District

The Birim South District is located in the Eastern Region, one of ten administrative regions in Ghana (figure 2.4). The other regions are: Ashanti, Brong-Ahafo, Central, Greater Accra, Northern, Upper East, Upper West, Volta and Western Region. According to the 2000 census, the Eastern Region is the third most populous with a population of 2,106, 696. It is the sixth largest with an area of 19,323 km². Its capital is Koforidua, which is located in the New Juaben district. In 2000, this city had a population of 87,315 (Ghana Census 2000). In addition to its administrative functions, Koforidua is also the region’s commercial center. Significant for its future growth as a commercial center, there is a now defunct railway station that was once a part of the national Ghana Railway Network. Currently, there are plans to rehabilitate the railway system in Ghana (Ghana Ministry of Transportation 2009).

There are a total of 17 districts in the Eastern Region. The Birim South District is in the south westernmost corner. 60% of the district is made of Akyem Kotoku traditional areas centered in Akyem Oda, the district’s capital. The Birim South District’s total area is 1,090 km²

or 420 square miles. There are about 150 settlements, mostly hamlets. In 2000, there was a total population of 178,459 (Ghana Census 2000).

The district is named after the Birim River that flows through the district from east to west and is one of the main tributaries of the Pra River. The Birim rises in the east of the Atewa Range, flows north through the gap between this range and the Kwahu Plateau, then runs roughly south-west until it joins the Pra River (figure 2.5). The banks of the Birim River produce most of the industrial diamonds in Ghana. The Birim Basin, rich in many minerals, was a major source of gold for centuries (Dickson et al. 1988).

The district was once covered with dense tropical forests. The ‘Big Tree’ located outside of Akyem Oda claims to be the largest in West Africa with 39 feet in circumference and 218 feet in height. Now much of the land has been cleared for farming. The current forest coverage is semi-deciduous with the economically important Mahogany tree. The landscape is dotted with sawmills and furniture workshops where carpenters craft products from local wood. More than 50% of the population is engaged in agriculture. Approximately 58% of farms are small in area at less than 7.5 acres. The type of farming is mostly subsistence farming. The crops include cassava, maize, groundnut (peanut), rice, plantain, cocoyam, tomato, okra, and peppers. Larger farms produce cash crops such as cocoa, citrus, and palm oil. Surplus crops are sold in local outdoor markets (Nagel 2007; Birim South District Assembly after 2002).

Akyem Oda

Akyem Oda is the commercial and administrative center of the district (figure 2.6). It is a mid-size Ghanaian town, large enough to have its own central market. In 2000, there was a population of 38,731 (Ghana Census 2000). Akyem (also spelled Achim or Akim) means ‘salt trader’ and refers to one of the major Akan groups of Ghana. There are three major divisions: Akyem Abuakwa, Akyem Kotoku and Akyem Bosome. Akyem Abuakwa is the northernmost and located in the Atewa Hills. Kibi is its capital. Akyem Kotoku is the middle division and Akyem Oda is its capital. Akyem Bosome is the southernmost and Akyem Swedru is its capital (Affrifah 2000).

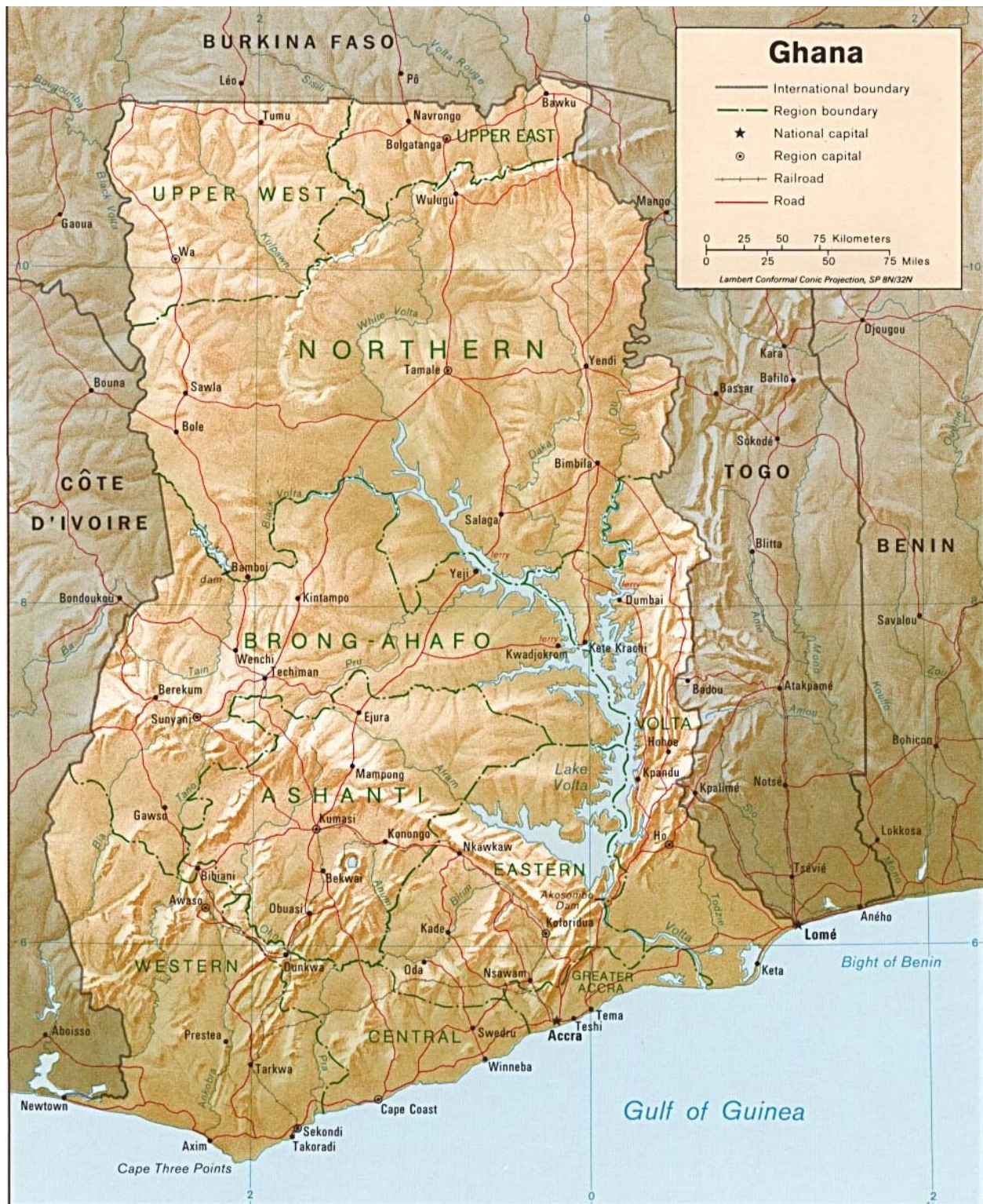
The town of Akyem Oda was founded in 1863. In 1860, a war between the Abuakwa and Kotoku forced the Kotoku to migrate to Western Akyem. The Kotoku were then briefly the guests of the Bosome in Akyem Swedru. The Bosome assisted in their application for land in the neighboring chieftaincy. It was first called ‘Nusuaem,’ meaning ‘The Slice.’ The name was changed to Oda or Akyem Oda in 1922 (Affrifah, 2002).

Oda is surrounded by forests with patches that are intensively cultivated. There are many dirt footpaths that the citizens use to travel from these farms to the town. In addition, there are major automobile roads leading out of Oda to Akyem Swedru and Achiase in the south, Akyem Asene and Akyem Manso in the east, and Akyem Wenchi in the north. Oda is divided into three main parts by the rivers Bonware and Apetesu which drain into the Birm. There is an out of service rail line passing through the town. It connected the terminal town of Kade in the north via Oda to the Accra-Takoradi line at Achiase. The town center is defined by the central market and

the lorry station. Larger industrial operations such as the saw mill are located outside of town (Nagel 2007).

The town is sometimes divided into Old Town and New Town. These districts are separated by the Bonware River and its associated wetlands, which is crisscrossed by foot paths and boardwalks. New Town contains the market, the adjacent lorry park, government administrative buildings, the hospital and surrounding neighborhoods and shops. As its name suggests, it was created after the other and many of the households are more prosperous.

Old Town is characterized by its traditional buildings. There are many groups of earthen houses arranged closely together as part of a compound around communal open spaces. There is very little space between one house's wall and another's, leaving just enough room to walk. Many of the houses feature courtyards with rooms opening to a central gathering area. Old Town contains the Zongo, a Muslim neighborhood which includes the town's main mosque as well as several minor ones. The Old Town Main Road is the only paved road and runs through Zongo ending at the Birim River. There is a pedestrian ferry crossing on the Birim that allows non vehicular access to the farms and diamond mines on the other side.



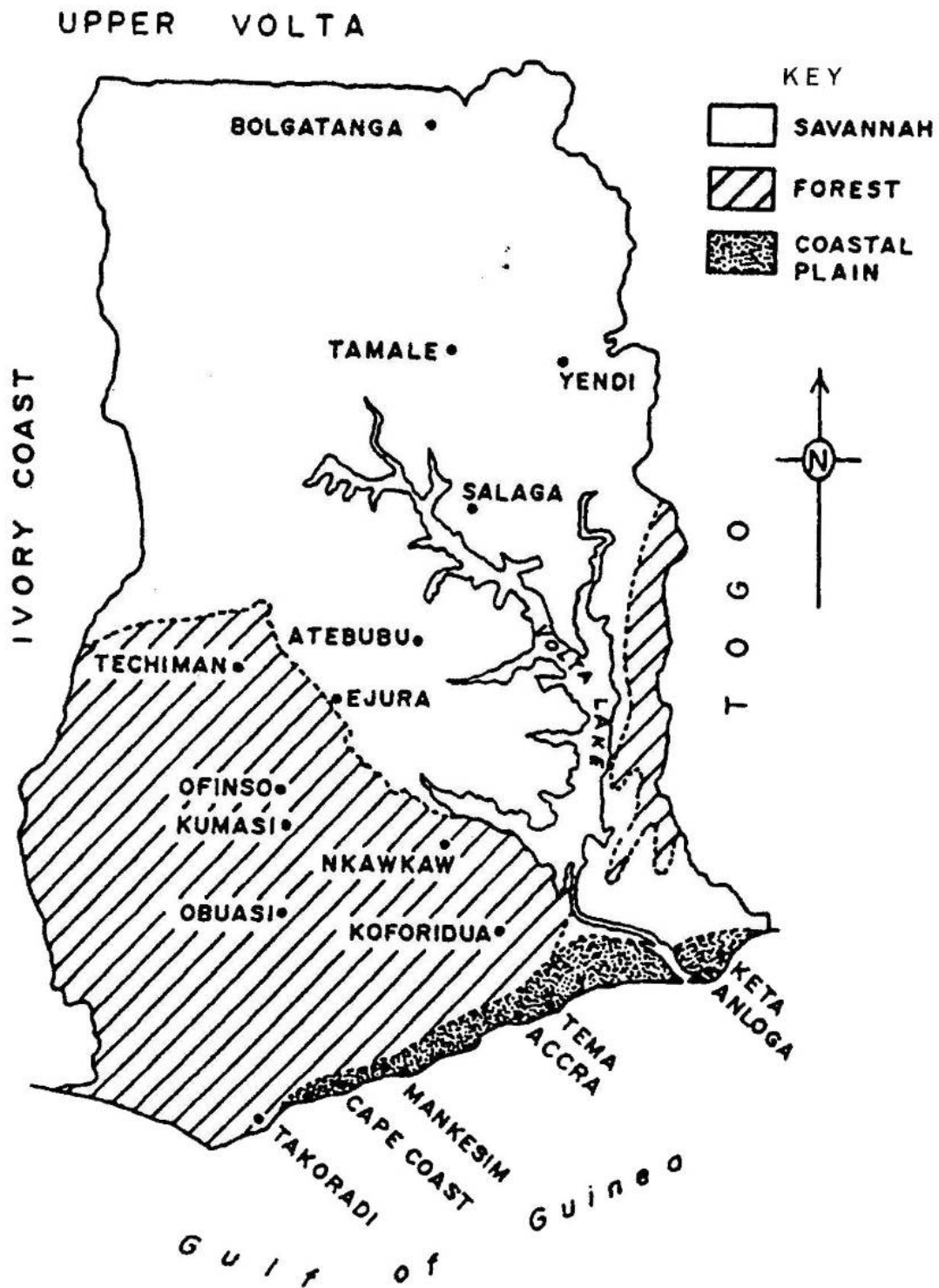


Figure 2.2: Environmental Zones (Clark 1994)

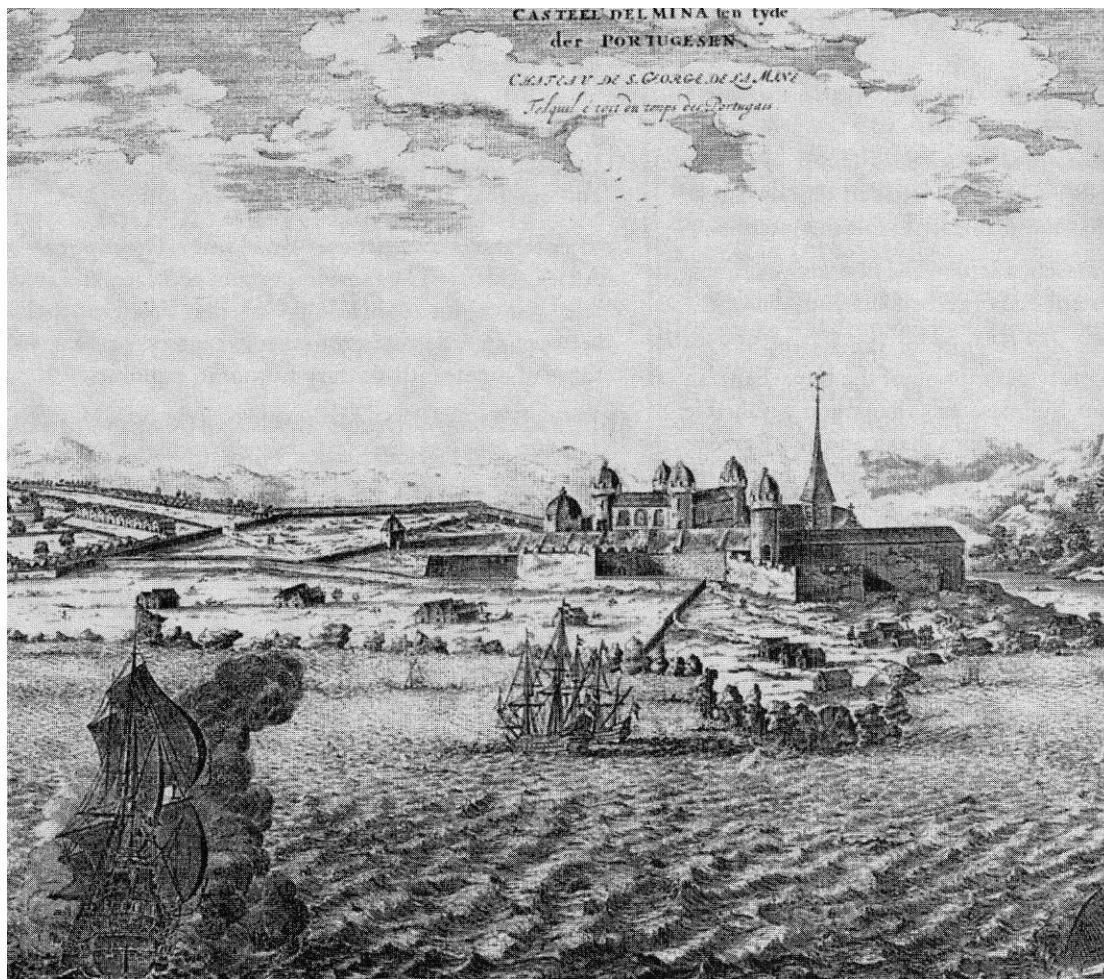


Figure 2.3: Elmina Castle (Dapper 1668)

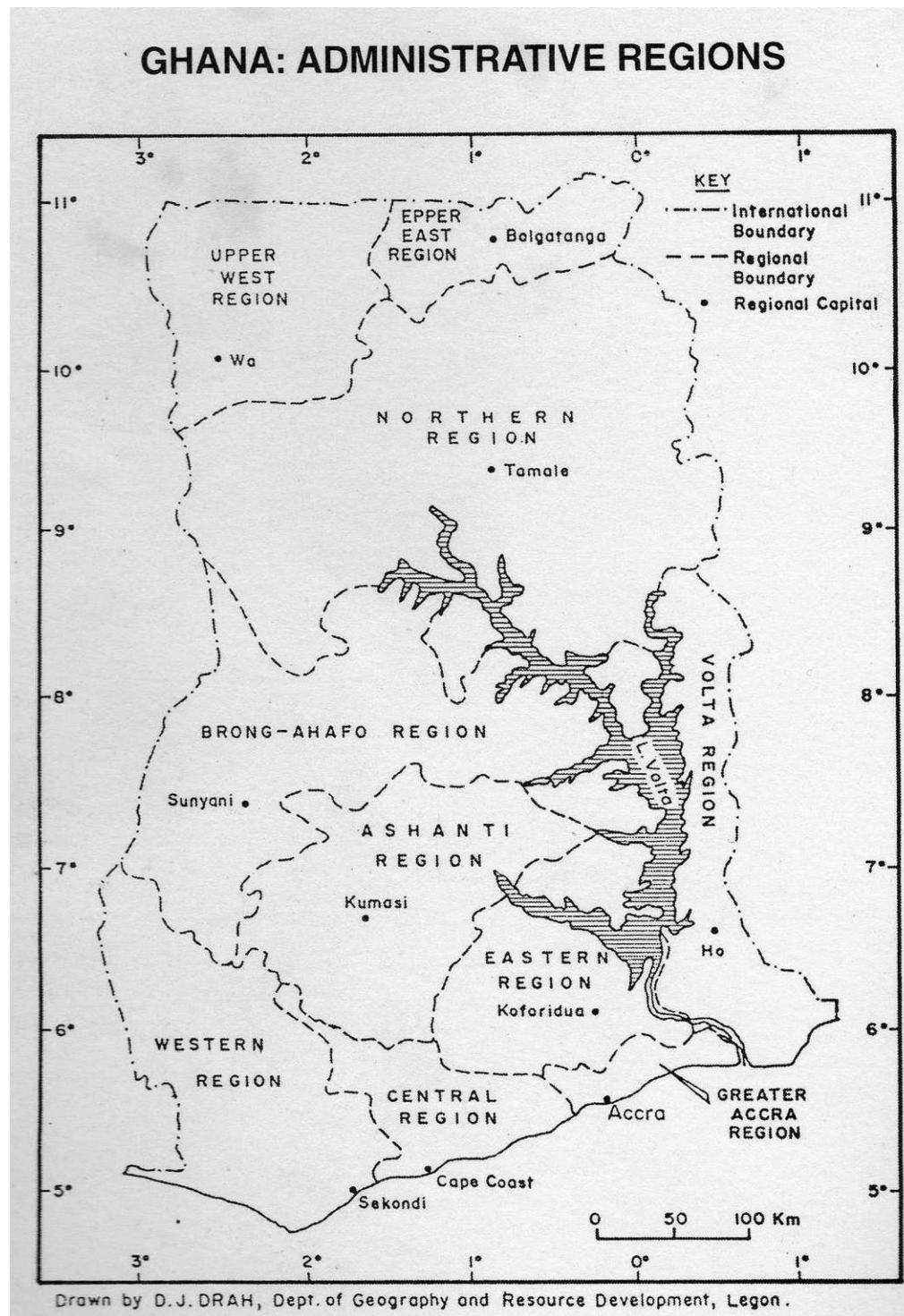


Figure 2.4: Regions of Ghana (Kuada et al 1999)



Figure 2.5 Sketch Map of Pra River in Ghana and Tributaries (Aymatth, 2009)

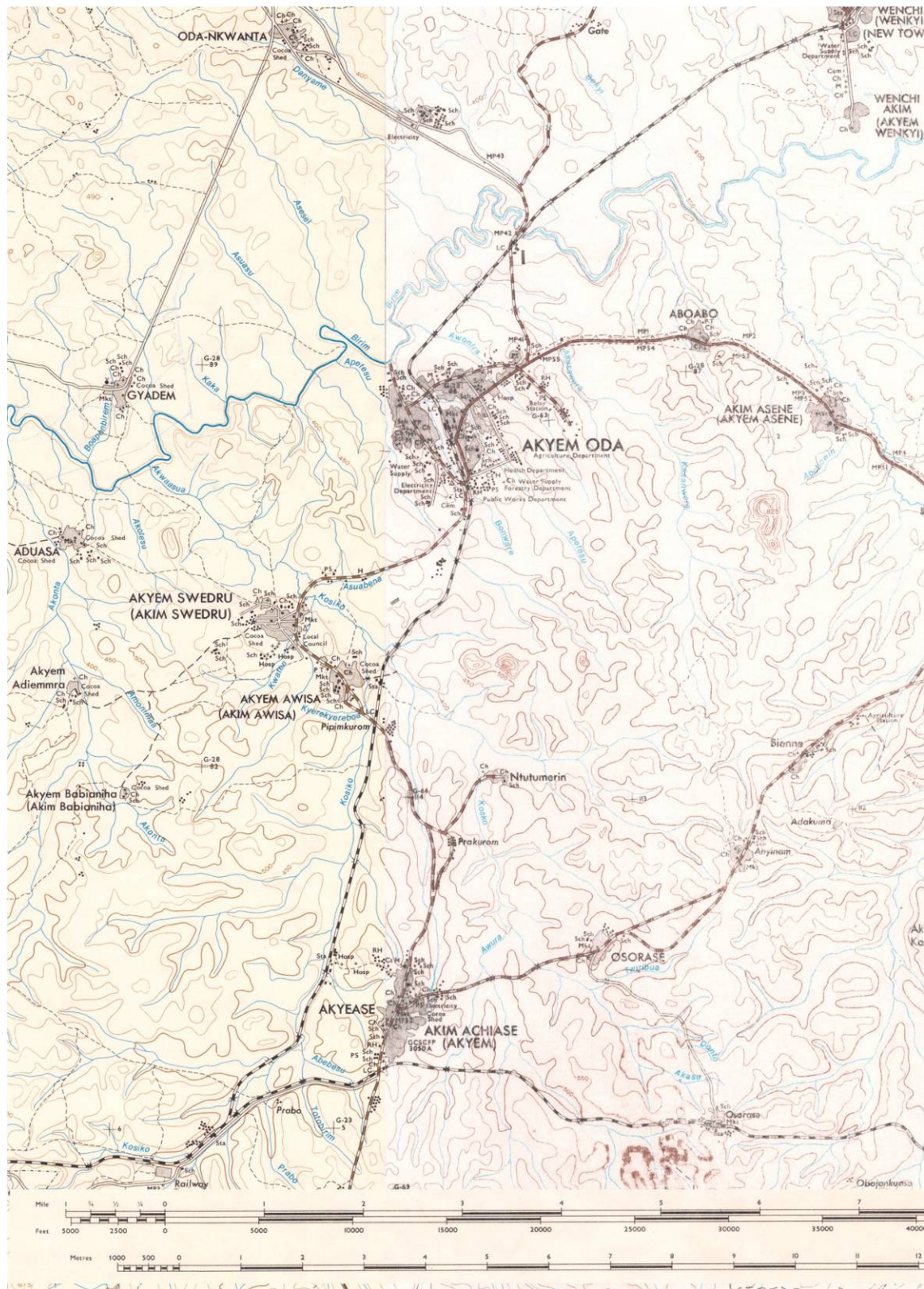


Figure 2.6 Map of Akyem Oda (Survey of Ghana 1972)

CHAPTER 3

HISTORIC WEST AFRICAN CITIES

One approach for understanding markets is within the context of historic West African cities. It is even possible to argue that there are (or were) uniquely West African kinds of cities and towns. These include: Jenne-Jeno, Al-Ghaba, Kano, Oyo Ile, Ibadan, Ilesha, Benin, and Kumasi (Figure 3.1). This chapter explores and identifies the unique urban and landscape patterns associated historically with cities in West Africa: urban ecotones, walls, sacred hills, city networks, a seasonally migratory urban-rural workforce, an ethnically heterogeneous population, broad streets lined with trees and markets. Of these, the market is the focus of the thesis, but other patterns explored here may contribute to a better design for Akyem Oda.

