

GOVERNMENT OF GHANA



**MINISTRY OF ENERGY
IN COLLABORATION WITH
LAND USE AND SPATIAL
PLANNING AUTHORITY**

**PETROLEUM HUB
SITUATIONAL
ANALYSIS REPORT**

MAY, 2021





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FOREWORD

The Government of Ghana's agenda of creating employment opportunities to absorb its youthful population gave birth to the "Agenda for Jobs". Amongst the strategies and programs developed under this policy is the creation of an enabling environment through fiscal and non-fiscal means to attract both domestic and foreign investments into Ghana's oil and gas industry. To meet this objective, the government intends to develop its Petroleum and Petrochemical Industry by establishing a Petroleum Hub. The development of the Petroleum Hub is envisaged to accelerate the economic growth of the country as well as increase the recognition of Ghana in the Sub Saharan region and beyond with respect to the oil and gas industry.

It is against this backdrop that the Land Use and Spatial Planning Authority under the Ministry of Environment, Science, Technology and Innovation, in collaboration with the Ministry of Energy developed spatial plans (i.e., Structure and Local plans) for a Petroleum Hub in the Western Nzema Traditional Area of the Jomoro Municipality. The development of the Spatial Plans was guided by international and domestic policies including the UN's Sustainable Development Goals, National Spatial Development Framework, Western Regional Spatial Development Framework, Energy Policy, the Petroleum Hub Infrastructure Master Plan, Manuals for the Preparation of Spatial Plans, Planning Standards and Zoning Regulations, the Riparian Buffer Policy just to mention a few.

The Structure Plan is to guide and co-ordinate the allocation of land for various uses including key infrastructure such as Jetties, Storage Tanks, Refineries, Liquefied Natural Gas (LNG) Facility, Power Plant; Ancillary Infrastructure such as Water Treatment Facilities, Waste Management Centre, Commercial Services; and other social amenities within the proposed Petroleum Hub enclave.

The Local Plans will on the other hand provide details of land use patterns showing individual plots of land for specific uses, open spaces, circulation, energy, water, and drainage systems among others. It is worthy of mentioning that the Structure and Local Plans have received statutory approval from the Spatial Planning Committee of the Jomoro Municipal Assembly.

With the completion of the plan preparation process and consequent approval, it is expected that development will proceed according to the proposals made in the Spatial Plans. These plans are important documents that will shape not only the development of the Petroleum Hub but also communities that are within the immediate neighborhood of the Petroleum Hub.

Finally, I would like to express my sincere thanks to all who worked and contributed to the development of the Spatial Plans for the Petroleum Hub.

.....
HON. DR. MATHEW OPOKU PREMPEH (MP)
Minister, Ministry of Energy



ACKNOWLEDGMENTS

The preparation of the Spatial Plans (Structure and Local Plans) for the Petroleum Hub in the Western Region could not have been successful without the support of all Stakeholders at the National, Regional and the District levels. The Land Use and Spatial Planning Authority gratefully acknowledges the individuals and organizations that contributed their time, energy and views in shaping the spatial plans.

The commitment and support received from the Ministry of Energy and the Petroleum Hub Implementation Committee is duly appreciated. Appreciation goes to Hon. Dr. Mathew Opoku Prempeh (Minister, MoEn), Hon. Dr. Mohammed Amin Adam (Deputy Minister, MoEn), Hon. Joseph Cudjoe (former Deputy Minister, MoEn), Hon. Professor Frimpong Boateng (former Minister of MESTI), Hon. Dr. Kwaku Afriyie (Minister, MESTI), Mrs Cynthia Asare –Bediako, Chief Director of MESTI, Mr. Jacob Amoah (NPA), Mrs. Anita Lokko (MoEn), Mr. Ali Nuhu (MoEn), Mr. Charles Owusu (MoF), Dr. Eric Yeboah (Land Policy Advisor, Office of the Senior Minister), Ms. Nancy Ayiku-Botchway (MoEn), Mr. Joseph Yankson (MoEn), Mr. Obed Kraine Boachie (MoEn) and Nana Damoah (MoEn). We are also grateful to the National Technical Working Groups, Institutional Heads and Representatives from Ministries, Department and Agencies, for their unlimited support throughout the preparation of the Structure and Local Plans for the Petroleum Hub.

Our sincerest appreciation goes to Hon. Kwabena Okyere Darko Mensah the Western Regional Minister, the Western Regional Coordinating Council, and relevant Sector Agencies from the Western Region. Special appreciation goes to His Royal Highness Awulae Annor Adjaye III and the Western Nzema Traditional Council for their immense support and contribution in the preparation of the plans.

We are particularly grateful to Hon. Ernest Coffie and Madam Joyce Angmorteh, MCE and MCD of Jomoro Municipal Assembly respectively, Members of the JMA Spatial Planning Committee and Technical Sub Committee, Departments and Staff of the JMA, Assembly Members and all Community Members for their commitment and support throughout the process.

Lastly, the tireless effort and dedication of the Project Team from the Land Use and Spatial Planning Authority are duly acknowledged. We express our thankfulness to Messrs Lawrence Dakurah (the Immediate Past Chief Executive Officer of LUSPA), Kwadwo Yeboah (Chief Executive Officer, LUSPA), Chapman Owusu- Sekyere (Director for Spatial Planning Directorate), Patrick Apraku (Director for Standards and Compliance Directorate), Miss Celestine Deku (Project Liaison Officer), Eugene Nyansafo, Benedict Arkhurst and Nada Tandoh (Sub Team Leaders), Prosper Detornu, Judith Derry, Abena Apeaa Adu, Ebenezer Ntsiful, Mohammed Munzamil, Stephen Nana Essuman, Peter Dery, Ama A. Boadu, Doagbodzi Amanda Selasie, Elvis Mensah, Achebah Enoch, Silas Achidago, Abigail Amankwah, Sheila A. N Humphrey-Ackumey, Sarah Gyogluu, Stella Ama Agyemang Fenteng, Dennis Quarcoo Nii Noi (Sub Team Members) and all Staff of LUSPA Head Office. Special thanks go to the Western Regional Director and Staff of LUSPA and all other LUSPA Regional Heads and Staff.

The view, comments and inputs received during the stakeholder consultations are reflected in the document.

LAWRENCE APAALSE

Chief Director, Ministry of Energy



JOMORO MUNICIPAL ASSEMBLY



PLAN NAME: PETROLEUM HUB LOCAL PLAN (PHASE ONE)

PLAN NO.:

APPROVAL DATE: 28TH MAY 2021

CHAIRMAN: Hon. Ernest Kofie

SIGNATURE: _____

SECRETARY: Richmond Kwame Obiri

SIGNATURE: _____



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CHAPTER ONE

INTRODUCTION

1.0 INTRODUCTION

This chapter provides the background and rationale of the Petroleum Hub Structure Plan (PHSP). It also discusses the scope of PHSP and the objectives that it seeks to achieve. The methodology adopted in analysing the Structure Plan Area (SPA) and the limitations encountered are presented in this chapter. It finally presents how this report is organized.

1.1 BACKGROUND AND RATIONALE OF STRUCTURE PLAN

1.1.1 Background

The oil and gas industry is an enormous opportunity for the country to contribute to its accelerated economic development. It has the potential of generating multiple impacts in the economy, particularly in the manufacturing and services sector when properly planned and managed. It is an impetus for contributing to the industrialization agenda of government. The Coordinated Programme of Economic and Social Development Policy (CPESDP) termed "Agenda for Jobs: Creating Prosperity and Equal Opportunity for All" has leveraged this opportunity as a catalyst for economic development. It has outlined several strategies to develop a modern, diversified, efficient and financially sustainable energy economy. Paramount to these strategies is the goal to create an enabling environment through fiscal and non-fiscal measures to attract domestic and foreign investment into the oil and gas industry. One of such measures is the development of a Petroleum Hub.

To achieve Government's vision of the Energy Economy and to facilitate access to adequate, reliable and cost-effective petroleum products, the Government intends to increase the national crude oil refining capacity, through public and private sector investment. The private sector investment will expand the national refining capacity in order to create a Petroleum Hub made up of refinery and processing facilities, port discharge and storage, distribution and transportation facilities as well as trading of petroleum products in Ghana for the West African sub-regional market and beyond. It will also contribute to the achievements of the SDGs 7, 8, 9 and 11.

A number of potential sites were considered, using criteria such as land availability and suitability, environment and proximity to the shoreline for the siting of the Hub among others. Based on the outcomes of extensive stakeholder engagements, the MoEn selected the Domunli enclave, located in Western Nzema Traditional Area in the Jomoro Municipality to site the Petroleum Hub. This is in line with the District Spatial Development Framework (SDF) which seeks to strategically position the Jomoro Municipal Area to attract Oil and Gas Investments. The Jomoro SDF takes cognizance of national policies and plans including the District's Medium-Term Development Plan (MTDP). Ensuing the preparation of the Jomoro SDF, it is imperative to develop Structure Plans of broad land use as the next logical sequence in the spatial planning process to guide the future development and land use patterns, the layout of trunk infrastructure and main transportation networks, conservation and protected areas and natural drainage system, and other key features to manage the direction of development. The Petroleum Hub Project provides an opportunity to prepare one of such structure plans for oil and gas development. Subsequently the Local plans which is at the third tier of Ghana's spatial planning system will



provide details of land use patterns showing individual plots of land, open spaces, facilities, transportation systems, and energy water and drainage systems among others.

1.1.2 Rationale

The scope and extensive nature of the petroleum hub mandates that a Structure Plan is prepared to guide and coordinate orderly physical development considering its strategic nature in the country's development agenda. The huge investments to be made in the petroleum hub require proper coordination and planning to align it with the national, regional and district development frameworks.

The Jomoro SDF strategically positioned the Municipality to attract Oil and Gas Investments based on the identified potentials of the municipality. Hence, the preparation of a structure plan will facilitate the achievements of the proposals made in the SDF.

The implementation of the Petroleum Hub Structure Plan shall span for a period of fifteen years (2021-2036). The Structure Plan is expected to:

- Ensure that patterns and intensities of existing and proposed developments are coordinated to enable efficient use of resources, services and facilities;
- Provide a coordinated approach to the provision of infrastructure and services in the project area and facilitate timely delivery of basic services to the population;
- Provide guidance and certainty to prospective developers, government and the general public regarding permissible land uses in the project area;
- Identify areas suitable for the preparation of local plan in phases and finally;
- Identify areas in need of urban renewal, improvements in community facilities, and protect conservation areas (threatened habitats and areas of historic, cultural and scenic value).

Following the preparation of the Structure Plan, Local Plans will be developed to define and allocate plots for the development of the four broad categories of infrastructure and amenities as indicated above. It will make provision for the development of other ancillary facilities and infrastructure such as residential and commercial uses, health and safety facilities, as well as provide for density and height zoning.

Ultimately, the preparation of both a Structure Plan and Local Plans for the Petroleum Hub will ensure rational land use distribution and management to promote socio-economic development of the Petroleum Hub.

1.2 SCOPE OF THE GHANA PETROLEUM HUB STRUCTURE PLAN

Geographically, the proposed Petroleum hub would be situated within the Western Nzema Traditional Area of the Jomoro Municipality. The project area can be located between latitude 04o59' 45" N to 05o07'15" N and longitude 02o48'30" W to 02o 38 30" W. The total estimated land size for the entire structure plan area is 50, 870 acres while the petroleum hub intervention area is estimated to cover 20,000 acres.

The Situational Analysis Report captures the data collected, analysis and the presentation of the existing situation in major thematic areas such as natural environment, population dynamics and settlement growth, economy, social services, housing, energy and transport.

Figure 1.1: The Petroleum Hub Structure Plan Area within the District Context.



Source: LUSPA, 2020

Figure 1.2: The Petroleum Hub Structure Plan Area



Source: LUSPA, 2020



1.3 OBJECTIVES FOR THE PREPARATION OF THE STRUCTURE PLAN

In order to ensure a participatory and consensus building approach, aimed at project ownership and sustainable project implementation, LUSPA has identified sub-objectives deemed important for the Structure Plan preparation. They are:

- a) To formulate a spatial vision for the Petroleum Hub by engaging relevant stakeholders including MDAs, Jomoro Municipality, Private Sector, CSOs and Traditional Authorities inter alia.
- b) To align and coordinate the spatial dimension of the Petroleum Hub to that of the Municipal, Region, National, Social and Economic policies by reducing duplications, conflicts, overlaps and waste, and imbalances
- c) To ensure environmental conservation, protection and sustainable use of natural resources by taking into consideration issues of climate change
- d) To create opportunities for economic development, infrastructure projects while ensuring gender cross-cutting issues
- e) To demarcate and erect pillars as a way of translating the plan onto the ground within the project area.

1.4 METHODOLOGY ON DATA COLLECTION AND ANALYSIS

Detailed data was collected from both primary and secondary sources to inform the preparation of the Petroleum Hub Structure Plan. Existing urban and rural settlement and their physical environments were assessed with the purpose of identifying the potential of natural landscape, the characteristics of the built environment, quality of the existing residential areas, historic and cultural qualities, markets and other public and private service areas, transport situation, rural/urban sanitation, problem areas such as flooding and risk areas as well as availability of land and potentials for development.

1.5 LIMITATIONS

The following limitations caused a challenge in the analysis of the SPA.

- Gaps in Data Availability and Accessibility;
Qualitative and quantitative data were collected from identified institutions and stakeholders. Where there were data gaps, the project team relied on the district and regional level data as well as international standards and best practices for the conduct of analysis.
- COVID 19 and Related Protocols;

COVID-19 and its related protocols affected the kind and levels of interactions that took place between the Project Team and stakeholders. COVID 19 protocols were always observed during consultation meetings. Some meetings were held virtually instead of in person and this was affected by internet connectivity.

1.6 REPORT ORGANIZATION

The report is structured into seven (7) chapters. Chapter 1 presents the background and rationale of the structure plan for the Petroleum Hub, the scope and objectives of the structure plan and identifies limitations encountered in the data collection and analysis process. Chapter 2 discusses the Natural Environment of the Structure Plan Area (SPA). It also presents the environmental constraints and the opportunities for environmental improvement. Chapter 3 deliberates on



the population dynamics and settlement growth which include hierarchy and functions and the existing land uses. Chapter 4 focuses on analyses of the sectors of the economy in the SPA. Chapter 5 presents social services provided in the health sector, education sector, water supply, sanitation (Solid & Liquid Waste systems), ICT, civic & culture, sports and recreation and safety and security. Chapter 6 discusses issues on housing typologies, densities and conditions. It also discusses issues on energy for lighting and cooking, and gas. It further analyses the transportation sector within the SPA.



CHAPTER TWO

NATURAL ENVIRONMENT

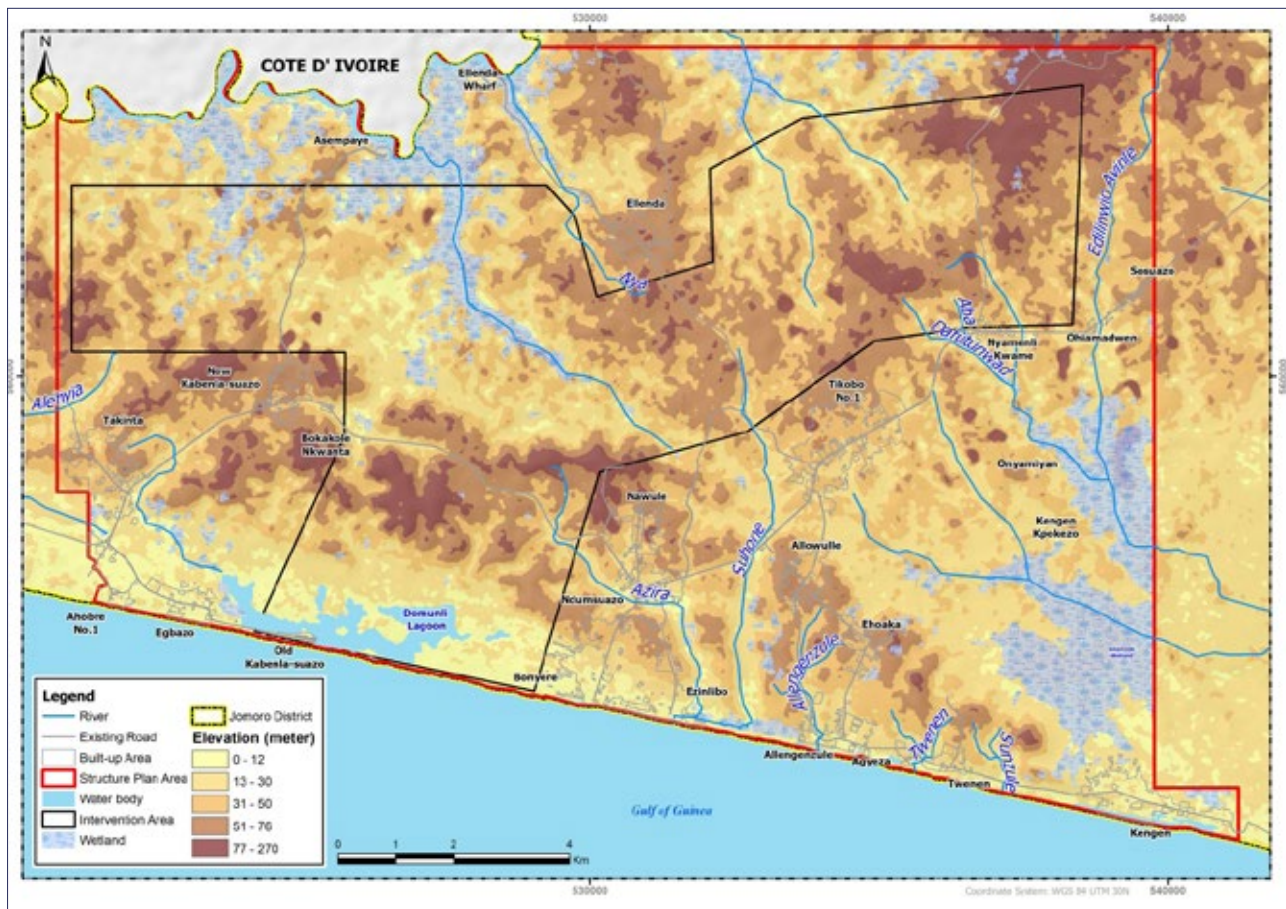
2.0 INTRODUCTION

This chapter describes the natural environment and physical features that influences the livelihoods and development within the SPA. It discusses the topography, rainfall, temperature, drainage and biotic environment, land cover changes over the years, as well as some identified environmental issues in the SPA.

2.1 TOPOGRAPHY

The SPA is characterized by undulating and low-lying areas with few hilly areas in the central to the Western section. (See Figure 2.1). These hilly areas range between 77-270m above sea-level. The North-Western section through the central to the South-Eastern parts and coastal areas are relatively flat with gentle slopes. These areas have elevations that range between 0-50 m above sea level.

Figure 2.1: Topography of Petroleum Hub Structure Plan Area



Source: LUSPA, 2020 based on USGS DEM data



2.2 RAINFALL

The SPA experiences two wet seasons with a year-round rainfall that has double maxima rainfall pattern just as the Jomoro Municipality. The highest mean monthly rainfall occurs between May and June. Rainfall peaks in July and October followed by short spells of relatively dry season. Rainfall in the SPA averages about 1380 mm with maximum amounts of about 1700 mm occurring during the months of March and July.

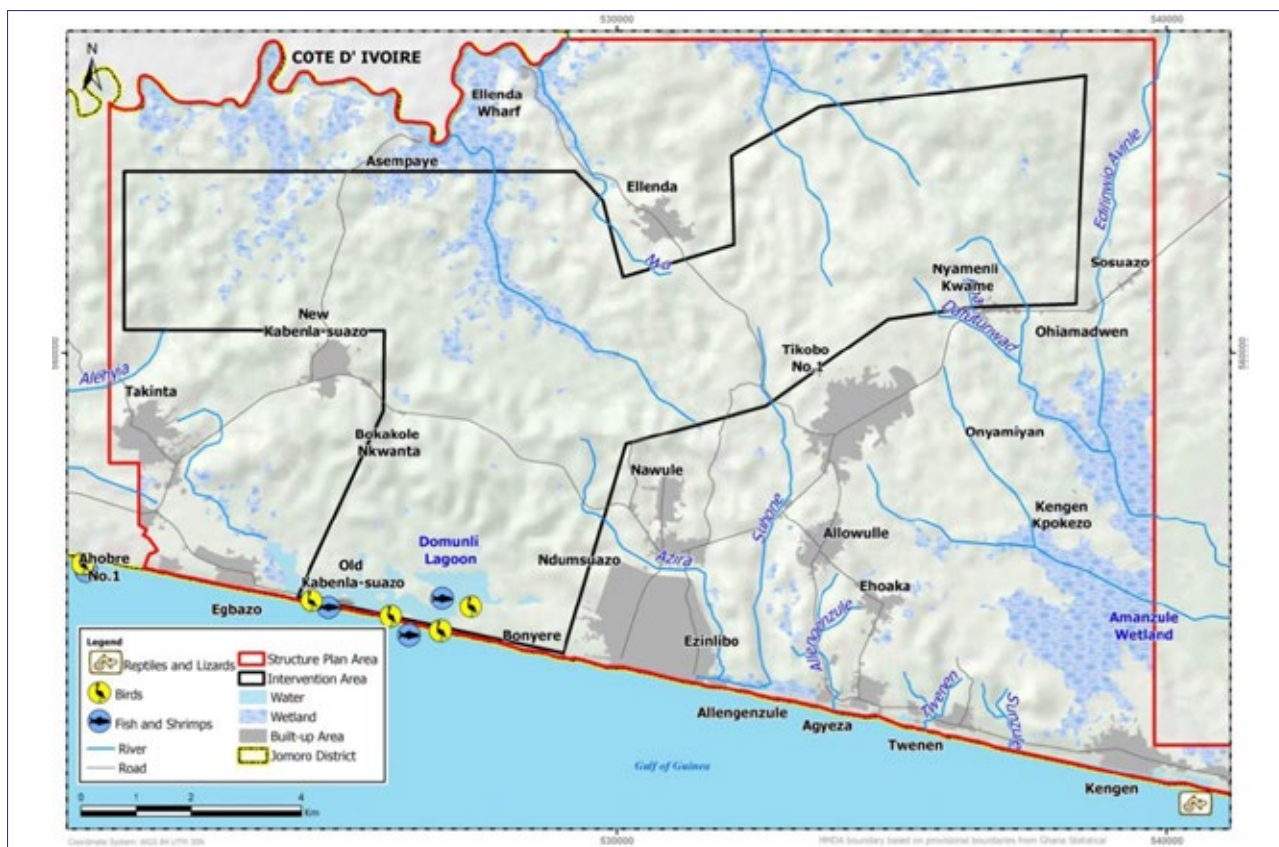
2.3 TEMPERATURE AND RELATIVE HUMIDITY

The SPA lies in the equatorial climatic zone that is characterized by moderate temperature, ranging from 22°C to 34°C. The temperature is fairly uniform across the SPA. The Temperature is generally high with a monthly mean of 26° C. Night time temperatures are about 22°C. However, the temperature dips to 20°C in August. Relative humidity is high, about 90% during the night and falling to about 75% when temperature rises in the afternoon. The temperature conditions in this area readily supports the cultivation of tropical crops such as cassava, coconut, oil palm and maize.

2.4 DRAINAGE

The SPA is well drained by a number of water bodies and wetlands. Tano, Edilinwio, Avinle, Aba, Dafutunwad, Sunzule, Suhone, Allengenzule and Nya Rivers and their tributaries are the identified water bodies that are located within the SPA. The prominent water body of the Plan Area is the Domunli lagoon. These water bodies and wetlands provide immense support systems such as source of livelihoods (through fishing), irrigation, transportation mode and other natural eco-system services among others.

Figure 2.2: Drainage within SPA



Source: LUSPA, 2020



2.5 AGRO-ECOLOGICAL ZONES

The original vegetation types of the SPA are Tropical Rainforest and Coastal Shrubs. The tropical rainforest (which is characterized by its evergreen scenery with a vast variety of plant species) occupies the upper parts while the Coastal Shrubs as the name suggests are found close to the coast.

2.6 LAND COVER CHANGE ANALYSIS

The land cover classes in the SPA are plantation (58.03%), grassland (22.81%), wetland (10.83%), water (1.93%), built-up (6.17%) and bare-land (0.22%). There has been tremendous land cover change from 1986 to 2018. The dominant land cover over the period has remained plantation which constituted 57.83% and 58.03% in 1986 and 2018 respectively (See Table 2.1). The most significant change over the period is the built-up cover (from 1.31% to 6.17%) representing 4.86% increase in the share of the land areas. This represents in absolute terms an increment of 2,523.34 acres from 682.85 acres.