West Africa includes the geographical area occupied by the contemporary nations of Mauritania, Mali, Senegal, the Gambia, Guinea, Guinea-Bissau, Cape Verde, Nigeria, Niger, Benin, Togo, Burkina Faso, Ivory Coast, Ghana, Sierra Leone and Liberia (Figure 3.2). The northern section of West Africa is known as the Sahel, a transitional zone between the Sahara desert and the savannahs of western Sudan. Forests form a third belt between the savannas and the southern coast, ranging from 160 to 240 kilometers in width. The historical territories occupied by the ancient Ghana Empire, the Hausa city states, Yoruba townships, and the Ashanti

Empire give great insights into understanding Oda's market and settlement patterns (Freund 2007).

One of the most ancient settlements in the sub-Saharan African archeological record is near the modern town of Djenne in Mali. The site is called Jenne-Jeno and archeological excavation has revealed sixteen centuries of occupation beginning in c. 200 B.C. (McIntosh 1995). Jenne-Jeno is unlike other old settlements of the river Niger, which were associated with the trans-Saharan trade in gold and existed as commercial linkages on the route. The trans-Saharan gold trade began in the 5th century A.D. with Berber people traveling on camels in caravans to trade in gold from western and central Sudan for salt (Figure 3.3). The gold trade was primarily increased by the demand for and supply of coinage (McIntosh 1995).

However, in Jenne-Jeno's case, the population concentration at these sites preceded the trans-Saharan trade of gold, the influence of Arab people and the arrival of the camel. Around 800 AD, there were estimated 20,000 people living there. No political or sacral authority explains this population concentration. Therefore, it appears to be an example of indigenous generated trade and indigenous social complexity in response to a unique environment (McIntosh et al 1981).

Inhabitants survived through mostly subsistence agriculture. Site deposits indicate early rice cultivation along with sorghum, millet and wild swamp grasses. Furthermore, Jenne-Jeno and its agriculture seem to respond to the particular characteristics of the local environment - where the desert, desert edge, plain and river all meet. Jenne-Jeno is an ecological 'edge city' and occupied a habitat known as an ecotone (Freund 2007).

An ecotone is a transition area between two adjacent ecological communities such as a forest and grassland. The word combines *eco* with *tonos*, Greek for “tension” and refers to a place where ecologies are in tension. The scale may be local such as the zone between a field or forest or regional – the zone between a forest and grassland. The ecotone may appear as a gradual blending of the two communities across a broad area or as a sharp boundary such as a forest and cleared land. Often, ecotones display greater diversity of species due to a broader range of habitats (Smith 1974). Environmental factors may be the primary reason for Jenne-Jeno’s existence. Therefore, because it is so unique, Jenne-Jeno cannot be suggested as a typical ancient city type for West African. However, its unique response to site and environment might be a model for creating an authentic West African city with solely indigenous foundations (Freund 2007; Smith 1974).

West Africa’s ancient city of al-Ghaba or ‘The Grove’ was located approximately 320 kilometers north of modern day Bamako, Mali. The 1068 A.D. description of the town by an Arab geographer al-Bakri is what we know today. Like Jenne-Jeno, Al-Ghaba occupied a unique ecological niche and was situated at the desert’s edge. Geopolitically, it belonged to a larger state, known in the historical narrative as Ghana. This is the ancient Ghana that predated the modern nation. The Ghana Empire or Wagadou Empire existed c. 790-1076 and was located in what is now southeastern Mauritania, and Western Mali (Figure 3.4). The empire was situated in the vast savannah area between the Senegal and Niger Rivers (Freund 2007).

Al-Ghaba, which was the empire’s capital city, was part of a twin city called, Kumbi-Saleh in modern Mauritania with a combined population of 15,000 inhabitants. The centers were 9.6 kilometers apart although residential settlements filled the area between the two. The other

city center was a Muslim quarter. This was the main commercial center and it housed North African merchants (Hull 1976).

Ghaba was the administrative center, a royal town where the king resided and an indigenously powerful place, independent of outside control. From the al-Bakri account, royal houses were constructed of acacia wood and stone. The king had a palace with conical huts surrounded by a fence like wall. The palace was decorated with carvings, paintings and the windows were fitted with glass. There were religious compounds with domed structures where local gods and ancestors were worshiped. Since the royal family was intimately connected to the houses of the ancestors, we can assume that political authority was directly linked with spiritual power. Common residences were traditionally constructed of mud and thatch and all of al-Ghaba was surrounded by a defensive earthen wall (Hull 1976).

There are unique West African settlement patterns, many of them seen in al-Ghaba. There is the enclosing earth wall. Numerous examples of walling large territories, cities and home sites and creating compounds exist throughout ancient West Africa (Freund 2007). Another common pattern is that of the sacred landscape and its physical markers such as hills, rivers, and groves. Spiritual authority residing in the land is common among African beliefs. African people were creating a link between the spiritual world and the living by locating the living in close proximity with the ancestors such as the royal houses of al-Ghaba with the religious compounds (Hull 1976).

A settlement's proximity to a sacred hill is an important practice for creating a spiritual link. One example, both historical and contemporary, is the Hausa city of Kano. Kano is considered the center of Hausa trade and culture. This city is located in Northern Nigeria and is

associated with a sacred hill known as Dalla Hill, whose elevation is 534 meters. Kano was first known simply as Dalla and in the seventh century, it was a community of iron workers (Staudinger 1990).

Kano has another typical pattern of organizing the settlement around a commercial market. The current market, Kurmi, is in the center of the old city. It has been in use since the Fifteenth Century. Kano residents are known for their astuteness in trade, culture development and worldly wisdom. Kano's reputation in trade is quite old. "In Kano, the greatest of all Nineteenth Century artisanal and commercial centre, European travelers marveled at the fine organization of the market and the equitable relation between the state and commerce, whereas much trade was actually carried out within the houses of merchants." This suggests that trade was so fundamental to everyday life that there was no physical separation between trading activities and other household functions (Staudinger 1990).

As also suggested in al-Ghaba's description, Kano's population fluctuated with the trading season. There were 60-80,000 people in late Nineteenth Century and additional 5,000 foreigners during the commercial season in the winter. Major trade items were guns, horses, ivory, ostrich feathers and salt. Kano was part of a spatially grand commercial network that centered on Cairo and thus was typical of a functional network of towns based on the demands of trade (Staudinger 1990).

Kano had walls around its old town, which was common in Hausa speaking settlements in Nigeria. These walls were presumably for defense and defined the major Hausa speaking cities of the central savanna in West Africa. For the Hausa, a city by definition must have walls for political authority and defense (Staudinger 1990).

In the Hausa language, there is a term for city that is uniquely African: *Birni*. *Birni* means city as a distinct social unit and is an old established concept in the Hausa language that is quite distinct from village or town as it denotes “urban activities.” In this meaning, a city is less about physical form and instead about something dynamic. Any *birni* will contain an ethnically mixed population. Perhaps for this reason, a *birni* has a ruler, known as *sarki* that cannot be a tribal chieftain. The *sarki* must seek to balance the royal influence (Freund 2007).

The Yoruba also built notable cities such as Ibadan and Ilesha, which share common patterns with other West African cities. Entire networks of towns, villages and cities were located south in Nigeria’s savannah forest border. At the time of British conquest, Yoruba were located in urbanized agglomerates (Freund 2007; Bascom 1955).

The major Yoruba city of Oyo Ile was considered their greatest political center until the close of the Eighteenth Century. It was 15-20 square miles were and surrounded by defensive earth walls. It was sometimes called Katunga or Old Oyo. Oyo Ile was the capital of the Oyo Empire, which was established by the Yoruba people in the Fifteenth Century. It was one of the largest West African states. The city engaged extensively in trade and became wealthy. The palace of the ruler or *oba* was the most important building (Figure 3.5). A large market was the heart of the city (Freund 2007; Bascom 1955).

Another city, Ibadan, located at the junction of the savanna and the forest in south western Nigeria, had a soaring population of 200,000 people in the late Nineteenth Century. Ibadan was organized around networks of compounds led by the heads of lineages and who were in effect also land owners. There were 40-400 people per compound with quarters for different ethnic groups. People were not limited to living solely in the city. Many went out to work in the

fields where they maintained temporary shelter. Seasonal migration between cities and agricultural lands is still very common practice today (Bascom 1955).

The Yoruba city of Ilesha's population of 20-25,000 people in the Nineteenth Century made it a political and social capital. Some of its physical characteristics include: the presence of royal graves and shrines, a large range of quarters dominated by chiefly households associated with particular lineages and craft specialties. On a larger geographical scale beyond the city, there were satellite towns that owed their allegiance to Ilesha. It is significant that some cities were large enough to influence regional growth patterns (Peel 1983).

In the city of Benin in south central Nigeria, east of Yoruba country, the Dutch traveler, Olfert Dapper, writes in 1668 of wide thoroughfares and vast royal precinct with beautifully wrought galleries and decorated low lying palaces (Figure 3.6). "The king's palace or court is a square, and is as large as the town of Haarlem and entirely surrounded by a special wall, like that which encircles the town. It is divided into many magnificent palaces, houses, and apartments of the courtiers, and comprises beautiful and long square galleries, about as large as the Exchange at Amsterdam, but one larger than another, resting on wooden pillars, from top to bottom covered with cast copper, on which are engraved the pictures of their war exploits and battles..." (Dapper 1668). Importance was placed on the ruler's compound and suggested in the centrality of political life; there is a link between physical organization and political authority (Freund 2007).

The use of wide thoroughfares linking political organization and political authority were features of the Ashanti city of Kumasi. Kumasi was the seat of the asantehene or king of the Ashanti. It was also the central place of the Ashanti confederacy, which was a West African state

with pre-colonial origins located in central Ghana. Kumasi was built on the slopes of a rocky ridge. The population was between 15,000 and 20,000 in the late Nineteenth Century and numbers would swell at times of festivals. Many people farmed in the surrounding countryside. Like Benin, there were decorated courtyards and galleries (Figure 3.7). “The streets are generally very broad and clean and ornamented, with many beautiful banyan trees, offering a grateful shade from the powerful rays of the sun” (Wilks 1975).

The growth of Kumasi into a powerful city can be explained through the strong political culture of the region and immense wealth. Kumasi depended on a powerful king to maintain urban existence. Villages in the Ashanti region didn’t have any fortifications like walls or fences as villages in other parts of West Africa have. The well organized Ashanti army fought mainly in the forest and as a dominating force mainly outside its territory (Oliver 1976).

The Kumasi region was very active, commercially trading gold and kola nuts over long distances. However, commerce was not primarily handled in Kumasi but in the market town of Kintampo, a great northern market town but with little political weight. Kintampo was noted for its ephemeral dwellings, erected when the commercial season was bustling. This is suggestive of the city network pattern, in which some cities specialize (and thus rely on more ‘complete’ cities) while others are more generalized (Freund 2007; Wilks 1975).

In Kumasi, during the time of the Ashanti kingdom, the typical courtyard form was developed. The ordinary house had one courtyard and if it was large, up to four. The basic house had four open-sided rooms (*patos*) enclosing a courtyard (*gyaase*). The king’s palace had around twelve courtyards each decorated differently. The house, which contained the shrine of a god and decorated with animal motifs on the outside, had two courtyards, one for the public ceremonies and the other for the priests. The ceremonial courtyard was enclosed by four open rooms; the

shrine room, one room for the singers, one for the drummers and the kitchen (Oliver 1976). The courtyard form was present throughout the Ashanti kingdom and in its villages (Figure 3.8). In Kumasi, during the time of the Ashanti kingdom, the typical courtyard form was developed. The ordinary house had one courtyard and if it was large, up to four. The basic house had four open-sided rooms (*potos*) enclosing a courtyard (*gyaase*). The king's palace had around twelve courtyards each decorated differently. The house, which contained the shrine of a god and decorated with animal motifs on the outside, had two courtyards, one for the public ceremonies and the other for the priests. The ceremonial courtyard was enclosed by four open rooms; the shrine room, one room for the singers, one for the drummers and the kitchen (Oliver 1976). The courtyard form was present throughout the Ashanti kingdom and in its villages (Figure 3.8).

This chapter identified patterns that many historic urban centers share in West Africa (Figure 3.9). Many of these patterns are also applicable to modern Ghanaian cities. The patterns include: urban ecotones, walls, sacred hills, city networks, a seasonally migratory urban-rural workforce, an ethnically heterogeneous population, broad streets lined with trees, courtyards and markets. The next chapter explores the market pattern in detail.



Figure 3.1: Ancient Cities of West Africa (Freund 2007)

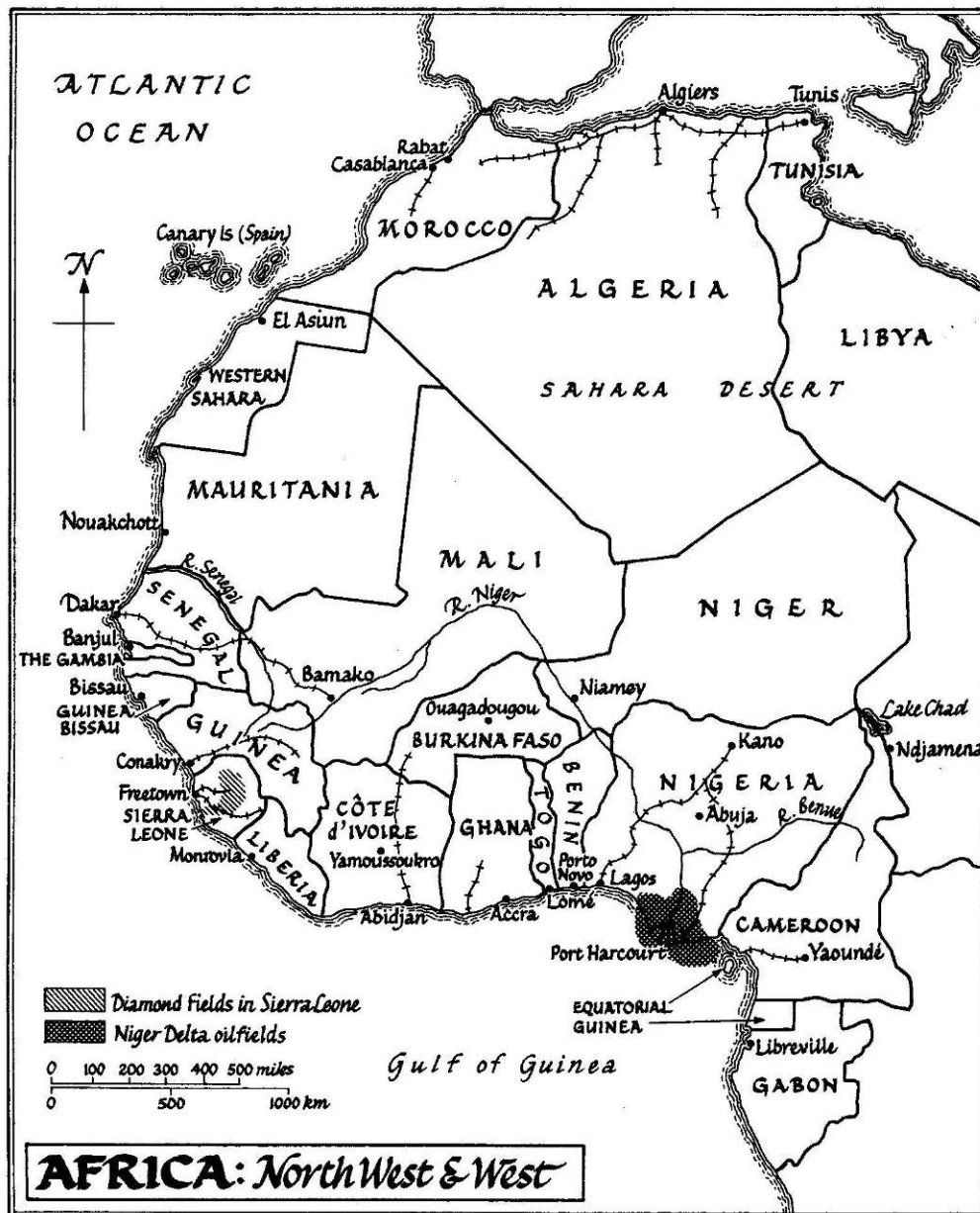


Figure 3.2: West Africa (Meredith 2005)

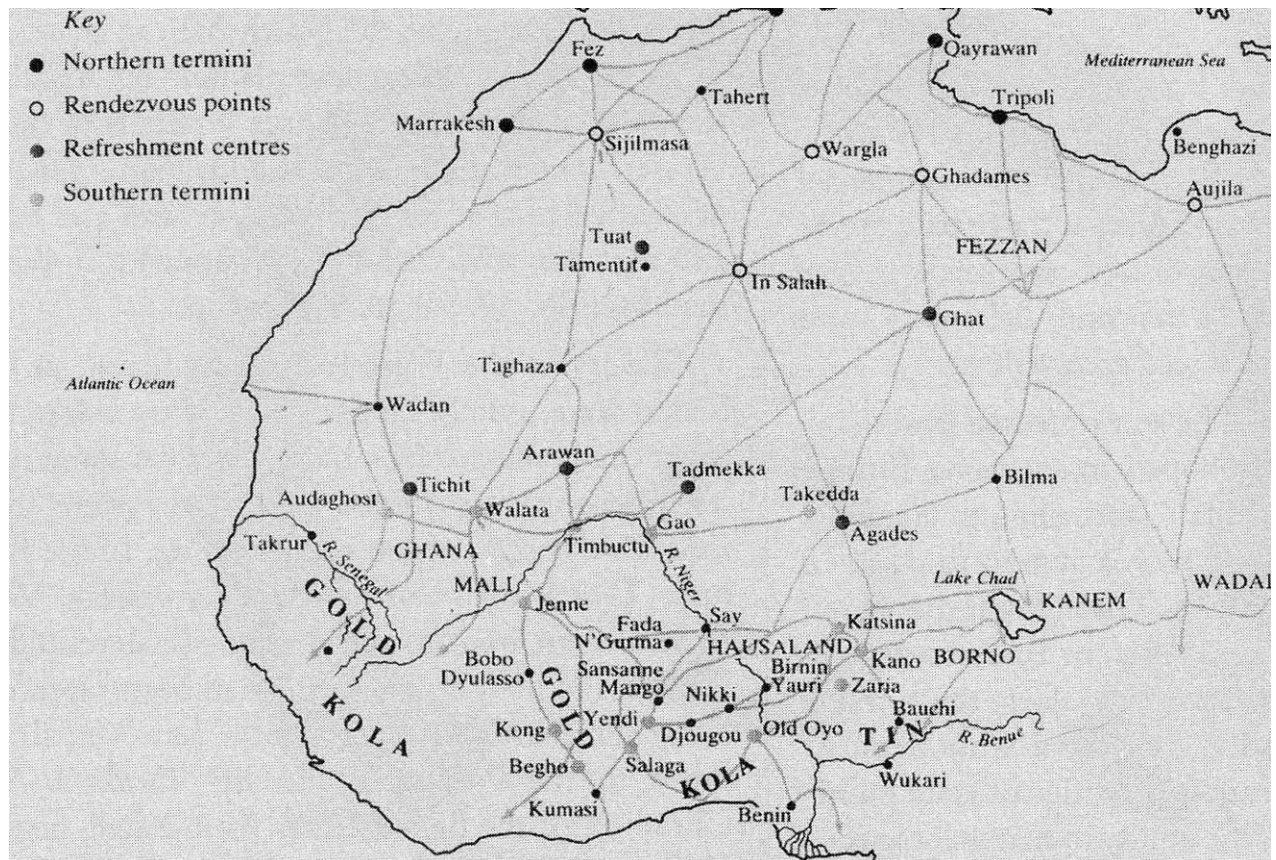


Figure 3.3: Trans Saharan Trade (Boahen 1986)

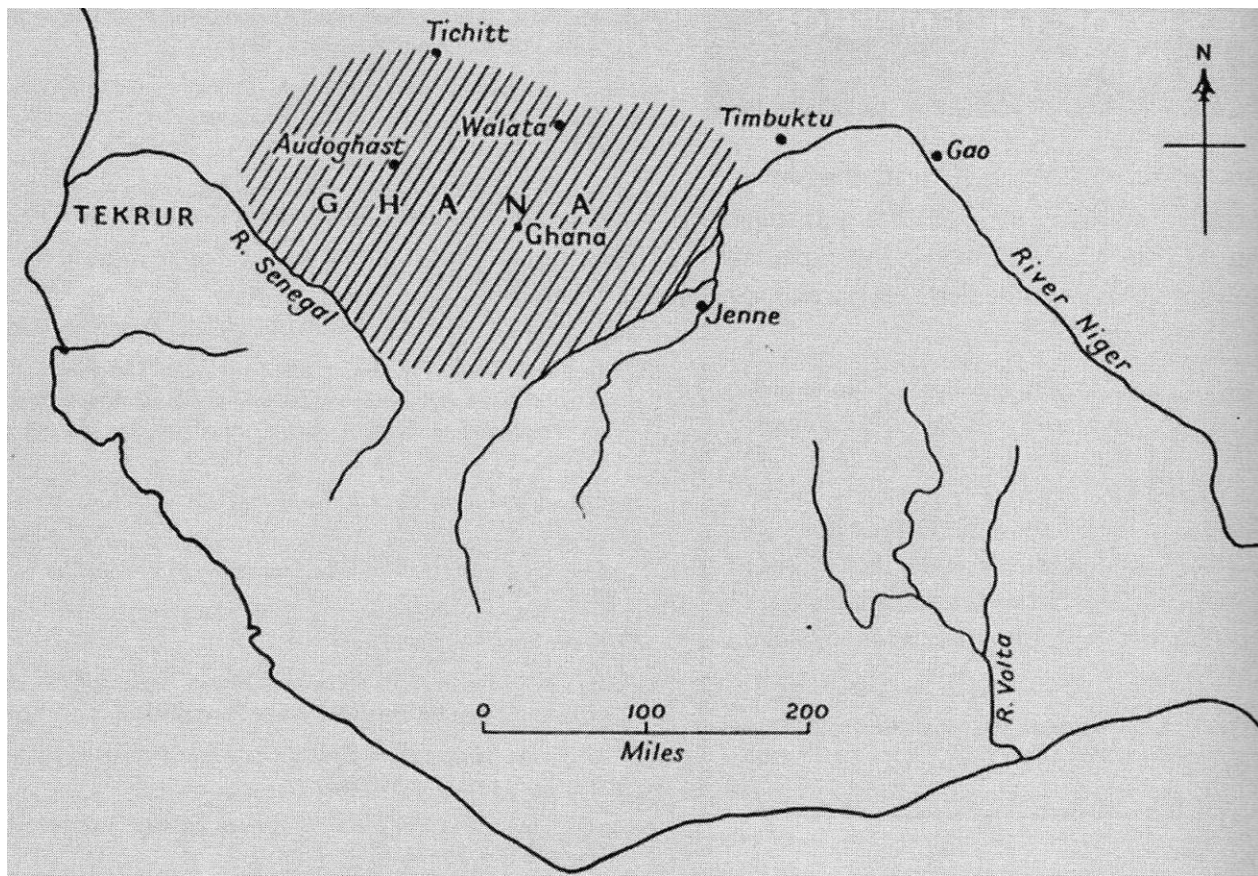


Figure 3.4: Ancient Ghana Empire (Davidson 1965)

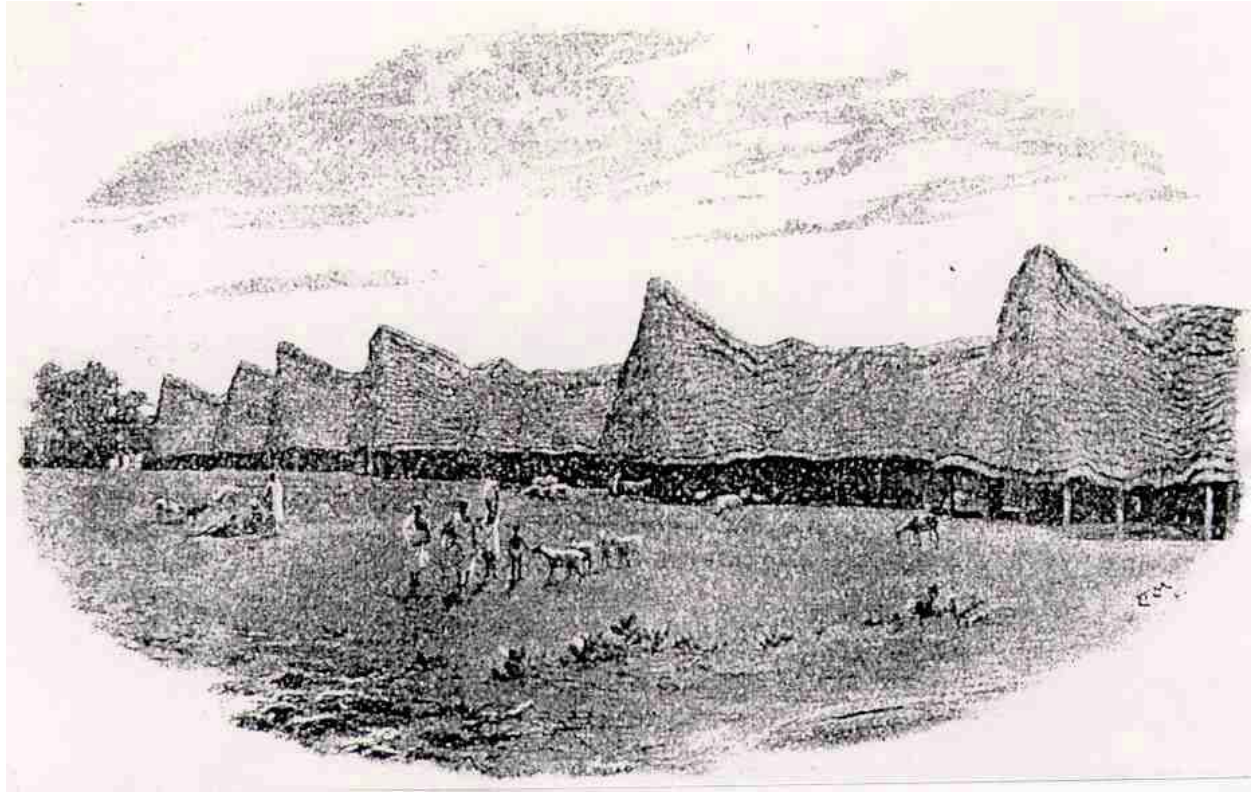


Figure 3.5: Oyo Ile Palace in the 1890's (Freund 2007)

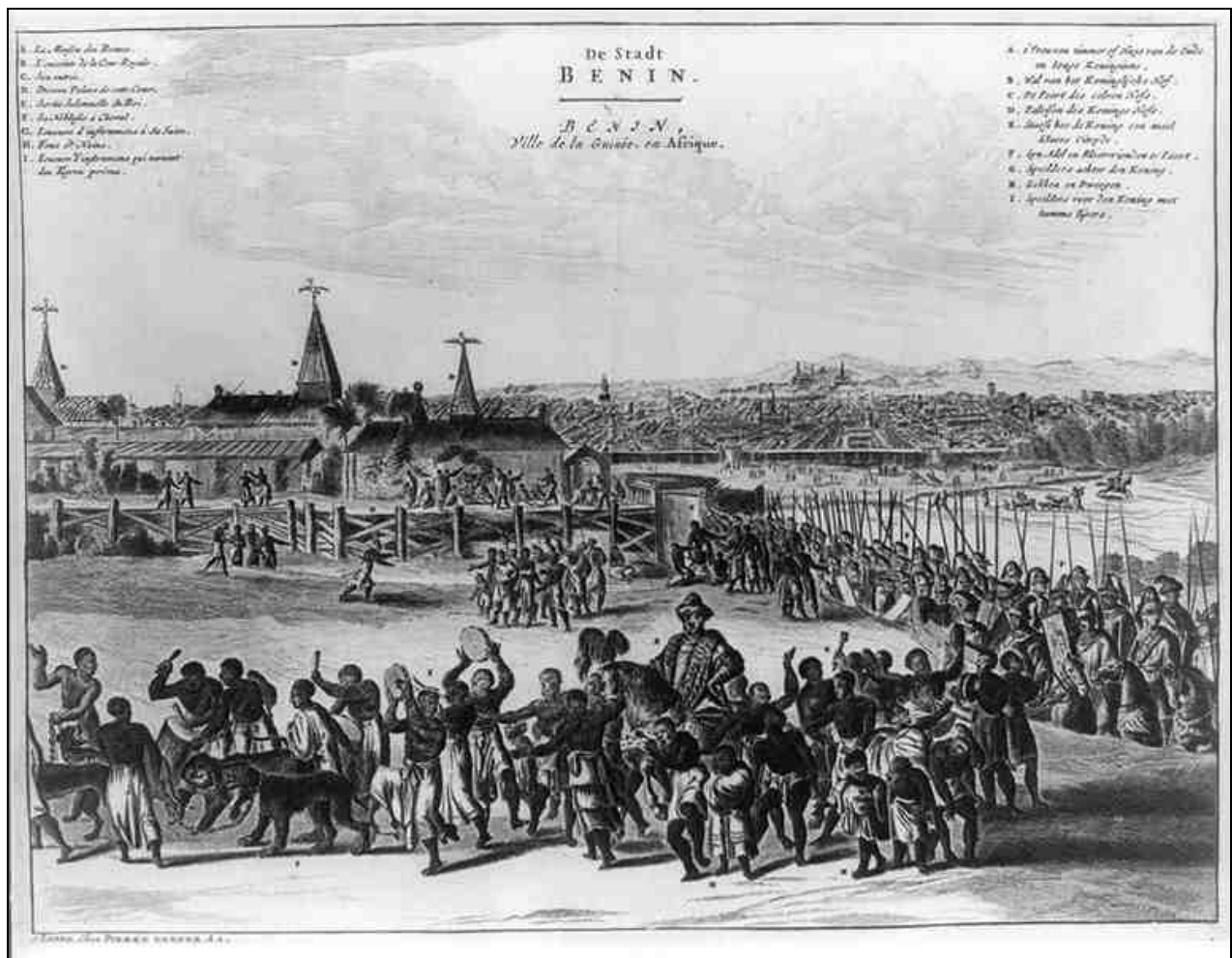


Figure 3.7: 1668 Engraving of the city of Benin (Dapper 1668)

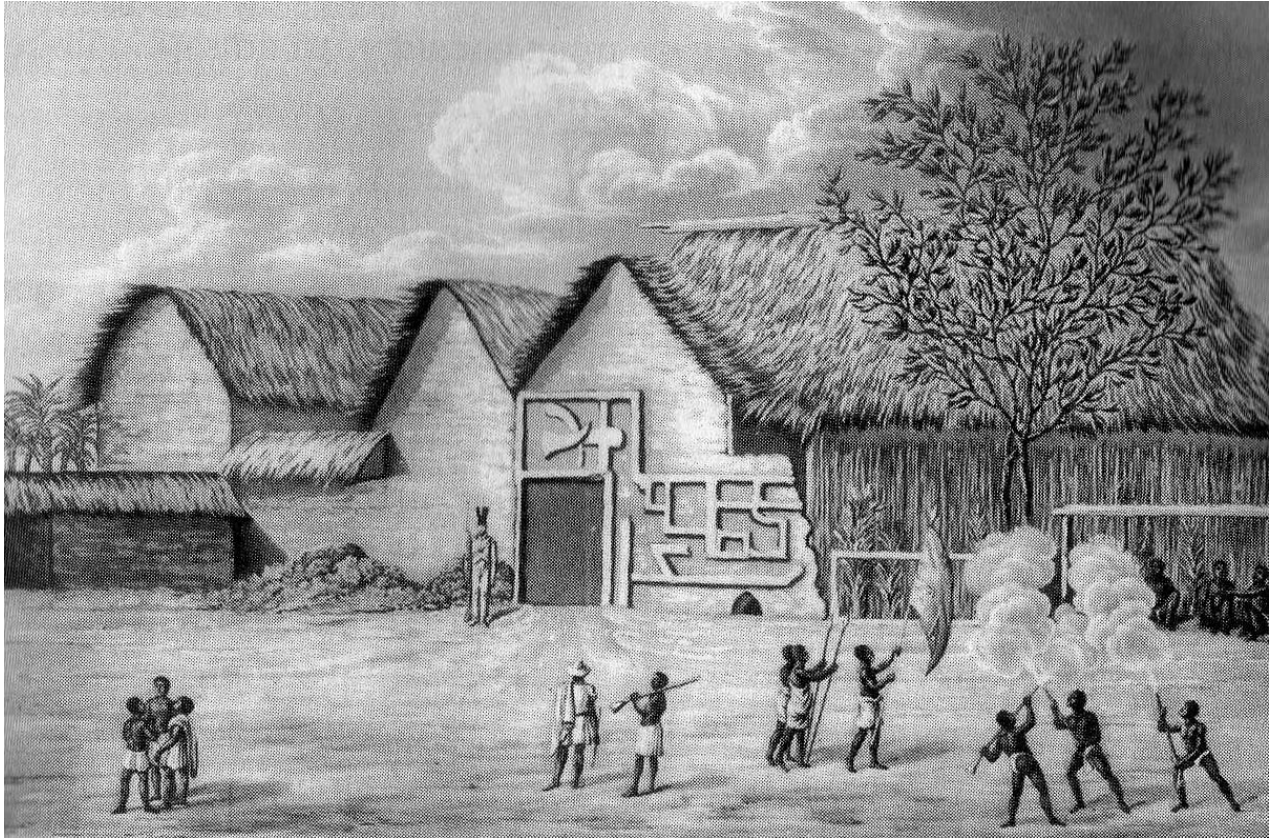


Figure 3.8: Decorated Buildings in Kumasi (Dupois 1824)

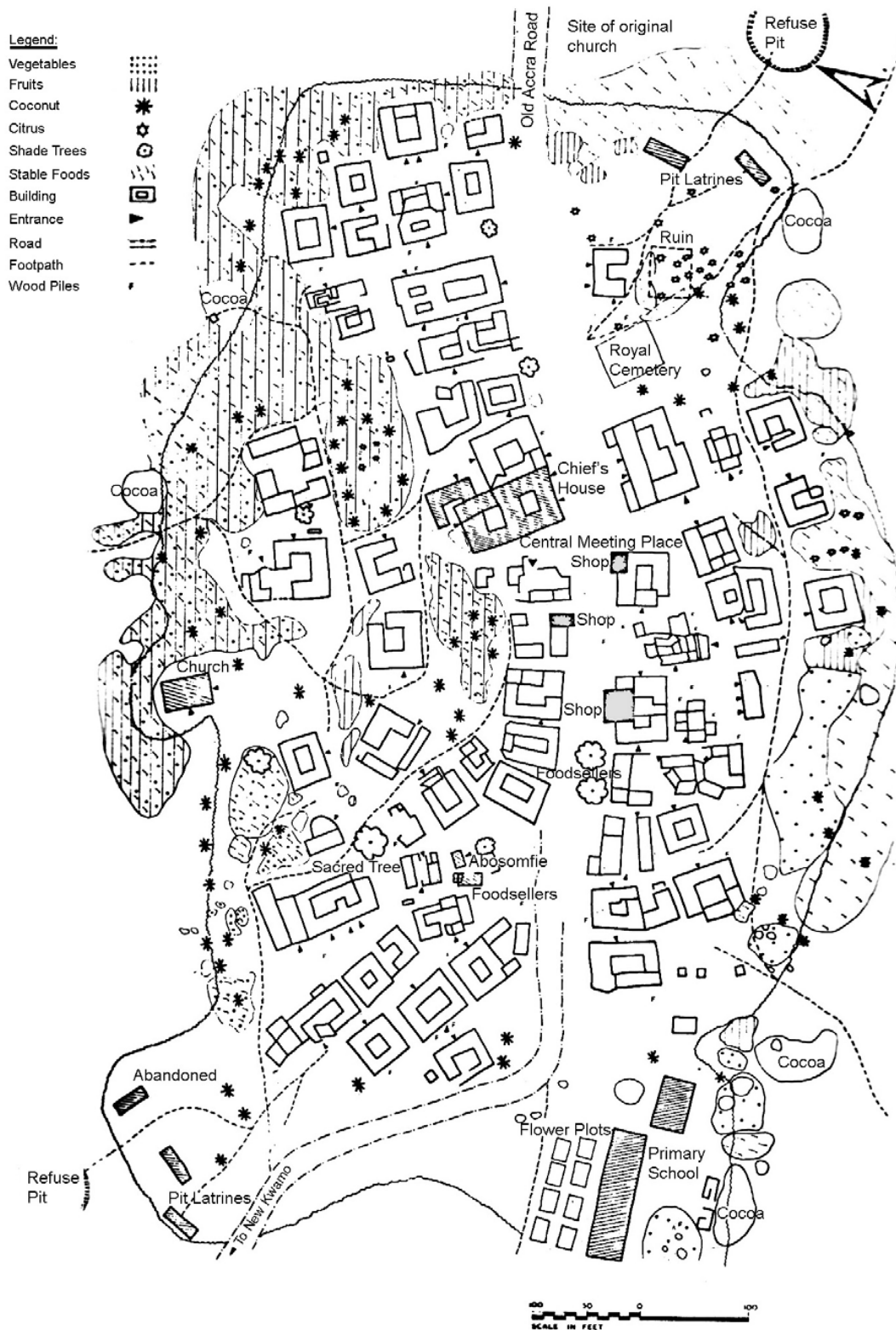


Figure 3.8: Map of the village of Old Kwamo showing buildings with courtyards (Oliver 1976)

City Patterns of West Africa

City	Ecotone	Wall	Hill	Network	Urban- Rural Mobility	Mix. Pop.	Broad Street w/tree	Courtyard	Market
Al- Ghaba	x	x				x			x
Benin							x	x	x
Ibadan	x			x	x	x			x
Ilesha				x					x
Jenne- Jeno	x								x
Kano		x	x	x	x	x			x
Kumasi				x	x		x	x	x
Oyo-Ile		x							x

* Market pattern is present in all the cities; however, it varies by number of markets and the location of markets. See text for further description.

Figure 3.9: Distribution of Historic West African Cities (Hayden 2009)

CHAPTER 4

WEST AFRICAN MARKETS

West African contemporary cities still exhibit many of the patterns identified in historic settlements. One pattern that consistently emerges is that of the centrality, both socially and physically, of the market in West African society. Markets were part of the cultural landscape and central to the organization in the city of these large and remarkable towns. Towns usually had an area set aside for a market, but where there were not permanent markets, weekly markets were held somewhere on the length of the main street of town (Farrar 1996). Some historic cities had many markets in addition to the central one. In Oyo Ile, the existence of seven separate markets was reported. Intra-town trade was probably far more important than regional commerce and thus, city markets dealt directly with each other (Freund 2007). Jean Barbot writes of Ghanaian markets in the late 1600s and describes “...many little lanes, crooked, and very irregular; all of them ending at the wide open place, which they commonly leave in the center of the town, and call it the market-place: serving daily both to hold the market, and to divert the inhabitants.” (Barbot 1732).

In contemporary West Africa, the outdoor open air markets are among the most dynamic marketplace systems, expanding rather than withering under long contact with capitalism (Clark 1994). Markets are a source of product delivery, nutritional subsistence, economic development, communication and local identity. For many locals, they are the primary places to shop, the only

source of fresh produce and affordable prices. Open air markets are an alternative form of retailing in the industrialized world, but are the main source of retailing in less developed countries. In Ghana, they are ubiquitous and necessary. They promote sustainable economic development by helping small farmers, providing jobs, requiring little infrastructure, and recycling goods and materials.

Markets function for both sellers and buyers as business incubators and “survival safety nets” for people at the economic bottom. There is a predominance of women in this profession (Sudarkassa 1973). Women, who may be excluded from certain forms of manual labor and yet have fewer opportunities for professional careers, find a chance at success within the trader profession and market hierarchy. For these vendors, markets are a low cost way to start an enterprise, exchange information, build a reputation of trust, and a way to earn income. Markets lower the consumers' cost of obtaining goods and services because they are an inexpensive way for people to market their wares in a friendly but competitive business environment. Bargaining is the way of business throughout the markets. Markets' space and function provide a physical and fiscal center for communities. These complex spaces can embody a society's behaviors and beliefs. They are closely linked to West African culture.

Important markets in Ghana are Kejetia in Kumasi, Makola in Accra, Takoradi's Market Circle and Techiman's large food market. These are located physically in the cities' central business districts. In mid-size cities with populations of 30,000 to 60,000, the central market is the only major market with smaller surrounding (at an approximate 20 mile radius) neighborhood and village markets (Ghana Statistical Service 2002). Cities that are considered mid-size include Akyem Oda with 38,731 people and Techiman with 56,187. Cities comparable to Akyem Oda's population are Yendi (40,336) and Winneba (40,017). Important large cities

include: Tamale (293,879), Takoradi (175,438), Cape Coast (118,105) and Koforidua (87,315). These have more neighborhood markets than the mid-size cities but retain the central market as a defining primary area of commerce. The largest cities in Ghana are the capital, Accra, which has a population of 1,659,136 and Asante city of Kumasi with 1,171,311 (Ghana Statistical Service 2002). In addition to the large central Makola Market, Accra has experimented with satellite markets. The success (or lack) of satellite markets will be discussed in the fifth chapter.

Kejetia or Kumasi Central Market is the largest of all Ghanaian markets (Figure 4.1). It is the most strategically located both in the city's center and in the geographical center of the country (Figure 4.2). It is serviced by paved roads linked to major cities (Figure 4.3). The current location of the market was founded in 1925. Daily trading populations is estimated at 15,000-20,000. There are over 10,000 stores and stalls fully occupied by traders dealing in every conceivable product. 70% of the traders are female and 65% are Asante, the dominant ethnic group in Kumasi (Clark 1994). Gracia Clark describes the view of the market from Kejetia traffic circle:

“It spreads a living carpet of energetic, even desperate commercial initiative down a broad wedge of valley land, overflowing the original rows of stalls, built inside a sharp bend in the railway line, into adjacent streets and open areas. Tables, stalls and storefronts display a dizzying range of commodities, from local foodstuffs, services and crafts through imports and locally manufactured goods, including all items regularly bought by local residents.” (Clark 1994)

In Kumasi, there is no typical trader. There are a range of enterprises from the largest wholesale magnates to some of the poorest strolling hawkers. “At one entrance, the wealthy rice and sugar dealer leans on dozens of burlap bags making her long distance telephone call, while a hawker passes selling cooked rice by the spoonful from a pot on her head.” The overall impression is one of diversity, juxtaposition and dynamism (Clark 1994).

Kumasi's Central Market shares a specific spatial configuration with other Ghanaian central markets (Figure 4.4). They are organized by commodity type and whether wholesale or retail. Each market location attracts a characteristic set of buyers and sellers by the kind of transaction. There are three main divisions: bulk commodity wholesale, specialized commodity retail and mixed commodity retail (Clark 1994).

Bulk commodity wholesale is located on the outer edge of the market in "yards" or *bode* (plural *mbode*). These yards contain foodstuffs that are sold in high volumes and are characterized by a few traders with huge piles of goods, boxes, bags and baskets. The yards are strategically located next to garbage dumps or *bola*. Plantain and Orange sellers in particular require close proximity to dumps (Clark 1994).

Specialized commodity retail is located in the market's core and organized in "lines." Specialized commodity retail refers to businesses that sell a single commodity in quantities not large enough to classify as wholesale. These businesses are organized in lines of stalls and can be identified by the commodity name plus *dwa* (Two for market) or *apata* (shed or stall). Therefore, a yam seller would be called a *bayere dwom* (yam market). Sellers in this section typically buy their goods from wholesale yards and belong to trader's groups (Clark 1994).

Mixed commodity retail is located beside and between the wholesale yards on the market periphery. These are traders that deal in several different but often complimentary commodities. For example, one of these traders might sell garden eggs, avocados, tomatoes and salt to accommodate buyers who seek to gather all their daily perishable needs in one stop and favor rapid shopping. In this way, mixed retail areas serve the same purpose as neighborhood markets where buyers shop locally for their daily needs. These traders obtain their goods from a variety

of sources: smaller transient village markets, directly from farms or from the specialized retailers (Clark 1994).

In addition to the traders who have static locations within the market, there are mobile types of traders. Specialized traders who spend time on the road transporting goods are called *nkwansuto* or “on the road people.” Some of these are “lorry chasers” who can be found in the lorry parks early in the mornings, buying goods from trucks to resale later in other markets. Hawkers are another type of mobile trader. Because there is minimal overhead, many choose this path to one day become established traders (Clark 1994).

Traders more than the hawkers are in many ways a privileged minority because they rent space that is in intense demand. “Rights to stalls within the market precincts constitute valuable working asset for those individuals and their families, rights which can be unofficially bought, leased, borrowed, and inherited. Less privileged locations in adjacent open areas and lorry parks also gain value because of their proximity to the central market, drawing high traffic that promises the chance of a livelihood” (Clark 1994).

Ghanaian central markets have a typical daily rhythm. Buying begins at dawn for the retailers who purchase directly from farms or smaller neighborhood village markets. Wholesale purchasing peaks between nine and ten o’clock in the morning. For consumer retail shopping, the peak is between eleven o’clock in the morning and two o’clock in the afternoon. Perishables are sold in the morning and prices are reduced heavily in the late afternoon. The afternoon is when large institutions such as schools, barracks, restaurants and prisons make their daily purchases. Large wealthy households who are planning a party also shop at this time for the best prices (Clark 1994).

There are many types of commodities sold in markets. Food is the most common and defines the look and smell of the market. It can be divided into three types: perishable, nonperishable and imported. Perishable foods include: cassava, tomatoes, *kantomire* (green leaf vegetable), onions, okra, pepper, yams, plantain, palm nuts, corn dough, cassava dough, meat, eggs, fish and snails. *Fufu* and *kenkey* both fermented local foods along with bread require special processing. Other nonperishable foods are: oil, salt, groundnut paste, shea butter, beans, corn, cassava flour and rice. Imported foods are: baking powder, curry, yeast, coffee, spices and Maggi cubes.