Table 2. 1: Land Cover Change Analysis (1986 -2018)

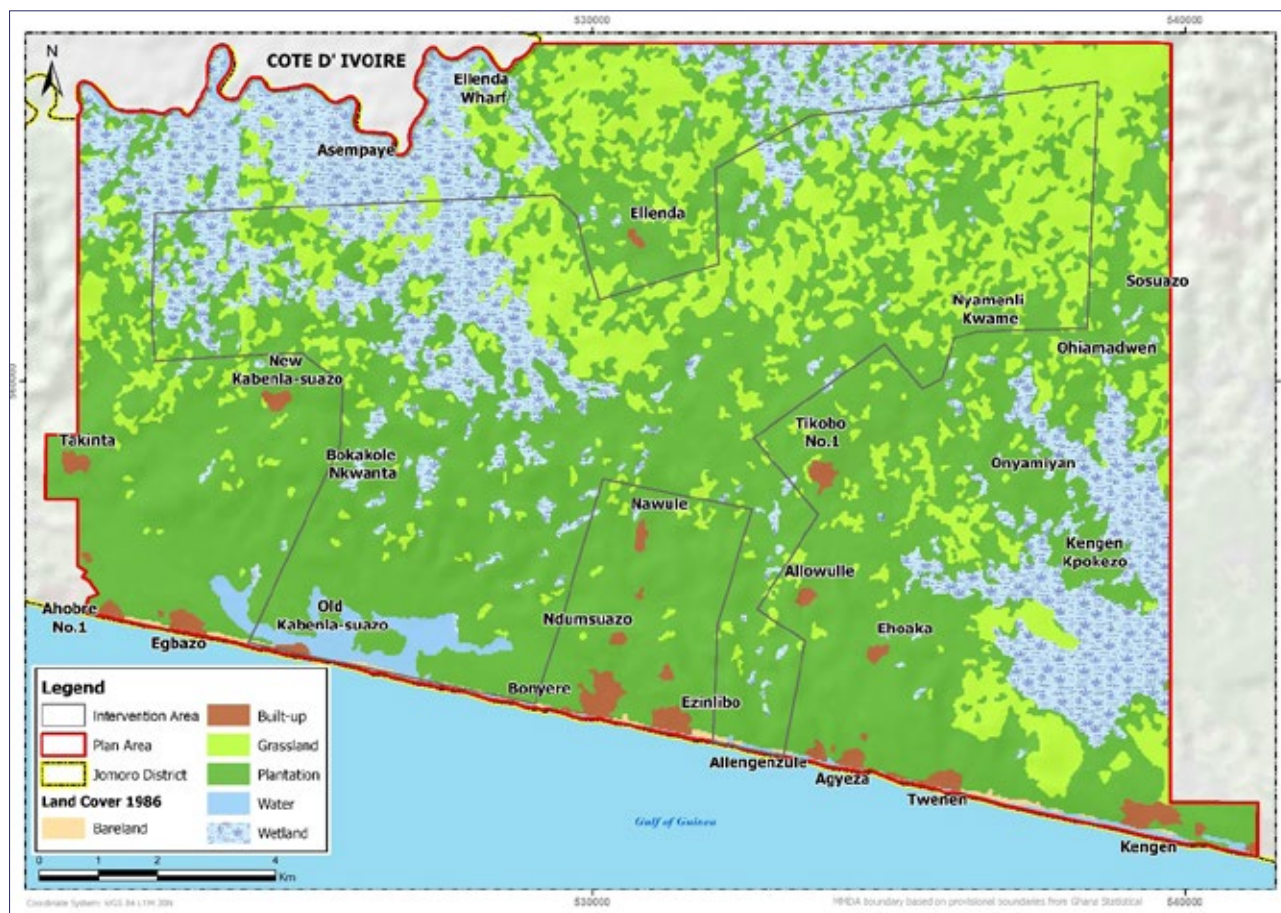
No	Land Cover	1986		2018		change	
		Size (Acre)	% Share	Size (Acre)	% Share	Size (Acre)	% Share
1	Plantation	30,055.43	57.83	30,157.37	58.03	101.94	0.20
2	Grassland	10,082.35	19.40	11,854.70	22.81	1,772.35	3.41
3	Wetland	9,925.33	19.10	5,628.18	10.83	-4,297.15	-8.27
4	Water	1,091.78	2.10	1,005.06	1.93	-86.72	-0.17
5	Built-up	682.85	1.31	3,206.19	6.17	2,523.34	4.86
6	Bare land	129.87	0.25	116.11	0.22	13.76	0.03
	Grand Total	51,967.61	100.00	51,967.61	100.00		

Source: LUSPA, 2020 based on USGS Database

Grassland cover constituted about a fifth of the land cover in 1986 and increased by 3.42% over the three decadal period. The bare-land cover mostly located along the coast has reduced over the period from 129.87 to 116.011 acres indicating a reduction of about 0.03% share. This could be attributed to coastal erosion and human activities.



Figure 2.3: Land Cover of the SPA, 1986



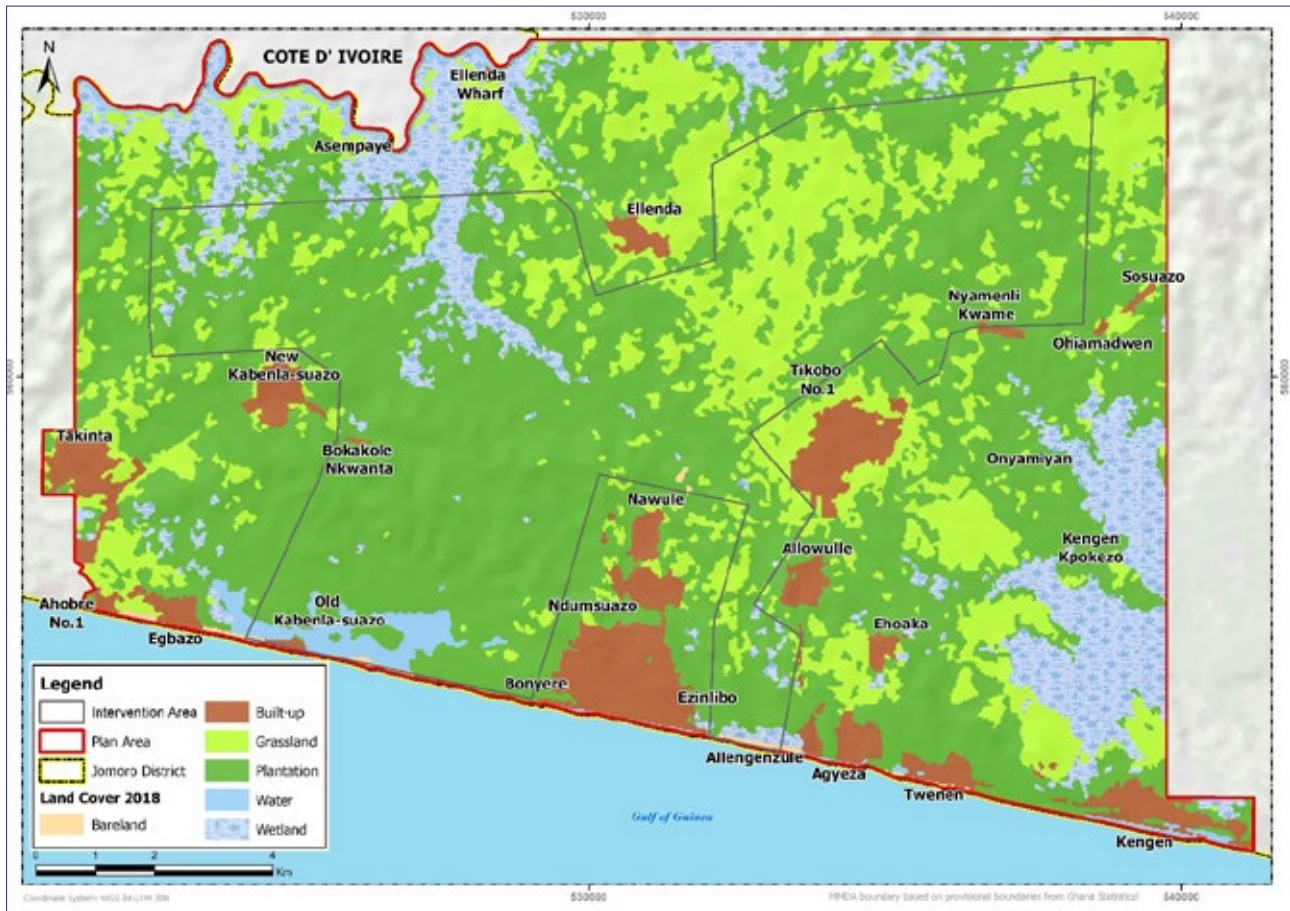
Source: LUSPA, 2020 based on USGS Database

Built-up cover which was the least land cover type in 1986 making up only 1.31% experienced the highest percentage growth.

The expansion of the built-up areas is evident in the increased settlement sizes as witnessed in Tikobo No. 1. Bonyere and Ezinlibo also had considerable growth leading to the amalgamation of these settlements which were conspicuously separate in 1986 (See Figures 2.3 & 2.4). Based on the urbanization rate coupled with the proposed development of the Petroleum Hub, the built-up cover is likely to increase to about 40% by the end of 2035. This expansion will adversely impact the plantation cover (cropland cover) which will impact livelihoods that depend on Agriculture and the Industrial (manufacturing) sub-sectors. In effect, diversification of the economic base of the SPA will have to be ensured to avoid the afore-mentioned impact from occurring. The water cover has reduced marginally from 2.10% to 1.93%.



Figure 2. 4: Land Cover of the SPA, 2018



Source: LUSPA 2020, based on USGS Database

2.7 COASTLINE PROFILE: CHARACTERISTICS OF THE COASTAL ZONE

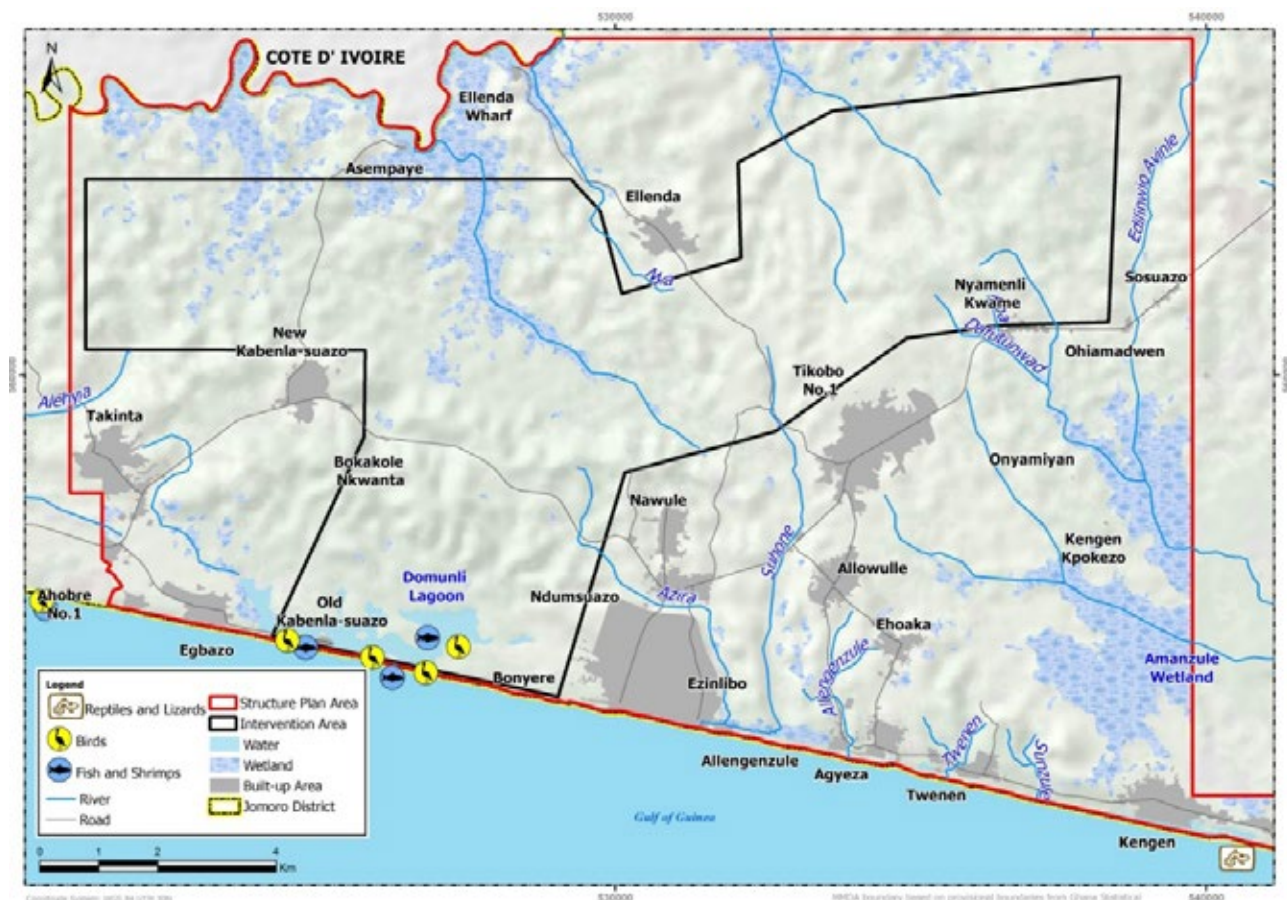
The coastal zone of the SPA is dominated by rural settlements. The area is characterised by wetlands and water bodies entering the sea, which underpin local cultures and livelihoods. The area has a long stretch of relatively flat sandy beaches and dune systems with elevation below 10 metres.

The coastline is linked to, rivers, estuaries and the greater part of the vast ecologically significant Amanzule wetland and Domunli lagoon complex that provides habitats for diverse flora and fauna which are worth preserving. These provide essential ecosystem services and are also critical for maintaining the fish stock. Most of these ecosystems are of national and international significance and hence more efforts are needed to preserve these ecosystems due to their irreplaceability and strong linkage to the livelihoods of the residents.

The wetlands, mangroves, lagoon, rivers and estuaries identified in the SPA which are ecologically sensitive are critical habitats for plant and animal species. Figure 2.5 shows the habitats of some species of animals in Ghana, which are ecologically sensitive.

The wetlands, estuaries, lagoon and nationally identified ecologically sensitive areas within the SPA have the potential of diversifying the economy via tourism development if properly developed.

Figure 2.5: Ecological Sensitive Areas within the SPA



Source: LUSPA, 2020

2.8 COASTAL DYNAMICS IN THE SPA

Due to the action of wind, waves, current and rising sea level in recent decades, most barrier beaches in Ghana are retreating at a rate of about 1m per year and in the Western Region within which the Petroleum Hub Structure Plan Area falls. It is estimated to be retreating at 2m per year on the average¹. Erosion, sea level rise, and sand winning from the beach result in land loss and the inland movement of the shoreline.

While the rate of erosion slightly varies from one coastal community to the other, sections of the shoreline within the SPA are noted to have eroded by approximately 50 meters² over the past 2 decades, causing the loss of buildings, farm lands and other properties. This phenomenon still continues due to high sea wave energy and evolving sea level rise due to climate change. This resulted in the relocation of some communities within the SPA. For instance, most people who lived in Old Kabenlansuazo resettled at New Kabenlansuazo about 50 years ago due to the impact of coastal erosion. Other coastal communities such as Bonyere, Ezinlibo and Twenen are experiencing coastal erosion.

In Twenen, community members noted that their current residence marked their third settlement. Their last place was called Twenwo, and they predict that they might have to move again in the next 20 years. This situation and destruction of properties is not different from Old Kabenlansuazo, Agyeza, Allengenzule, and Egbazo communities, which are all within the SPA.

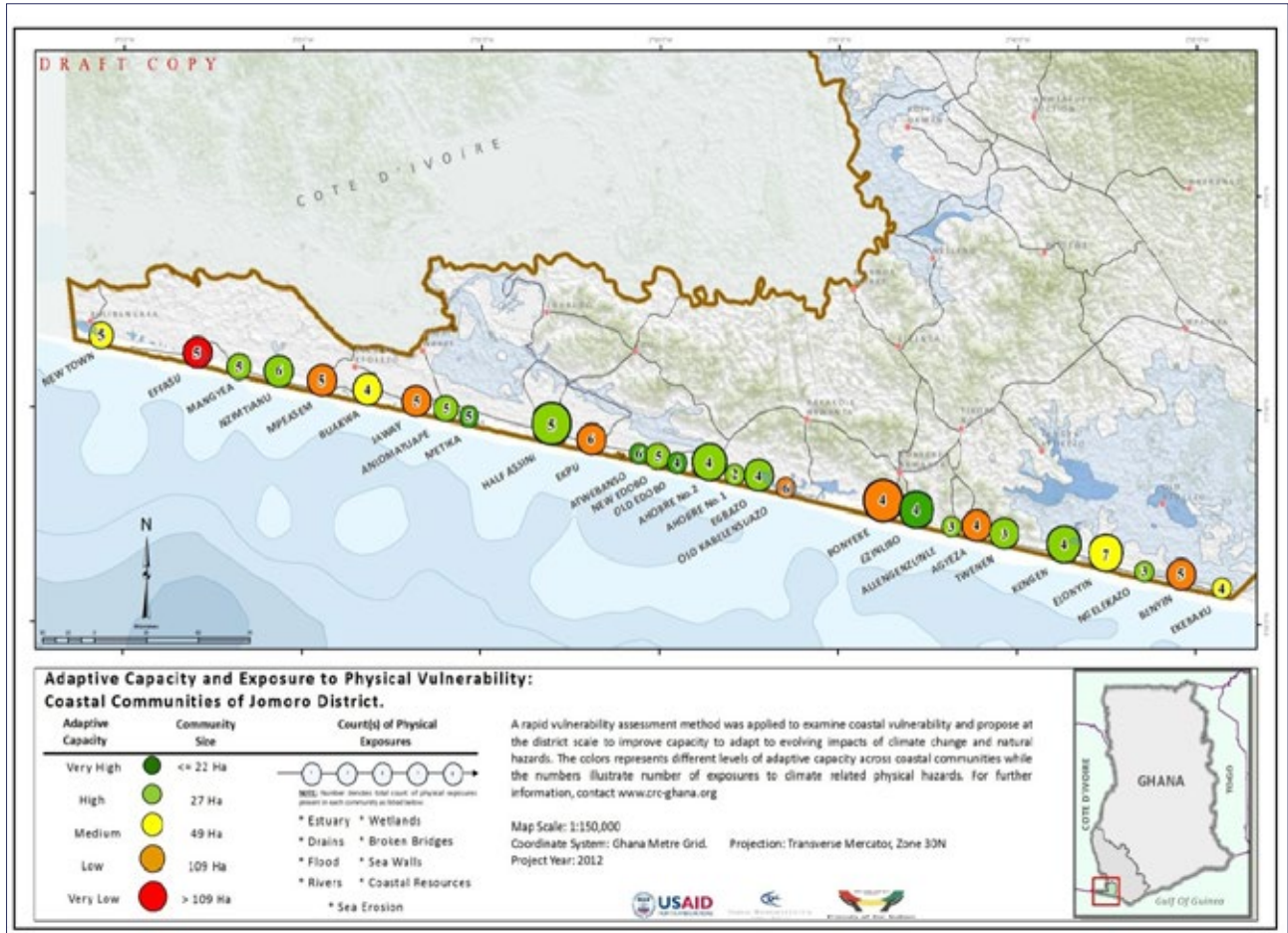
¹ Jomoro Medium Term Development Plan
² Jomoro Medium Term Development Plan



2.9 PHYSICAL IMPACTS OF HAZARDS AND CLIMATE CHANGE

The SPA has coastal settlements, infrastructure, flora and fauna habitats that are vulnerable and exposed to varying degrees of hazards and climate-related risks. These include flood risks, coastal erosion, and presence of dynamic coastal features along the beach, among others. It is worthy to note that the combined effect of these hazards and human activities pose significant threat to key assets such as artisanal fishing settlements, fish landing sites, critical habitats, and recreational and cultural sites. All the six (6) coastal settlements in the SPA are directly exposed to two or more of the above-mentioned hazards and climate related risks.

Figure 2.6: Vulnerability and Climate-Related Risks for Coastal Communities



Source: USAID, 2012

In all coastal communities, sea erosion is posing significant threat to turtle nesting beaches and landing sites and displacing the coconut plantations that underpin the agro-industry in the SPA. Flooding is a major issue in Nawule and Tikobo No.1 communities in the SPA and it perennially impacts adversely on lives and properties. While sea erosion results from high wave actions and is aggravated by sand winning along the shoreline, flooding is mainly caused by increased filling of wetland and floodplains for housing construction and establishment of artisanal fishing settlements, thereby reducing the potential of the landscape to absorb water during intense rainfall events.

Another major cause of flooding in the SPA is as a result of overflow of rivers and streams into adjacent communities. The combination of flooding and coastal erosion has raised concerns for relocating people away from hazard prone areas.



2.10 KEY ISSUES

Key issues regarding the environment that exist within the SPA include:

- The Domunli lagoon is a valuable asset that can be harnessed for tourism activities.
- Coastal erosion and flooding threaten livelihoods within the SPA
- The massive change in the land cover from vegetative to industrial use would have significant impact on coconut farming and coconut oil processing which is a major source of livelihood
- Coastal vulnerability to climate-related hazards such as high sea-level and shoreline erosion in the coastal settlements in the SPA threatens fish and shrimp spawning areas, habitat for migratory birds and the hospitality industry in the SPA.



CHAPTER THREE

POPULATION DYNAMICS AND SETTLEMENT GROWTH

3.0 INTRODUCTION

Population and urbanization have implications for economic and social development and environmental sustainability. This can aid decision makers anticipate future trends and incorporate that information into development policies and planning (UN, 2019).

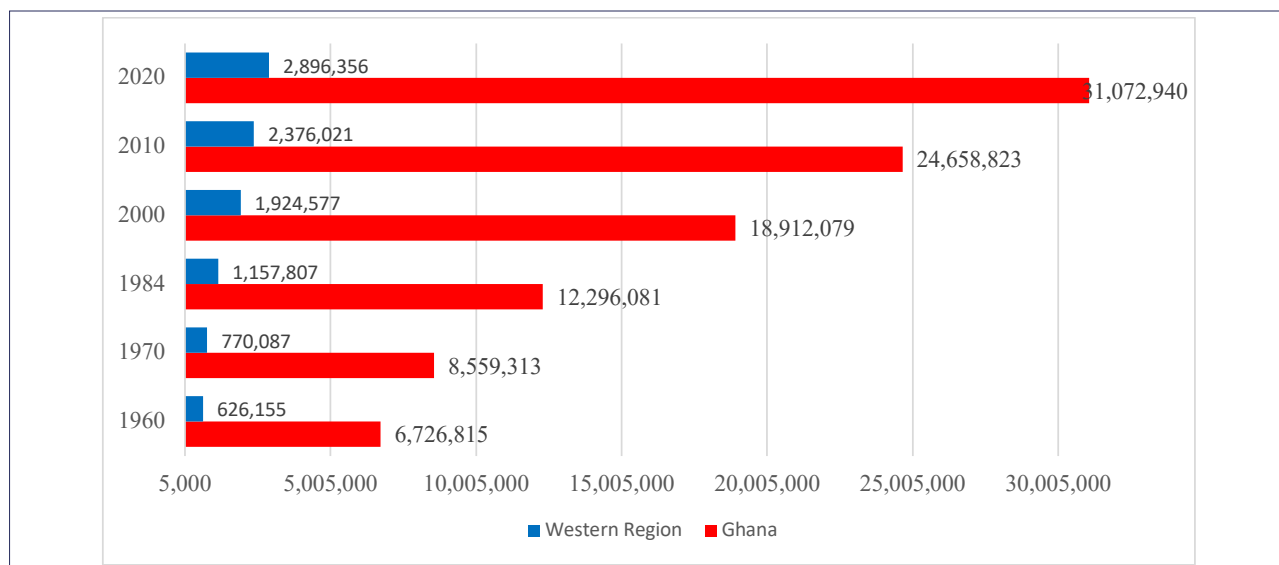
This chapter presents the population dynamics and distribution within the structure plan area. It discusses the historical/past trends from 1970 to 2020 and projections up to 2035, age-sex distribution and the dependency ratio. It further describes the urbanization level, settlement growth and patterns as well as migration.

3.1 HISTORICAL POPULATION TRENDS

Ghana and Western Region

For many years, Ghana's population has had a relatively high and steady growth rate. From 1960, the population increased from about 6.7 million to 12.3 million in 1984 and doubled to 24.6 million in 2010. According to Ghana Statistical Service (GSS, 2015), the nation's current projected population is about 31 million which is in line with several international estimates such as the World Bank. The trajectory of Western region's population is similar to that of the country. The region's current population is estimated at 2.9 million (GSS, 2015). Generally, in terms of growth rate, the region has experienced a decreasing growth rate, from 1960 to 2020. Figure 3.1 and figure 3.2 illustrate the historical population trend and growth rate in Ghana and the Western Region respectively.