Clothing is sold alongside African fabrics such as *kente* and *adinkra* cloth with culturally significant stamped patterns. Seamstresses are available to create whatever clothing requested from the cloth. Other products and services include: bags, sandals and shoes, ice water, baskets, hair plaiting, chewing sticks, bicycle repair, glass beads, pots, native medicines, laundry starch and calabashes. There are also many industrial products such as cassettes, soap, spare parts, drugs, mosquito coils, cutlasses and plastic ware.

In Ghana, the trading in bulk commodities takes place mainly in rural periodic markets. These markets serve the needs of a region. Buyers from city central markets go to rural areas to bargain and purchase commodities at a competitive price. These rural bulking markets also sell goods to local villagers (Trager 1981). However, some specialize solely in selling to town buyers and exclude local consumer needs (Smith 1975). In Ghana, a few periodic markets perform regional bulking and transfer functions for goods which pass through major ecological zones such as the coast, the forest, and the savannah. Techiman, Atebubu, and Ejura contain markets that are roughly located between the forest and savannah vegetative zones (Clark 1994).

Techiman Market in the south and the Offuman Market in the north are the major periodic markets. Many varieties and large volumes of farm produce are traded (Ghana Districts 2009).

In Kumasi, there exist other neighborhood markets that function in relation to the central market (Figure 4.2). The city has about twenty-eight neighborhood markets (Ghana Districts 2009). Important neighborhood markets include Bantama and Asafo, which has its own lorry park. As a result of government action, some major commodities are located away from the central market such as cattle sales, which were transferred to a slaughterhouse. Frozen fish are sold in an outlet in the Asafo market. Neighborhood markets in residential areas do not challenge the central market's dominance because these specialize in wholesale quantities of a few particular commodities and not in specialized retail commodities. However, they do compete with the central market's mixed retail areas in appearance and function by displaying the vegetables and starchy staples bought daily by most Ghanaians. The surrounding neighborhoods benefit from their proximity. These markets offer the convenience of buying all items needed without the congestion and standing in line for public transport that the central market requires. For traders, the neighborhood markets have the advantage of relatively low rent. However, with the exception of Asafo market, most neighborhood markets have poor physical facilities (Clark 1994).

This concludes the literature review portion of the thesis. The fifth chapter examines Akyem Oda's dilemma. Special attention is given to the planning of satellite markets and how they might function in a mid-size city.



Figure 4.1: Kumasi Central Market (Cassity 2001)

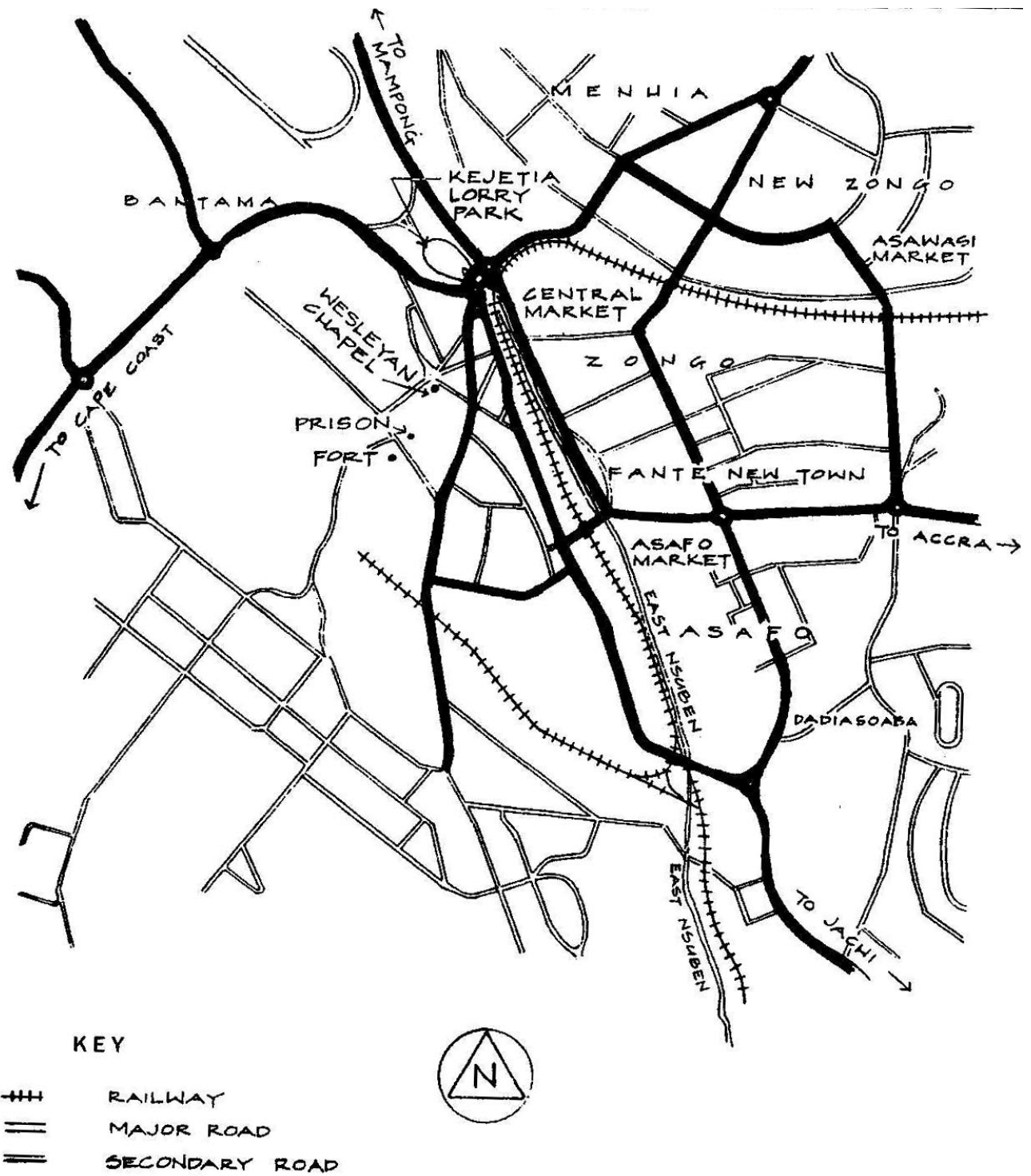


Figure 4.2: Map showing Kumasi's market locations (Clark 1994)

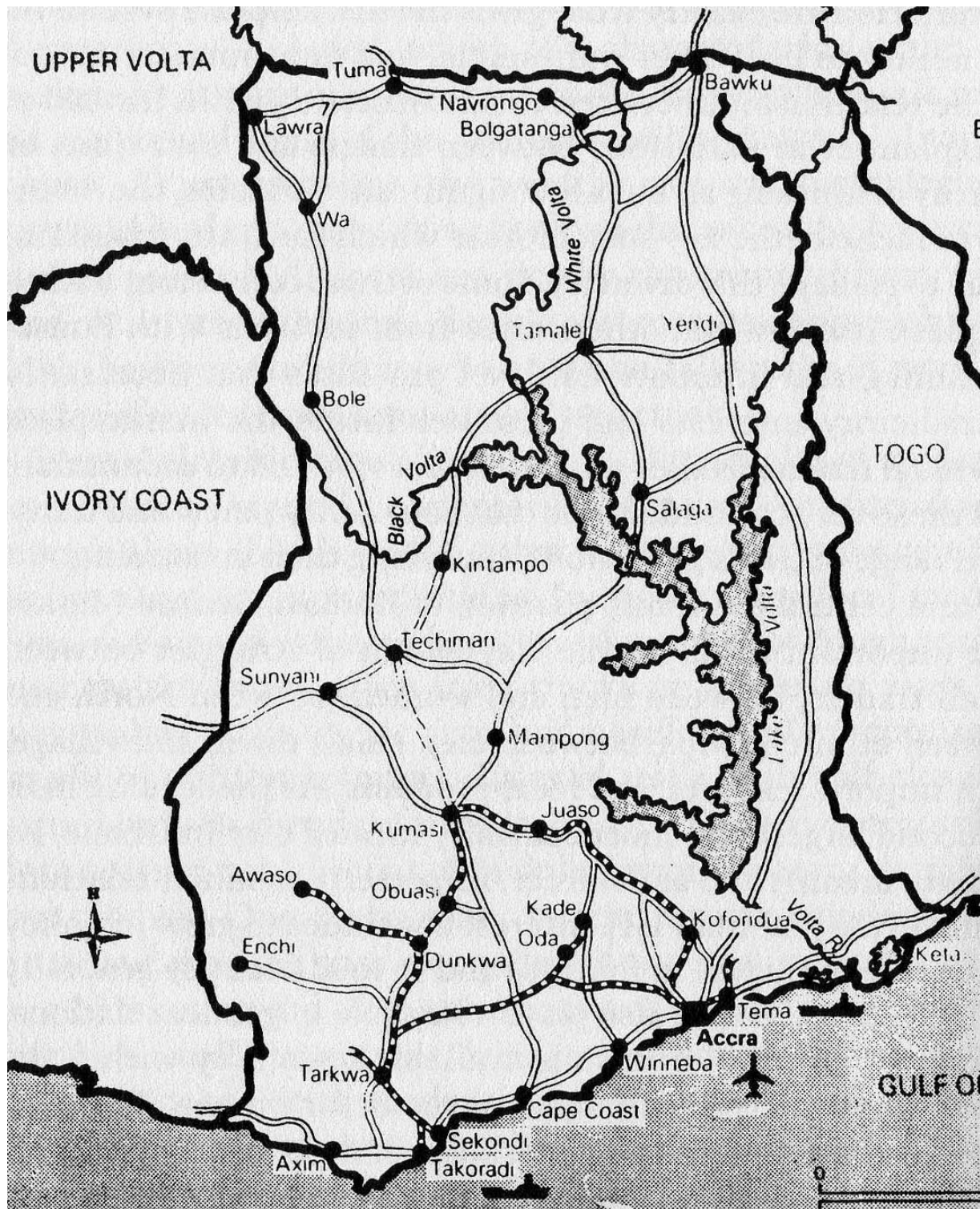


Figure 4.3: Roads linking major commercial cities in Ghana (Clark 1994)

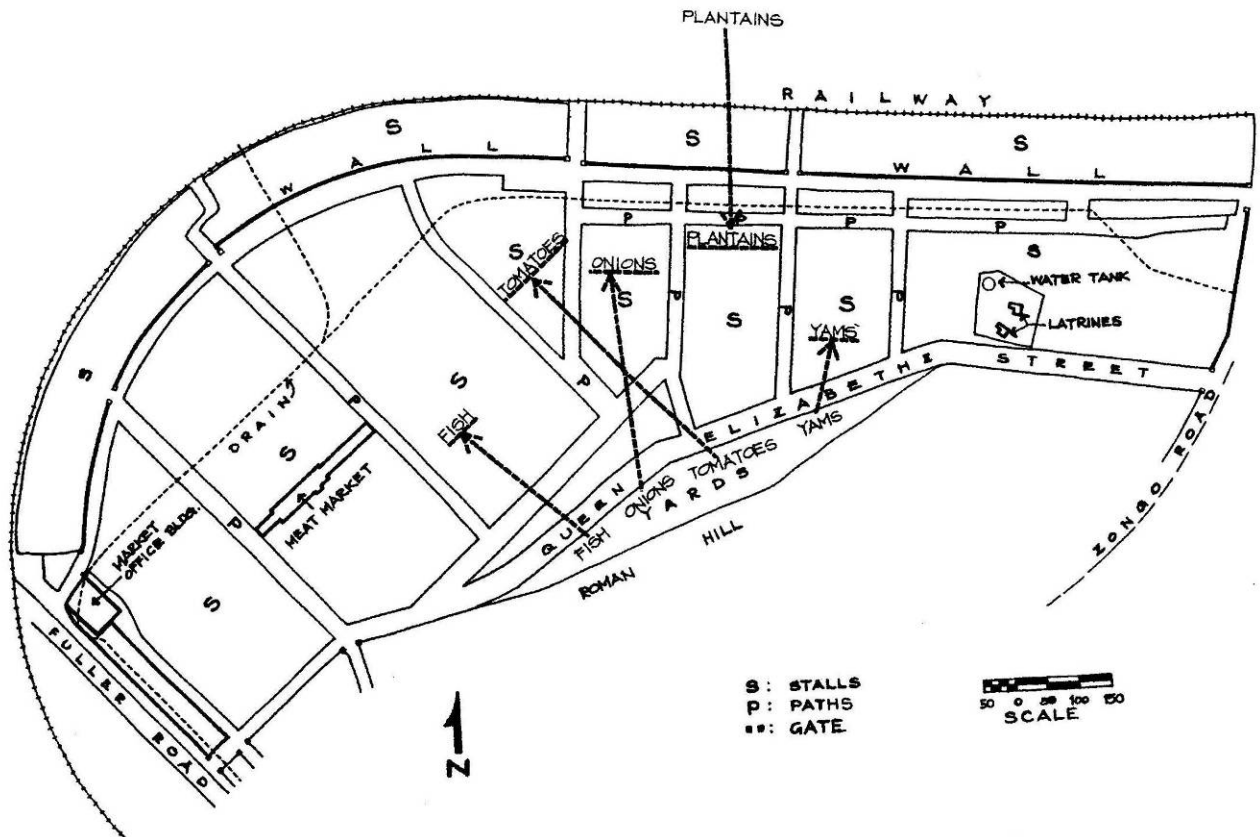


Figure 4.4: Plan of Kumasi Central Market (Clark 1994)

CHAPTER 5

AKYEM ODA'S DILEMMA

This chapter analyzes the social and environmental issues surrounding the planning of a satellite market in Akyem Oda. Oda's central market and proposed satellite market are described while interviews with citizens and government officials establish the importance of the underlying question "Does a satellite market in Akyem Oda conflict with the central market?" Site conditions and two proposals for the satellite markets are presented. A case study in Cape Coast and examples from Accra provide different perspectives. In addition, the environmental challenges are discussed. Finally, it is concluded that Akyem Oda is not large enough for a satellite market and that even the satellite markets, created in the much larger Accra, are failures. While a satellite market is not necessary for Oda, if the site is to be developed, the emphasis should shift to planning a neighborhood market with mixed retail and a small 'bulking' area. The wetland portion of the site should not be developed but preserved to improve water quality.

Central Market

The following description is from the author's fieldwork and seeks to convey a sense of the market experience.

Akyem Oda's central market, like Kumasi's Kejetia market, is strategically located in the town center (Figure 5.1). It was constructed in 1940 (Busumtwi 2006). It is a market with established open and closed hours and "market days" on Monday and Thursday. This market with its narrow aisles, metal roofs, and covered stalls can be reached via narrow passage ways that cut through the edges of surrounding buildings (Figure 5.2). There is a distinctly temporal rhythm to the activities conducted there. During the night, the market is closed and the whole area becomes very quiet and almost deserted except for the ever present domesticated animals. Then, at first light, people begin to arrive with their wares. The market begins to come alive with people shouting their selections and prices. Oral bargaining is the rule of transaction. The buildings around the market host shops that sell everything from medicines to tires and they are a modern extension of the central market. Services such as shoemaking, banking, and watch repair are also offered. The streets leading to the market area are lined with small wooden kiosks as an additional layer of retail activity (Figure 5.3).

Next to the central market is the lorry station (Figure 5.1), a place to catch a taxi, tro tro (minivan), or other transportation, which is even more crowded and often busier than the central market area. All vehicles transport people and every imaginable good to virtually every settlement in Ghana. The sense of a connection to faraway places is overwhelming as drivers shout the names of destinations when you pass. The alternating rhythm of fast-paced transactions as people arrange for personal travel or transport of commercial goods; followed then with the

slow inevitable waiting for each departure to fill to their maximum capacity to achieve the best price is difficult to describe. A western comparison does not exist. The experience feels extremely fast-paced and slow-moving all at the same time.

Public space is distinctly unlike that of American and European cities. Every space in the market and in the adjacent lorry station is used. People, goods and frenetic bargaining crowd the space, delight the eye and overwhelm the ear. It is a continuous action from market to lorry so as to make them dependent and inseparable.

All residents shop in the market. However, the market is more than just a retail center; it is the heart of the local socio-economic system. The relationship between the central marketplace and the local economy is connected closely to cash flow and credit sources. There is a Market Association that handles administration and rental issues. This Association is linked to the local agricultural bank, which is adjacent to the market and is called the South Birim Rural Bank. A widespread banking and credit process, known as *su-su*, is managed through the bank. A South Birim Rural Bank manager, Gladys Okyene, explained how the *su-su* lending practices and banking system worked.

“Members who are also market merchants make daily monetary contributions. This amount is not fixed. For example, five Ghana cedis (USD exchange rate: 0.69) is a common amount. The bank staff goes around the market and collects the money daily. Membership registration is not compulsory but is by choice. Currently, 2,500 registered sellers participate. Receipts are given for daily paid amounts and they are instructed to record this in their booklets. After three to six months of consistent uninterrupted payments, clients qualify for a loan of half the amount contributed plus that amount. The daily contribution is then used to pay back that loan for the next six months. Small local banks offer *su-su* lending schemes more than the larger commercial banks do. These local banks are more intimately connected to the local markets. The South Birim Rural Bank has offered the *su-su* scheme for six years (eight years in 2009) and it has been very successful. Many participants are able to create a bank account, which the bank requires ten Ghana cedis to open a regular banking account. This has improved their economic situation and allowed their businesses to grow.” (Okyene 2007)

Within the central market is the opportunity for social improvement for both traders and buyers. The central market's location does not preferentially favor a particular neighborhood or social tier. Its central location creates a convenient configuration for access and transportation. Access to the central market is equal for all residents of Oda. Poor and less-privileged citizens are able to buy and sell in the central market without any additional financial burden or social stigma.

Satellite Market

A satellite market is a market that functions in relation to a larger often more centrally located market. This orientation with the central market is the satellite market's defining feature and distinguishes it from a neighborhood market. Physically, it is located further out on the edges of a settlement rather than at its center. Satellite markets are more common in larger settlements such as Accra where its purpose is to relieve vehicular and pedestrian congestion (Ansong 2007).

In the satellite market, alleviating congestion is accomplished by breaking up bulk goods. Wholesale goods first arrive in large trucks at the satellite market where they are then divided into smaller retail quantities, which are then distributed among the traders in the central market. This results in fewer vehicles, especially large lorries or trucks in the central market. The separation of wholesale and retail activities in each market helps alleviate the congestion (Clark 1994). Satellite markets also provide an alternative shopping experience and selling location for the population in the immediately adjacent neighborhoods. These residents no longer depend solely on the central market (Ansong 2007).

A satellite market's location determines how residents, especially those who do not live in its vicinity will use it. The satellite market site in Akyem Oda is located approximately 1.5 kilometers from the central market in the Nkwantanun neighborhood and close to the saw mill in a more industrial section of Oda (Figure 5.1). The cost of transportation, predominantly *tro-tros* (mini vans) and taxis, is a deciding factor for those who will use the market and must be considered when selecting a new site.

The proposed site is approximately six acres and is bordered on all sides by roads (Figure 5.4). A main truck route along the northeast side links it to the center of Oda (Figure 5.5). Residential roads border the other three sides. It is traversed by a stream with accompanying wetlands in the lower northwest portion of the site (Figure 5.6). The northwest side borders a saw mill (Figure 5.7). The south side abuts a residential area (Figures 5.8 and 5.9). A public latrine has been constructed for the site (Figure 5.10).

The site was cleared by the District Assembly in early 2007 and does not have any large trees. In the lower portion surrounding the stream and in the wetland, there is some sparse vegetation. This combined with a slope of between 3% and 5% (over 5% ten feet away from the stream's bank) creates erosion. The high point is at the south side continuing into the adjacent neighborhood and the low point is at the stream near the main truck route. In addition to the public latrine, there is an open sided metal roof shed (Figure 5.11). Two separate small residential compounds, which have been illegally constructed, also occupy the site (Figures 5.12 and 5.13). A large water tank near the shed sits on the property line on the south side, where there are two large dumpsters that have since been removed.

The private sector's position on the new market is divided between the traders and buyers who operate in the central market and the potential developer(s) of the new market site. The satellite market's location poses the problem that some could not afford to buy or sell there. Market traders saw the new proposal as a threat to their livelihood and it provoked fears that resulted in protests at the local District Assembly. Among the issues were: 1. an increase in transportation costs based on longer distance and increased taxi fares, 2. the potential loss of existing customers and 3. new competition from other new sellers.

It is also closer to upper class communities. These neighborhoods and the sections of town between it and the original settlement are collectively known as 'New Town.' 'Old Town' is the original town settlement from which other parts, such as New Town, developed and then spread further away from its center. The residents of Old Town tend to be poorer and of lower social standing. In addition to using the central market, many of these residents sell and shop along the Old Town streets for daily needs. Old town residents wonder where they will shop, if market activity moves away from the central market.

However, from the public sector's perspective, the move to the edge of town would allow the local government to better manage and enforce land use changes in the new market since it is a blank area being built on undeveloped land. Currently, with the exception of the market manager who is a government employee, the central market relies on customs and traditions of the market traders to guide activities. According to local officials, the market traders currently do as they please without any restrictions from local government. A lack of government regulation and control is typical of commercial life at this smaller scale across Ghana. Hence, it is often referred to as the 'informal sector.' The satellite market would seek to eliminate some of the problems associated with a lack of strong established commercial regulation and expansion

plans. However, Frank Busumtwi, the District Chief Executive, assures that the central market would not be eliminated, but it would continue with reduced traffic and congestion. “When the central market was first constructed in 1940, the users were estimated to be approximately 5,000. Now there are approximately 50,000 users with many coming from outside rural areas. The market is operating beyond its capacity.” (Busumtwi 2006)

Frank Busumtwi stressed that he would like to improve the image of the town and civic functioning of Akyem Oda, beginning with the market. Busumtwi is very familiar with issues regarding town planning. He studied and completed a planning graduate degree from Hunter College in New York. His educational training is grounded in Western planning models as well as the colonial heritage of the Gold Coast, which is modeled on the British Town and Country Planning laws and traditions. The Town and Country model continues in a decentralized system today. Having also traveled extensively, he sees value in other models and thinks that they can provide a new framework for the improvement of Akyem Oda’s development. For him, a master plan is a step toward modernization and higher quality of life.

Busumtwi is no stranger to controversial new planning in Akyem Oda; he recently introduced the town’s traffic light. Mixed citizen reaction greeted the traffic light. It is now fully functional after the cool reception. The satellite market would be another new contribution reflecting modernization. The change would be lasting. According to Busumtwi, the main problem and obstacle with the plan for the market is its budget, which is more than \$1.5 million U.S.D. and is well beyond the means of Birim South’s government (Busumtwi 2006).

The 2005 proposal, Proposed New Market at Nkwantanum, Akyem Oda, was designed by Sutherland & Sutherland and S. Tetteh & Associates in Accra for the Birim South District

Assembly (Figure 5.14). In this design, there is a main lorry park with a bulk breaking section at the northwest end of the site where goods are delivered in bulk and then redistributed to various parts of the market. Next to the bulk section is a taxi and lorry park with shaded waiting area for buyers and traders. There is also a nearby warehouse for overnight or short term storage of traders' goods and a refuse management area. Four main entrances are located along each of the boundary roads, which are then linked to primary circulations routes of six meters in width.

The proposal calls for several market shops which are structures of simple construction. These shops are a complex of open stalls around a small courtyard and in plan are shaped like the letter 'C.' There are also markets stalls, which are smaller in area and height. Other buildings include: a market hall, a warehouse, two story shops/office buildings, and three story office buildings along the main truck road. There is a partially shaded arcade and walkway which links the bank and a restaurant/chop bar. The stream area and open space are planted with trees. The proposal notes that in the future, the stream should be canalized to promote hygiene and good drainage (Sutherland et al 2005).

D.C.E. Busumtwi scrapped the 2005 market plan for a simpler less costly proposal in 2007. The cost, he worried was too high. The market was originally a planned public project and is now becoming increasingly a private one. A private citizen is now willing to pay for the market provided that he is allowed to build a petrol service station on the property's corner. He is a local business developer and owner of several stations and in the Birim South District. He acts as his own contractor for the project. Local officials are allowing him to put a petrol station on the site as a method of getting the project developed.

The 2007 proposal is much simpler (Figure 5.15). The plan remains roughly four sided and wedge shaped surrounded by roads. There are three direct entry points marked as driveways in addition to the lorry park. There is a lorry park for taxis and *tro-tros* with 34 designated parking spaces. Next to the station is a filling station, which will presumably also accommodate some parking. It is unclear whether the open area located above the filling station is a park. Without some designation, the area will most likely be interpreted as an opportunity for traders to set up additional shops or stalls. In a nod towards providing greenery and shade, there are thirteen trees placed throughout the design.

Like the previous proposal, there is a hierarchy of structures that a trader may use to sell his or her goods. The plan shows sections of shops as the main market structures for traders to display goods. There are three main rectangular sections of shops arranged in a linear fashion. In addition to these, at the lorry park, there is a secondary shop area with eleven shops shown. There are no multistory buildings. In addition to the shops, there are much smaller sheds, which presumably are kiosks or stalls. There are eleven rectangular sections of sheds. There are ten sections with 36 individual sheds each and one section with 30 individual sheds for a total of 390 sheds. In the lower left corner of the plan, a lot is designated as a filling station. Adjacent to the filling station, along the road moving towards the north, this plan shows 72 spaces allocated for shops located in the wetland and stream.

Busumtwi identified several aspects of the original vision that he would like included in future plans. The goal is a market atmosphere with excellent lighting, security and basic amenities such as freezers for perishable produce, meat and fish, a lorry park, and storage facilities, which would make the place attractive to individuals who normally would leave Akyem Oda to shop in larger cities. Busumtwi would like more people to be encouraged to live

and work in Oda and to reverse the trend of residents moving to larger cities such as Accra. The satellite market would begin to address this issue. “Oda needs to accommodate growth and to update its commercial sphere. If there is an efficient satellite market in Akyem Oda, the likelihood of its citizens moving will decrease.” (Busumtwi 2007)

However, keeping Akyem Oda’s citizens from moving elsewhere is a complex task. The satellite market may affect the out-migration and help Busumtwi to see more people living and working in Oda. Perhaps a satellite market is not the only way to achieve this. Some say expansion of the central market could reverse the competition created by the satellite market. There is fear that with two market spaces, a vacant central part of town might develop. Busumtwi thinks differently. He feels that less market activity could be a positive influence on community planning. His idea is to use the central market space for public works and downtown improvement projects. However, he assures that shutting down the central market has never been the goal (Busumtwi 2007).

Case Study

Ghanaians’ receptivity to land use zoning is mirrored in Cape Coast. Cape Coast or *Cabo Corso* is the capital of the Central Region and the Fante people. In Fante, it is called *Oguaa*. It is situated on the coast 165 km west of Accra (Kuada et al 1999). It has a population of 118,105 (Ghana Census 2002). Evident in its architecture and planning, the town has a strong colonial history. It was founded by the Portuguese in the Fifteen Century and passed through Dutch, Swedish, and British possessions. The town grew around Cape Coast Castle, which was used in

the Trans-Atlantic Slave Trade and is now a major attraction for the heritage tourist industry and the African Diaspora (Carmichael 1993).

The central market is Kotokuraba. Cape Coast Municipal Area is compact in nature and this has ensured that the Kotokuraba Central Market captures the bulk of commodity flow. These commodity flows emanate from the hinterland (farming communities) and the coastal fishing centers. The smaller neighborhood market of Anafo controls the fish trade. Kotokuraba Central Market and Anafo market are located at opposite ends of Commercial Street and are linked together by the string of stalls and businesses. Other neighborhood markets include Kotoka and Abura and small selling centers at Adisadel, Kwaprow and Pedu (Ghana Districts 2009).

Previously, before entering politics, Frank Busumtwi worked in Cape Coast as Director of Town and Country Planning. These urban planning issues were and still remain the main “hot button” issues of the municipality: transportation, traffic congestion, lack of zoning and sprawl. The new Director of Town and Country Planning, William Boateng Ansong, explained that zoning is not well enforced in Ghana”

“An area that is designated residential may be sold by the private land owner for commercial development if the offer is high enough. For instance, currently in Cape Coast, there is a gas station being built in a designated residential area. Of course, this does not have to be a negative development and it could lead to more creative mixed use development. However, the developer is acting with only profit in mind and a positive development would be accidental. Another problem is that many projects lack funding. Projects that are initiated by the government tend to deviate from the public good to private business investment. It is therefore not uncommon for projects initiated by local government to be in part funded privately with the caveat that the private individual will add some component to the plan such as a business that directly benefits him. In Cape Coast, zones often merge, particularly commercial with residential zones.” (Ansong 2007)

Unlike Akyem Oda, there is no plan for a satellite market in Cape Coast. Ansong says of satellite markets, “These markets are useful for breaking bulk products into smaller units for individuals who will then sell these in the main market at a retail price. Large vehicle traffic is restricted to satellite market, thus minimizing congestion.” However, he does not think that Cape Coast is large enough to require such a market, but perhaps with the current growth in Ghana, this could change in the future (Ansong 2007).

Satellite Markets exist in Accra, which with a land area of 185 km² and a population of 1,659,136 is much larger than either Akyem Oda or Cape Coast (Ghana Census 2002). Makola Market is the central market. In theory, the probability that a satellite market would relieve congestion and provide a more attractive marketplace for immediately adjacent neighborhoods should be greater. However, these satellite markets are not proving successful. Despite proximity to the satellite market, sometimes the existing central market is still more appealing to individuals who are located closer to the satellite market, due to the larger selection of goods and the competition in the central market. These competitive prices make the extra transportation costs negotiable (Clark 1994).

In several documented satellite markets in Accra, many are now vacant and serve as temporary housing for the homeless. 90% of satellite markets in Accra are empty and gradually becoming “white elephants” (Norley 2009). Due to government efforts to decongest these satellite markets, they have even become hostile spaces:

“Traders displaced by the recent decongestion exercise by the Accra Metropolitan Assembly (AMA) still hang around the streets and pavements, and now run helter skelter with the approach of the AMA guards, popularly known as “aaba ei” (they are coming). The metro guards, positioned at vantage points in the Central Business District (CBD) to ensure that no hawking is done on the pavements and streets, are sometimes overwhelmed by the large number of people who patronize the area. A trip to most

satellite markets revealed that the markets were occupied by only a handful of old women, who cannot stand the tension of 'aaba ei' (they are coming) - the call of the traders on seeing the Accra Metropolitan Assembly (AMA) City Guards approaching. These guards confiscate their wares and only release them after a fee is paid. The Tuesday Market at Mamprobi has 10% of its traders, mainly fishmongers and vegetable sellers, doing business with empty tables. The market, which used to be a very busy place on Tuesdays, as the name suggests, is now a ghost on market days. According to the traders, most of their colleagues who acquired spaces for trading had deserted the place for the central business district. According to an Assembly Member, who pleaded anonymity, the assembly, over the years, had spent huge sums in maintaining the satellite markets to stop the influx of traders into the business district. The newly constructed La Market is a white elephant, as traders hawk on the shoulders of the road, while the old sheds are equally empty. The Osu Market has also had its share of traders abandoning their sheds for the streets in Accra.” (Norley 2009)

The traders are abandoning these government sponsored satellite markets for the central market. The satellite markets are not successful (Norley 2009). These markets are poorly located and disconnected from the surrounding community. Too much government oversight disrupts the community dynamic. Traditional market design is self organizing at the individual scale and is a bottom up process.

What works are smaller neighborhood markets that are connected not to the central market but within the community that they are located (Clark 1994). It is a difference of orientation. For example, Asafo Market in Kumasi serves the surrounding neighborhood by providing the less competitive mixed retail commodities that are more about convenience and not price. Specialized retail is located in the very competitive Kumasi Central Market where you have lines of stalls with traders who specialize in only one commodity such as tomatoes. The bulk breaking function of satellite markets is best located on the periphery of the central market, not in a separate market. This is the case in both Akyem Oda and Kumasi with one important exception; in Kumasi, the only bulk breaking that occurs away from the central market is for

those commodities that are government regulated such as kola nuts and cattle meat and those that produce a large amount of waste such as oranges and plantains (Clark 1994).

Environmental Considerations

The proposed satellite market is located on a site that poses some environmental challenges. While intangible factors, like customs, traditions and folkways, help form the market's organization and architecture, environmental challenges weigh heavily in the planning and design process.

Environmental conservation in developing nations is rarely top priority. This becomes apparent when one walks down the streets in Ghana. Solid waste and household refuse is often on the streets and in the gutters. The lack of public services, which many in the developed world take for granted, such as public garbage pickup, latrines, landfills, incinerators and wastewater treatment are often absent. Environmental sensitivity may seem a costly and unnecessary burden when trying to meet basic needs like shelter, nutrition and healthcare.

Environmental improvements can be a better investment to improve economic vitality. Typical investments in high-impact development with expensive machinery may impress many and give the idea of progress. However, environmental technologies such as grey water systems and composting are effective and less expensive. These mitigate and often reverse environmental degradation.

Economists note that possessing concern for the environment is a luxury (Wheelan 2003). Wealthy individuals in developed countries are willing to spend money to protect the

environment, because their basic needs are being met and the spent money is merely a fraction of their more than already sufficient incomes. Likewise, wealthy nations devote a greater share of resources to protect the environment than do poor countries. In a nation like Ghana, there are inadequate financial resources, which tend to place subsistence high above environmental quality. Thus, all available resources are channeled into what is considered more immediate productive ventures and environmental challenges are neglected or even exacerbated by development. Yet, it has been found that improved environmental conditions and efficient services attract more investments and thus help alleviate poverty (Akuffo 1998).

Ghana is not entirely without government institutions and a framework to begin addressing environmental problems. There are government regulations in Ghana that seek to restrict development and create infrastructure for the public good. However, these are not usually backed by the rule of law. The Town and Country Planning Ordinance of 1945, which is the current law on urban growth and urban management has for several decades not been completely enforced (Town and Country Planning 2009). Many developers build on land reserved for roads, drainage, public toilets, markets, schools, parks and gardens, thus nullifying any local land-use planning process (Ansong 2007). The lack of adherence to plans may pose a danger for the Nkwantanum site.

The Environmental Protection Council in Ghana was created June 4, 1974 to deal directly with the environment by the government and was later transformed into the Environmental Protection Agency in 1994. However, environmental protection laws in Ghana actually date back to Ghana's colonial era. The laws, then, were mostly related to disease prevention and control. And they were more often enforced in the larger cities where government offices and factories

were located. For example, one of the earliest statutes is the Beaches Obstruction Ordinance in January 29, 1897 (Ghana EPA 2009).

The environmental dimensions of Akyem Oda's proposed satellite market include the issues of erosion control, water quality, wetlands protection and the use of culverts. The main environmental feature of the site is a wetland. A wetland is an area of land whose soil is saturated with moisture either permanently or seasonally (Figure 5.16). Such areas may also be covered partially or completely by shallow pools of water. Wetlands are considered the most biologically diverse of all ecosystems (Mitsch 2007).

Wetlands perform a critical ecological function by acting like natural water filtration systems. The plants and bacteria found in wetlands have a high filtering capacity. When water flows through the soil and plants, excess nutrients and pollutants are retained. In addition, this provides oxygenation which destroys fecal coli forms from human and animal excretions that endanger human health when excessive concentrations build up (Mitsch 2007). In Akyem Oda, wetlands catch and contain household refuse thus preventing it from entering the main water supply (Figure 5.17).

Despite their positive effect on water quality, wetlands are viewed negatively by many Ghanaians because they contain standing water and presumably malaria carrying mosquitoes. Any decision that increases or diminishes standing water in a community's environment could strongly affect its population's health. Malaria is an infectious disease caused by protozoan parasites transmitted via mosquitoes to humans. 90% of malaria-related deaths occur in Sub-Saharan Africa (Madamombe 2005). The burden of the disease destroys the productivity of a

society and hinders its development. Malaria is commonly associated with poverty. However, what is overlooked is that malaria is often the cause of poverty (Gollin 2007).

Malaria is a major concern in Ghana and in Akyem Oda. It is responsible for widespread sickness and death. Any environmental alteration cannot increase the local mosquito population. Birim South officials have proposed the draining of local wetlands in order to curb the spread of malaria. Oda is channelizing the central stream in the wetlands using culverts to drain marshland and reduce mosquitoes (Busumtwi 2007). According to Busumtwi, there is a correlation between natural fluctuations in standing water in the wetlands and the number of malaria cases. By using concrete culverts, his goal is to move water faster through the low-lying areas to the river, thus diminishing the accumulation of standing pools and the possibility of mosquito breeding areas.

The use of culverts should be greatly discouraged because of the effect on water quality. While wetlands filter water of pollutants, culverts concentrate pollutants and send them in high concentrations to the Birim River. Contrary to draining a wetland to prevent standing water, a drained wetland area still holds pools of standing water in which mosquitoes breed. When water flow is diverted into a culvert, the hydrology of the wetland is altered and the native plants die. Without plants, water collects in areas where it normally would not and becomes stagnant. In a healthy wetland, natural vegetation encourages species diversity that controls the mosquito population (Dugan 1993).

Erosion is another potential problem for the site. The slope of the site is steep (5% in some areas) and there is already evidence of erosion. Erosion occurs when gravity encourages a down-slope creep of soil and in heavy rainfall, storm water washes the topsoil away (Figure 5.18). Landforms such as gullies are created over time (Brown 2009). In Akyem Oda, this

problem is mostly the result of human land-use practices rooted in traditional culture (such as sweeping the earth bare) that keep the ground bare of vegetation that would normally prevent erosion. This is seen in Old Town (Figure 5.19). In 2007, students from the Ghana Summer Service-Learning program devised a solution to stabilize the earth by constructing fascines in a pilot project (Figure 5.20). A fascine is a rough bundle of brushwood used for strengthening and stabilizing the soil (Figure 5.21). Fascines control erosion and encourage vegetation (Schiechl 1980). Fascines can be used to prevent erosion of sediments into the wetland.

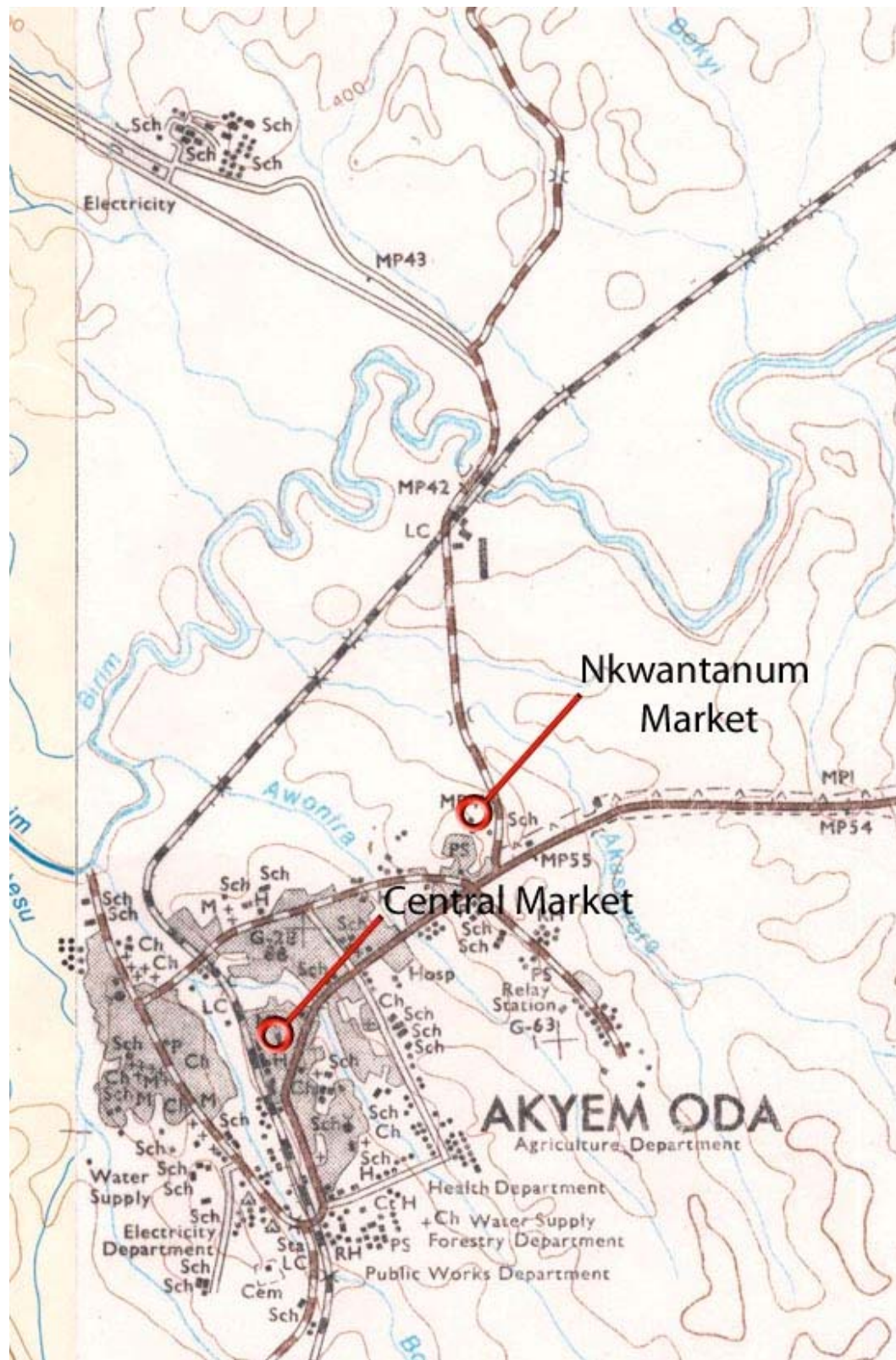


Figure 5.1: Map showing Satellite and Central Market locations



Figure 5.2: Narrow Passage into Central Market (Nagel 2005)



Figure 5.3: Layer of Retail Activity (Nagel 2005)

Existing Conditions

Nkwantanum

Satellite Market Plan

Akyem Oda, Ghana

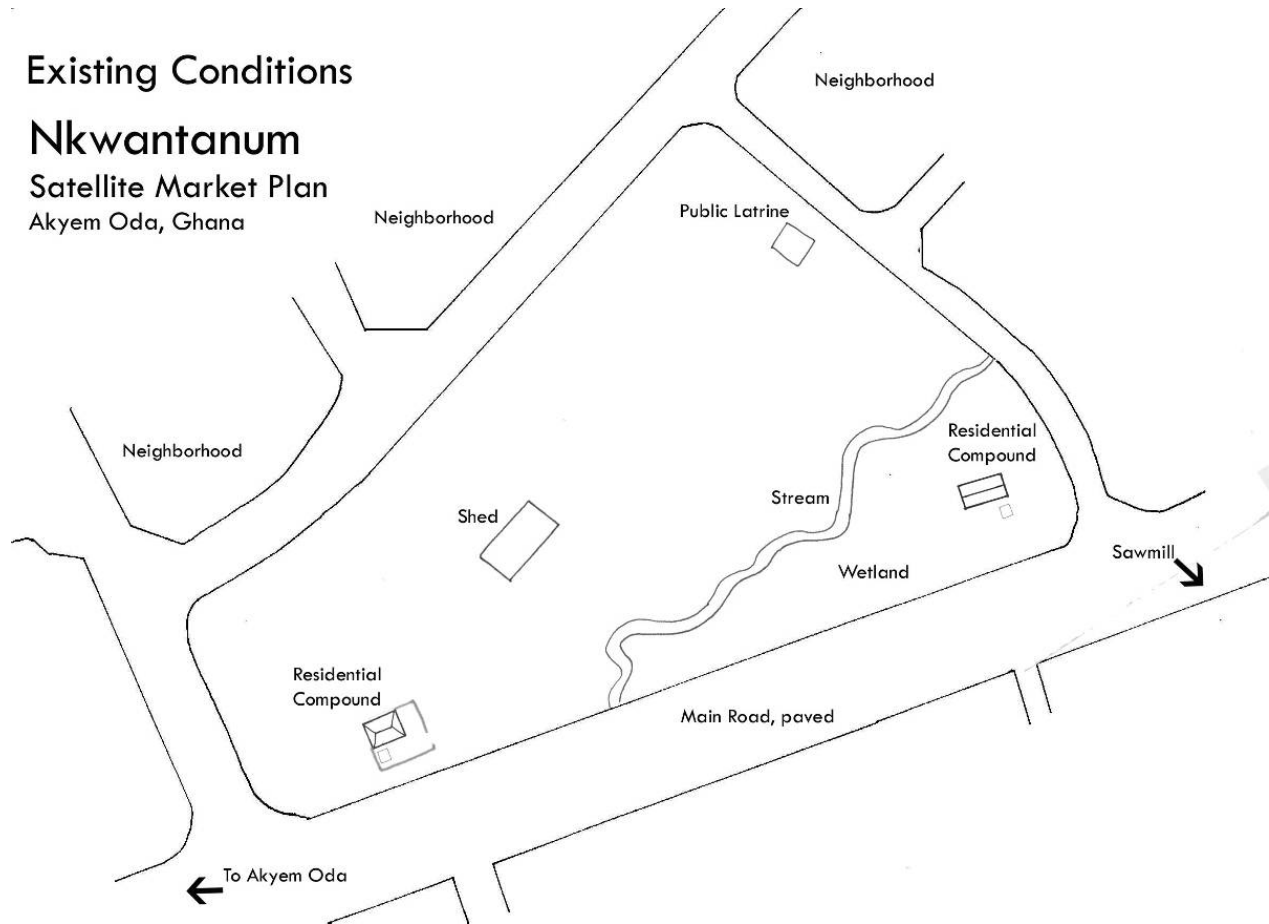


Figure 5.4: Existing Conditions (Hayden 2009)



Figure 5.5: North view of main road (Hayden 2007)



Figure 5.6: Northwest view of wetlands and saw mill (Hayden 2007)



Figure 5.7: Saw mill (Hayden 2007)



Figure 5.8: South view looking up hill towards neighborhood (Hayden 2007)



Figure 5.9: Southside neighborhood (Hayden 2007)



Figure 5.10: Public latrine (Hayden 2007)