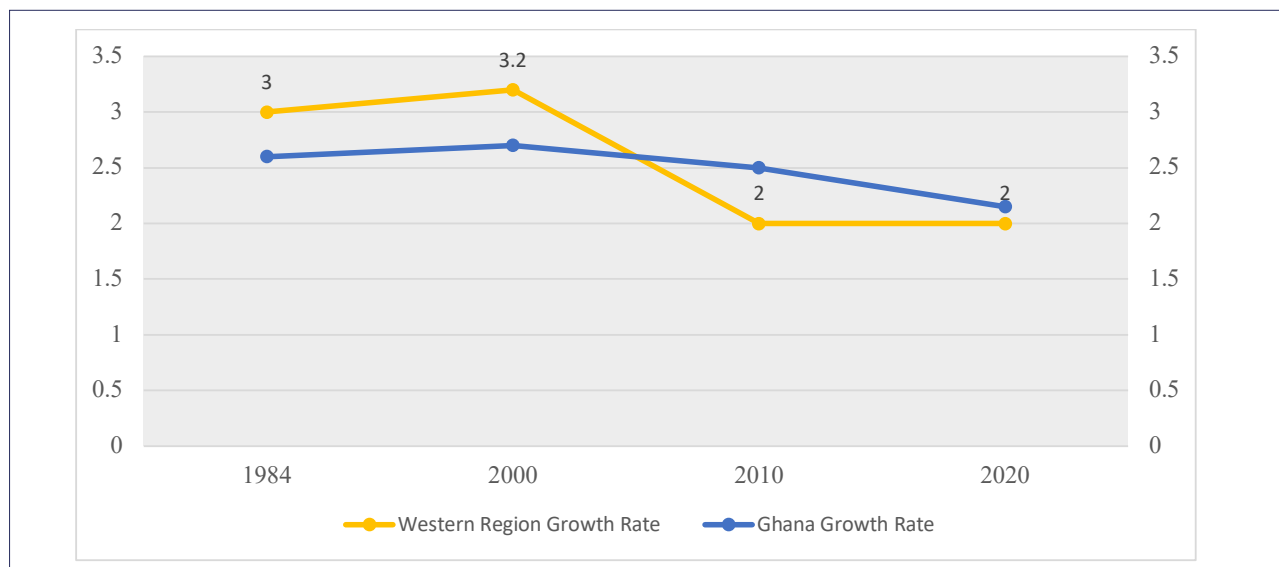
Figure 3. 1: Historical population trend (1970-2020)



Source: LUSPA, 2020 based on GSS 2010



Figure 3. 2: Population Growth Rate trend (1984-2020)

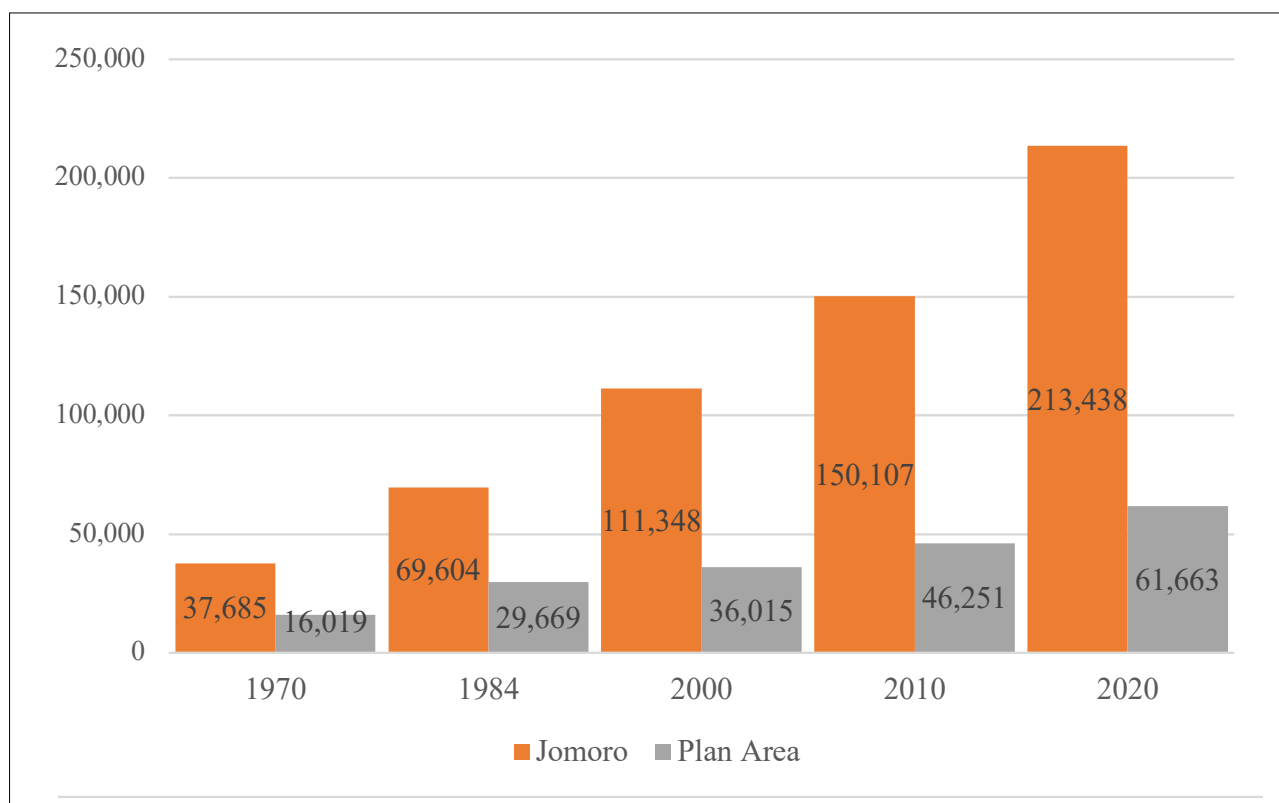


Source: LUSPA, 2020 based on GSS 2010

3.2 JOMORO MUNICIPALITY AND THE SPA AREA

The estimated population of Jomoro Municipality in 2020 was 214,438 which represents 7.4% of the total population of Western Region (LUSPA 2020 based on GSS 2010). This represents an 8.45 percentage increase from the previous census year of 150,107 in 2010. Figure 3.3 and 3.4 present the population and growth rates of Jomoro Municipal Assembly and that of the SPA.

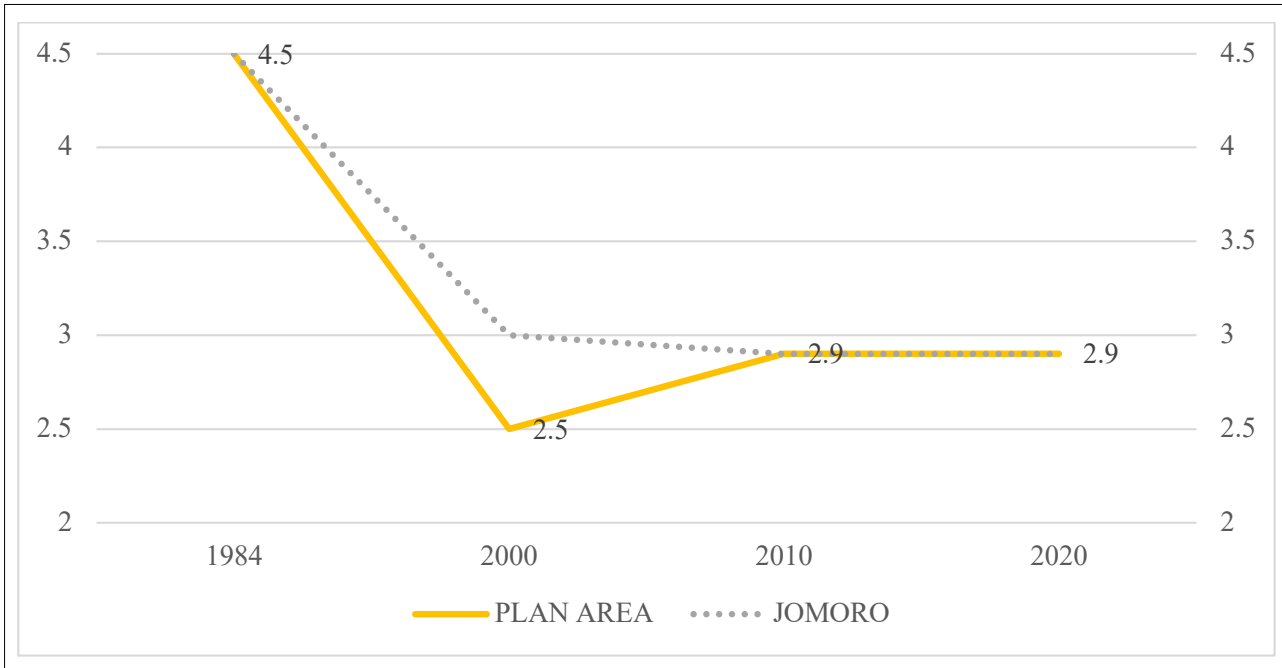
Figure 3.3: Population of Jomoro Municipality and Structure Plan Area



Source: LUSPA, 2020 based on GSS 2010



Figure 3.4: Growth Rate for SPA and Jomoro Municipality

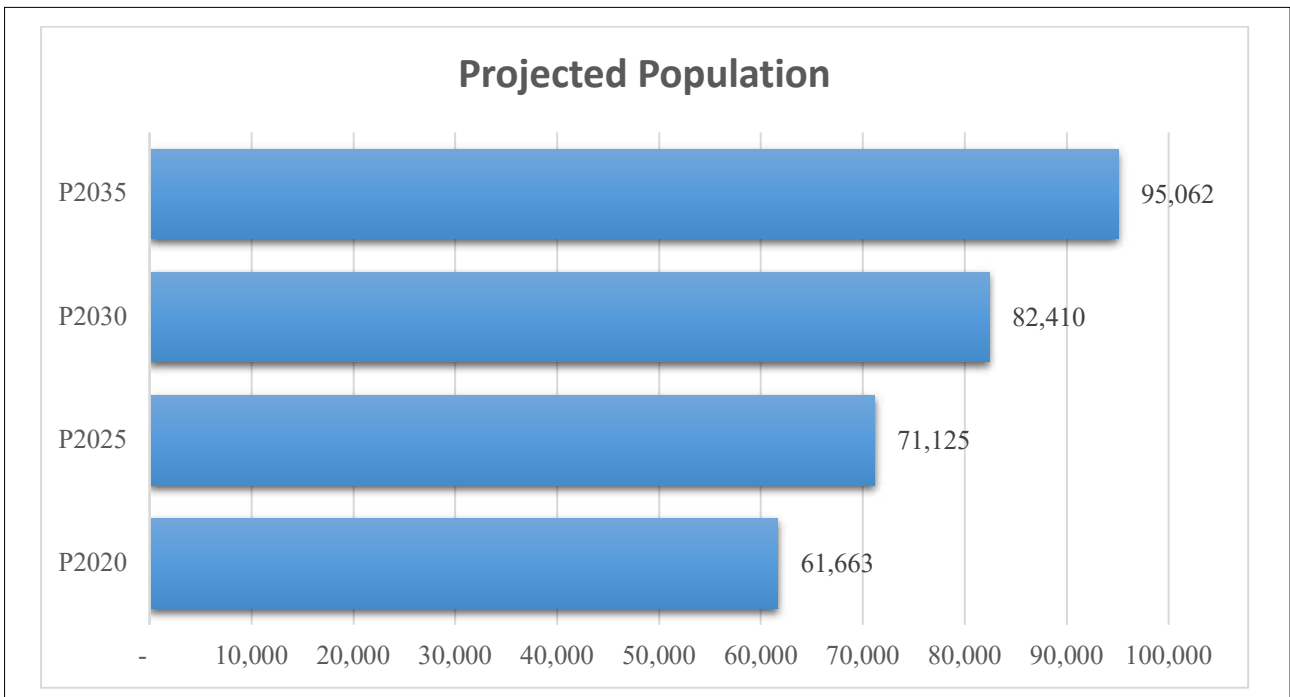


Source: LUSPA, 2020 based on GSS 2010

3.3 PROJECTED POPULATION OF PLAN AREA

The population of the SPA is projected to reach 95,062 people in 2035 by the end of the plan period, based on the growth rate of 2.9%. The population for the SPA in 2025 is projected to increase by 15% and by 2030 it is projected to reach 82,410. Figure 3.5 depicts the projected population.

Figure 3.5: Projected Population



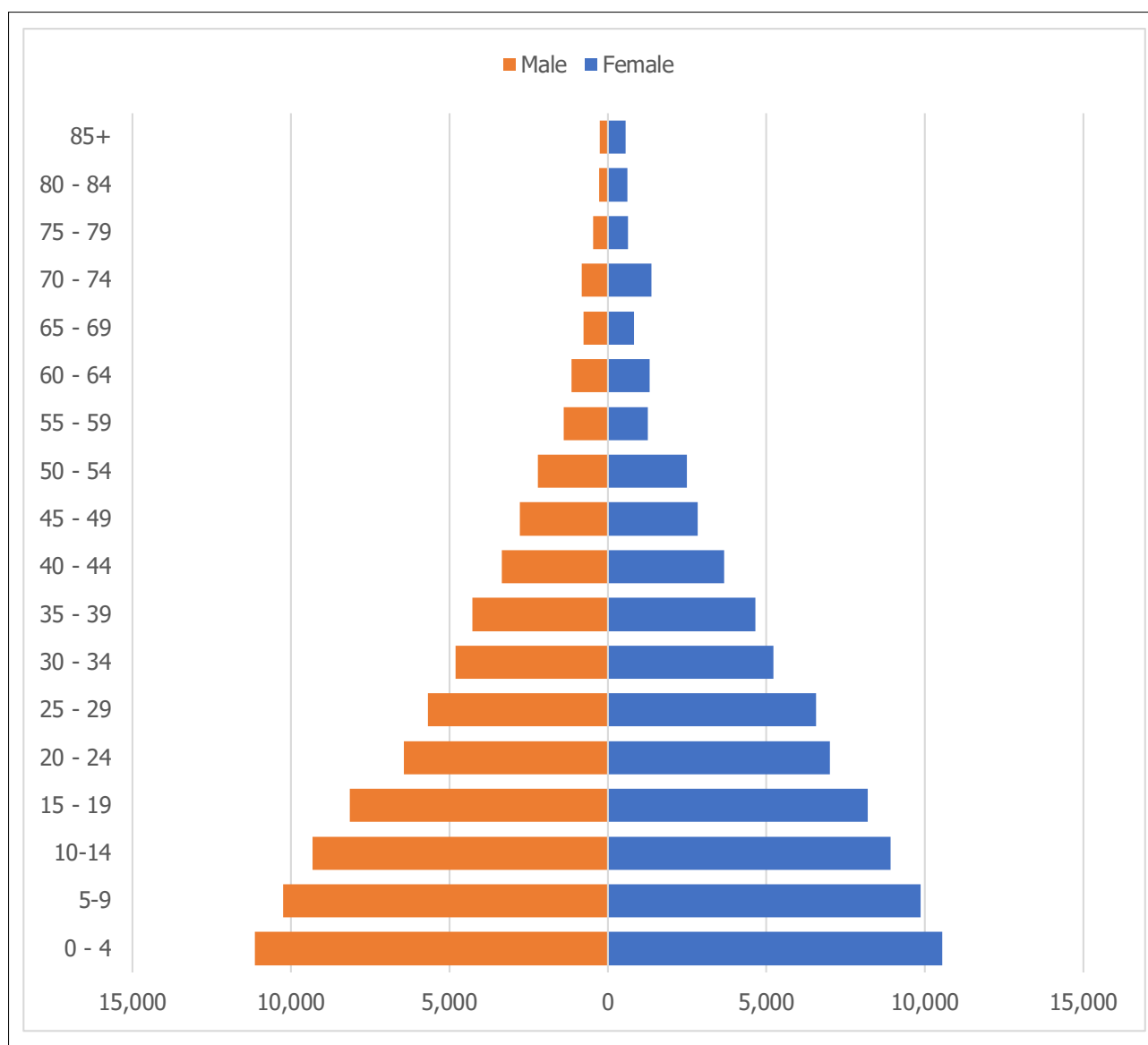
Source: LUSPA, 2020 based on GSS 2010



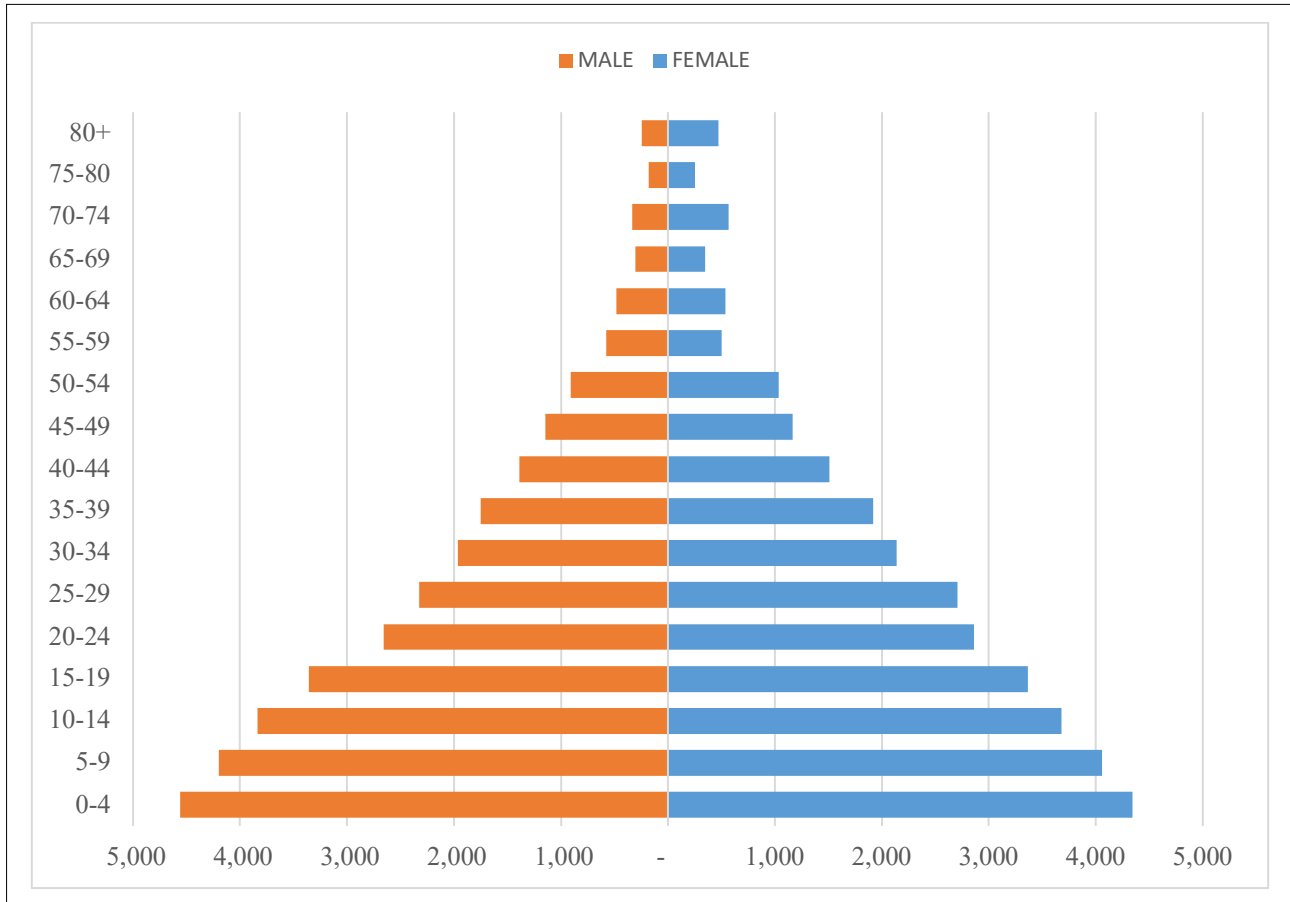
3.4 AGE-SEX STRUCTURE

The age-sex composition to a larger extent influences the population changes such as fertility, mortality, and migration in that geographic area (Cudjoe and Amoah, 2013 as cited in GSS, 2012). According to Bogue (1969), of all the population characteristics, age-sex structure is vital to demographers and planners and are referred to as 'demographic variables. The plan area is characterized by an economically active population constituting about 55.6% within the age group of 15-64 years, with females dominating. This presents a great opportunity for jobs and the labour market. Figures 3.6 & 3.7 depict the age-sex composition of the plan area and the Jomoro Municipality.

Figure 3.6: Age-Sex Structure for Jomoro Municipal



Source: LUSPA, 2020 based on GSS 2010


Figure 3.7: Age-Sex Structure for SPA


Source: LUSPA, 2020 based on GSS 2010

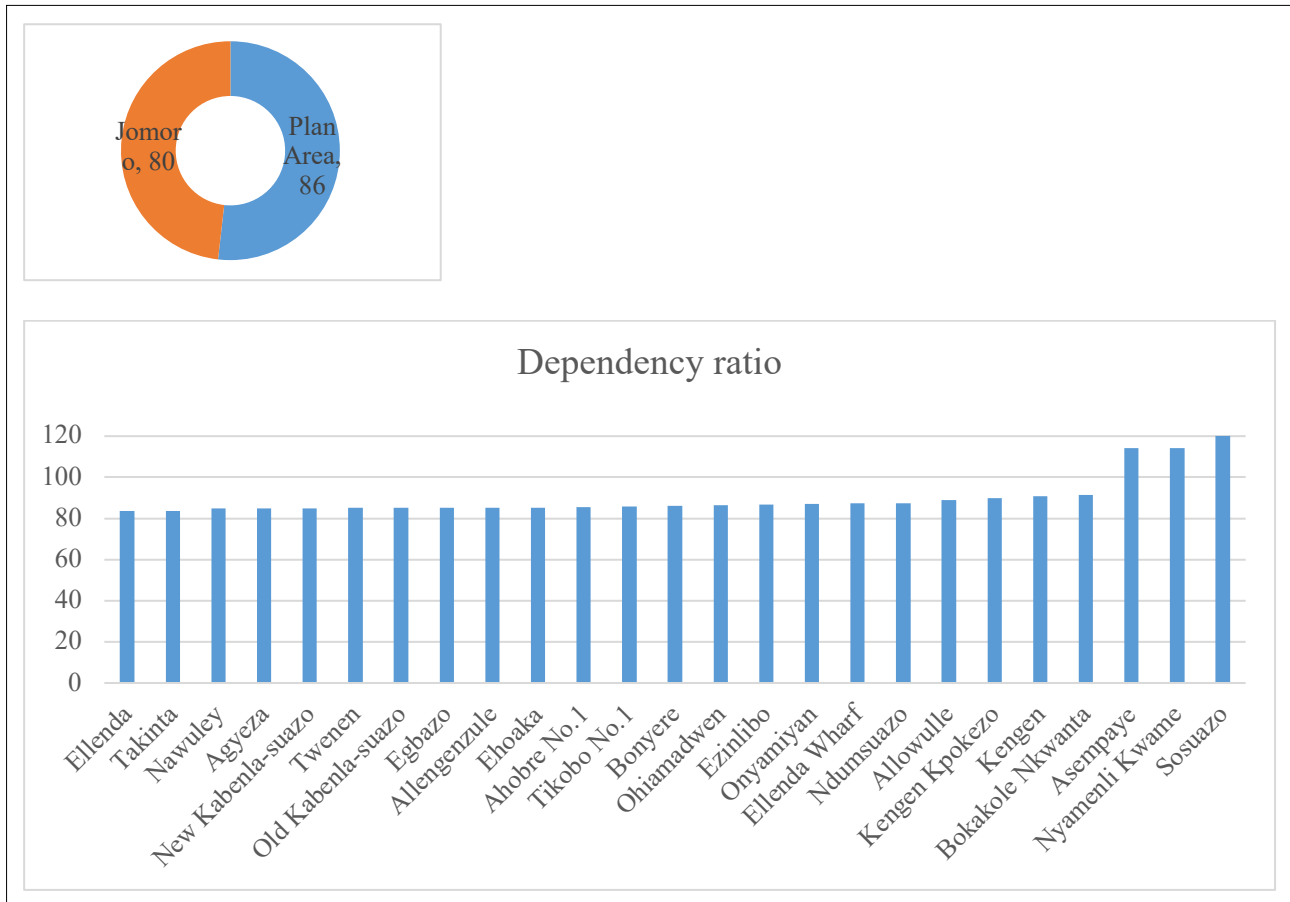
The population pyramid depicts a broader base with the majority of the population at the base and decreases upward. The majority of the population lie within the youthful age cohorts of 0-4, 5-9, 10-14 and 15-19 years. The male population dominates from ages 0-14 and then starts declining at age 15 to 80. The decline in population particularly the male population from age 15 onwards can possibly be attributed to migration. As the male population might have left the plan area to seek for job opportunities while the females remain in the plan area, accounting for the female dominated population. The possible labour force within the SPA is a good opportunity that must be harnessed through the creation of appropriate job opportunities.

3.5 AGE DEPENDENCY RATIO

The age dependency ratio is the ratio of persons in the dependent class (under age 15 and over age 64) to those in the economically productive ages (15-64 years). The plan area has a total age dependency ratio of 1:0.86 compared to 1:0.80 in the Municipality as at 2010. This implies that, there are approximately 86 and 80 persons in the dependent ages for every 100 persons in the working age cohort for the Plan area and Jomoro Municipality, respectively. The male dependency ratio of 1:0.83 is higher than the female dependency of 1:0.77 in the district. Figure 3.8 illustrates the dependency ratio for all the communities in the Plan area.



Figure 3.8: Age Dependency Ratio for both SPA and Jomoro Municipality

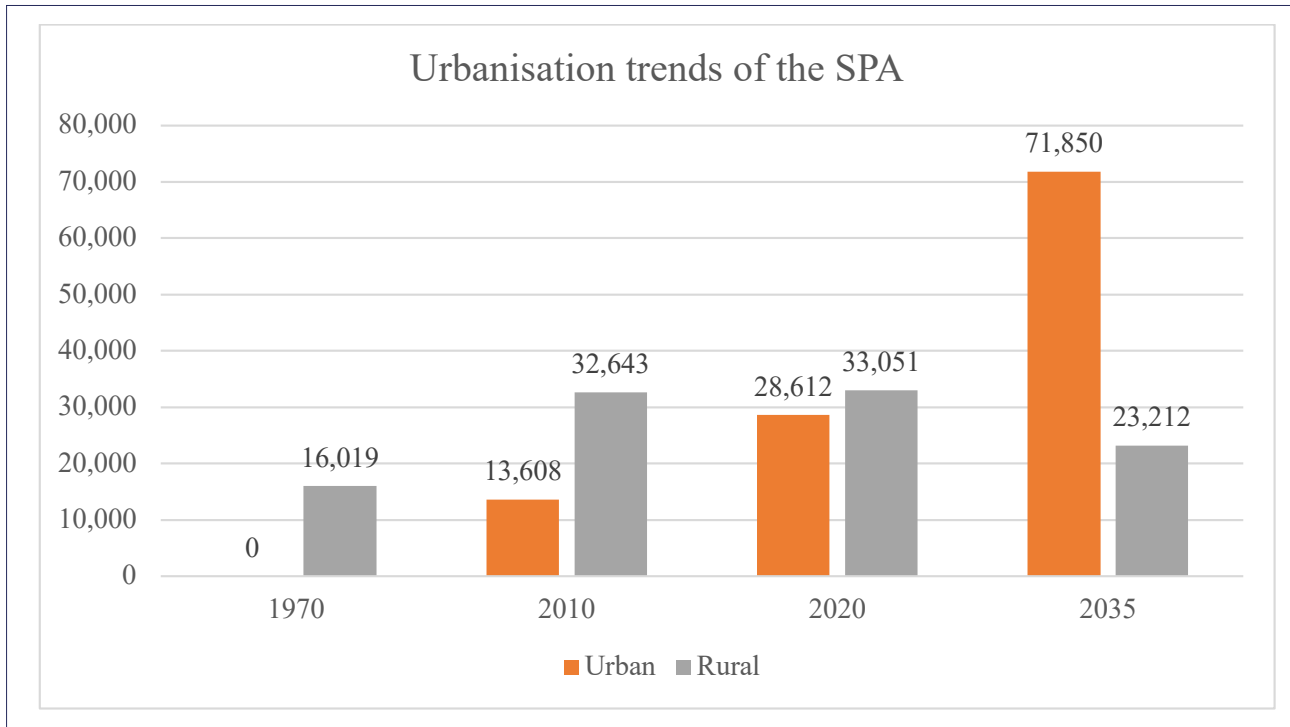


3.6 URBANISATION

The proportion of people who lived in urban areas in the Jomoro Municipality in 2010 and 2020 was 35% and 45% respectively. This trend is expected to continue unabated due to natural growth, migration and economic activities as well as infrastructure, expansion or development. The SPA is also fast urbanising, it was completely rural in 1970 however, by 2010 its level of urbanisation was 29%, with about 13,608 people, living in urban areas rising to 46% (28,612) in 2020. Its level of urbanisation is projected to reach 75% (71,850 people living in urban areas) by the end of the structure plan period. Figures 3.9 & 3.10 shows the urbanisation trends and rates within the SPA.



Figure 3. 9: Urbanisation Trends for SPA



Source: LUSPA, 2020 based on GSS 2010

3.7 SETTLEMENT DISTRIBUTION

The SPA is made up of twenty-five (25) settlements with four (4) being urban and twenty-one (21) being rural as at 2020. There are eight (8) coastal communities and seventeen (17) inland settlements. However, Bokakole which used to be a farming community no longer exists due to lack of access to basic facilities and inaccessibility by road.

Figure 3.11 displays the spatial distribution of population across the established settlements within the structure plan area. From 1970 up to 1984, the settlements within the plan area experienced an increase in population with a growth rate of 4.5. Within the period, all the settlements had a population of less than 5000 making the entire enclave rural with Tikobo No. 1 being the most populous settlement with a population of 2,547. Susuazo, the least populated settlement had six residents. The population of Tikobo No. 1 continued to increase to 4,717 in 1980 and reached the status of an urban settlement in 2000 at a growth rate of 2.5. Bonyere reached urban status in 2010 and the remaining settlements continued to be rural. The disparity in population within the structure plan area is quite huge with 12 settlements, that is Susuazo, Asempaye, Nyameli Kwame, Bokakole Nkwanta, Kengen kpokezo, Bokakole, Onyamiyan, Ellenda Wharf, Ohiamadfwen, Old Kabenlensuazo, Ahobre No.1 and Allengenzule having populations of less than 1000.

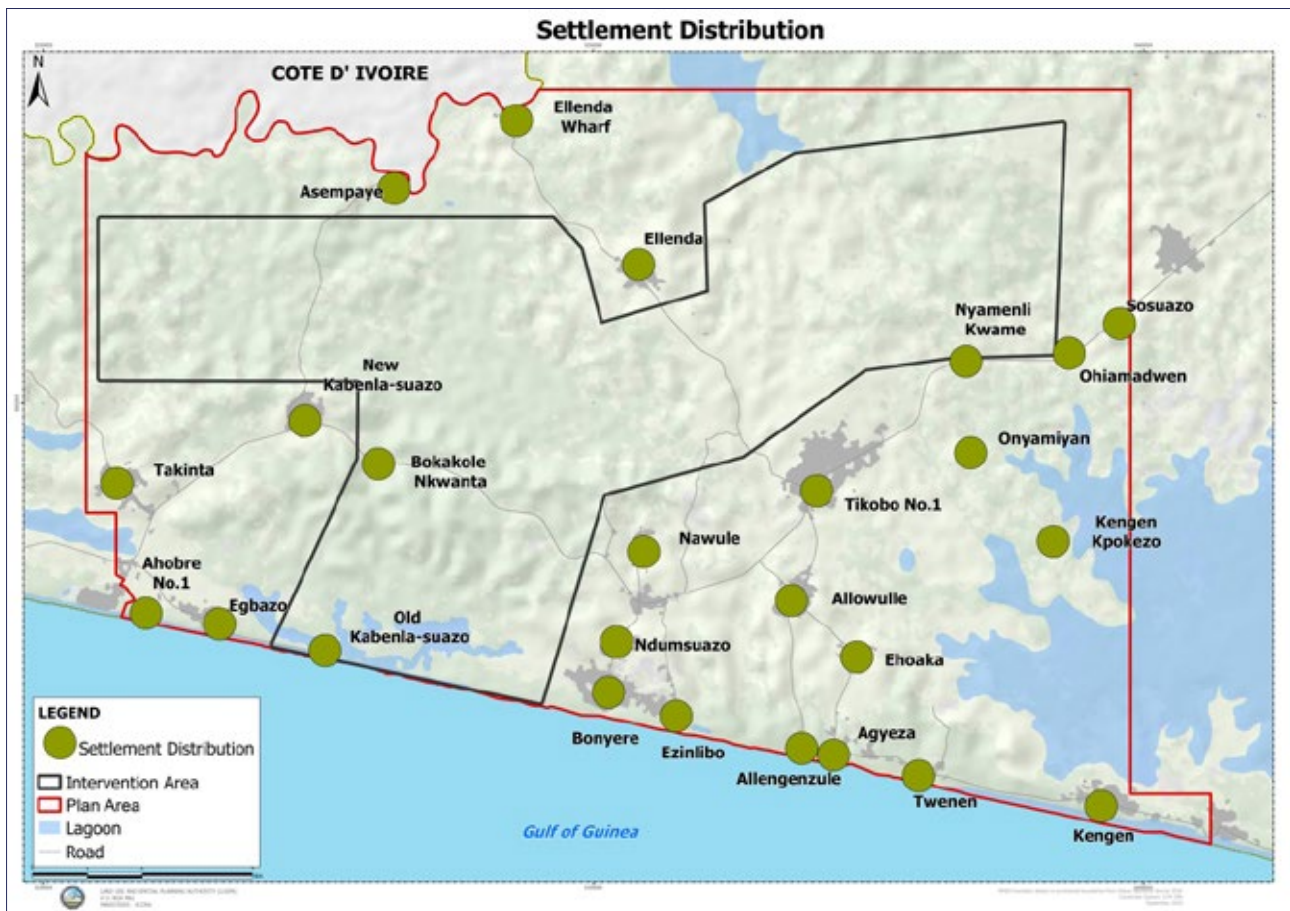


Table 3.1: Settlement Distribution in the SPA, (1970 – 2010)

Name	P1970	P1984	P2000	P2010
Growth rate		4.5	2.5	2.5
Sosuazo	6	11	14	18
Asempaye	8	15	18	23
Nyamenli Kwame	8	15	18	23
Bokakole Nkwanta	18	33	41	53
Kengen Kpokezo	36	67	80	103
Bokakole	37	69	83	107
Onyamiyan	43	80	97	125
Ellenda Wharf	64	119	144	186
Ohiamadwen	69	128	157	202
Old Kabenla-suazo	93	172	210	269
Ahobre No.1	196	363	442	568
Allengenzule	261	483	587	754
Ehoaka	469	869	1,054	1,354
Agyeza	540	1,000	1,215	1,560
Twenen	665	1,232	1,493	1,918
Egbazo	666	1,233	1,497	1,923
Nawuley	759	1,406	1,707	2,192
Kengen	865	1,602	1,945	2,498
Ndumsuazo	866	1,604	1,948	2,501
Allowulle	873	1,617	1,963	2,520
Ellenda	893	1,654	2,007	2,578
New Kabenla-suazo	1,166	2,159	2,621	3,366
Ezinlibo	1,309	2,424	2,943	3,779
Takinta	1,394	2,582	3,133	4,023
Bonyere	2,168	4,015	4,873	6,257
Tikobo No.1	2,547	4,717	5,725	7,351
SPA Area	16,019	29,669	36,015	46,251

Source: LUSPA, 2020 based on GSS 2010

Figure 3.10: Settlement Spatial Distribution



Source: LUSPA, 2020

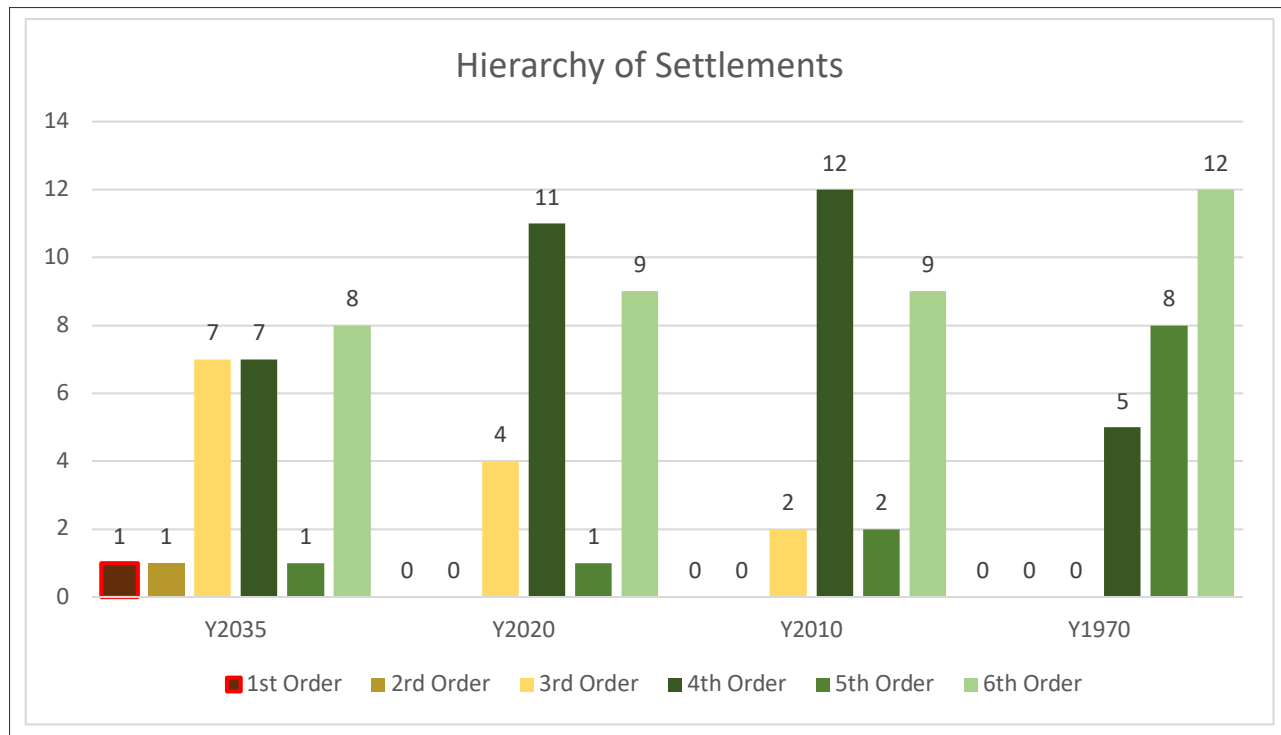
3.8 SETTLEMENT PATTERNS, HIERARCHY & FUNCTIONS

Nationally, there is an established hierarchy of settlements as proposed in the NSDF with the first order settlement starting from cities of over 1 million population. The NSDF proposed hierarchy system was done based on United Nations Settlement size categories with some modification to fit it in context and to improve analysis of the urban system. Hierarchy of settlements provide a useful perspective of historical and future urban settlements and the functions these settlements perform.

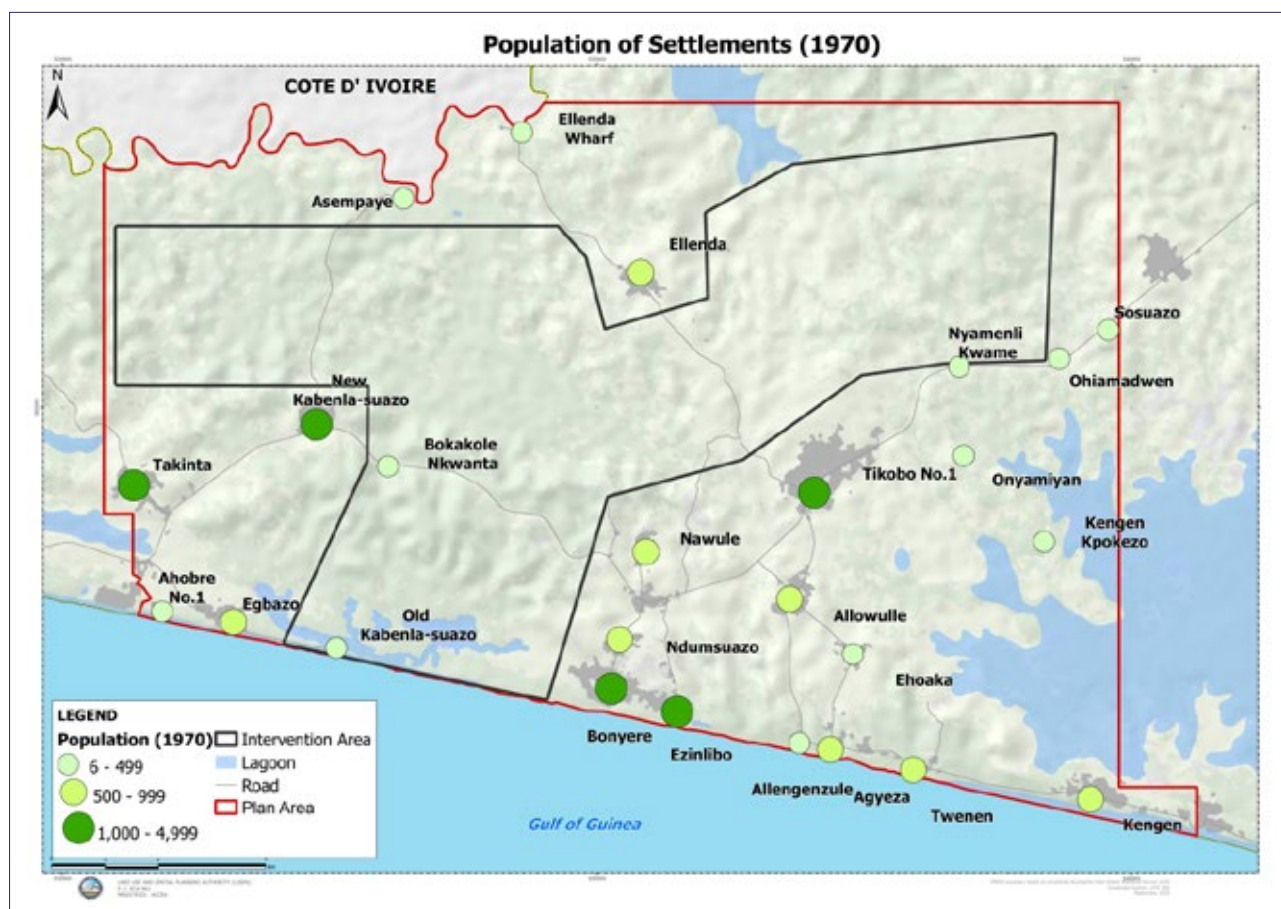
The SPA's hierarchy of settlement is equally done to fit to purpose and context. The first order settlements are classified as communities with population ranging from 15,000 to 19,999. The second, third, fourth, fifth and sixth order settlements range from (10,000-14,999), (5,000-9,999), (1,000-4,999), (500-999) and (1-499) respectively.



Figure 3.11: Hierarchy of Settlements (1970-2035)



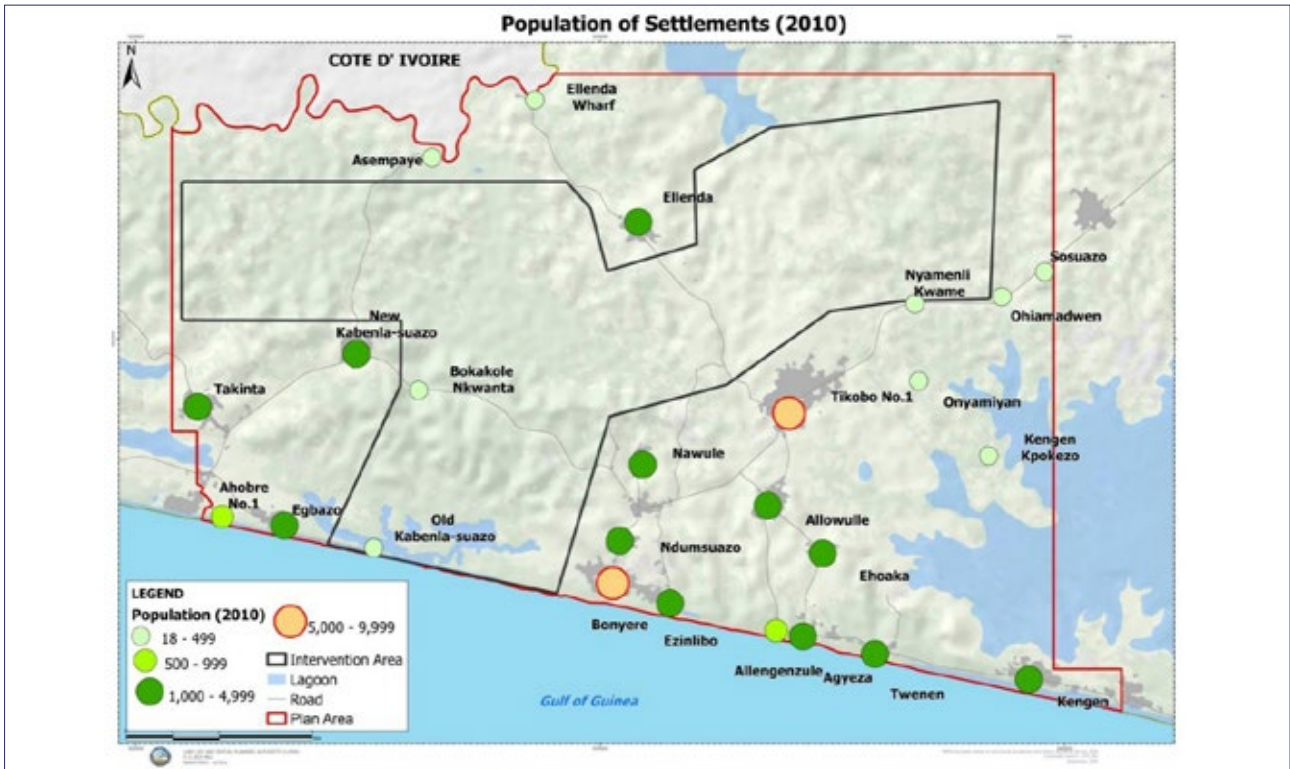
Source: LUSPA 2020



Source: LUSPA 2020

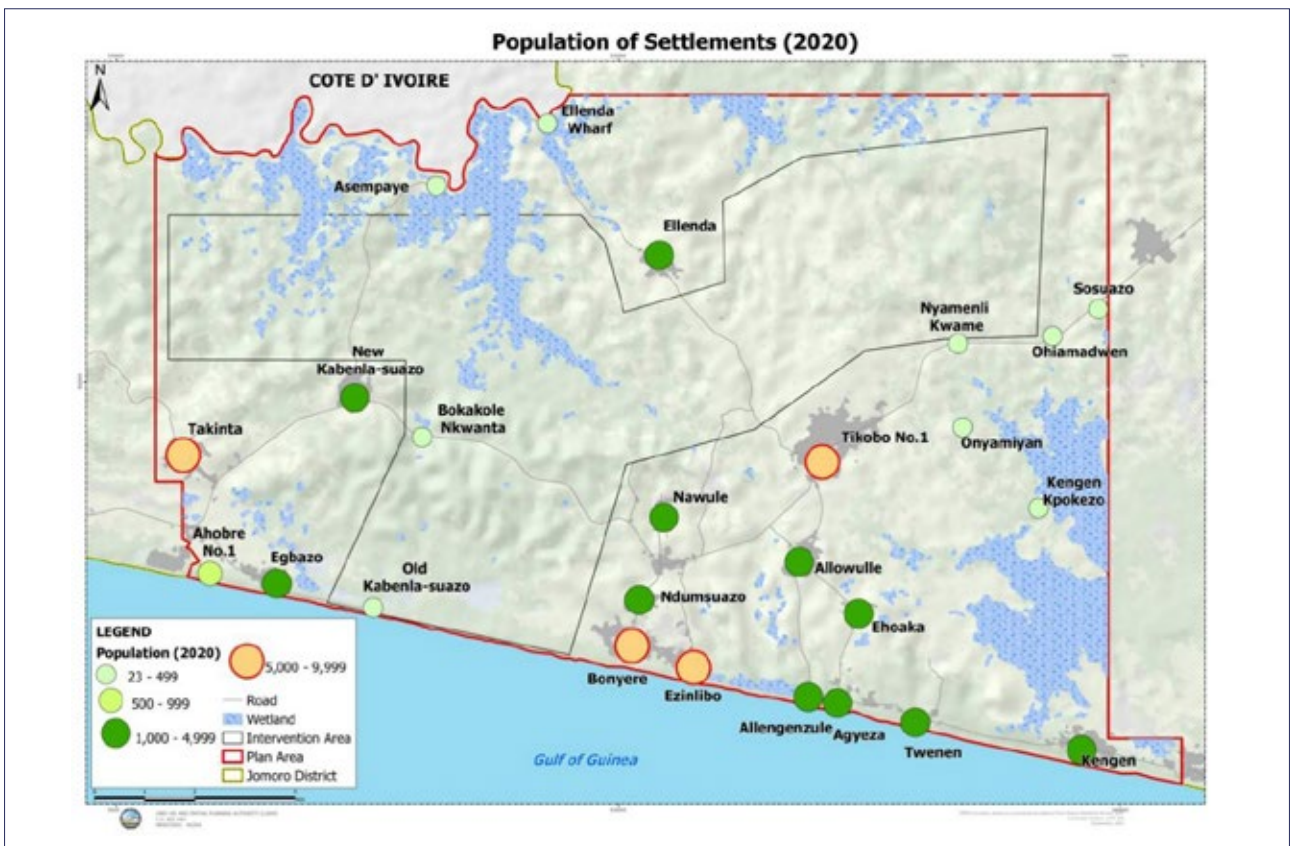


Figure 3.13: Spatial Distribution of Settlements in 2010



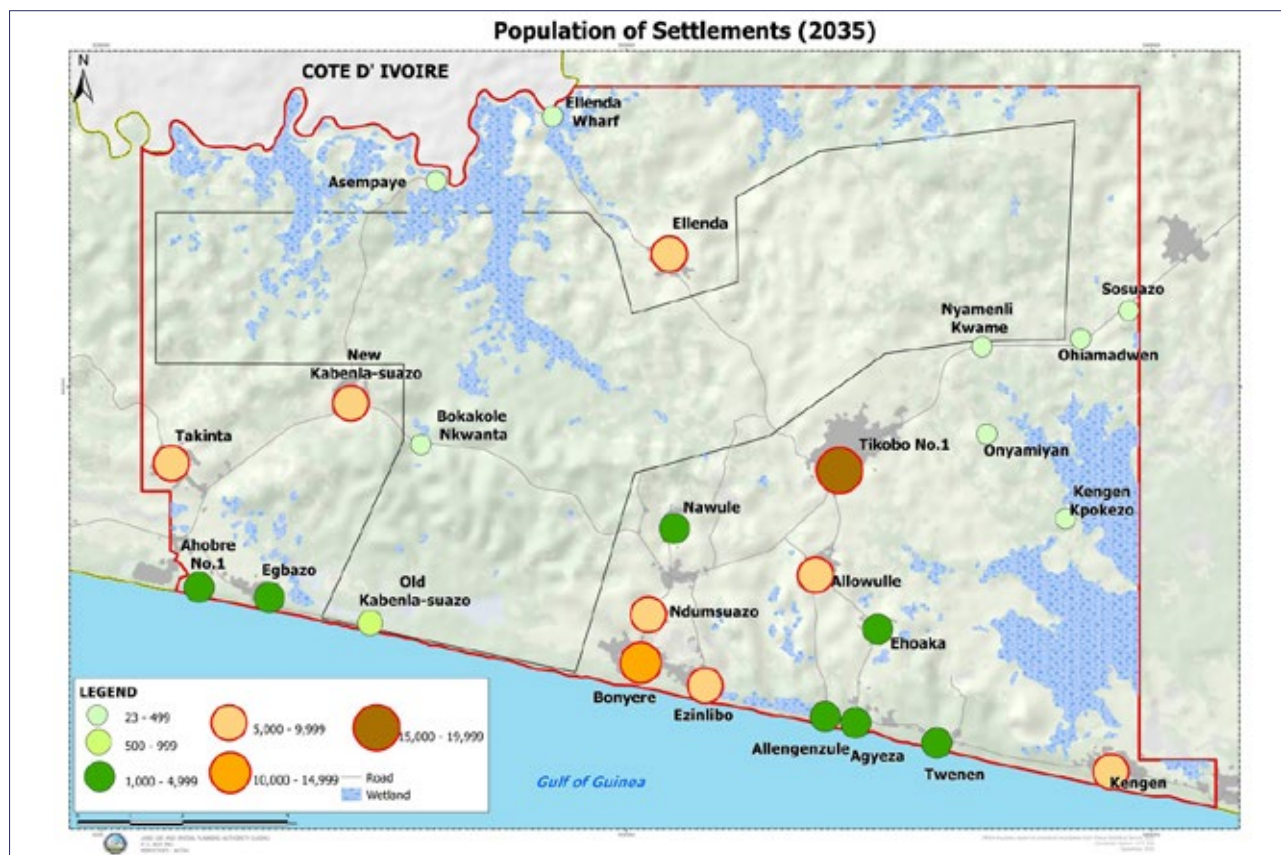
Source: LUSPA 2020

Figure 3.14: Spatial Distribution of Settlements in 2020



Source: LUSPA 2020

Figure 3.15: Spatial Distribution of Settlements in 2035



Source: LUSPA 2020

Table 3.2 below illustrates the hierarchy of settlements in the plan area from 1970 to 2035.