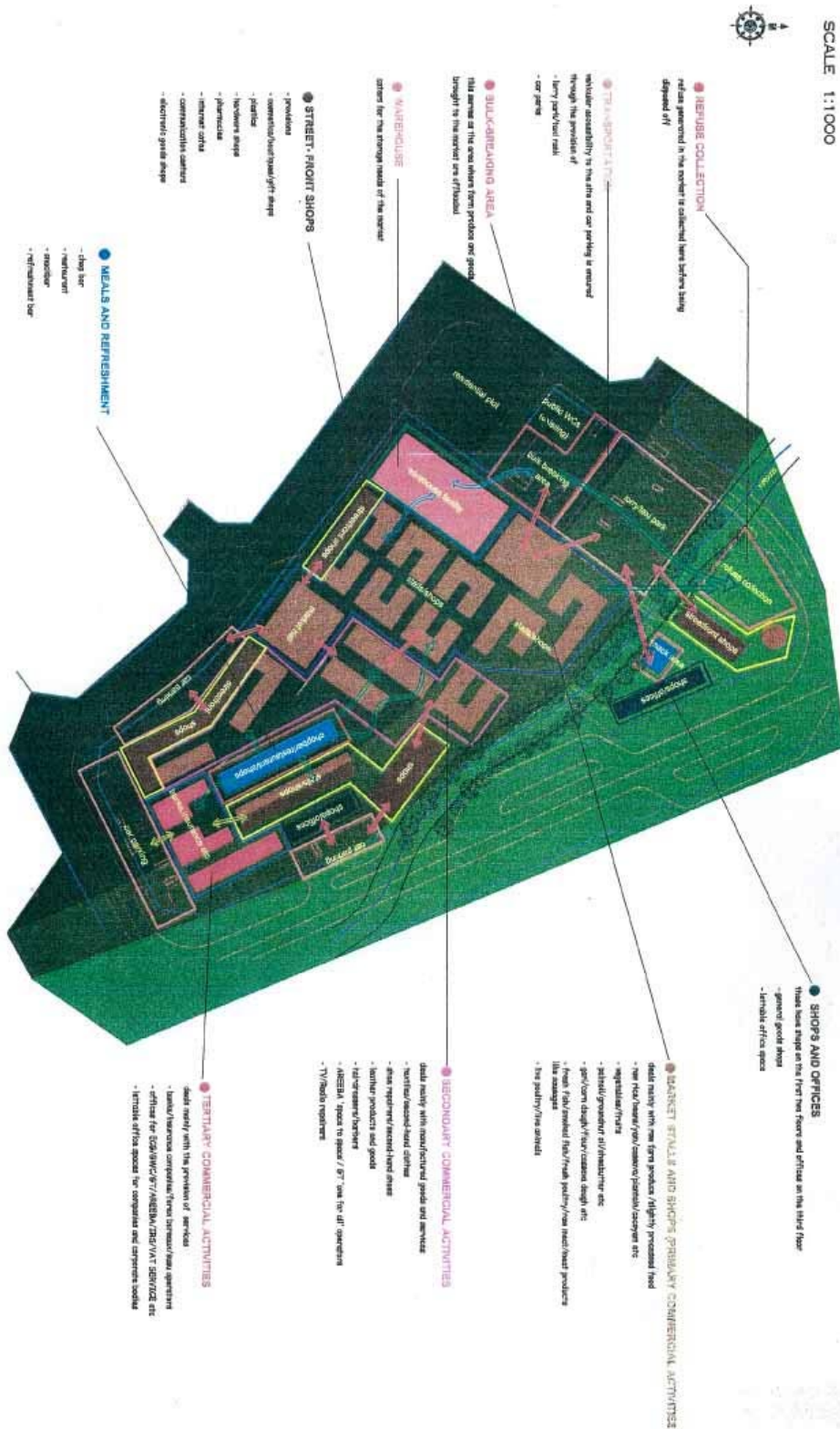
Figure 5.11: Shed (Hayden 2007)



Figure 5.12: Residential compound (1) (Hayden 2007)



Figure 5.13: Residential compound (2) (Hayden 2007)



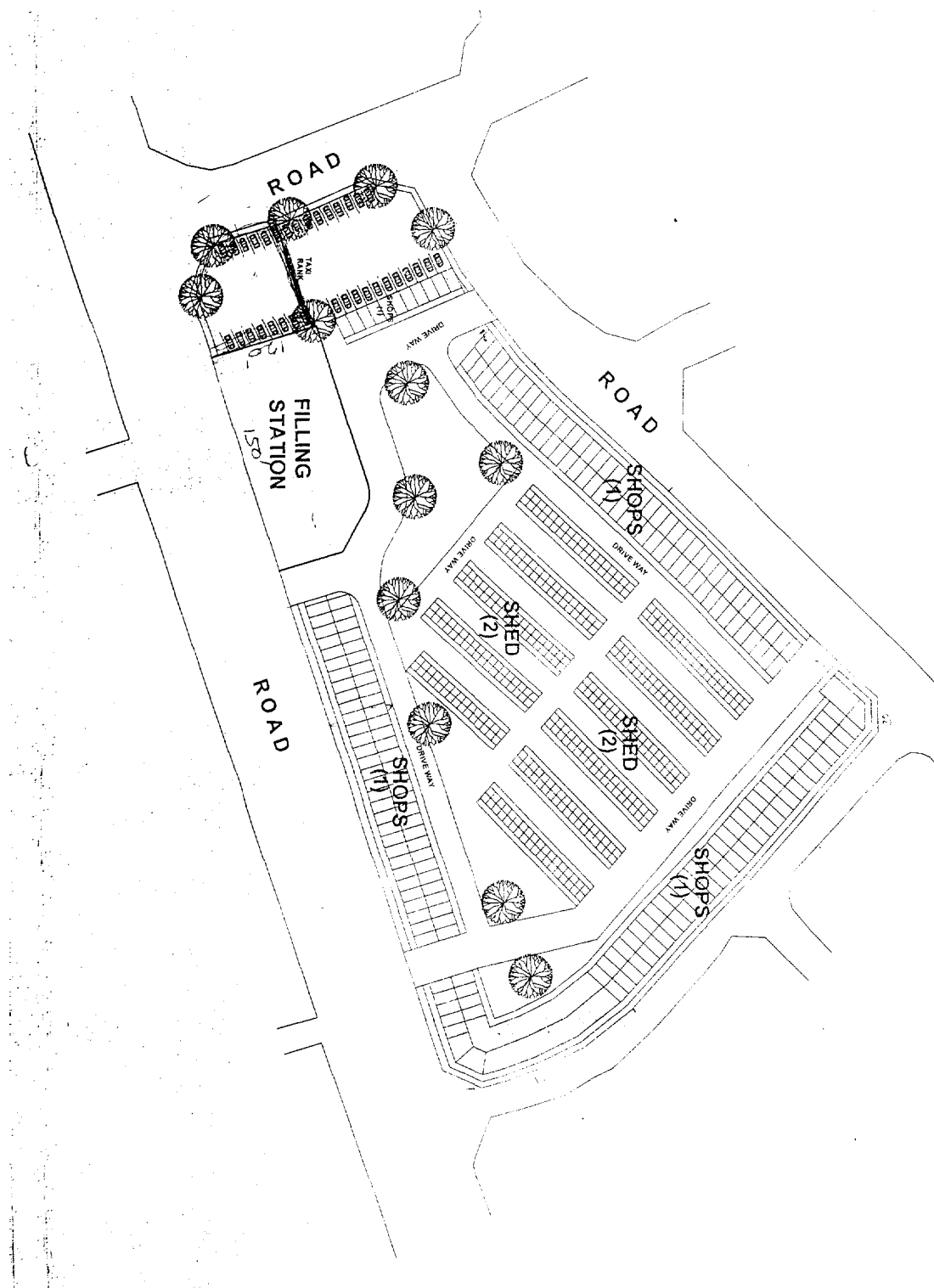


Figure 5.15: Satellite Market Plan (Birim South District 2007)



Figure 5.16: Healthy wetlands in Akyem Oda (Hayden 2007)



Figure 5.17: View of household refuse in Akyem Oda's wetland area (Hayden 2007)



Figure 5.18: Actively eroding land during a rainstorm (Hayden 2006)



Figure 5.19: ‘Grand Canyon’ gullies in the Old Town in Akyem Oda (Hayden 2007)



Figure 5.20: Built fascine (Hayden 2007)

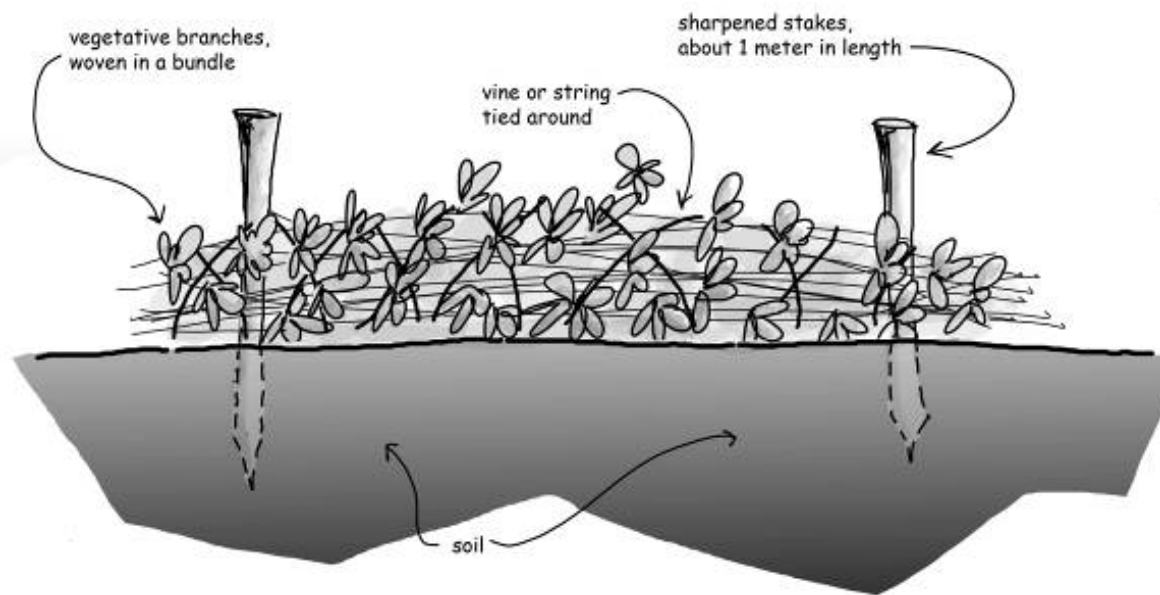


Figure 5.21: Diagram of fascine (Penn. Dpt. of Environmental Resources 1986)

CHAPTER 6

RECOMMENDED SOLUTION

The Cape Coast case study revealed that Akyem Oda is not large enough for a satellite market. Furthermore, the Accra example suggests that satellite markets are simply unsuccessful even in a larger city. Therefore, if the site is to be developed, the emphasis should shift from a satellite market for Akyem Oda to a neighborhood market for the surrounding Nkwantanum community. Neighborhood markets serve small communities throughout Ghana and are a traditional planning solution that has proven successful (Clark 1994).

The new plan introduced in this thesis by the author seeks to provide an improved market shopping experience with four main entrances that are marked with gateways and trees (Figure 6.1). A sidewalk along the main road protects the pedestrian traffic and a median planted with trees slows traffic. Throughout the market, a variety of native tree species are planted for shade and aesthetics. There are a total of eight functional areas: Mixed Retail, Bulk Wholesale, Community Center, Wetlands, Lorry Park, Warehouse Storage, Chop Bar and Administrative Office (Figure 6.2). Several patterns from chapter three are incorporated: ecotone (wetland transition to surrounding site), broad streets lined with trees and courtyard building forms. The divisions explained in chapter four of whole yards and retail lines are also used.

In the new plan, the site is divided into three sections. Each section is assigned a priority or phase to be constructed (Figure 6.3). Phase one should be built first and as the funds are available, the subsequent phases of two and three can be built. The first section of the site (Phase 1) is planned specifically to cater to the immediately adjacent community by focusing on mixed retail commodities (Figure 6.4). While competitive prices alone are not enough to attract business, the convenience of mixed retail commodities does have the potential. This section also contains a small lorry park and market administration buildings. All structures except for the administration buildings are simple open sheds where individual stalls are placed (Figure 6.5). Some sheds are linear to accommodate traditional market “lines.” Others are rectangular or a “C” shape to create courtyards, which in the third chapter was shown to be a traditional architectural form. Covered walkways along the sheds provide additional trading space and shade.

The next section is the second phase and should be designated as a wholesale “bulking” area (Figure 6.6). These are subdivided into several “yards.” This area is for those few designated wholesale commodities that are a source of congestion in the central market such as plantains and oranges. The District Assembly should meet with local market traders to determine these designated wholesale commodities. This section includes a nearby refuse management area and warehouse for overnight storage. Since the new focus is on the neighborhood, there should also be a community gathering place. A market hall is included for community events and it contains an open courtyard with a tree (Figure 6.7).

The wetlands area should not be developed except for low impact structures such as small free standing kiosks and a boardwalk (Figure 6.8 and Figure 6.9). This section is to be developed as Phase three. Conservation should begin immediately but the structures should be added last. A

restaurant or “chop bar” option is provided for local residents. This will encourage the appreciation of the stream and surrounding wetland. In order to preserve the environmental integrity of the site, the wetlands will be preserved by the encouragement of additional surface vegetation (native plants that collect sediments and stabilize slope) and fascines. There are no paved roads, only permeable surfaces which will prevent the market site from eroding and negatively impacting the local water quality. Materials should be low cost and low impact. Open single story sheds with metal roofs and wood beam construction will be sufficient. The open floor plans allow traders to customize the space.

The following pages present the new plan with a series of illustrations.

Nkwantanum Neighborhood Market Plan Akyem Oda, Ghana

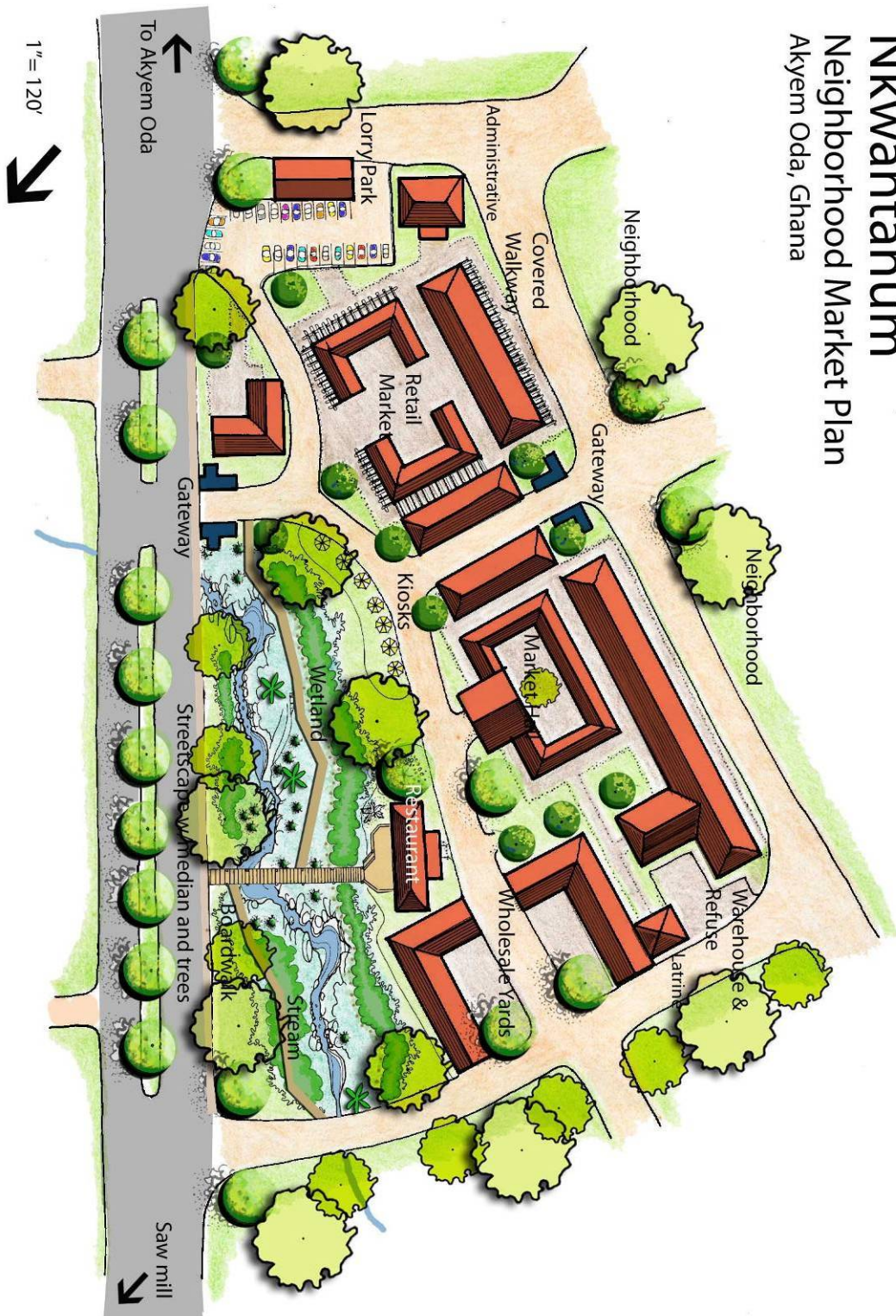


Figure 6.1 New Nkwantanum Neighborhood Market Plan (Hayden 2009)

Nkwantanum

Neighborhood Market Plan

Akyem Oda, Ghana

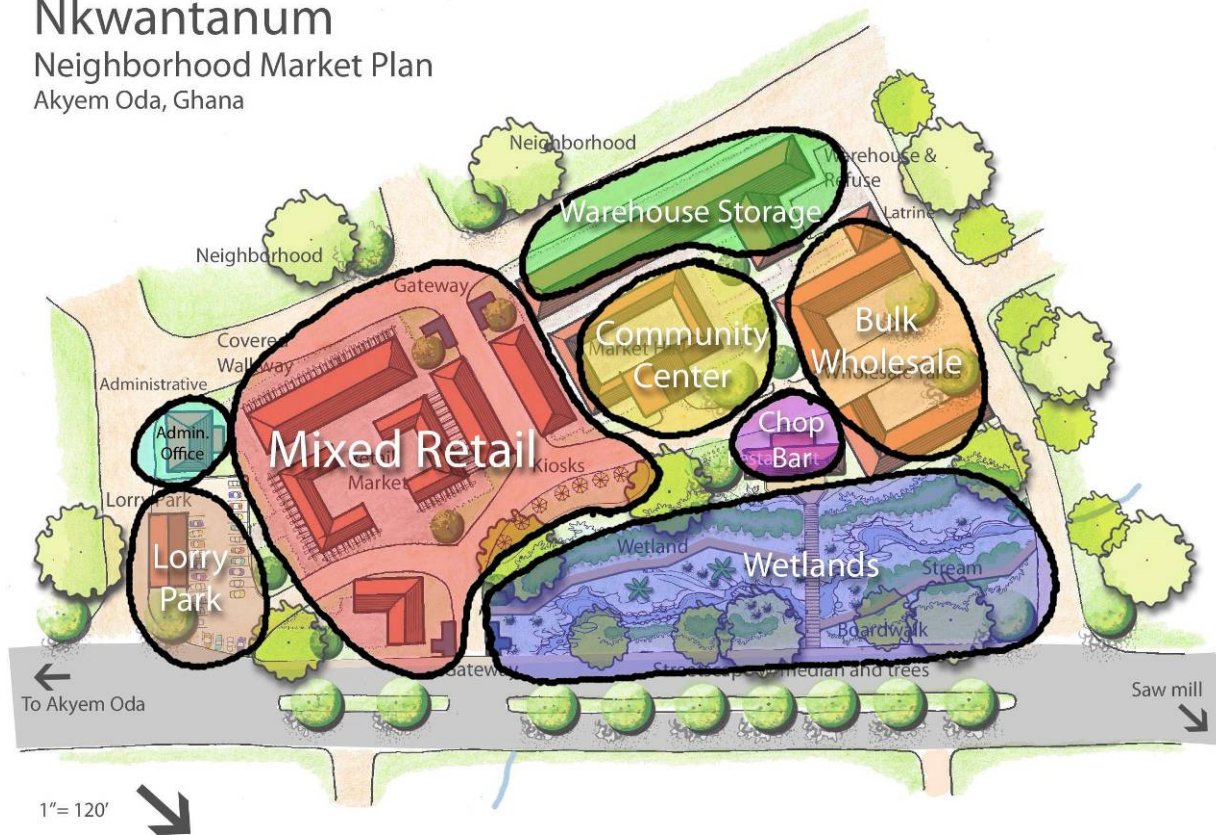


Figure 6.2: Functional Areas (Hayden 2009)

Nkwantanum

Neighborhood Market Plan

Akyem Oda, Ghana

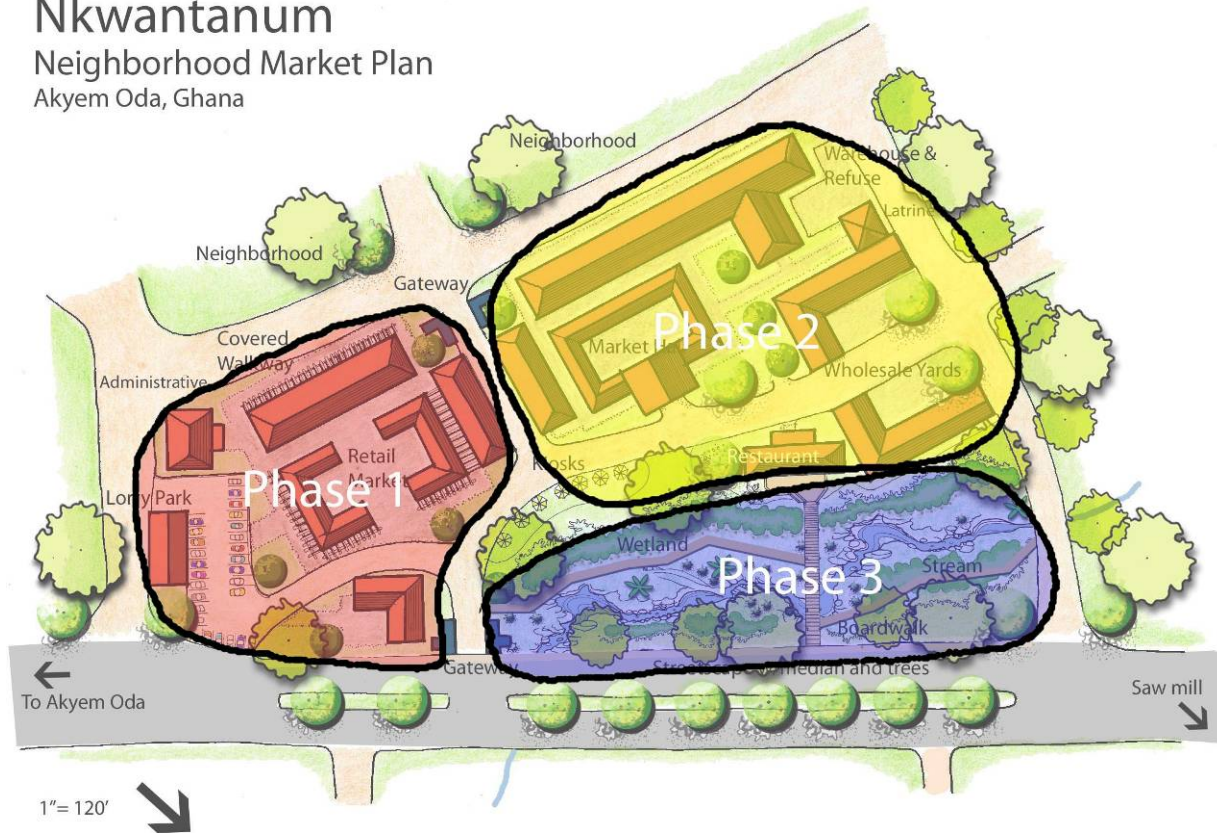


Figure 6.3: Market Phases (Hayden 2009)