Table 3.2: hierarchy of settlements in the plan area from 1970 to 2035

NAME	HIERARCHY OF SETTLEMENTS FROM 1970 -2035			
	1970	2010	2020	2035
Sosuazo	6th Order	6th Order	6th Order	6th Order
Asempaye	6th Order	6th Order	6th Order	6th Order
Nyamenli Kwame	6th Order	6th Order	6th Order	6th Order
Bokakole Nkwanta	6th Order	6th Order	6th Order	6th Order
Kengen Kpokezo	6th Order	6th Order	6th Order	6th Order
Bokakole	6th Order	6th Order	-	-
Onyamiyan	6th Order	6th Order	6th Order	6th Order
Ellenda Wharf	6th Order	6th Order	6th Order	6th Order
Ohiamadwen	6th Order	6th Order	6th Order	6th Order
Old Kabenla-suazo	6th Order	6th Order	6th Order	5th Order
Ahobre No.1	6th Order	5th Order	5th Order	4th Order
Allengenzule	6th Order	5th Order	4th Order	4th Order
Ehoaka	6th Order	4th Order	4th Order	4th Order
Agyeza	5th Order	4th Order	4th Order	4th Order



NAME	HIERARCHY OF SETTLEMENTS FROM 1970 -2035			
	1970	2010	2020	2035
Twenen	5th Order	4th Order	4th Order	4th Order
Egbazo	5th Order	4th Order	4th Order	4th Order
Nawuley	5th Order	4th Order	4th Order	4th Order
Ellenda	5th Order	4th Order	4th Order	3rd Order
Allowulle	5th Order	4th Order	4th Order	3rd Order
Ndumsuazo	5th Order	4th Order	4th Order	3rd Order
Kengen	5th Order	4th Order	4th Order	3rd Order
New Kabenla-suazo	4th Order	4th Order	4th Order	3rd Order
Takinta	4th Order	4th Order	3rd Order	3rd Order
Ezinlibo	4th Order	4th Order	3rd Order	3rd Order
Tikobo No.1	4th Order	3rd Order	3rd Order	1st Order
Bonyere	4th Order	3rd Order	3rd Order	2nd Order

Source: LUSPA 2020

From the table, it is observed that the hierarchy of settlements within the structure plan area has been changing over the period. The order of settlements in 1970 was from the fourth order to the sixth (see figure 1970 map and table 3.2). Tikobo No.1 and Bonyere attained the third order status in 2010. Takinta and Ezinlibo also reached the third order status in 2020 whiles Tikobo No.1 and Bonyere maintained their third order status. By the end of the plan period, Tikobo No.1 and Bonyere would have reached the first and second order settlement by 2035.

The third order settlements are Tikobo No.1, Bonyere, Takinta and Ezinlibo with populations between 5000 and 9,999. These four settlements are dispersed with Tikobo No.1 at the east, Takinta at the west, Bonyere and Ezinlibo at the south. Tikobo No.1 has the highest number of infrastructure among the four. It serves as the major market center in the structure plan area. Both Tikobo No. 1 and Bonyere have health centres, Takinta has a CHPS facility, Ezinlibo accesses health services in Bonyere, and it is the only settlement with a senior high school in the plan area.

The fourth order settlements with populations of 1000 to 4999 are New Kabenlensuazo, Ellenda, Allowulle, Ndumsuazo, Kengen, Nawuley, Egbazo, Twenen, Agyeza, Ehoaka and Allengenzule. About eleven settlements fall within this category. Eight (8) of these settlements being Allowulle, Ndumsuazo, Kengen, Nawuley, Twenen, Agyeza, Ehoaka and Allengenzule are concentrated around Bonyere and Ezinlibo. They form a linear pattern at the coast and at the north-western portion of the structure plan area. They have lower order infrastructure and mostly depend on the higher order settlements for services such as health. They are mainly rural settlements and a few have the potential of achieving an urban status by the end of the plan period.

Ahobre No.1 is the only fifth order settlement as at 2020 with a population between 500 and 999. It lies in the south western part of the structure plan area. Ahobre No.1 is a coastal community that has people coming from cape coast and other adjoining towns to fish during the fishing seasons. For this reason, it was called Ahohobea in the past and later changed to its present name Ahobre as the community expanded. The town lacks access to basic infrastructure like health and education and depends on the higher-level settlements for the services of health and education. The main occupation of the residents is farming and fishing.

The sixth order settlements are settlements with populations 23 to 499. These are Old Kabenlensuazo, Ohiamadwen, Ellenda Wharf, Bokakole Nkwanta, Asempaye, Nyamenli Kwame and Susuazo. They form a linear pattern and are concentrated at the east and south eastern

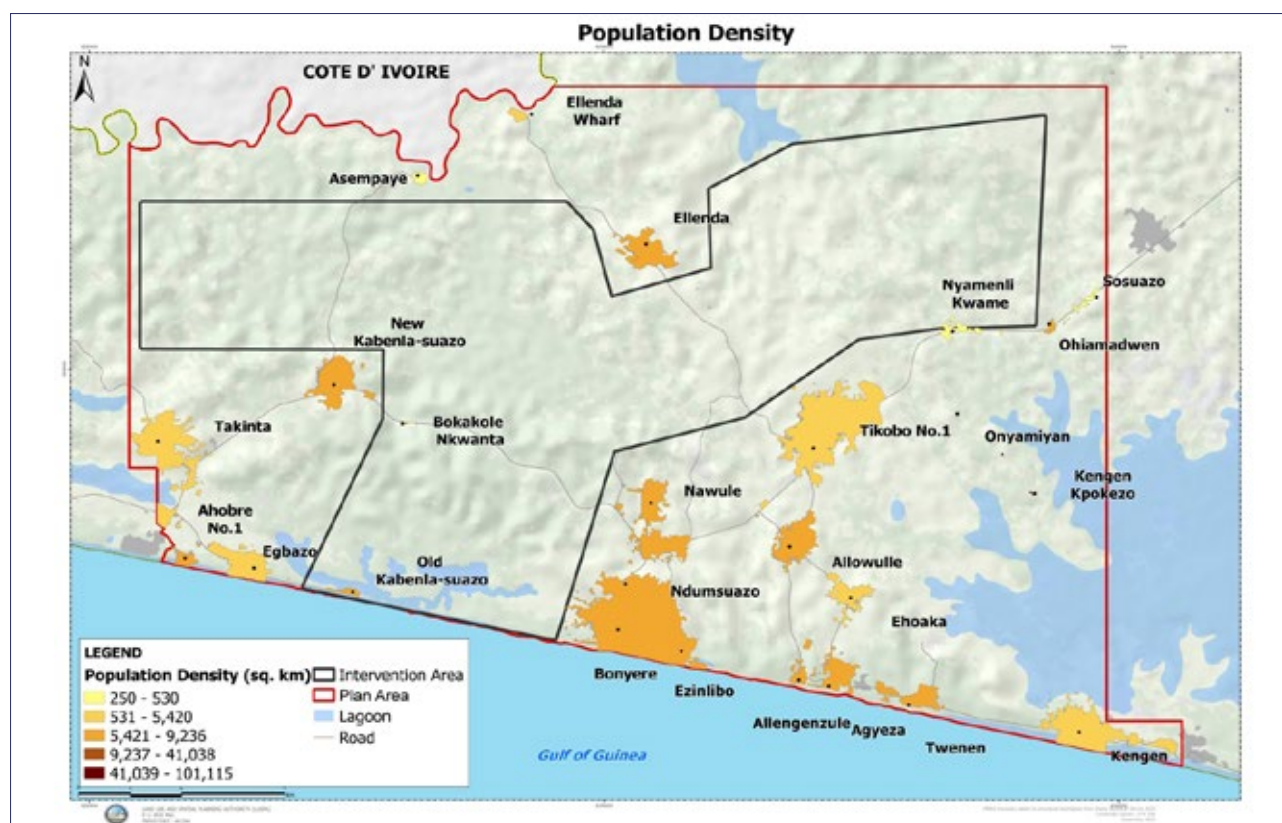


part of the structure plan area. These settlements do not have access to basic infrastructure. They are mostly farming communities and serve as dormitory settlements to farmers living in the higher order settlements.

3.9 POPULATION DENSITY

Population density describes the number of people per unit area (measured in acres). This aids in the siting of infrastructure and services. Figure 3.17 shows the density distribution within the structure plan area. The population density was calculated by dividing the population of each settlement by their total built up area.

Table 3.3: Population Density



Source: LUSPA, 2020

It can be observed from Figure 3.17 that the structure plan area is sparsely populated. Onyamiyan is the settlement with the highest density despite its population being below a 1000. This is followed by Kengen Kpokezo with a population of 138. However, because of the small development footprint they are the most densely populated settlement within the plan area using the current growth rate of 2.9%. These are temporary farming hamlets and are not expected to grow at same rate as compared to the other settlements within the SPA, hence it is expected that their densities will be lower than estimated. Tikobo No.1 with the highest population has larger development footprint and thereby has a low population density. Asempaye, Nyamenli Kwame and Susuazo are the least densely populated settlements.

3.10 DESCRIPTION OF MAJOR SETTLEMENTS WITHIN THE SPA

TIKOBNO. 1

Tikobo No.1 with a current population of 9824 is the highest order settlement in the structure plan area and the third largest settlement in the Jomoro Municipality. Tikobo in Nzema means



“We have ended”. The early settlers migrated from their previous settlement and decided to finally settle at Tikobo No.1. It is the commercial hub within the SPA as it hosts the largest market. All the settlements in the SPA converge at Tikobo No. 1 on Thursdays, which is the main market day to trade. Besides the market, Tikobo No.1 has financial institutions such as banks and micro-finance institutions. It has a health centre and other social services such as education, recreational facilities, a post office, police station and internet cafes that serves the community and the adjoining settlements.

Tikobo No. 1 has about 40% of its roads tarred. The community depends on a small water system as their source of water. Sanitation is an issue of concern as there are inadequate sanitary facilities resulting in indiscriminate disposal of waste leading to health issues in the community. In addition, engagement with the opinion leaders revealed that about 30% of the population engage in open defecation due to inadequate toilet facilities. It was also observed that there is erosion partly due to the absence of drains in the community.

BONYERE

Bonyere is the second largest community in the structure plan area and the fourth largest in the Jomoro Municipality. It is a coastal community and most of its populace engage in fishing and farming as their major occupation. It was previously a major transport hub besides Half Assini. The booming transportation business contributed to the growth of the settlement. The transport business collapsed over the years due to chieftaincy disputes. Bonyere in the Nzema language literally means “crop germination”. It has a market where community members engage in commercial activities. The community has a public health centre that helps in meeting the health needs of its populace.

Majority of the roads within Bonyere community are untarred with the main road leading to Bonyere being tarred. Sanitation is a major issue of concern as there are no dumpsites in the settlement and the existing toilet facility has been abandoned because of its poor structural and environmental conditions. Engagements with opinion leaders revealed that about 98% of the population engage in open defecation and this has the potential of contributing to the outbreak of sanitation related diseases in the settlement. The community depends on a small water system, boreholes and standpipes as their main source of water. About 70% of households in Bonyere rely on the small water system while others use the remaining water sources.

TAKINTA

Takinta is the third largest urban community in the structure plan area and the ninth largest urban settlement in Jomoro Municipality. It has a market, which has been abandoned because of its bad condition. Commercial activities and petty trading activities occur along the main Half Assini Road. Takinta has a CHPS Compound that serves the health needs of the community.

None of roads within the community are tarred. The community depends on a small water system which majority of the households use. Others rely on boreholes and wells. The community is faced with sanitation issues, as there are inadequate sanitary facilities for solid and liquid waste disposal. About 50% of the population resort to open defecation because of the lack of toilet facilities in their homes.

EZINLIBO

Ezinlibo is the fourth and tenth largest urban settlement in the structure plan area and the Jomoro Municipality respectively. Ezinlibo means “Under the Enzili tree” in the Nzema language. Community members engage in farming and fishing as their major occupation. Ezinlibo and Bonyere form a conurbation. The community has no health facility and most of the people access health services in Bonyere. It has educational infrastructure up to the level of a senior high school and two basic schools. A naval base is being constructed at Ezinlibo and this will

improve marine surveillance and security to complement the siting of the Petroleum Hub in the enclave.

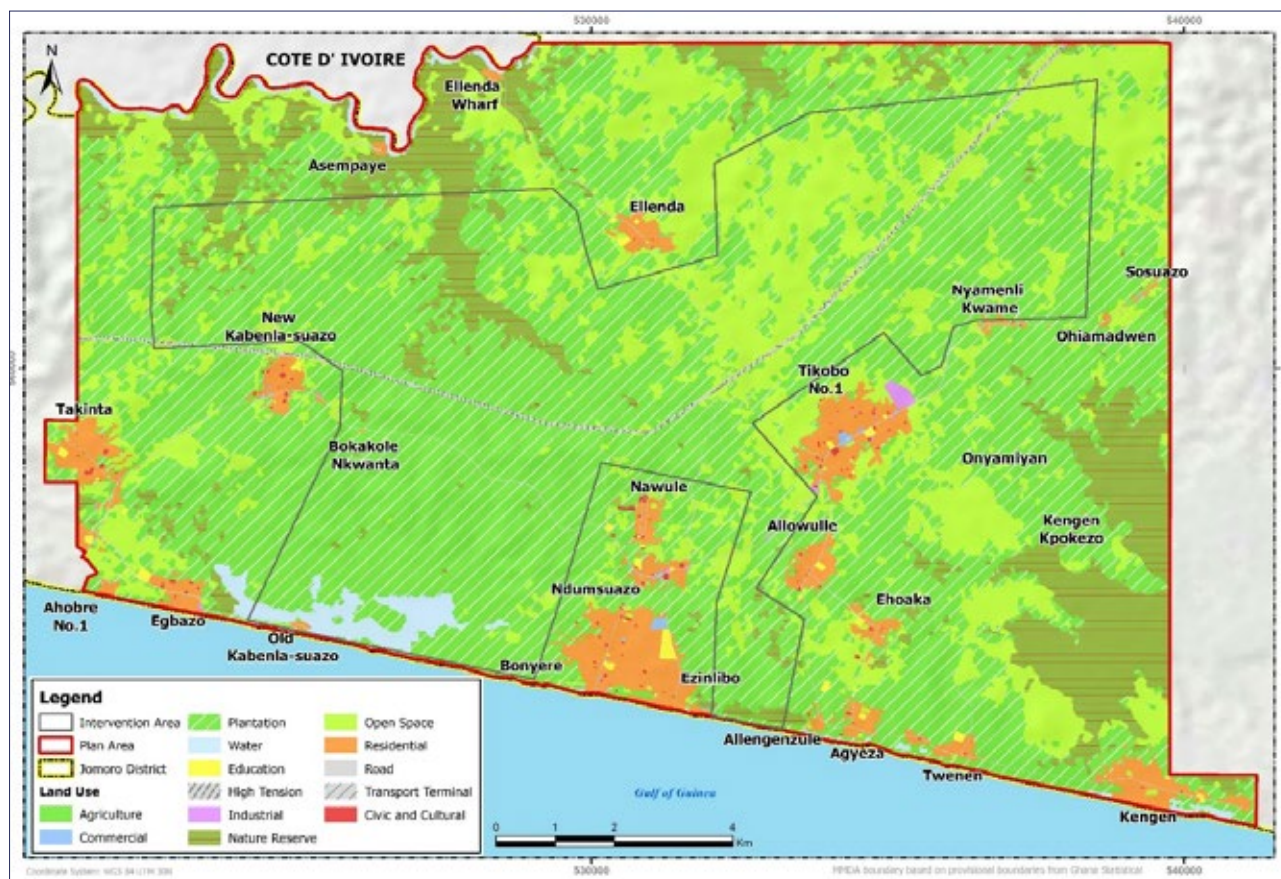
All roads except for the main road are untarred. The community depends on a small water system which majority of the households use. Others rely on bore holes and wells. There is also the issue of poor sanitation as a challenge in Ezinlibo due to inadequate sanitary facilities such as communal waste disposal site, household and public toilet facilities. The existing public toilet facility has been abandoned leading to open defecation.

The remaining twenty-one (21) settlements are rural by their population. It is expected that, the proposed petroleum hub will boost the growth and spatial development of these settlements.

3.11 EXISTING LAND USES

The existing land use of the structure plan area as depicted in figure 3.18 presents a graphic description of currently land use activities. Table 3.3 displays the existing land uses within the structure plan area.

Figure 3.16: Land Use Map of the Structure Plan Area



Source: LUSPA 2020


Table 3.4: Exiting Land Uses

EXISTING LAND USES		
LAND USES	AREA (SQKM)	PERCENTAGE
AGRICULTURE	0.2	0.08
COMMERCIAL	0.1	0.07
PLANTATIONS	121.7	58.67
DRAINAGE	3.8	1.83
EDUCATION	0.5	0.25
HIGH TENSION	1.2	0.57
INDUSTRIAL	0.2	0.11
NATURE RESERVE	22.7	10.96
OPEN SPACE	46.1	22.22
ROAD	0.9	0.42
RESIDENTIAL	9.7	4.66
TRANSPORT	0.01	0.01
CIVIC AND CULTURE	0.3	0.15
TOTAL	207.4	100

The dominant land use in the SPA is Agric (58.75%) giving credence to the Agrarian economy. These include residential developments, commercial uses, Civic and Culture, and industrial uses, agricultural and public recreation uses. The existing land uses depict the agrarian nature of the area, as the predominant land use in the Structure Plan Area is the plantations that comprises of coconut and palm plantations. The residential uses are few and scattered across unlike that of the urban areas where residential uses are concentrated in a particular area. Typical of a rural area, the structure plan area has few infrastructures such as education and roads. The land uses have been shaped over the years by the culture and economic activity of the population.

3.12 KEY ISSUES

- There exists an economically active population in the plan area with limited job opportunities in the SPA. This provides opportunities for training the population in employable skills to serve the hub and other economic activities.
- Low dependency ratio of 1:0.86
- Sparse distribution of settlements. This has the potential of increasing the cost accessing basic social services and cost of providing adequate services to all settlements.
- Increasing population and urbanization. This is a phenomenon present in most developing countries, steps should be taken to harness the opportunities associated.
- Inadequate basic services in all settlements such as sanitary facilities.



CHAPTER FOUR

ECONOMY

4.0 INTRODUCTION

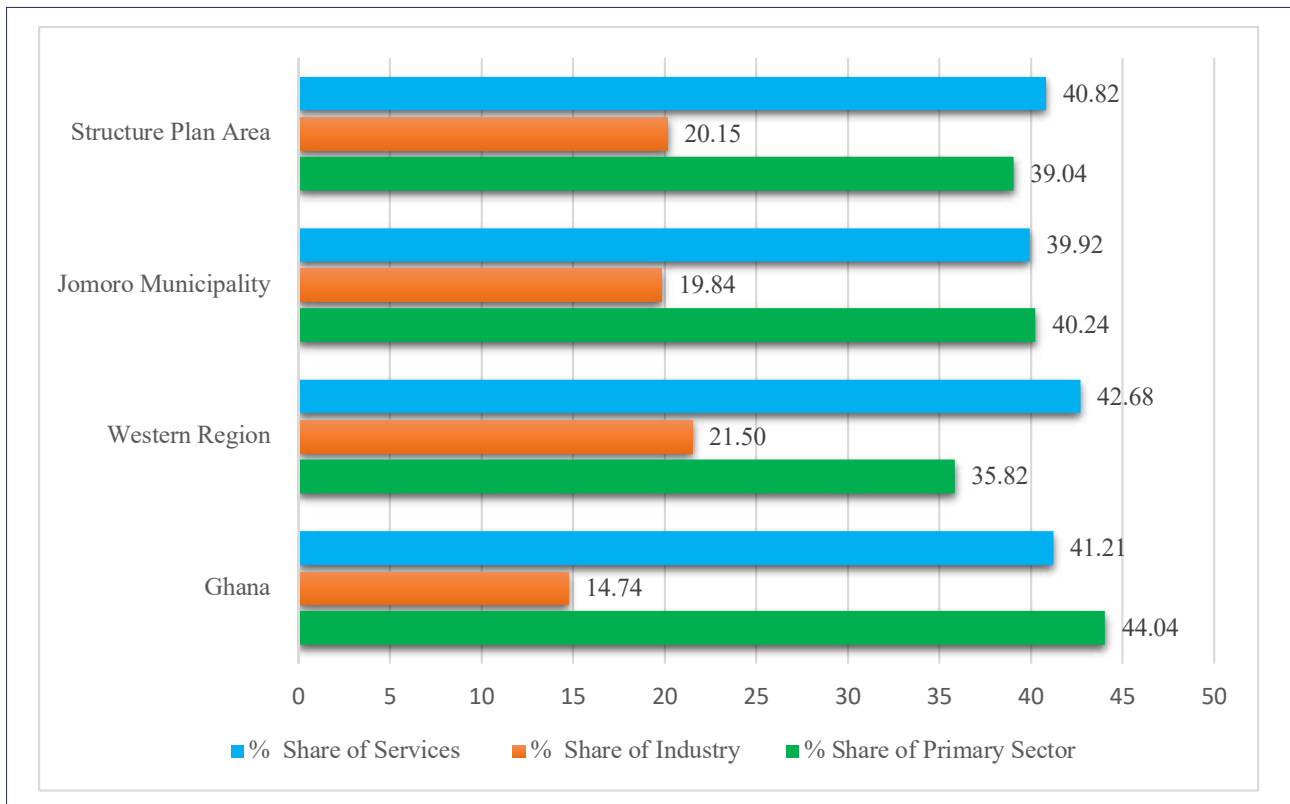
This chapter of the report discusses the employment structure of the economy of the SPA and that of Jomoro Municipality. It further provides detailed analyses of the Primary, Services and Industry Sectors. Issues related to economic production and productivity levels of the Jomoro Municipal Assembly in the regional context using comparative analytical methods are also discussed. The spatial distribution of jobs and firms of the various sectors in the settlements as well as trend analysis of economic production are discussed. By this analytical approach, the key issues are revealed based upon which proposals will be made for economic improvement and transformation. It also puts into detailed perspectives, the likely economic impacts of the proposals.

4.1 EMPLOYMENT STRUCTURE OF THE ECONOMY

The employment structure of the SPA is almost similar to the Municipal structure but differs slightly as Agriculture and Service sectors employ the majority of the labour force. The Services Sector is the largest source of employment in the SPA. This is followed by the Primary Sector³ that engages about 39.04% of the working populace while the Industrial sector employs a fifth of the economically active workforce (20.15%). The Industrial Sector in the Municipality employs a fifth of the economically active populace, same as that of the SPA (See Figure 4.1). The employment structure at the national level however provides a picture where the primary sector engages 44.04% followed by Services sector (41.21%) and the least employer being industrial sector with only 14.74%. Contrary to the national structure, the Western Region's employment structure is dominated by the Services Sector and has an Industrial sector that engages a fifth of the working populace which is far higher than the national figure. The relatively higher industrial share of employees in the Western Region is mainly due to the high number of workers in the mining and quarrying and agro-processing sectors as compared to other regions. Refer to figure 4.1 for details on employment structure.



Figure 4.1: Employment Structure of the Plan Area compared to Municipal, Regional and National Structures



Source: LUSPA based on 2010 Population and Housing Census and 2018-2021 Medium Term Plan⁴

4.2 ECONOMIC PRODUCTION AND PRODUCTIVITY OF THE JOMORO MUNICIPALITY

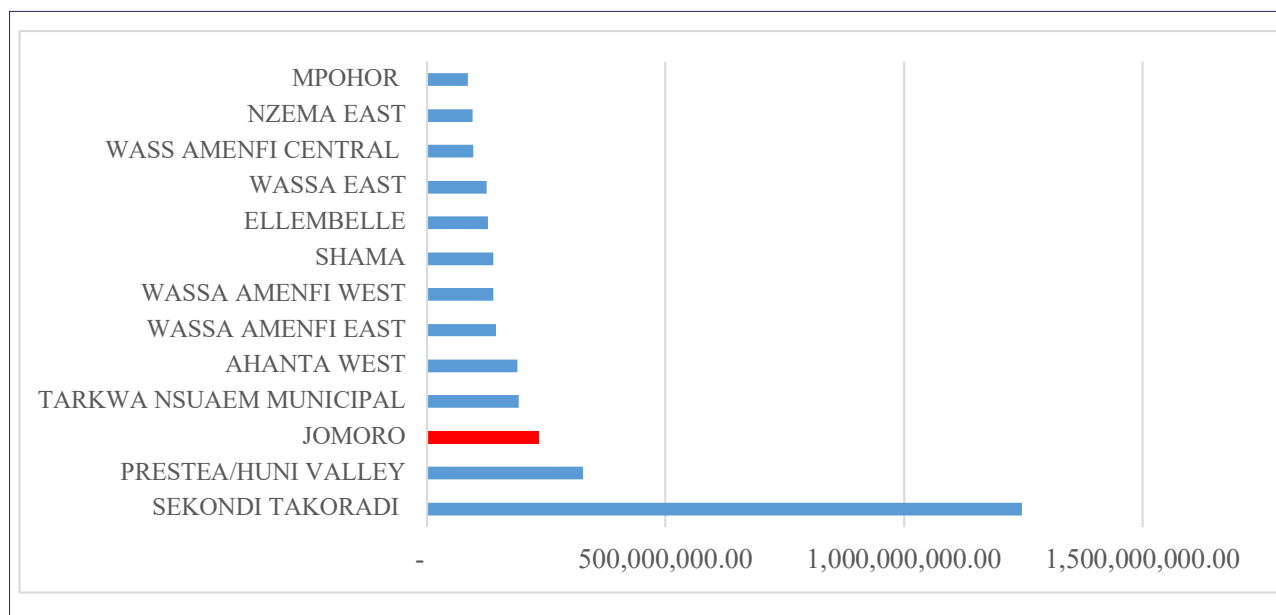
Jomoro Municipality generated 7.44% of the total Gross Domestic Product (GDP) of Western Region⁵ which was GHC 3,141,412,126.00 as at 2014 (See Figure 4.2). This made it the third highest contributor in terms of value addition to the Region's GDP. A District like Tarkwa Nsuaem Municipal had high value contribution because of the location of major mining firms however this was surpassed by the Jomoro Municipality.