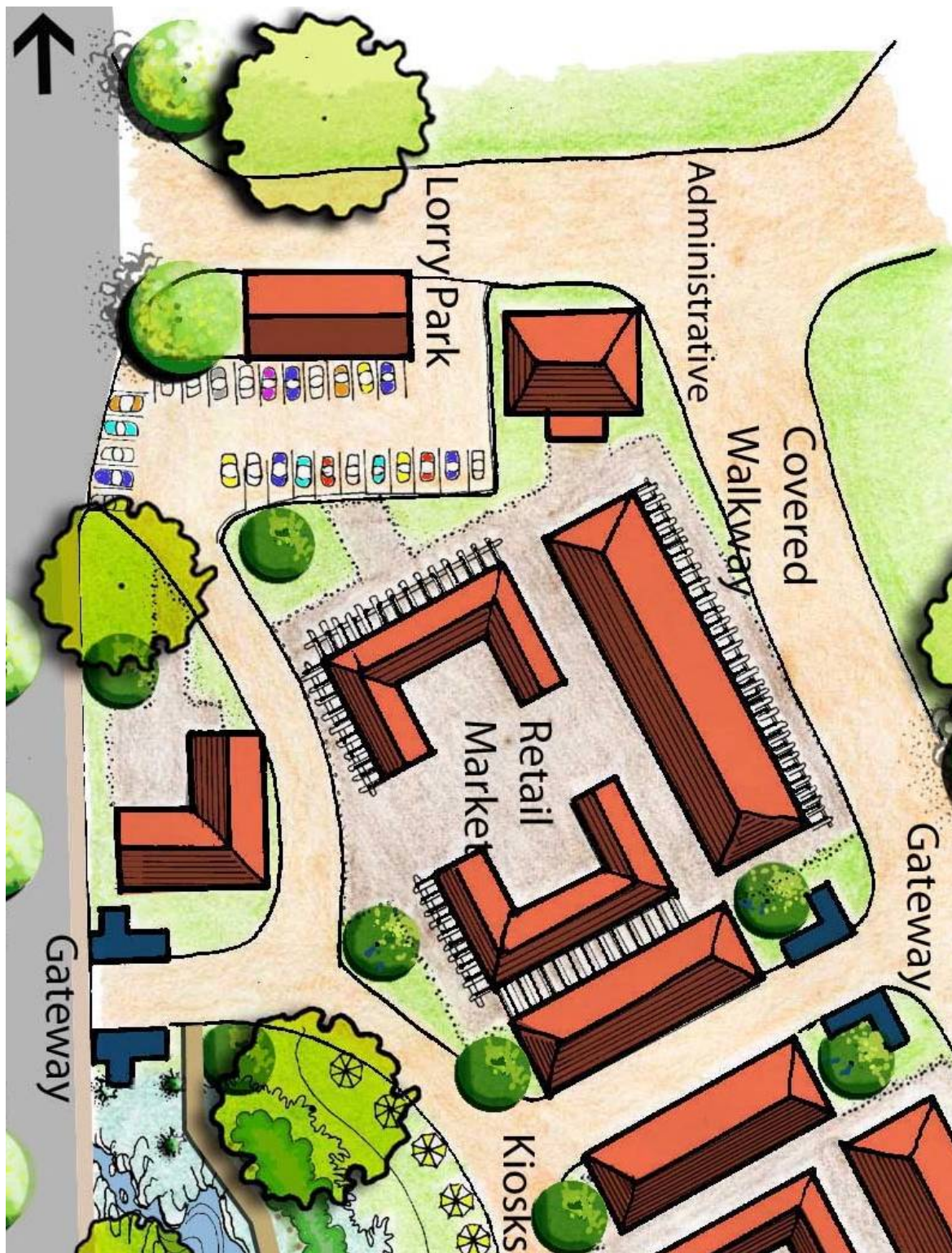
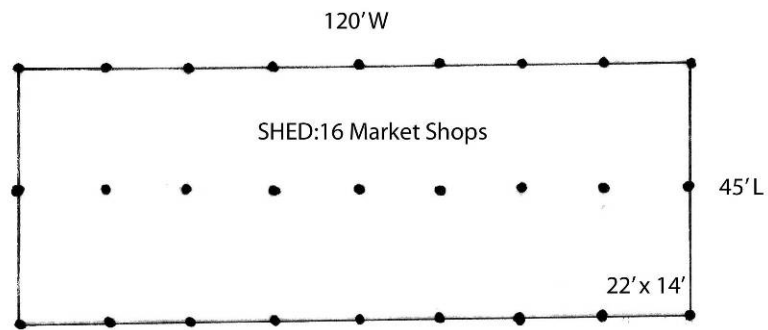
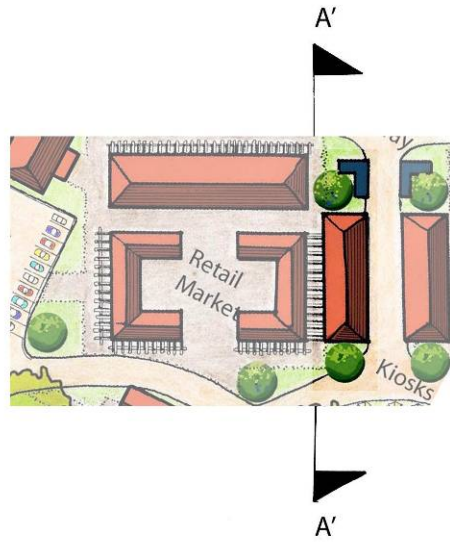
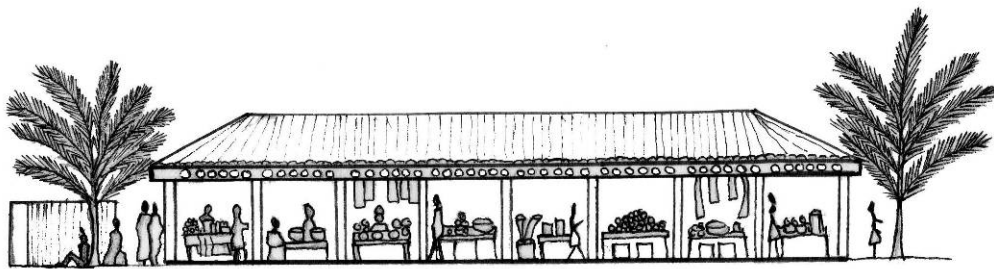


Figure 6.4: Retail area and lorry park (Hayden 2009)



PLAN: Market Shops



SECTION A'-A': Market Shops

Figure 6.5: Market Shops illustrations (Hayden 2009)

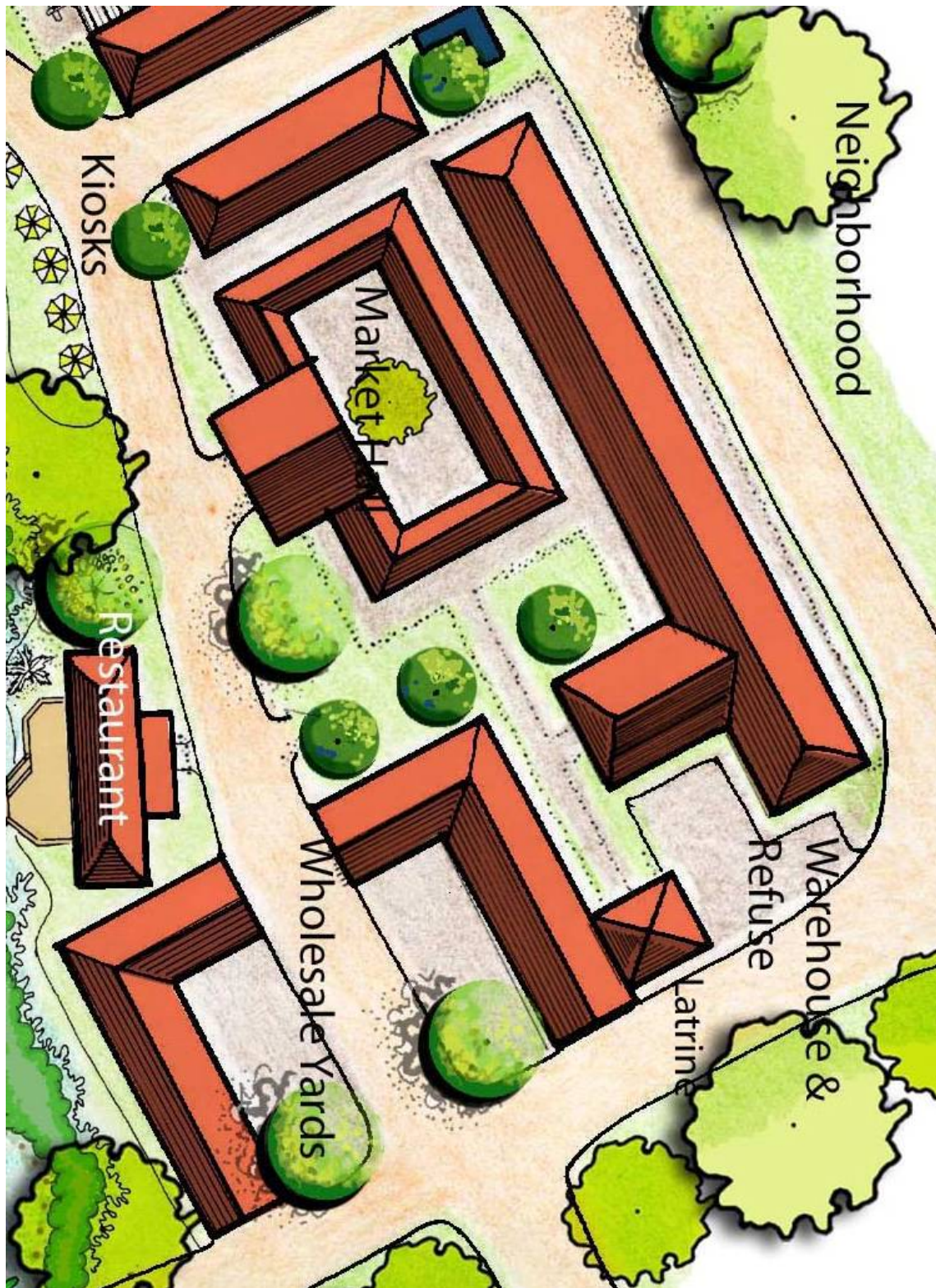


Figure 6.6: Wholesale Yards and Market Hall (Hayden 2009)

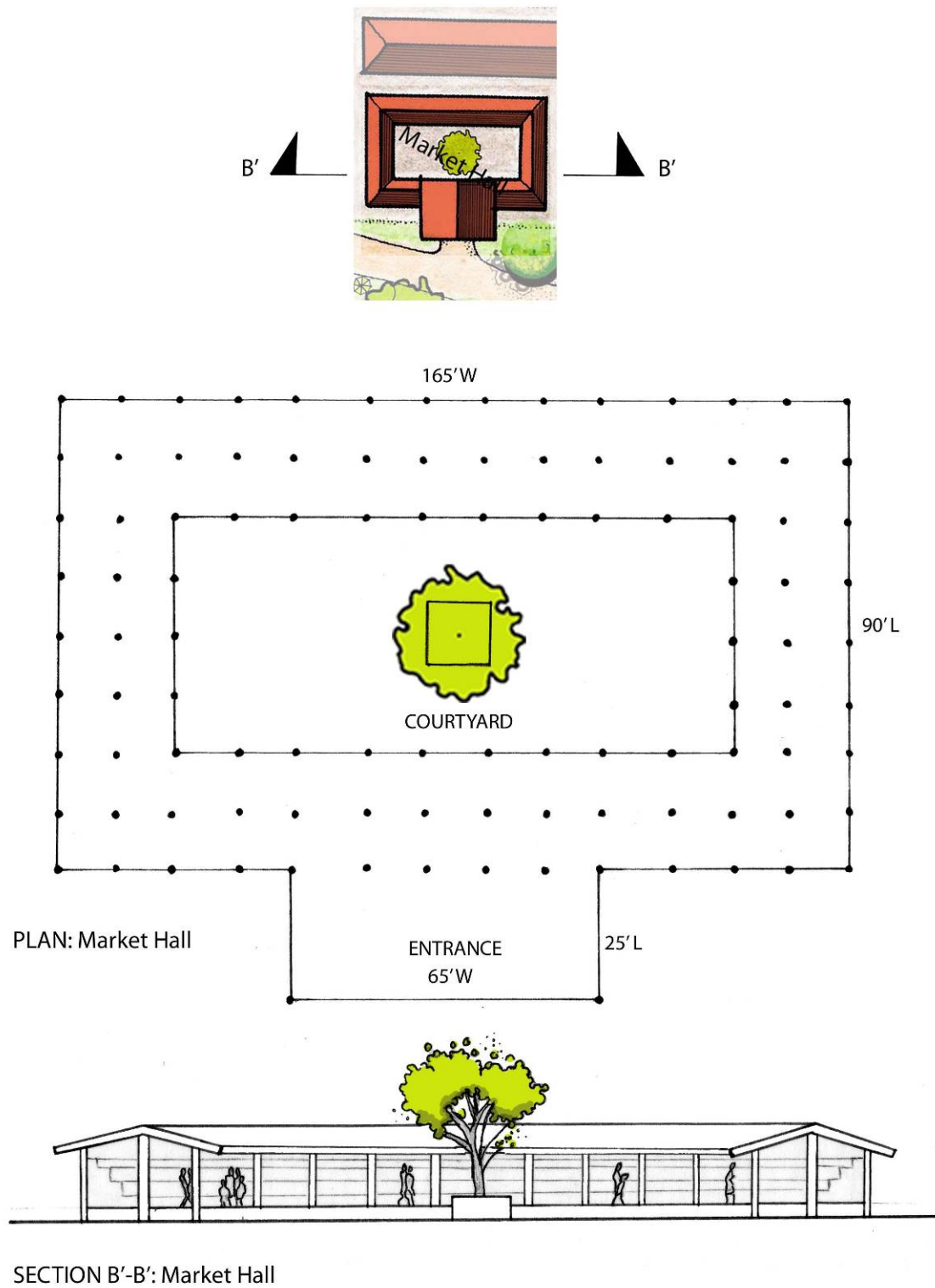


Figure 6.7: Market Hall illustrations (Hayden 2009)

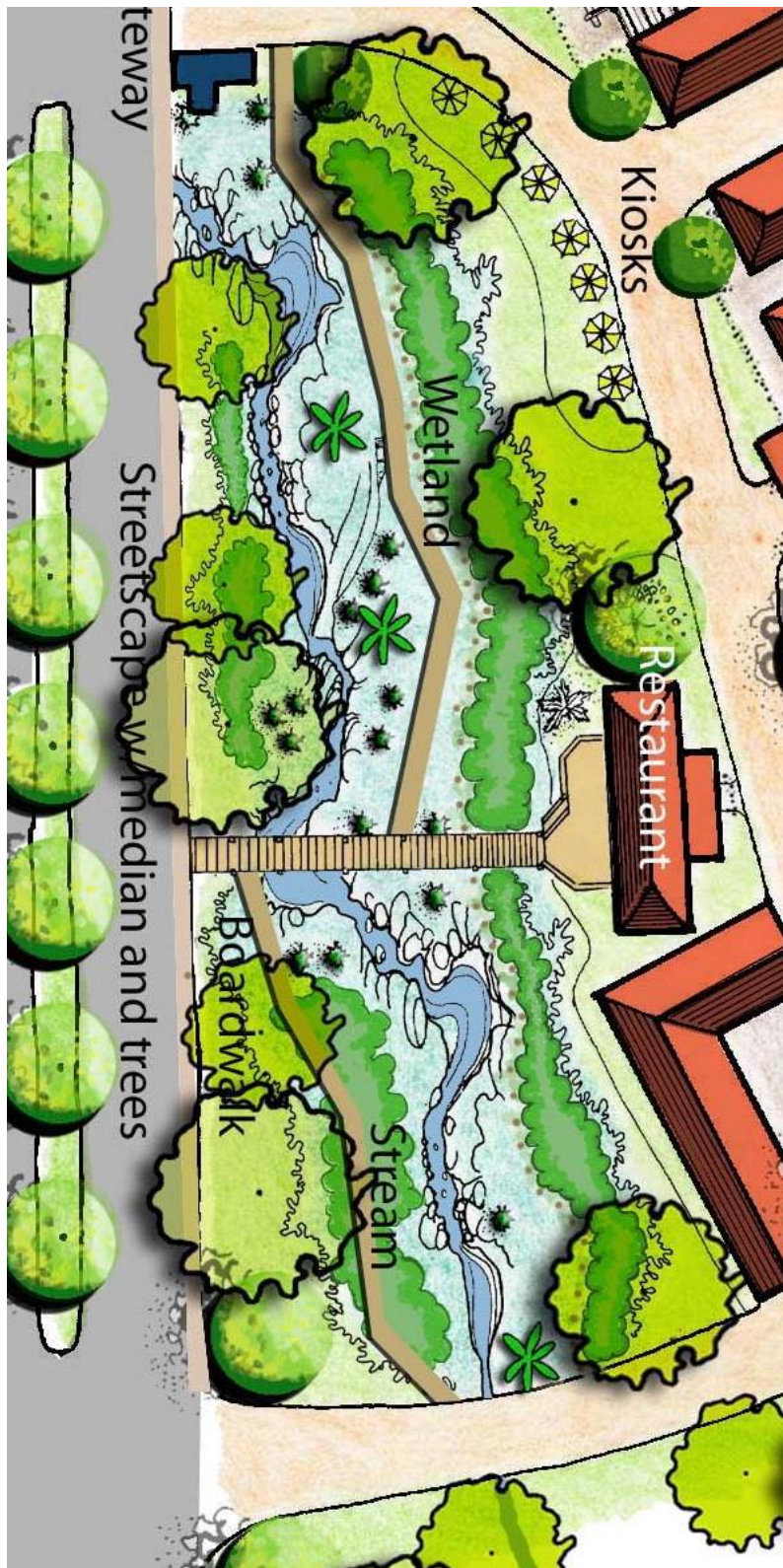
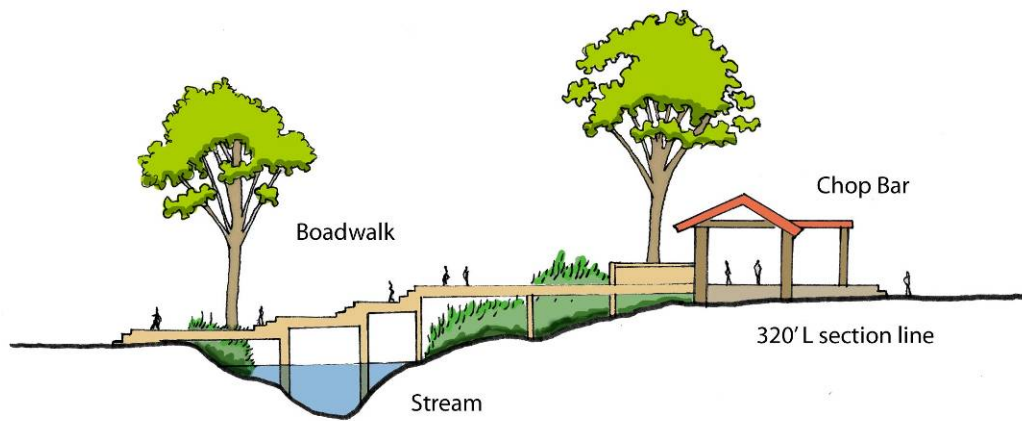
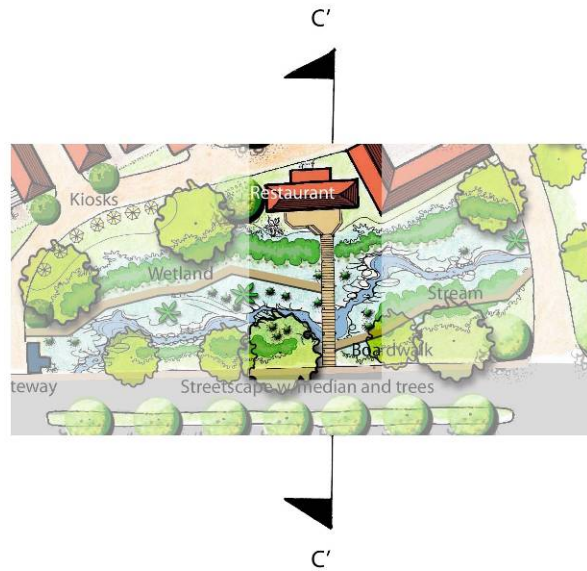


Figure 6.8: Wetlands (Hayden 2009)



SECTION ELEVATION C'C': Wetland Conservation

Figure 6.9: Wetland Section Elevation (Hayden 2009)

CHAPTER 7

LESSONS LEARNED

This thesis is the culmination of the author's experiences during two successive trips to Ghana as part of the yearly Summer Service-Learning Studio. Experiencing firsthand the traditional community life of Akyem Oda inspired a closer look at the problems and struggles facing the residents of a West African town. Many problems such as water quality, erosion and funding for schools were examined but the questions posed by a new proposed market on the edge of Akyem Oda captured the curiosity of the author. Questions include: *Why design in a developing country? Are western planning schemes appropriate in Akyem Oda?* And the central question, *Do Satellite Markets Conflict with Central Markets in Mid-size Ghanaian Towns?* Beyond an intellectual curiosity, the market traders, mostly women, and the sheer dynamism of the central market, both unlike any known place or people in the author's experience, were the ultimate inspiration and compelled an investigation of the West African market.

The thesis provided the author an opportunity to learn about the challenges of designing in a cross cultural context and in an unfamiliar country with many problems common throughout the developing world. The Service-Learning Program created a two-way interaction of sharing and learning, contributing and receiving, that provided the community a much needed service

such as erosion management planning; the author acquired knowledge and skills that no traditional university class could teach.

The thesis also provided a chance to fulfill an ethical purpose. As designers, there is a mandate to improve the built environment and an ethical obligation to contribute to the objectives of human development by working towards the sustainability. Since the work of the founding father, Frederick Law Olmsted, the landscape architecture profession has sought to improve society (Beveridge 1995). The main philosophical and aesthetic goal of landscape architecture is to connect the human condition with the ecological world. "Landscape architects should be in the vanguard of the environmental movement, discovering ways to help design environments that at the most fundamental level 'do no harm' - and beyond that, in ways large and small, contribute to the renewal of the earth and of the human spirit" (Howett 1999).

Why Design for Africa?

There is little disagreement that there is a need for increased involvement and leadership from designers and physical planners within the international development field. During the 21st century, increases in human population will continue to put pressures on the environment, its natural resources, governments, and social systems and cultures. In 2007, a new shift from rural to urban occurred and now the majority of the world's people now live in cities. Unfortunately, due to the dismal nature of urbanization in impoverished nations, there are many problems that accompanied this shift such as slum formation and sprawl (Moreno 2006). Many of the challenges are associated with the largest cities in the developing world. However, large cities are not the only important settlements. The majority of urban migrants will move from rural

areas to small settlements with less than one million inhabitants (United Nations Human Settlements Program 2008). This means that the planning of mid-size settlements like Akyem Oda is an important task.