⁴ The paucity of data makes it impossible to have information on the employment structure for 2019 or 2020. The assumption is that the structure has not changed that much from 2010 since there has not been a radical shift in structure in the Region or the Municipality.

⁵ The disaggregated data shows districts in the Current Western Region. This was possible using the district level data from GSS. Effia-Kwesimintsim which is now a Municipality has its data as part of the STMA figure.



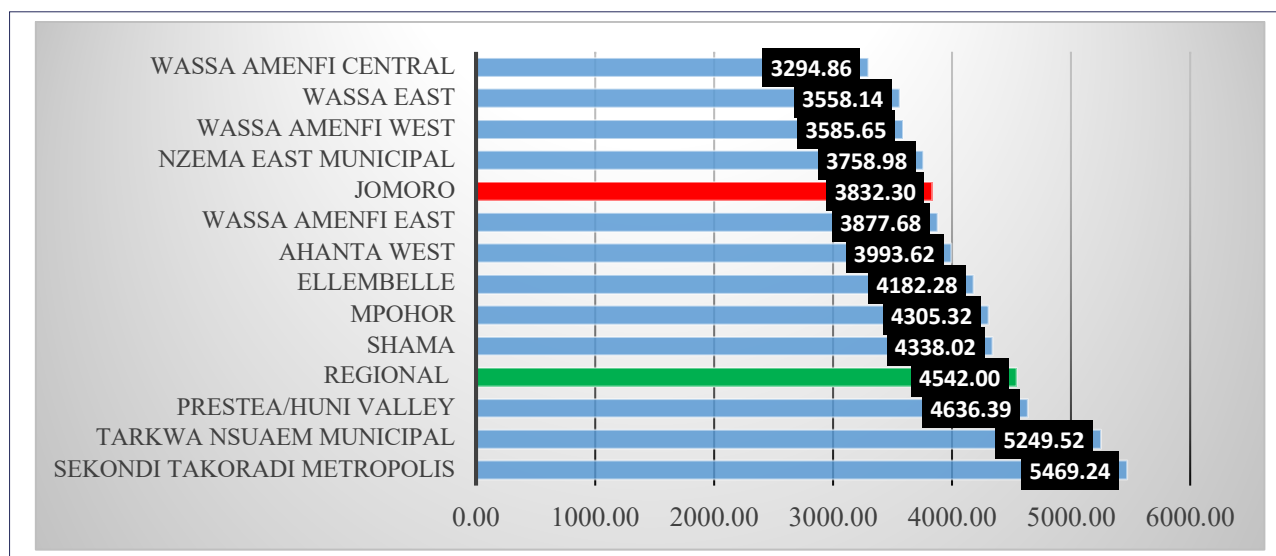
Figure 4.2 : Economic Production to Western Regional GDP, 2014



Source: LUSPA, 2020

Notwithstanding the high GDP contribution of the Municipality, productivity level of the Municipality tends to be quite low. The average contribution per worker of the Municipality fell below the regional average which was around GHc 4,452.00 (see Figure 4.3). This is because of the low value contribution of the sub-sectors of the municipality.

Figure 4.3: Per Worker Contribution to GDP



Source: LUSPA, 2020

Tarkwa Nsuaem and Prestea Huni Valley which have high income generating activities particularly in the Mining and Quarrying sub-sectors had better productivity levels though initially Tarkwa Nsuaem was surpassed by Jomoro Municipality with regards to value addition. This requires that the employment structure in the long run should be planned so workers can move into sectors that have high income earning/generating activities like financial services, technical professional areas or high value-addition manufacturing sectors etc.



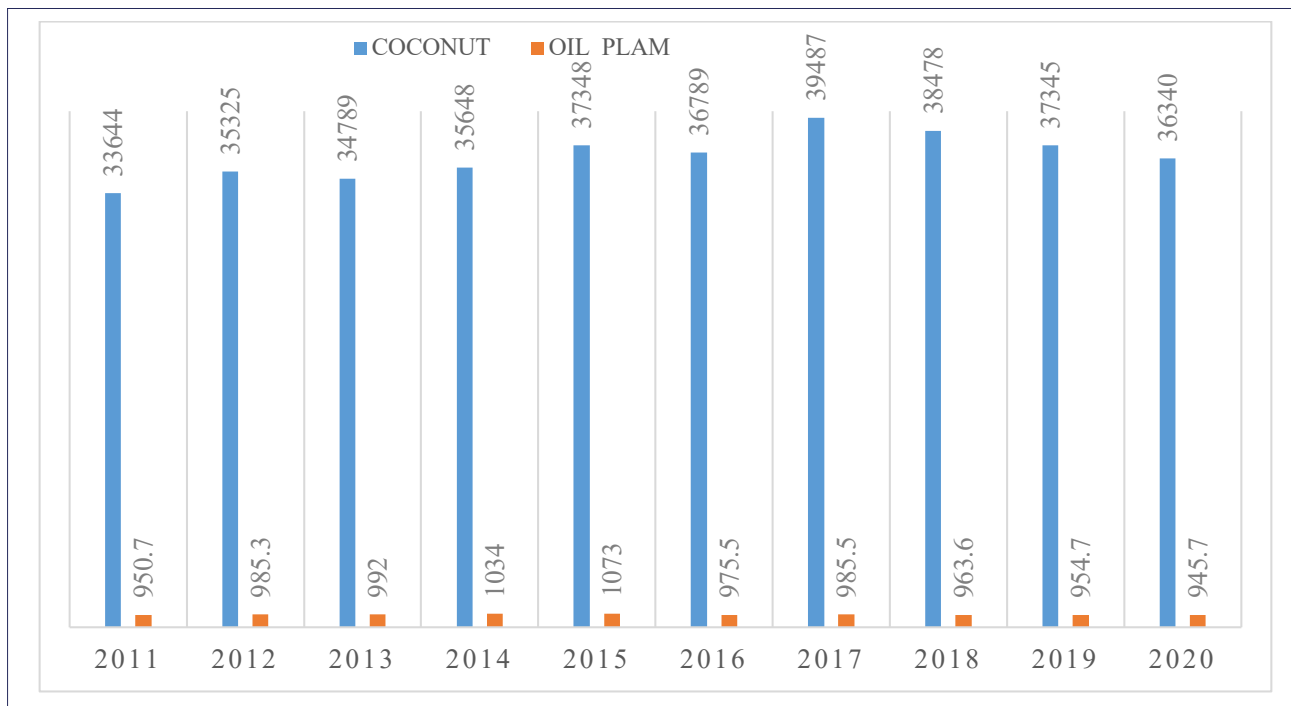
4.3 UNDERSTANDING EMPLOYMENT STRUCTURE AND THE PRODUCE OF THE STRUCTURE PLAN AREA

A detailed analysis of the economy by sub-industrial sectors for the Municipality and SPA indicates that about 40% percent of the economically active workforce are engaged in the primary sector⁶. Coconut and cassava production are the dominant agro-produce that are cultivated in the area. Other crops produced in the area are oil palm, cocoa, rice and plantain. Vegetable production remains on a subsistence level. Some of the primary sector workers are also engaged in livestock production with pig-rearing being the largest livestock produced in the area. The next section discusses the trend of production of some of the agro-produce in the SPA.

4.3.1 Coconut and Oil Palm Production

Coconut which is the largest agro-produce cultivated in the area has witnessed a rise-and-fall pattern in production from 2011 to 2020. The highest production was recorded in 2017. Since then, the production level has consistently taken a nose-dive. One of the attributable cause is linked to the increasing spread of St Paul's wilt disease which affects the coconut plants.

Figure 4.4: Coconut and Oil Palm Production in the Spatial Planning Area, 2011-2020



Source: LUSPA based on field data from Jomoro Municipal Assembly

Coconut production has a very significant impact on the economy as it has the most important value-chain linkages which has been developed over the years. It is used in the production of coconut oil, pig-feed, charcoal production, door-mat production, brush production, among others.

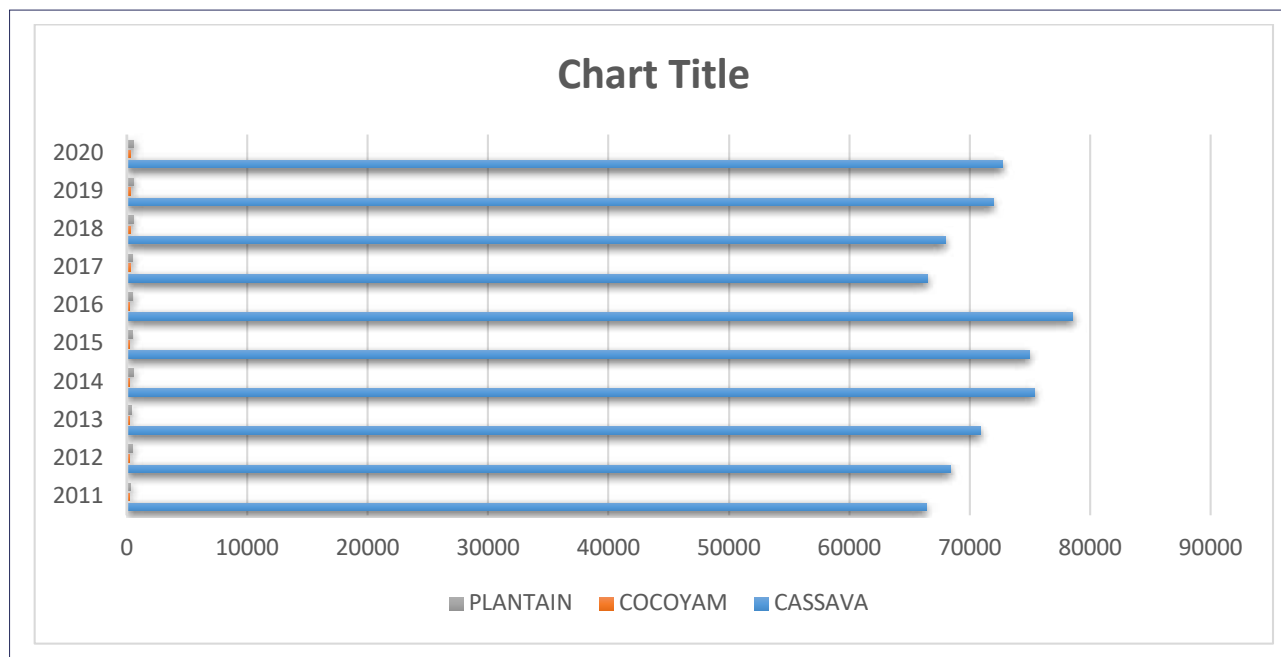
In contrast to the high production of coconut, oil palm production is quite low in the area. The highest production of oil palm was recorded in 2015 where a total of 1073 tonnes was produced. Despite its low level of production, oil palm production enjoyed consistent growth for almost half a decade (2011-2015). Quite akin to the coconut production, since 2017, cocoa production has been reducing though marginally.



4.3.2 Cassava, Cocoyam and Plantain Production

Cassava is the predominant and important crop grown in the SPA compared to plantain and cocoyam. This can largely be attributed to the fact that it is used for the production of Akyeke, the staple food. Its significance is evident in the commercial production quantities as shown in figure 4.5. The production of cassava rose from 2011 at an increasing rate up until 2015 where it recorded a decline. However, the highest production peaked in the subsequent year recording a total of 78,451 metric tonnes. Since then, the production levels have never reached the 2014-2016 levels.

Figure 4.5: Cassava, Cocoyam and Plantain Production (Metric Tonnes), 2011-2020



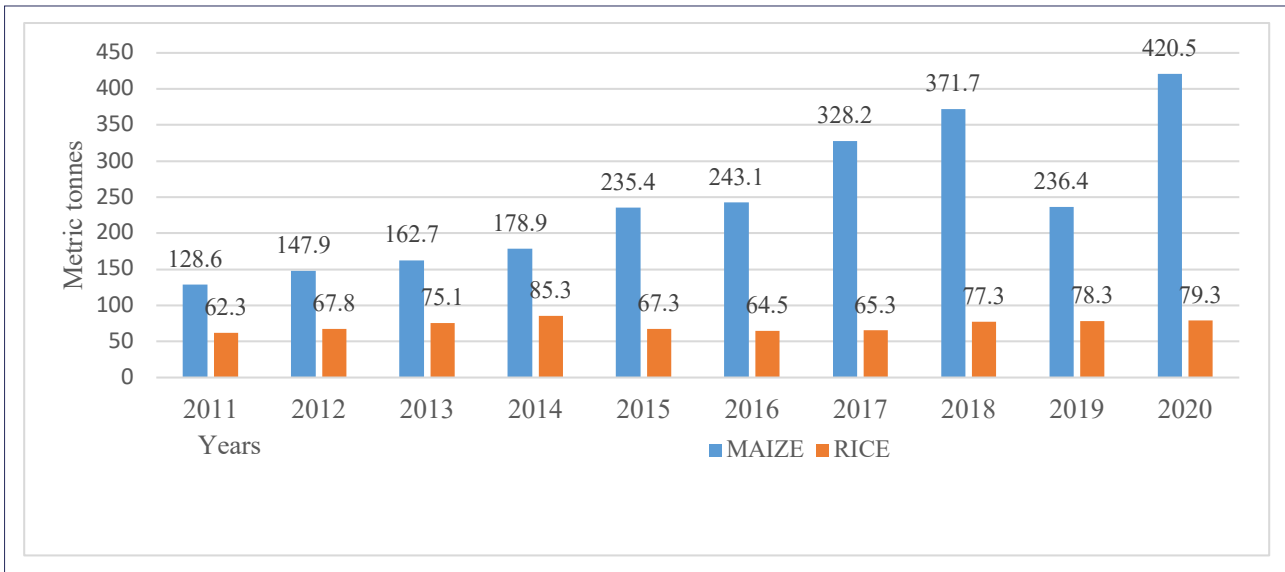
Source: LUSPA 2020, based on Data from Agriculture Department of Jomoro Municipal

4.3.3 Maize and Rice Production

Maize and rice production in the SPA is relatively low and done mainly on subsistence basis with a few of the produce sold on commercial basis. Maize production witnessed an increasing trend in production for nearly a decade with the only decline recorded in 2019. Afterwards, production resurged in the subsequent year recording the highest production over the decadal period. Rice production which is comparatively lower recorded declines in 2015 and 2016 and has since recorded very marginal growth.



Figure 4.6: Maize and Rice Production, 2011-2020

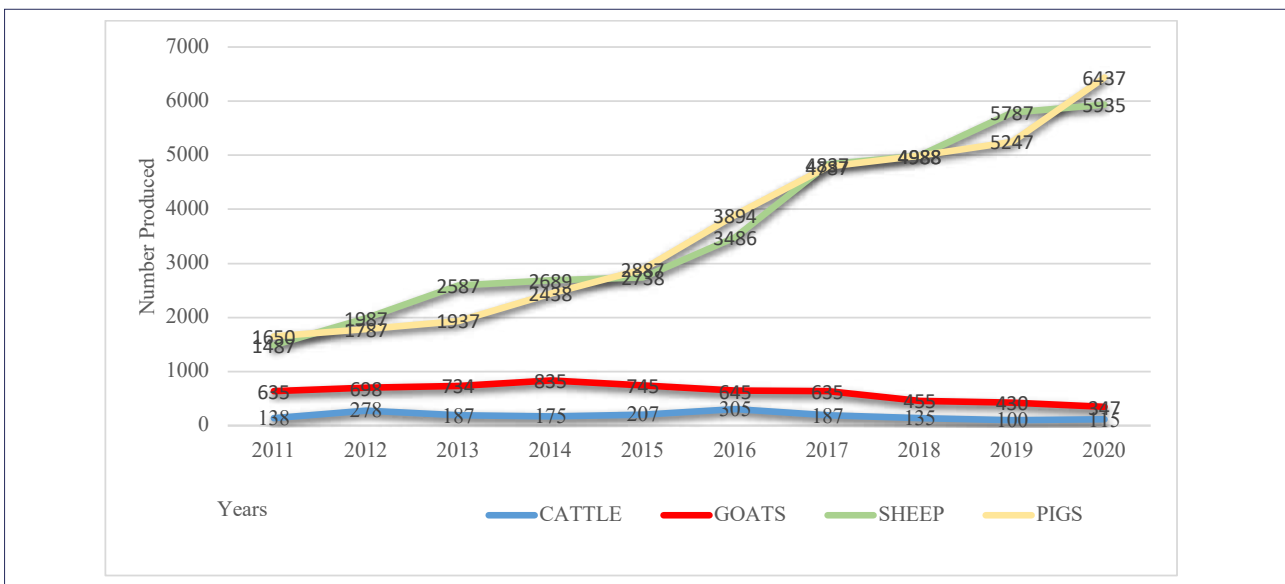


Source: LUSPA 2020, based on Data from Agriculture Department of Jomoro Municipal

4.3.4 Livestock Production in the SPA

Pigs and sheep are the most reared livestock in the SPA. Figure 4.7 clearly shows production levels have never declined over the decadal period. The highest production level for pigs and sheep were recorded in 2020 though highest percentage change were recorded in the 2015-2016 and the 2016-2017 periods respectively (See Table 4.1). The high increase in pig production is partly due to the high availability of pig-feed and its low cost which is generated from the chaff of the processed coconut. Contrary to the increasing production of sheep and pigs, goat production numbers have declined over half a decade commencing from 2014. The number of cattle produced also decreased consistently from 2016 to 2019. The attributable reason for the low numbers of goat reared in the area is that, only a few communities rear them because of the belief that goats are associated with bad luck.

Figure 4.7: Livestock Production, 2011-2020



Source: LUSPA, 2020 based on Data from the Department of Agriculture, Jomoro Municipal.



Table 4.1: Annual Percentage Change in Production, 2011-2020.

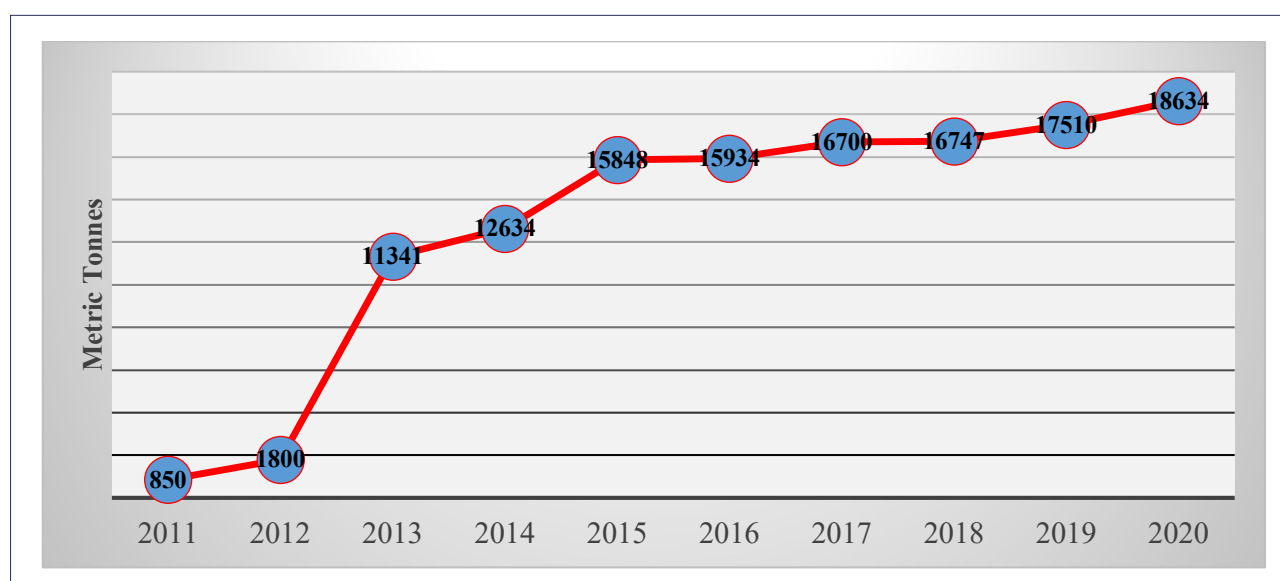
Livestock Type	ANNUAL PERCENTAGE CHANGE								
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Cattle	101.45	-32.73	-6.42	18.29	47.34	-38.69	-27.81	-25.93	15.00
Sheep	33.62	30.20	3.94	1.82	27.32	38.76	3.12	16.02	2.56
Goats	9.92	5.16	13.76	-10.78	-13.42	-1.55	-28.35	-5.49	-19.30
Pigs	8.30	8.39	25.86	18.42	34.88	22.93	4.20	5.19	22.68
Total	21.48	14.63	12.71	7.17	26.65	25.40	1.15	9.45	10.98

Source: LUSPA, 2020 based on Data from the Department of Agriculture, Jomoro Municipal.

4.3.5 Poultry Production

Poultry production is a relatively new entrant in the Agriculture economy of the SPA. The trend of poultry production witnessed a massive surge in 2013 and since then production has consistently been rising at an increasing rate based on a year-on-year change analysis. The continuous increase in poultry production is partly as a result of declining fish-catch over the years. To diversify the income stream of the fisherfolks and supplement the protein requirements, some farmers have resulted to poultry farming to add up to the short-fall in fish-catch over the years. The increasing population base of the area also means higher quantities of nutritional requirements and hence a good initiative to meet the dietary requirements of the growing population.

Figure 4.8: Poultry Production, 2011-2020

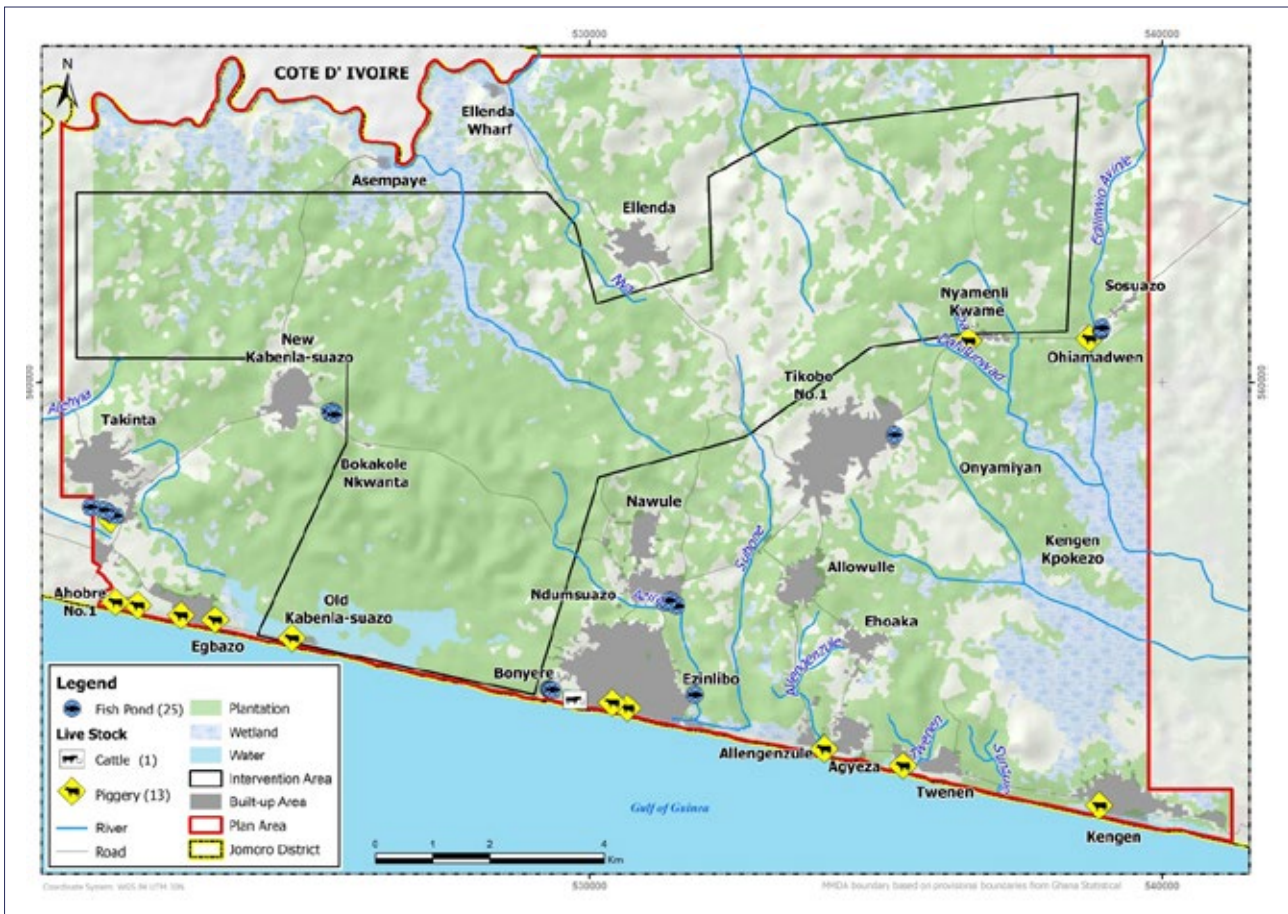


Source: LUSPA, 2020 based on Data from the Department of Agriculture, Jomoro Municipal.