Countries that are doing well managing growth have highly centralized systems and structures of government and planning. While economic development is important, spatial planning is just as critical throughout Africa. “These infrastructure systems cannot be put in place by market forces alone. They are necessarily planned components of effective urbanization that are prerequisites for functioning urban and regional markets. Without the infrastructure base, these major cities—such as Dar es Salaam (Tanzania), Accra (Ghana), and Dakar (Senegal)—will continue to perform economically far below their potential. This is a point seldom understood by macroeconomists; sound macroeconomic advice for achievement of development must include provisions for the urban planning in key cities, in order to ensure the effective buildup of the underlying infrastructure systems” (Sachs 2008).

The current state of town planning in Ghana is unacceptable for a country that is aspiring to become a middle-income country. Ghana’s economic growth has been held back by poor town and country planning. Mr. Frank Tackie, the president of Ghana Institute of Planners (GIP), said that “the only democratic process by which government can manipulate the use of land and environmental resources towards a unified goal of development for larger societal benefits is through good town planning. However, if Ghana does not link its economic output to a strategy of effective planning and building of its towns and cities there is no way Ghana can attain the visible living conditions in its settlements comparable to what pertains in any of the successful countries that we wish to emulate” (Tackie 2008).

Are western planning schemes appropriate?

The satellite market represents an application of Western spatial planning, which is not always the best solution for a traditional town. Inappropriate application of Western planning practices can be seen in the poorly understood relationship between town planning and malaria. When examining the pattern of building cities on hills (chapter three), a spiritual connection was made of the practice. However, another less esoteric reason for placing settlements on hills might be that hills tend to be naturally drier than the surrounding lower lands. Without standing water, there would be fewer malaria carrying mosquitoes. Originally, before colonization, African cities and settlements had lower population densities and were spread farther apart; this would create a condition that slowed the transmission of malaria. Western planning has a tendency to place development near rivers and lakes. Historically, this was always for trade and sustenance and in contemporary times, there is an emphasis on aesthetics and recreation. In the case of many tropical communities, the tendency to place development away from water has mostly been interpreted as a difference of cultural preference. However, there is critical logic to it and that is the prevention of malaria. If the relationship between population density, geography and malaria is better understood, traditional town planning could play a role in the process of malaria prevention.

Conclusion

This thesis continues the work of the Summer Service-Learning Studios by providing a design for a neighborhood market that focuses on the neighborhood community. Patterns present in historic West African cities were identified. The new plan attempts to improve the quality of the site by preserving the wetland area, which previous proposals ignored. It seeks to reemphasize the importance of traditional market planning and indigenous architecture such as courtyards and to mitigate the trend of overvaluing Western planning schemes and architecture. A satellite market's orientation to the central market is artificial and case studies reveal that these markets have not been successful for attracting business and contribute to village sprawl. In contrast, small traditional neighborhood markets that emphasize the immediately adjacent community work.

Markets, the traders and the dynamic traditional economies that they support show a different more positive yet realistic image of Africa than the one commonly held by non-Africans. Images of poverty and violence on one hand contrast with romantic visions on the other. This conflicting image crisis could be called 'a problem of two Africas' (Ayittey 2008). One writer put it this way: "When I left the United States, I had two contrasting images of Africa in my head. First, the stereotypical images of anarchy, starving children and poverty that seems to dominate every American's impression of the continent. Beyond, these desperate images, I also expected to find a continent that I had romanticized: an isolated land, music, strong traditional culture and beautiful people that have survived with dignity through terrible hardship; a land captured in a flaming black-and-orange painting of elegant silky figures crossing a river in a canoe, a painting that a Ghanaian artist had once traded me in a New York subway" (Thompson 1998).

In the market, there are two Africas in another sense. There are the coexisting modern and traditional Africas. These may appear to operate by the same principles and logic, when in fact, they do not. There is the modern economic growth and development in such places as Accra and Tema. The other Ghana is the peasant majority's reality. The peasants' economy produces the real wealth of Africa: agricultural produce, cash crops, timber, minerals, sculpture and other artifacts but often in unrecorded, untaxed and un-invested currency and resources. Africans have always been entrepreneurs, going about their daily economic activities on their own violation. They do not queue before rulers' palaces or huts for permission to engage in trade, fishing, or agriculture. They produce surpluses that are sold in village markets, where prices are determined by bargaining, not dictated from tribal government (Ayyittey 2008).

Creating better local markets strengthens the indigenous Africa, which is a sustainable Africa. The thesis is an attempt to create better local markets and a step toward a sustainable Africa. The product of this thesis, the master plan for the 'Nkwantanum Neighborhood Market', will be presented to officials and citizens of Akyem Oda during an upcoming Summer Service-Learning Studio. This master plan is needed to attract available implementation funds from national and international organizations. It is the hope of the author that Akyem Oda will continue its growth and development while seeking traditional planning solutions to solve its challenges. The central market should remain pivotal to the organization of the town and the valuable wetlands should be preserved with a new growing environmental appreciation.

GLOSSARY

This section includes special words and phrases that are specific to research in Ghana and West Africa. Also included are terms from Twi, Ga, Hausa and Arabic languages as well as those derived from British English, which are uncommon or have different meaning in American English.

Aaba ei:

Ga phrase meaning “they are coming” and used by traders to refer to Accra Metropolitan Assembly (AMA) guards; traders who are operating *informally* exclaim this phrase in warning of their approach

Accra:

Capital City of Ghana; located on the Coast

Adinkra:

Symbols created by the *Akan* in Ghana that represent concepts or aphorisms and are used on fabric, walls, pottery, woodcarvings and logos

African Diaspora:

Movement of Africans and their descendants throughout the world

Akan:

An ethnic and linguistic group of West Africa, mostly in Ghana and Côte d'Ivoire, and includes the *Ashanti*, *Akyem* and *Fante* sub-ethnic groups

Akosombo Dam:

A dam, officially Akosombo Hydroelectric Project, located in the Akosombo Gorge of southeastern Ghana; its purpose is generating electricity; the dam creates the world's largest man-made lake, the Volta

Akyem:

Akan ethnic group located primarily in Eastern Region of Ghana; also spelled Akim or Achim

Twi word meaning “Salt Trader”

Akyem Abuakwa:

One of three traditional *Akyem* ‘nations’ and is the northernmost division, located in Atewa Hills; its capital is Kibi

Akyem Bosome:

One of three traditional *Akyem* ‘nations’ and is the southernmost division with Akyem Swedru as its capital

Akyem Kotoku:

One of three traditional *Akyem* ‘nations’ located in the middle division with *Akyem Oda* as its capital

Akyem Oda:

Town located in the Birim South District of the Eastern Region in Ghana; inhabited primarily by *Akyem Kotoku* ethnic group; has a population of approximately 39,000; sometimes shortened to Oda

Apata:

Twi word for “shed” or stall; plural, these are referred to as “lines” in a market and are where specialized retail commodities are sold by traders

Asafo:

Important neighborhood market in *Kumasi*; contains a *lorry* park and frozen fish outlet

Asantehene:

Twi word meaning, “*Ashanti* King;” *Kumasi* is the seat of the kingship

Ashanti:

Akan ethnic group that is politically and culturally significant in Ghana

Large influential empire that developed the Ashanti Confederacy in 1670

Bantama:

Important neighborhood market in *Kumasi*

Birim:

Refers to the Birim South District, one of 17 districts in Eastern Region

River that is one of the main tributaries of the *Pra* River

Birni:

Old established *Hausa* term for city, meaning city as a distinct social unit; different from village or town as it denotes ‘urban activities’ and not as much of a description of physical form but of dynamic social activities

Bode:

Twi word meaning “yard” and refers to an area in a market where commodities are sold in high volumes or bulk wholesale (pl. *mbode*)

Bola:

Twi word meaning “garbage dumps”

BYOI:

Acronym for “Bring Your Own Infrastructure” and used by businesses to describe the situation in Africa and the intense level of investment for African startups

Cedi:

Currency in Ghana; present cedi was introduced July 3, 2007 and was equal to 10,000 old cedi when redenomination dropped four zeros; word is derived from *Twi* word for “cowry shell”

Chop Bar:

Ghanaian term for restaurant

D.C.E.:

District Chief Executive, Government appointed and responsible for the performance of the day-to-day executive and administrative functions of the *District Assembly*

District Assembly:

In the Constitution of the Republic of Ghana, the highest political authority for a district; it consists of both elected and appointed members

Dwa:

Twi word for trade

Dwom or Edwom:

Twi word for market

Ecotone:

Transition areas between two ecological communities; *tonos* is Greek for “tension”

Elmina Castle:

Fort built by the Portuguese in 1482 for the purpose of trade; important historical site recognized by UNESCO

Fante:

Akan ethnic group in southwestern coastal region of Ghana; main city is Cape Coast
Dialect of *Twi* language

Fascine

Rough bundle of brushwood used for strengthening and stabilizing soil in order to prevent erosion and encourage vegetation

Fufu:

Staple food of West and Central Africa; a thick paste or porridge made by boiling starchy root vegetables and then pounding until desired consistency; In Ghana, it is made from cassava or yams and is swallowed not chewed

Ga:

Kwa language, part of the Niger-Congo language family, spoken around *Accra* and Southeastern Ghana

Ghana Empire (Ancient):

Also called Wagadou Empire, c. 790-1076, located in present day southeastern Mauritania and western Mali; Al-Ghaba was the empire's capital city; Modern Ghana is named after the empire

Golden Stool

Symbol of royal authority and unity among the *Ashanti*; The Golden Stool was commanded down from the heavens by Okomfo Anokye, the Priest and advisor to *Osei Tutu*. *Twi* phrase: sika 'dwa

Gyaase:

Twi word meaning “enclosed courtyard;” the typical *Ashanti* house had one and up to four courtyards

Gye Nyame:

Adinkra symbol and aphorism meaning “except for what God allows to happen” or “unless God allows it to happen”

Harmattan:

Arabic name for dry dusty West African trade wind that blows south from the Sahara into the Gulf of Guinea from the end of November until the middle of March

Hausa:

Ethnic and linguistic group located primarily in northern Nigeria and southeastern Niger; many have moved to cities and towns in Ghana and are adherents to Islam
Chadic Language and is spoken as a *lingo franca* throughout West Africa

Hawkers

Vendor selling merchandise that is easily transported; synonymous with peddler

High Life:

Musical genre from Ghana, characterized by jazz horns and multiple lead guitars; E.T. Mensah was a famous Highlife bandleader

Informal Sector:

Economic activity that is not taxed or monitored by the government; often associated with developing countries

Kejetia:

Kumasi Central market located adjacent to Kejetia Circle; largest of all Ghanaian markets

Kenkey:

Staple dish made from ground corn allowed to ferment for a few days before partially cooking and then wrapping in either banana leaves or corn husks before steaming; it is similar to a sourdough dumpling

Kente:

A type of fabric made of interwoven cloth strips by the *Akan*

Kontomire:

Leafy Greens used in traditional cooking in Ghana; African spinach

Kotokraba:

Central market in Cape Coast

Kumasi:

City in Ashanti Region; also known as “The Garden City”

Kwame Nkrumah:

Ghana’s first president from 1957-1966; important leader for Ghanaian Independence and of the *Pan Africa movement*

Larabanga:

Town in northwestern Ghana, near the entrance to Mole National Park; famous for its distinct white-washed earth mosque said to be the oldest in Ghana; inhabited by the Kamarra People

Latrine:

Public communal space with multiple toilets

Lorry:

British English for either a commercial vehicle for transporting goods or a passenger vehicle; in Ghana, lorry parks are areas where these vehicles deliver and pick up goods and passengers

Maggi Cube:

All purpose seasoning bouillon cube used to flavor dishes and made by Nestlé; popular in Ghana and sold in markets

Makola:

Large central market in *Accra*

Nkwansuto:

Twi term meaning “on the road people” and refers to specialized traders who spend time on the road transporting goods

Nkwantanum:

Neighborhood located 1.5 kilometers from the town center of *Akyem Oda*; new proposed satellite market location

Nusuaem:

Original *Twi* name for *Akyem Oda*, meaning “The Slice;” name was changed in 1922

Pan Africa Movement:

Philosophy advocating African Unity both politically (nations) and socially (native Africans and members of the *African Diaspora*)

Patos:

Twi meaning, “open sided rooms;” the typical *Ashanti* house has four patos enclosing a courtyard

Pra:

Major River in Ghana; Birim River flows into it

Oba:

Yoruba word for “ruler;” refers to the traditional leader of a Yoruba settlement

Oguaa:

Fante name for Cape Coast, a coastal city in the Central Region

Osei Tutu:

Leader who consolidated the *Ashanti* kingdom during the late 17th century in *Kumasi*; according to legend, by the invocation of Okomfo Anoyke, he received the *Golden Stool* from heaven and was thereby named King of the *Ashanti* or *Asantehene*

Refuse:

British English term used in Ghana meaning “anything thrown away;” waste; used in phrase, ‘refuse management,’ to describe the management of the open dumping of waste

Sahel:

Arabic word meaning “shore” and refers to environmental and climate zone located directly south of the Sahara from the Atlantic Ocean to the Red Sea; it is covered in grassland and savannah

Sarki:

Hausa word meaning, “Ruler” and is the leader of a *birni*; must not be a tribal chieftain

Sunsum:

Twi word referring to the ‘spirit’ of the *Ashanti* people, living, dead and yet to be born; this is said to be contained in the *Golden Stool*

Su-su:

Widespread banking, credit and loan system for market sellers in Ghana; managed through local banks

Trans Atlantic Slave Trade:

Enslavement, transporting and trading of African people across the Atlantic Ocean to colonies in the New World for the purpose of forced labor; many were from West Africa

Tro-tro:

Ghanaian term for a share taxi or public transportation vehicle; usually a minibus

Twɪ:

Akan language spoken in Ghana and divided into three dialects: Asante, Akuapem and *Fante*

Water Bore:

Drilled shaft to access water; a well

Zongo:

Hausa term for settlement; neighborhoods in Ghana whose inhabitants are predominantly Muslim and *Hausa*; these communities are often poorer than surrounding ones

REFERENCES

- Affrifah, K. (2000). The Akyem Factor in Ghana's History: 1700-1875. Accra, Ghana Universities Press.
- African Development Bank. (2006). "Ghana: Country Assistance Evaluation." (<http://www.afdb.org>).
- Akuffo, S.B. (1998). Pollution Control in a Developing Economy: A Study of the Situation in Ghana. Accra, Ghana University Press.
- Annan, Kofi. (2000). "United Nations Secretary-General at the Organization of Africa Unity (OAU) Summit in Lome." Daily Graphic, 12 July 2000.
- Ansong, William Boateng. (2007). Interview with Director of Town and Country Planning, Cape Coast.
- Ayittey, George B. N. (2008). Africa Unchained: The Blueprint of Africa's Future. New York, Palgrave Macmillan.
- Barbot, J. A. (1732). Description of the Coasts of North and South Guinea. London: Churchill's Collection of Voyages and Travels.
- Bascom, William. (1955). "Urbanization among the Yoruba." Africa, XL.
- Boahen, Adu and J.F. Ade Ajayi . (1986). Topics in West African History. Harlow, Longman.
- BBC.
- (2007, June 18). "UK's Tullow Uncovers Oil in Ghana". Retrieved September 1, 2009, from (<http://news.bbc.co.uk/2/hi/business/6764549.stm>).
- (2007, July 1). "Summit Focuses on African Unity." Retrieved September 28, 2009, from (<http://news.bbc.co.uk/2/hi/africa/6258072.stm>).
- (2009, January 3). "Opposition Leader Wins Ghana Poll." Retrieved September 28, 2009, from (<http://news.bbc.co.uk/2/hi/africa/7809451.stm>).
- Beveridge, Charles E. and Raul Rocheleau. (1995). Frederick Law Olmsted: Designing the American Landscape. New York, Rizzoli.

- Birim-South-District-Assembly (2002). The treasury of the Akyems.
- Birim South Planning Department (2007). Market plan.
- Birmingham, David. (1998). Kwame Nkrumah: The Father of African Nationalism. Athens, Ohio University Press.
- Brown, Jason and Simon Drake. (2009). Classic Erosion. Venture West Wiley.
- Busumtwi, Frank, D.C.E. (2006) Interview at Birim South District Assembly
- Busumtwi, Frank, D.C.E. (2007) Interview at Birim South District Assembly
- Carmichael, J. (1993). African Eldorado : Gold Coast to Ghana. London, Duckworth.
- C.I.A. (2009). The World Factbook: Ghana.
- Clark, Gracia. (1994). Onions Are My Husband: Survival and Accumulation by West African Market Women. Chicago, The University of Chicago Press.
- Collins, John. E.T. (1996). Mensah, King of High Life. Accra, Anansesem.
- Dapper, Olfert. (1668) Nauwkeurige Beschrijvinge der Afrikaansche Gewesten, Amsterdam.
- Davidson, Basil. (1965). The Growth of African Civilization. London, African World Press.
- Dickson, K. B., G. Benneh, et al. (1988). A New Geography of Ghana. Harlow, Longman.
- Dugan, Patrick. (1993). Wetlands in Danger. World Conservation Atlas Series. Firefly Books.
- Dupuis. (1824). Journal of a Residence in Ashantee.
- Farrar, T. (1996). Building Technology and Settlement Planning in a West African Civilization : precolonial Akan cities and towns. Lewiston, E. Mellen Press.
- Fasi, M. El and I. Hrbek, ed. (1988). Africa from the Seventh Century to the Eleventh Century, volume 3 of General History of Africa. University of California Press.
- French, Howard W. (2007, June 6). "Drought Cuts Hydropower in Ghana." New York Times. Retrieved September 28, 2009, from (<http://www.nytimes.com/1994/09/16/world/drought-cuts-hydropower-in-ghana.html>)
- Freund, Bill. (2007). The African City: A History. New York: Cambridge University Press.
- Ghana Ministry of Trade. (1997). Aspects of the Trade liberalization Policy: Incentives to Growth in the Manufacturing Industry. Accra, Ministry of Trade and Industry.

- Gocking, R. (2005). The History of Ghana. Westport, Conn., Greenwood Press.
- Gollin, Douglas and Christian Zimmermann. (2007). "Malaria: Disease Impacts and Long-Run Income Differences." Institute for the Study of Labor. (<http://ftp.iza.org/dp2997.pdf>).
- Hair, P.E.H. (1994). The Founding of the Castelo de São Jorge da Mina: An Analysis of the Sources. Madison, University of Wisconsin.
- Howett, Catherine. (1999). Landscape Architecture Magazine. December 1999.
- Hull, Richard. African Cities and Towns before the European Conquest, New York: W.W. Norton, 1976.
- Insoll, T. (ed.). (2008). Current Archaeological Research in Ghana. Cambridge Monographs in African Archaeology 74. Oxford: Archaeopress.
- International Monetary Fund (2007) World Economic Outlook. (<http://www.imf.org>).
- Kuada, John and Yao Chachah. (1999). Ghana: Understanding the People and Their Culture. Accra New Town, Ghana, Woeli Publishing Services.
- Kufuor, John A., president of Ghana. (3 May 2002). The Financial Gazette.
- Lewis, David Levering. (2000) W.E.B. Dubois, 1919-1963: The Fight for Equality and the American Century. New York, Henry Holt Publishing.
- Madamombe, Itai. (2005). "Africans push to tame malaria." Africa Renewal, Vol.18:4
- Meredith, Martin. (2005). The Fate of Africa: A History of Fifty Years of Independence. New York, Public Affairs.
- McIntosh, Roderick J.; McIntosh, Susan Keech (1981). "The inland Niger delta before the empire of Mali: evidence from Jenne-jeno". Journal of African History 22: 1-22.
- McIntosh, Susan Keech (ed.) (1995). Excavations at Jenné-Jeno, Hambarketolo, and Kaniana (Inland Niger Delta, Mali), the 1981 season. Berkeley: University of California Press.
- Mitsch, William J. and James G. Gosselink. (2007). Wetlands (4th ed.). New York, John Wiley & Sons.
- Moreno, Eduardo Lopez and Rasna Warah. (2006) "The State of the World's Cities Report 2006/7: Urban and Slum Trends in the 21st Century." UN Chronicle No. 2.
- Nagel, Alex. (2007). The Three Akyem: A Community Park for the Town of Akyem Oda, Ghana. University Of Georgia.

Norley, Naa. (18 September 2009). "Ghana: AMA Satellite Markets Abandoned" Ghanaian Chronicle. AllAfrica, Global Media.

Nyerere, Julius, president of Tanzania. (1997) "University of Edinburgh, October 9, 1997" PanAfrican News, September 1998.

Okyene, Gladys (2007). Interview with a South Birim Rural Bank Manager.

Oliver, P. (1976). Shelter in Africa. London, Barrie and Jenkins.

Owusu-Ansah, D. (2005). Historical dictionary of Ghana. Lanham, Md., Scarecrow Press.

Peel, J.D.Y. (1983). Ijeshas and Nigerians: The Incorporation of a Yoruba Kingdom, 1890's-1970's. Cambridge, Cambridge University Press.

Prussin, L. (1969). Architecture in Northern Ghana: A Study of Forms and Functions. Berkeley: University of California Press.

Quist-Arcton, Ofeibea. (2007, March 4). "Ghana at 50 Reflects on Dreams of Nationhood." Retrieved September 16, 2008, from (<http://www.npr.org/templates/story/story.php?storyId=7722412>).

Sachs, Jeffrey D., Director, The Earth Institute at Columbia University. (<http://www.earthinstitute.columbia.edu/csud/>).

Salm, S. J. and T. Falola (2002). Culture and Customs of Ghana. Westport, Conn., Greenwood Press.

Schiechtl, H. (1980). Bioengineering for Land Reclamation and Conservation. University of Alberta Press.

Schwimmer, Brian. (1976). The Social Organization of Marketing in a Southern Ghanaian Town. PhD. diss, Stanford University.

Smith, Carol. (1975). "Examining Stratification Systems Through Peasant Marketing Arrangements: An Application of Some Models from Economic Geography." Man 10:95.

Smith, Robert Leo. (1974). Ecology and Field Biology, 2nd Edition. New York, Harper & Row.

Sudarkassa, Niara. (1973). Where Women Work: A Study of Yoruba Women in the Marketplace and in the Home. Ann Arbor: University of Michigan Press.

Sutherland & Sutherland and S. Tetch & Associates, (2005). Proposed New Market at Nkwantanum, Akyem Oda. Unpublished.

Staudinger, Karl. (1990). In the Heart of the Hausa States. Monographs in International Studies, Africa Series 56. Athens, Ohio, Ohio University Press.

Tackie, Frank. (2008) Ghana Institute of Planners. (<http://www.gip.org>).

Thompson, Nick. (1998). The Washington Post 8 Nov 1998.

Town and Country Planning Ordinance (2009) (<http://www.ghana.gov.gh/files/Town and Country Planning.doc>).

Trager, Lillian. (1981). "Yoruba Market Organization: A Regional Analysis." African Urban Studies 10: 43-58.

UNDP. (2007). Human Development Data: Ghana. (<http://hdrstats.undp.org>).

Wheelan, Charles. (2003). Naked Economics: Undressing the Dismal Science. New York, W.W. Norton & Company.

Wilks, Ivor. (1975). Asante in the Nineteenth Century: The Structure and Evolution of a Political Order. Cambridge, Cambridge University Press

The World Bank. (2009). Ghana Data profile. (<http://devdata.worldbank.org>).

World Economic Forum. (2004). The African Competitiveness Report. (<http://www.weforum.org>).