4.3.6 Spatial Distribution of Primary Sector Workers

Tikobo No.1 which is the most urbanized settlement has the largest number of primary sector workers. Other areas with large concentration of primary sector workers are Bonyere, Ellenda, New Kabenlasuazo, Ndumsuazo and Tankinta as shown in Figure 4.9. The large settlements with huge numbers of agro-workers have to move outside the settlements and farm due to the conversion of the agricultural lands for residential and other developments. The rural settlements like Ohiamadwen, Nyamenli Kwame, Sosuazo, Asempaye among others have farms very close to the communities though some still travel quite a distant to access their farms. In effect, there will be the need to start training and developing the skills of the young farmers in the large urban areas in alternative skills so they can diversify the agro-based income activities with non-farm based income earning activities.

Figure 4.9: Spatial Distribution of Primary Sector Activities, 2020



Source: LUSPA 2020

4.4 THE SERVICES SECTOR

The services sector engages 40.81% of the economically active populace in the SPA. This sector is dominated by the Wholesale, Retail and Repair of vehicles sub-sector⁷ which engages 41% of the workforce in the area (See Figure 4.10). This relatively high share is largely due to the ease of entry in to the sector as compared to the other services sub-sectors. The almost ubiquitous nature of the Wholesale and retail sub-sector is spatially evident in the number of traders seen selling in the various markets, the fish-mongers, the petty traders in front of many houses, the mechanics who work on taxis, buses, motorbikes among others in both the urban and rural settlements in the SPA. This is further supported with markets constituting 40% of the established service centres identified in the field during the primary data collection. As the area

⁷ This is referred afterwards as Wholesale and retail sector.

urbanizes, this number is likely to increase. Unfortunately, the earnings from these activities are not very substantial as compared to workers in Financial, Real Estate, Legal and Administrative sectors which are almost absent in the area.

The second largest source of employment in the services sector is Accommodation and Food Services followed by the Transport and Storage Services, Other Service activities and Educational services respectively. The number of hotels, motels, guest houses, beach resorts and restaurants employ a number of workers in the sub-sector.

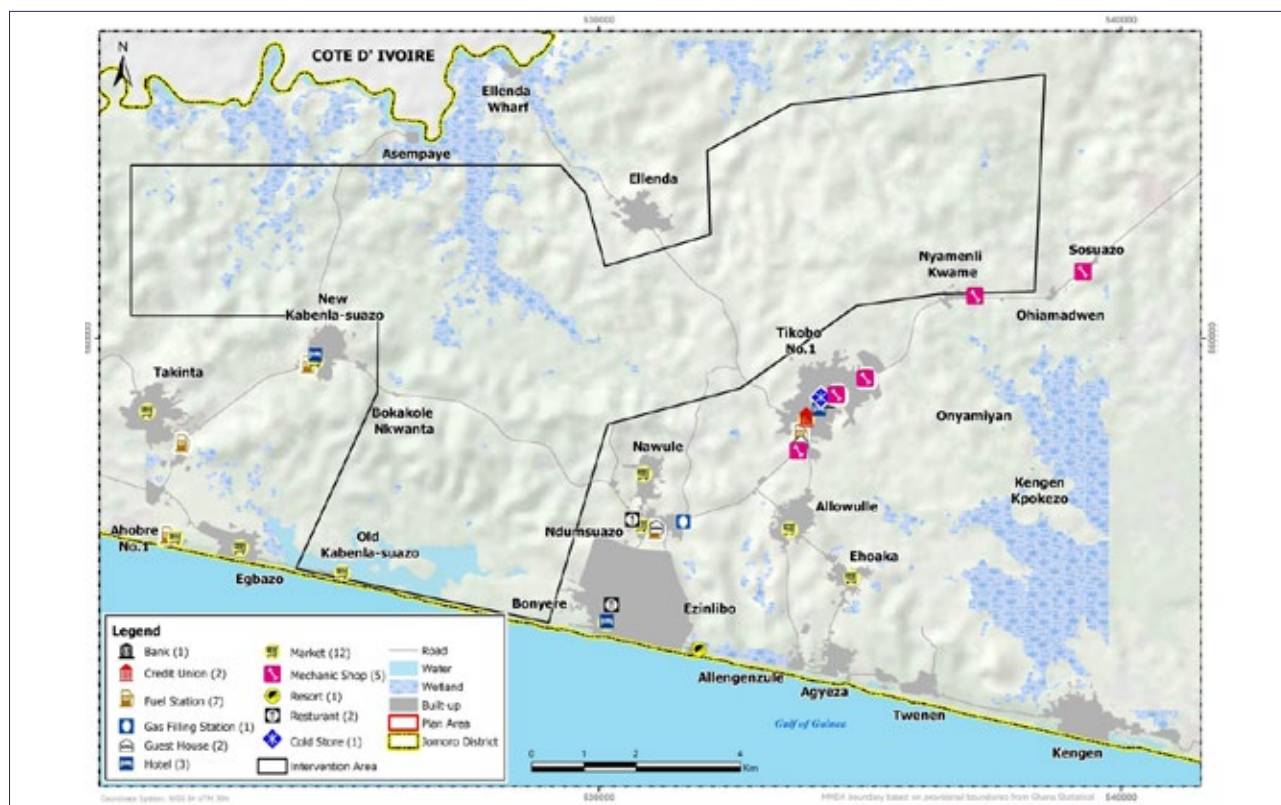
The high income-earning areas such as Information and communication, finance and insurance, Professional, Scientific and technical activities are almost unavailable or remains very low as seen from Figure 4.10.

Figure 4.10: The Relative Share of Workers in the Services Sector within the SPA, 2020

Source: LUSPA, 2020 based on data from the Development Planning Office of Jomoro Municipal

Spatially, the Services sector is highly concentrated in the most urbanized areas of the SPA which is Tikobo No.1 (See Figure 4.11). Bonyere, Ndumsuazo and New Kabenlensuazo also have very large concentration of Service sector workers. This is similar or in line with globally established knowledge where the most urbanized areas usually have the highest concentration of services sector workers from very low level services sub-sectors to very sophisticated level of services in the knowledge and technological, research, finance, trade and legal firms inter alia.

Figure 4.11: Spatial Distribution of Service Sector Activities in the SPA



Source: LUSPA, 2020 based on data from the Development Planning Office of Jomoro Municipal

In a similar vein, financial institutions are located in Tikobo No. 1 and there exists other forms of standardized formal financial services which cannot be found in the other urban centres in the SPA. The details in terms of the distribution of service establishments that reinforces this knowledge is presented in Table 4.2. The Table 4.2 illustrates that Tikobo No.1 has the highest



number of almost all the various and diverse established service types in the SPA. Tikobo No.1 alone is host to 37% of the various service types. This is followed by Ndumsuazo and New Kabenlasuazo with a relative 14.29% and 8.57% respectively. The least urbanized areas are not diversified and have relatively fewer services to offer its residents as indicated in Table 4.2.

Table 4.2: Distribution of Some Selected Service Centers in the SPA

Community	Market	Fuel station	Financial Institution	Hotel/ guest house/ Restaurant/ beach resort	Mortuary	Cold store	Total	% share
Tikobo No.1	2	3	3	4		1	13	37.14
Ndumsuazo	1	2		2			5	14.29
New Kabenla-Suazo	1	1		1			3	8.57
Nawule	1			1			2	5.71
Egbazo	2						2	5.71
Ahobre No. 1	1	1					2	5.71
Ezinlibo (Zinibo)		1		1			2	5.71
Bonyere	1						1	2.86
Takinta	1						1	2.86
Allowulle	1						1	2.86
Nyamenli Kwame					1		1	2.86
Ehoaka	1						1	2.86
Twenen	1						1	2.86
Old Kabenla-Suazo	1						1	2.86
Total	14	7	3	9	1	1	35	100.00
% share	40.00	20.00	8.57	25.71	2.86	2.86	100.00	

Source: LUSPA, 2020 based on Field Data Collection.

4.5 INDUSTRY

The Industrial sector of the SPA is predominantly led by the manufacturing sub-sector which engages nearly 90% of the workforce. This manufacturing sub-sector is however not the high-end manufacturing type but low-skilled manufacturing which uses crude method of production. Specifically, the main form of manufacturing which is almost ubiquitous in the SPA is agro-processing. It involves coconut and cassava processing into coconut oil and akyeke among others. Wood processing and carpentry which involves processing coconut trees and other tree types into finished wood materials for construction and furniture are also common in the area. Construction is the second largest constituent of the industrial sub-sector which engages nearly eight (8) percent of the economically active workforce. Other activities like Mining and Quarrying (basically sandwinning in the area) and electricity, gas, steam and aircondition supply, water and waste remediation services are very few in the SPA.

Table 4.3: Distribution of Employees in the Industrial Sector

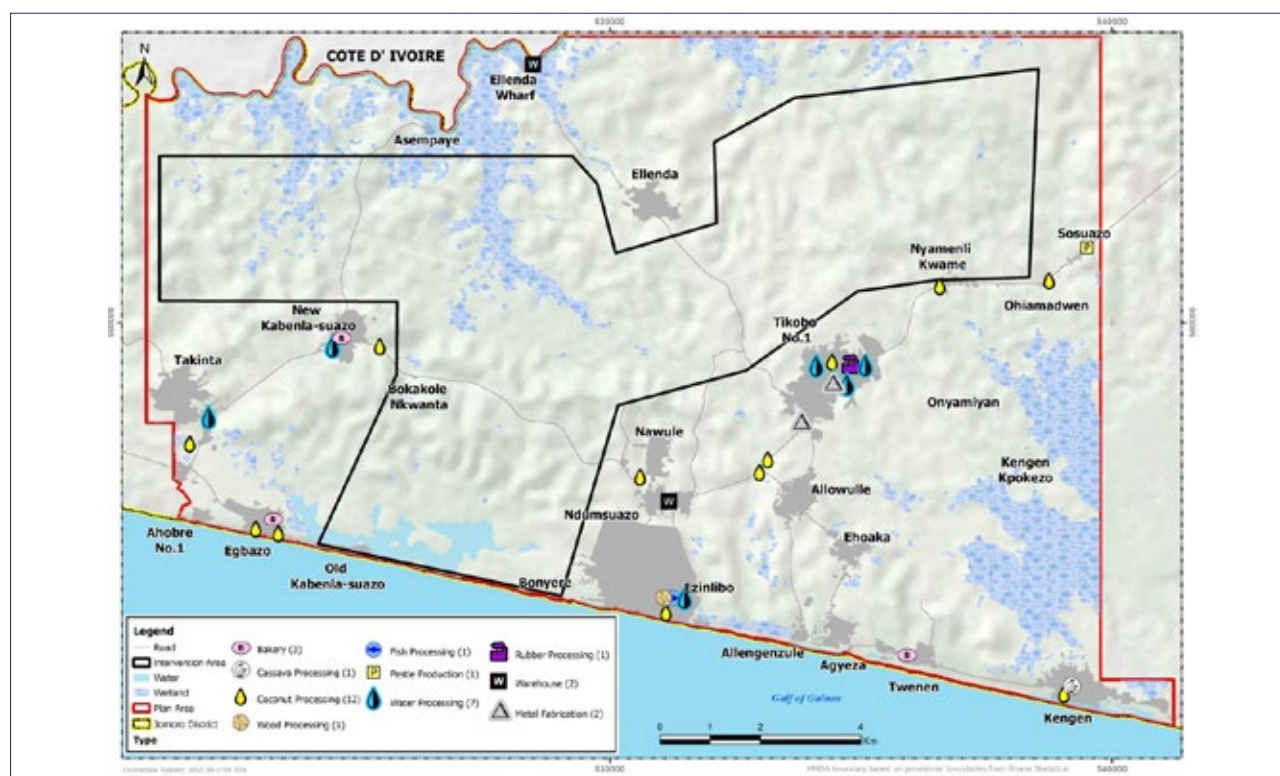
	Number of Employees	Percentage Share
Manufacturing	6998	88.90
Construction	605	7.69
Mining & Quarrying	93	1.19
Water supply; sewerage, waste management and remediation activities	143	1.82
Electricity, gas, steam and air conditioning supply"	32	0.41
	7872	100

LUSPA 2020 based on Data from the Jomoro Municipal Assembly

4.5.1 Spatial Distribution of Industrial Sector Jobs

Spatially, the distribution pattern of jobs in the industrial sector is heavily concentrated in the most urbanized centres which are Tikobo No.1 and Bonyere. Other centres such as Ndumsuazo which is directly north of Bonyere and Ellenda (which is located in the northern part of the SPA) as well as New Kabenla-Suazo and Takinta also have sizeable number of industrial workers. Settlements with the most share of industrial workers are largely in the eastern part of the SPA. Other settlements with few number of industrial workers are in the south-western part of Structure Plan Area.

Figure 4.12: Spatial Distribution of Industrial Activities in the Spatial Plan Area



Source: LUSPA 2020, based on Data from the Jomoro Development Planning Office



The distribution of industrial firms reinforces the dominance of Tikobo No. 1 as the most economically vibrant centre in the planning area. Aside hosting the highest number of population in the Industrial sector as a whole, Tikobo No. 1 has about 30% of the manufacturing firms based on the field data collected for some selected firms (See Table 4.4). This relative share of manufacturing firms is four times higher than the next centres that have only six (6) % of the firms. In addition, in terms of manufacturing diversity, Tikobo No. 1 tends to have almost all the various manufacturing firms present unlike the other settlement that has a maximum of two of the identified types.

Coconut oil manufacturing firms are widespread and present in almost every single community/settlement. Aside Sosuazo, all the settlements have coconut oil manufacturing firms. Coconut which is the most produced crop in the area is processed into coconut oil, feed for pigs (chaff), charcoal production, doormats, among others. The threat to this manufacturing sector is the huge demand emanating from Nigeria which leads to high purchases of the coconut fruit leaving very little to feed the value-chain of oil production. When this cycle continues the manufacturing base though not very sophisticated is likely to collapse which might lead to lots of job losses and ultimately affect their livelihoods.

Table 4.4: Distribution of Some Manufacturing Firms in the SPA

Settlement	Bakery	Water processing	Coconut Oil Processing	Carpentry/Saw mill	Rubber factory	Corn/flour mill	Pestle Production	Total	% Share
Tikobo No.1		3	2	2	1	1		9	27.27
Bonyere		1	1					2	6.06
Takinta		1	1					2	6.06
Ezinlibo (Zinibo)		1	1					2	6.06
Ellenda	1		1					2	6.06
Allowulle			2					2	6.06
Kengen			1					1	3.03
Ohiamadwen			1					1	3.03
Nyamenli Kwame			1					1	3.03
Allengenzule			1					1	3.03
Agyeza			1					1	3.03
Twenen	1		1					2	6.06
Nawule			1	1				2	6.06
New Kabenla-Suazo			2					2	6.06
Ellenda Wharf	1		1					2	6.06
Sosuazo							1	1	3.03
TOTAL	3	6	18	3	1	1	1	33	100.00
% share	9.09	18.18	54.55	9.09	3.03	3.03	3.03	100.00	

Source: LUSPA, 2020 based on Field Data Collection



4.5.2 Key Issues

Based on the analysis conducted, a number of key issues have been identified. The identified issues include the following:

1. The employment structure of the economy reveals that the share of Services and Primary Sectors are almost equal while the industrial sector has the least share. This structure is however not too different from the Regional Sector.
2. The services sector is dominated by the wholesale, retail and repair of vehicles
3. (motorcycles etc). A detailed segregated analysis shows that petty trading dominates this sub-sector though it has the least income earning values in the services sector.
4. The industrial sector is dominated by the manufacturing sector which is largely coconut processing related.
5. The manufacturing sub-sector is threatened by the high demand for coconut fruit from Nigeria^a which is likely to disrupt the agro-processing value chain in the SPA and the Jomoro Municipality in general. The relatively old dry coconut which is used for coconut oil production among others are reducing tremendously in supply.
6. Tikobo No. 1 is the most economically vibrant centre in the SPA as it hosts the high-end services and industrial sector workers and firms. In addition, it is the most economically diverse as it has variety of service and industrial sector firms which cannot be found in the other urban centres.
7. The main issues identified in the primary sector are challenges of diseases and pest that affects the coconut plantations. Secondly, the crude method of agriculture practiced does not lead to high production and productivity and this results in very low economic returns. The challenge of rapid urbanization is also taking up agriculture land which is likely to impact adversely on the agriculture outlook of the area.



CHAPTER FIVE

SOCIAL SERVICES

5.0 INTRODUCTION

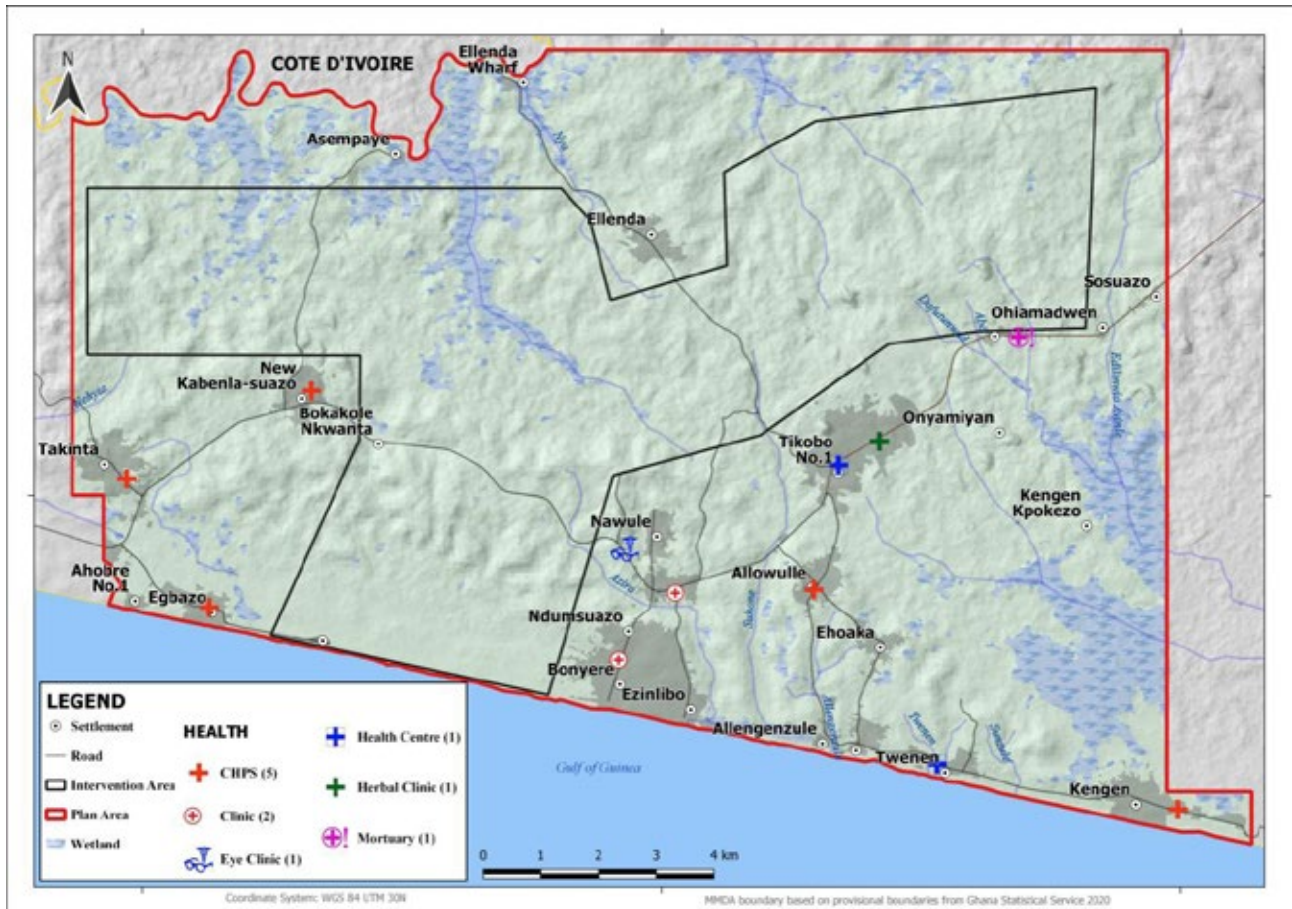
This chapter discusses issues on health, education, water and sanitation, civic and culture, safety and security, sports and recreation, and information communication technology within the SPA and that of Jomoro Municipality.

5.1 HEALTH

Health is not only a human right issue, but also a key driver of development, and ultimately of wealth creation. Healthcare in Ghana is mostly provided by the government and is largely administered by the Ministry of Health and Ghana Health Services. Its mandate is to establish a more equitable, efficient, accessible and responsive health care system.

The SPA has two (2) health centres, four (4) clinics, and five (5) CHPs compound as well as a mortuary as depicted in figure 5.1 below.

Figure 5.1: Location of Health Facilities within the Structure Plan Area



Source: LUSPA, 2020

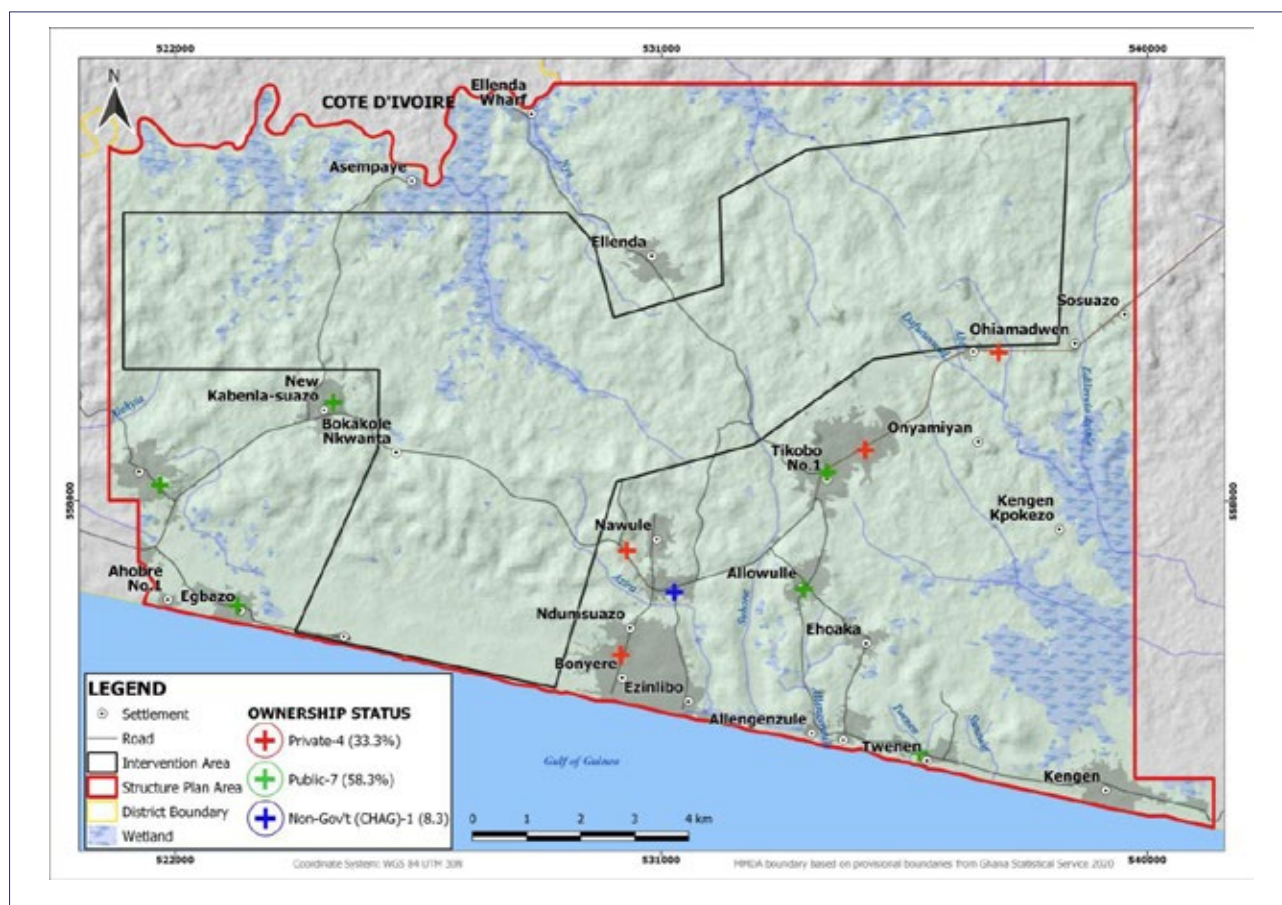
5.1.1 The Ownership of Health Facilities

The ownership of health facilities within the SPA include;

- i. government owned facilities (health centers and Community Health-Based Planning Services (CHPs) compound),
- ii. privately owned clinics (herbal clinics)
- iii. Non-Governmental Organizations (NGO) – Christian Health Association of Ghana (CHAG).

From the analyses 58.3% of health facilities are government owned while, 33.3% are privately owned. The remaining 8.3% are owned by CHAG, Figure 5.2 shows the distribution and ownership of the facilities. The common causes of Out Patient Department (OPD) attendance are malaria, upper respiratory tract infection and diarrhoea. The incidence of diseases within the communities could be attributed to the poor sanitary practices within the SPA.

Figure 5.2: Spatial Distribution and Ownership of Health Facilities



Source: LUSPA, 2020.

5.1.2 Status of Health Delivery

For the purposes of this analysis, the criteria used to determine the efficiency of health facilities include the nurse-to-patient ratio and the health staff available in the SPA. The World Health Organization (WHO) standard recommends a ratio of 1 nurse to 1000 OPD patients, however, in the SPA the analysis shows that the number of nurses to OPD attendants exceeds the WHO standard by 103 OPD patients.



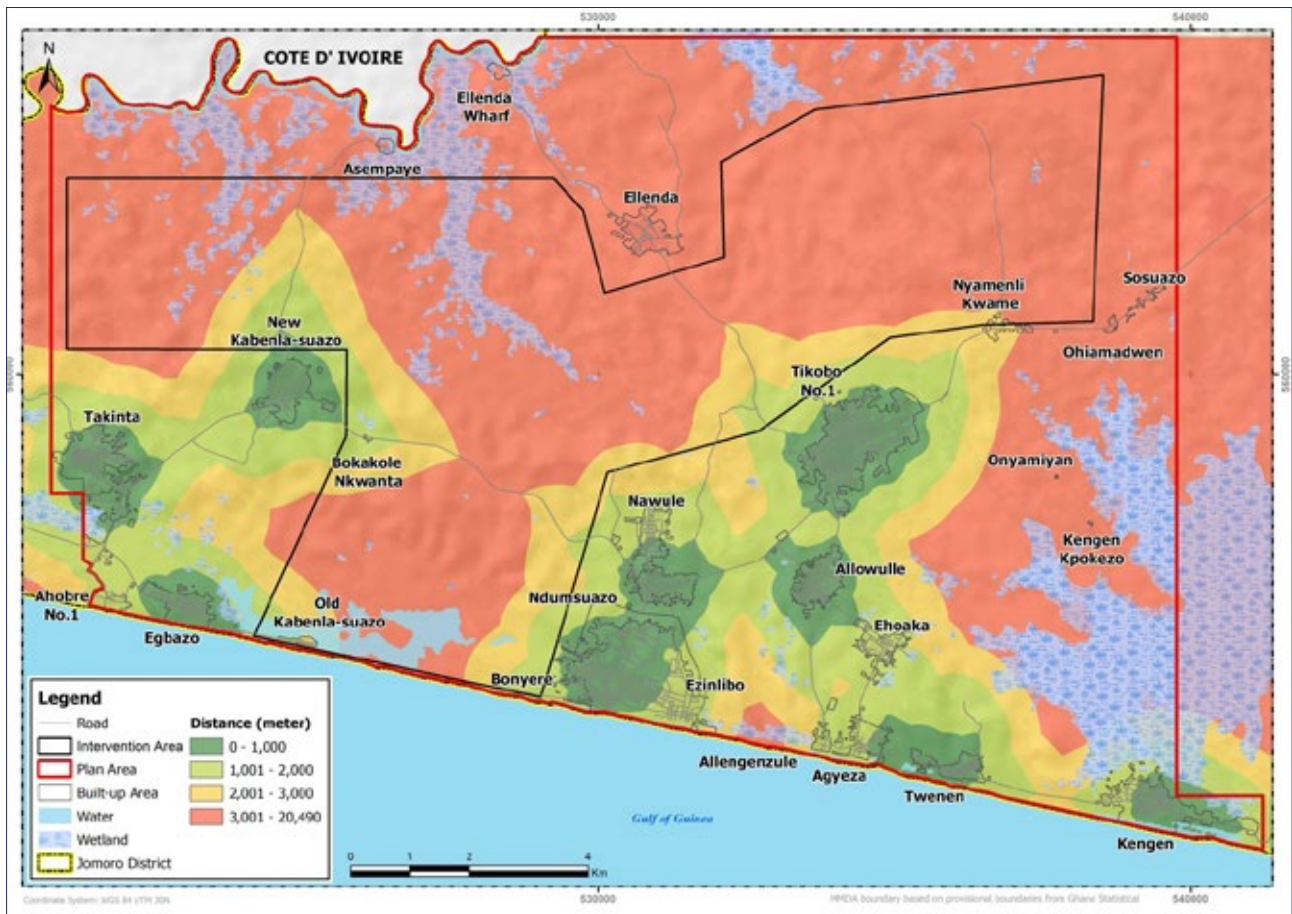
From the data collated, out of a total of 30888 Out Patient Department (OPD) cases recorded in 2019, 94.8 % of the OPD attendants used National Health Insurance Scheme (NHIS).

There is only one (1) registered Traditional Birth Attendant (TBA) in the SPA located at Bonyere. However, there are other TBAs in the area who are unknown because they are not registered. There is no doctor within the structure plan area; nevertheless, there are two (2) doctors who serve the Municipality. Health professionals within the SPA include: mid-wives (5), physician assistants (2), laboratory technicians (2), Disease control Officer (1) and nurses (28). The nurses comprise general nurses, community health nurses and enrolled nurses. There is a mortuary at Nyameli Kwame that services the entire SPA and beyond.

There is currently no ambulance station within the SPA, though, the Jomoro Municipality has two stations at Elubo and Half Assini. It is therefore imperative to situate a station within the SPA to assist with emergencies.

5.1.3 Accessibility to Health Facilities

Generally majority of the communities have physical access to health facilities. Communities such as Ahobre No.1, Asempaye, Ellenda, Ellenda Wharf, Ohiamadwen, Susuazo, Onyamiyan and Kengen-Kpokedzo falls outside the 2.5km required to access a health facility. Communities such as Ezinlibo, Ellenda, Agyeza, and Nawuley are serviced by mobile CHPS health workers. The Mobile workers stationed at Tikobo No. 1 commute to Ellenda and Ellenda Wharf, whilst those at Twenen commute to Agyeza to provide healthcare services. Figure 5.3 below shows the distance to access a health facility within the SPA.



Source: LUSPA, 2020



5.1.4 On-going projects and Proposals

The following on-going projects and proposals are sponsored by the Municipal Assembly:

1. Construction of a CHPS Compound each at New Kabenlansuazo, Ellenda, and Allowule
2. Construction of a ward for the health center at Tikobo 1
3. Construction of Maternity ward at Tikobo No 1 Health Centre
4. Proposal to upgrade the Takinta CHPS Compound to Health Centre

5.1.5 Key Issues

The following key issues were identified:

1. Inadequate logistics (medical supplies) to effectively deliver quality health care
2. Seasonal increase (fishing season) in the population due to migration puts pressure on the health facilities.
3. Inadequate health personnel.
4. Some of the communities such as Onyamiyan do not have access to Health facilities
5. Indiscriminate disposal of waste is poses public health issue in the communities
6. Poor conditions of health facilities and staff quarters in some communities
7. Inadequate health services in the Health facilities
8. Poor accessibility to ambulance service

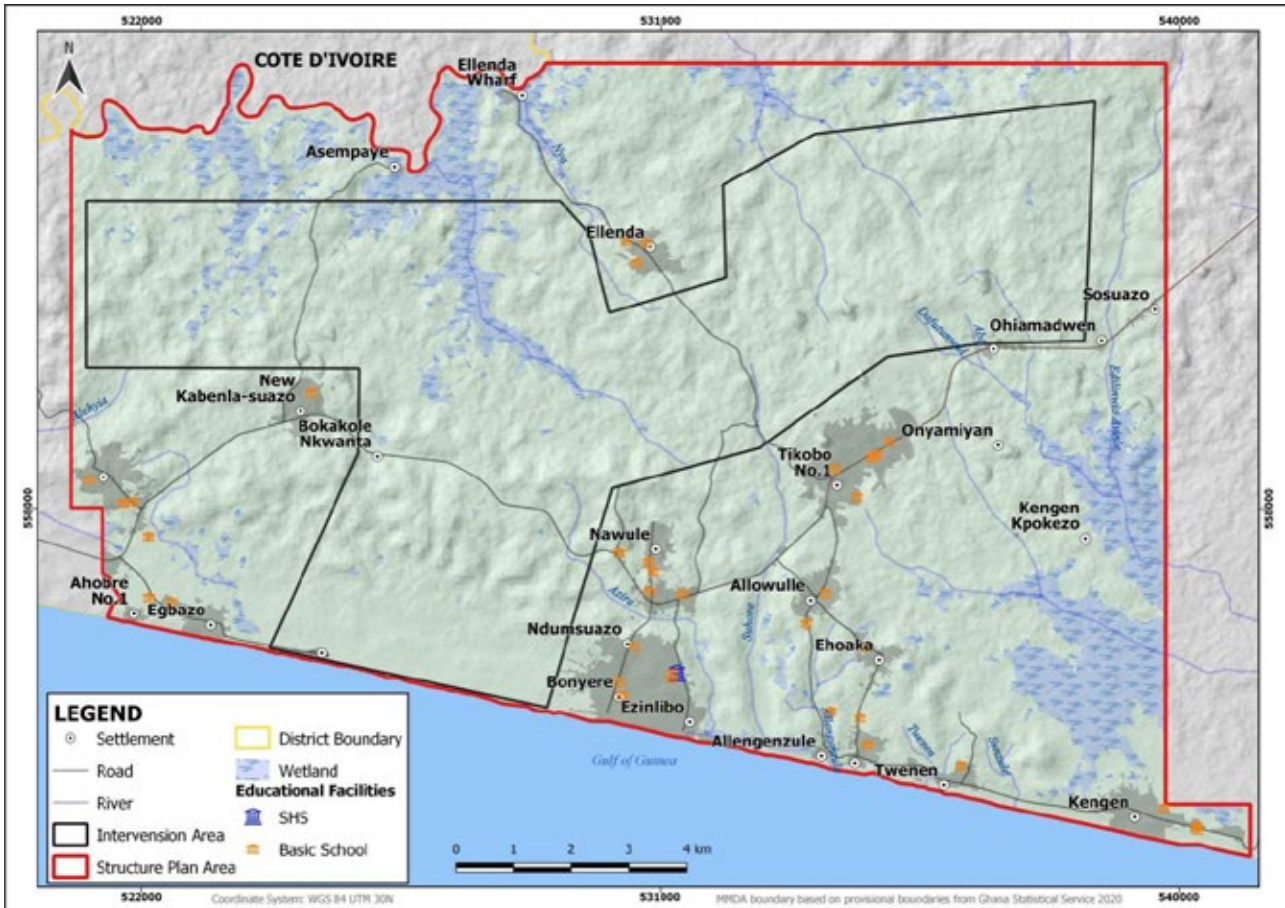
5.2 EDUCATION

Education is an essential tool for economic and social development of a country. It empowers both the individual and society to engage in civic responsibilities, improve their health and economic well-being, amongst others. In view of this, policies and plans have been formulated and implemented to ensure that each individual has access to quality education. The overall goal of the education sector is to deliver quality education service at all levels that will equip learners in educational institutions with the skills, competencies, and awareness.

5.2.1 Existing Situation on Education

There are two levels of education in the SPA, namely; basic and secondary. The basic level is made up of the kindergarten (KG), primary and junior high school (JHS). In total, there are forty-three (43) basic schools with twenty-six (26) and seventeen (17) being private and public schools respectively. These are located in sixteen (16) out of twenty-five (25) communities in the SPA (Education directorate, Jomoro Municipal, 2020). There is just one (1) public secondary school which is the Annor Adjaye Senior High School (SHS) located in Ezinlibo. There is no technical/ vocational nor tertiary institution in the SPA. Figure 5.4 displays the spatial distribution of educational facilities within the SPA.

Figure 5.4: Educational Facilities in the SPA

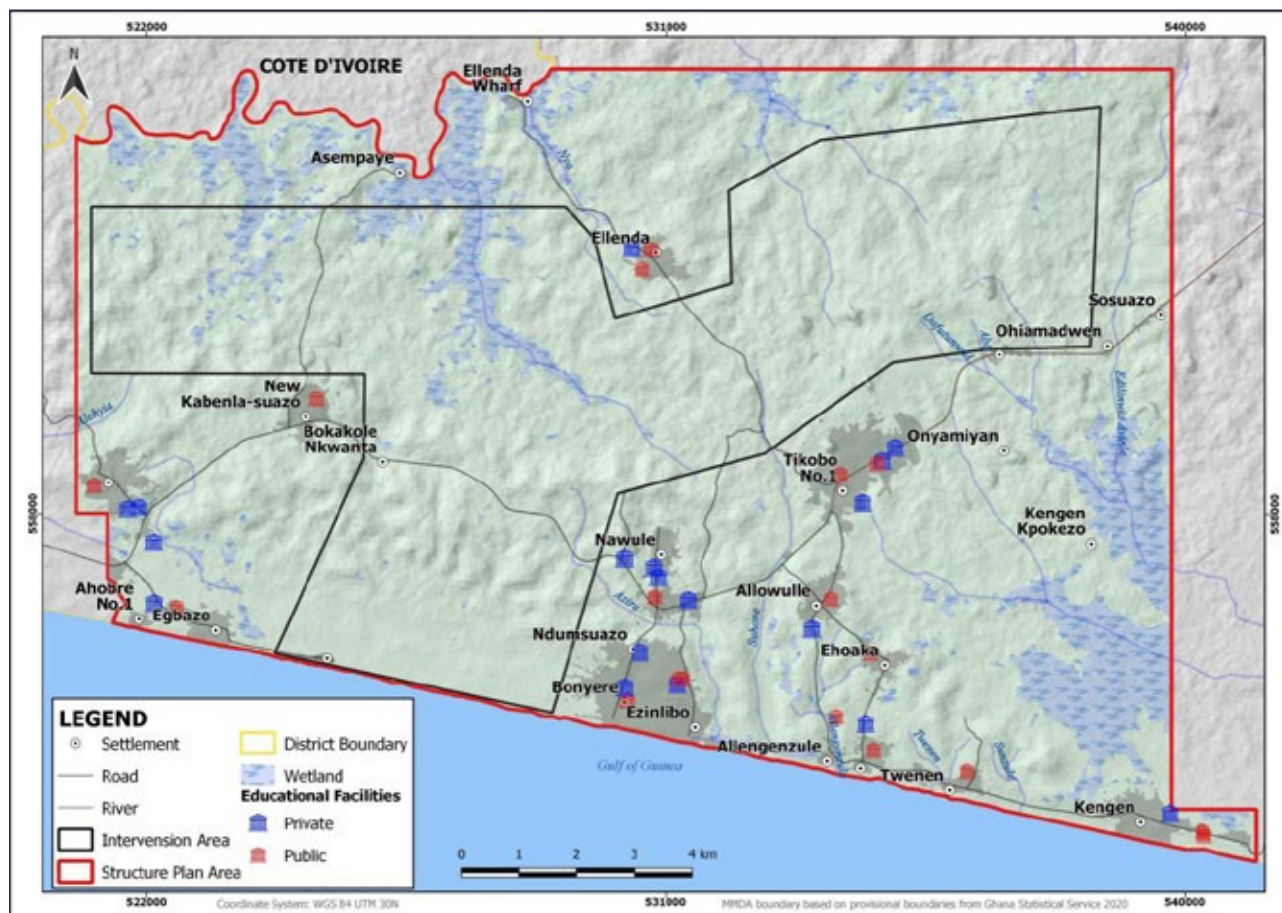


Source: LUSPA, 2020

5.2.2 Ownership of Educational Facility

About sixty percent (60%) of the basic schools are private owned, while forty percent (40%) are public owned. Figure 5.5 shows the spatial distribution of ownership of basic school facilities within the SPA. There are more private schools than public schools at the KG and primary levels. On the other hand, the situation is different at the JHS level with about seventeen (17) public schools at the JHS level and sixteen (16) private schools.

Figure 5.5: Spatial Distribution of Ownership of Basic Schools



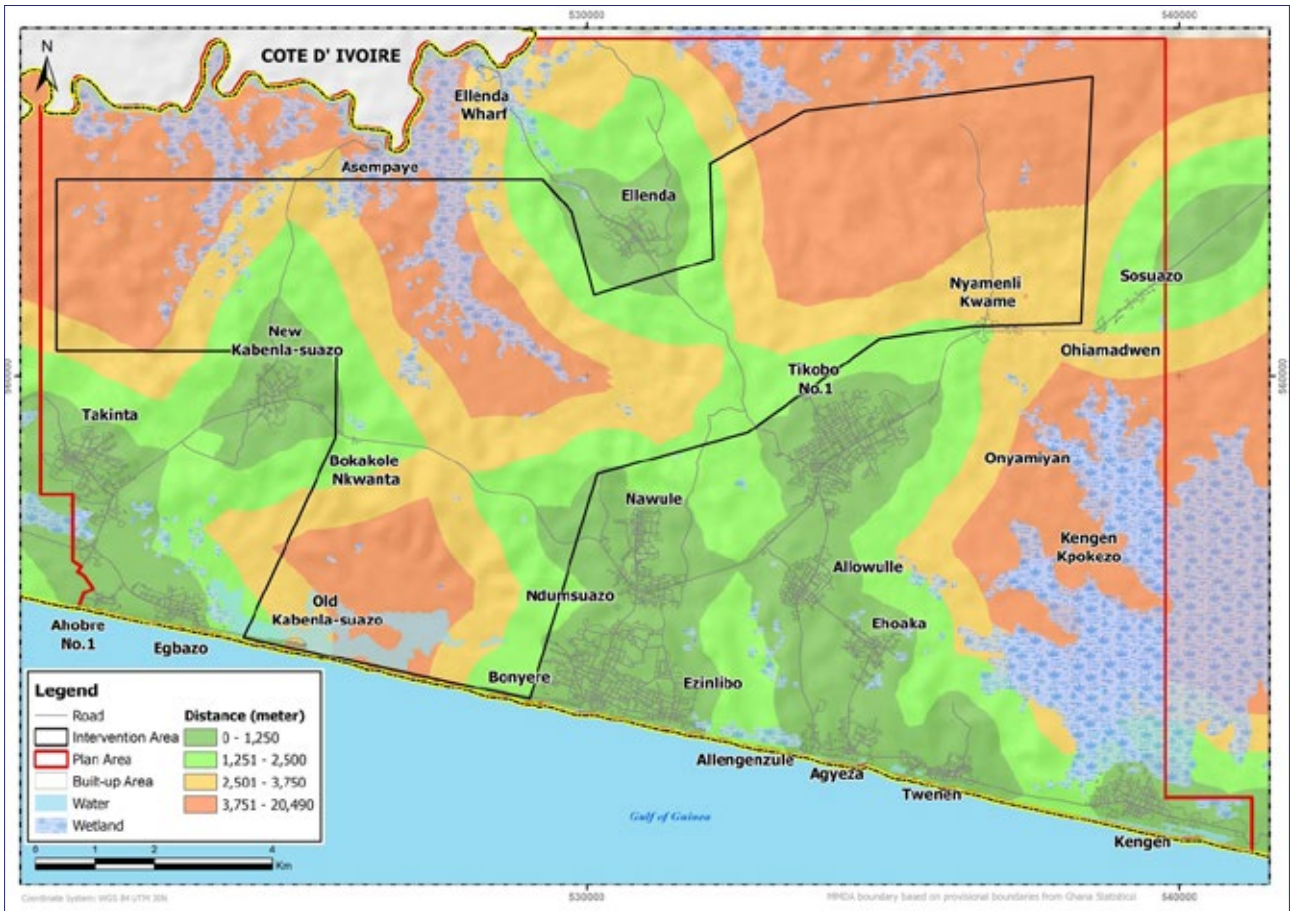
Source: Field Survey, 2020.

5.2.3 Accessibility to Schools

The Planning Standards requires a minimum working distance of between 0.4km to 8.04km to a basic school and 3.22km to 8.05km to access a JHS. From figure 5.6, it is observed that the basic schools are within the acceptable radius. However, with no schools in Asempaye, Ellenda Wharf, Old Kablensuazo, and Kengen Kpokezo, this implies that pupils would have to walk over 3 to 8 kilometres to attend school



Figure 5.6: Accessibility Map of Schools

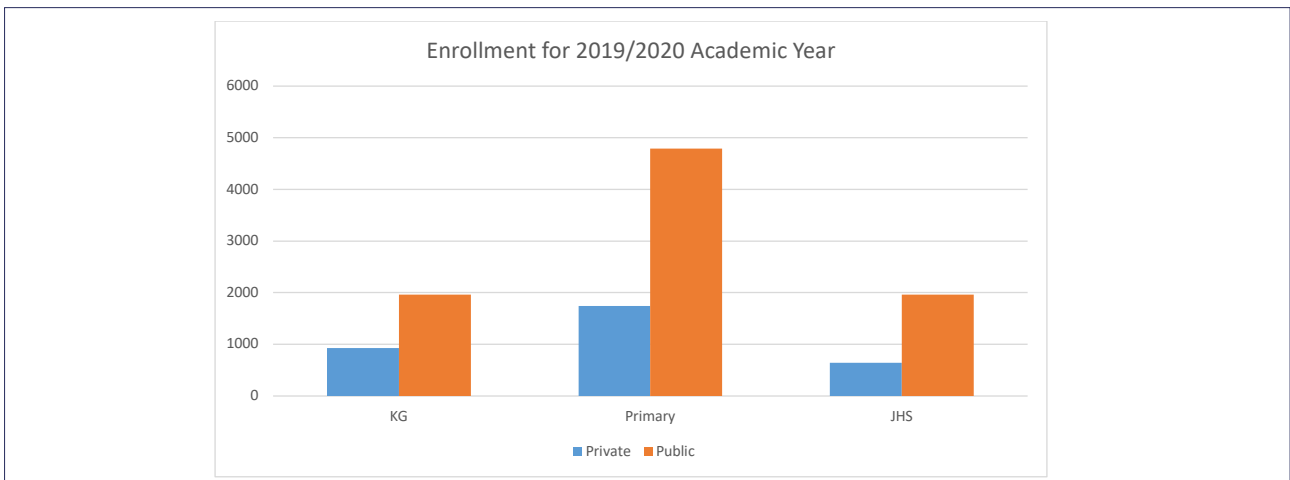


Source: LUSPA, 2020

5.2.4 School Enrolment

In assessing the enrolment for the 2019/2020 academic year for basic schools, as indicated in figure 5.7, enrolment in the public schools are higher than that of the private school even though private schools are more than public schools. This can be attributed to their affordability due to the government policy on FCUBE⁹ and the Ghana School Feeding Programme (SFP).

Figure 5.7: Enrolment for 2019/2020 Academic Year for Basic Schools in the SPA



Source: LUSPA, 2020



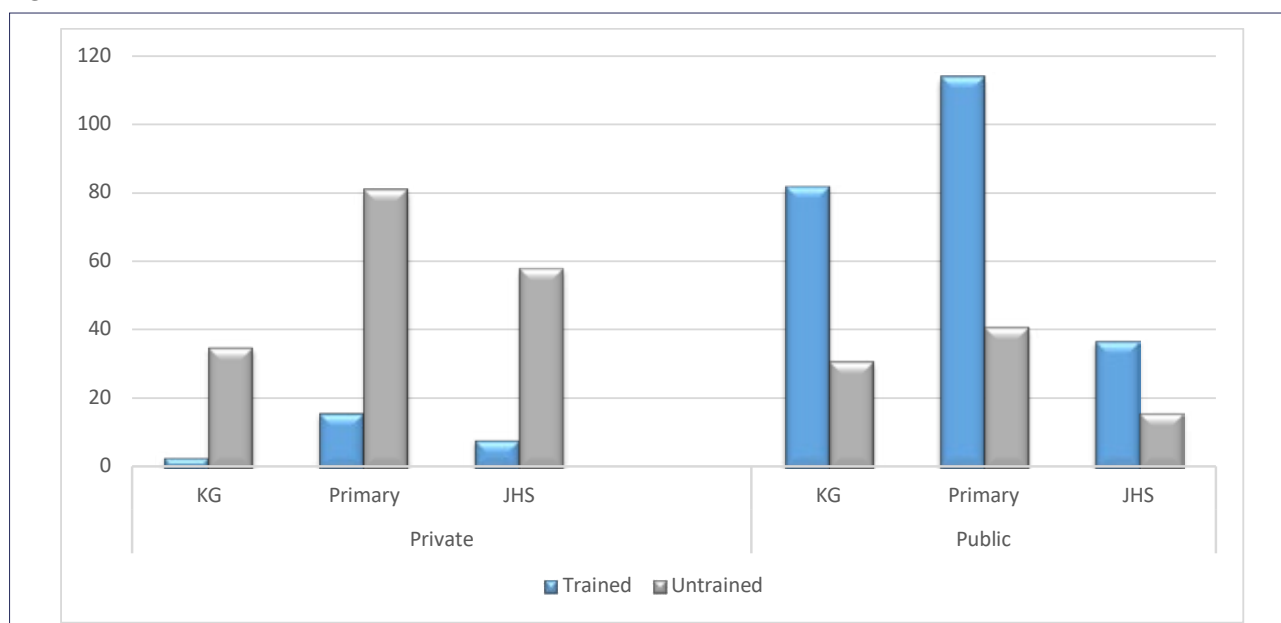
5.2.5 Staffing

The total number of teachers are five hundred and twenty-two (522) for both public and private schools. The proportion of teachers at the three levels in basic education is illustrated in Figure 5.8. It can be observed that the percentage of trained teachers in the private schools is low with only 13.4 % being trained. The situation is opposite for public schools where 73% of the teachers are trained.

5.2.6 Pupil Teacher Ratio

The Pupil Teacher Ratio (PTR) of KG, Primary and JHS are 19:1, 26:1 and 22:1 respectively for public schools. Comparing with the national targets (2019) of 35:1, 35:1 and 18:1 respectively, the PTR for JHS in the SPA is higher than the national target. This implies that there is the need to deploy more teachers especially trained ones, to the SPA for the JHS level.

Figure 5.8: Trained and Untrained Teachers in the SPA Area



Source: LUSPA based on Education Directorate, Jomoro Municipality, 2020

5.2.7 The Pupil-Classroom Ratio

The Pupil Classroom Ratio (PCR) for public KG, primary and JHS in the SPA are 43:1, 32:1 and 31:1 respectively for public schools. These figures are within the required range of the planning standard except for public JHS which is marginally below the minimum standard of 35 pupils per class.

5.2.8 School Infrastructure

In terms of school ICT infrastructure in the SPA, four (4) out of seventeen (17) public basic schools have fully equipped and functional ICT labs. This implies that the rest of the schools learn ICT abstractly with no practical's which affects their proficiency in ICT.

Good sanitation plays a critical role in the health of both pupils and teachers. As a requirement of the Ghana Education Service, KG, Primary'1 (single stream) are required to have 6-seater toilet (minimum). As indicated in the table 5.1 five (5) public schools have the basic minimum standard of a 6-seater toilet which represents 29.4 %. On the other hand, 41.2 % of the public schools have toilet facilities but do not meet the standard. The rest of the schools do not have

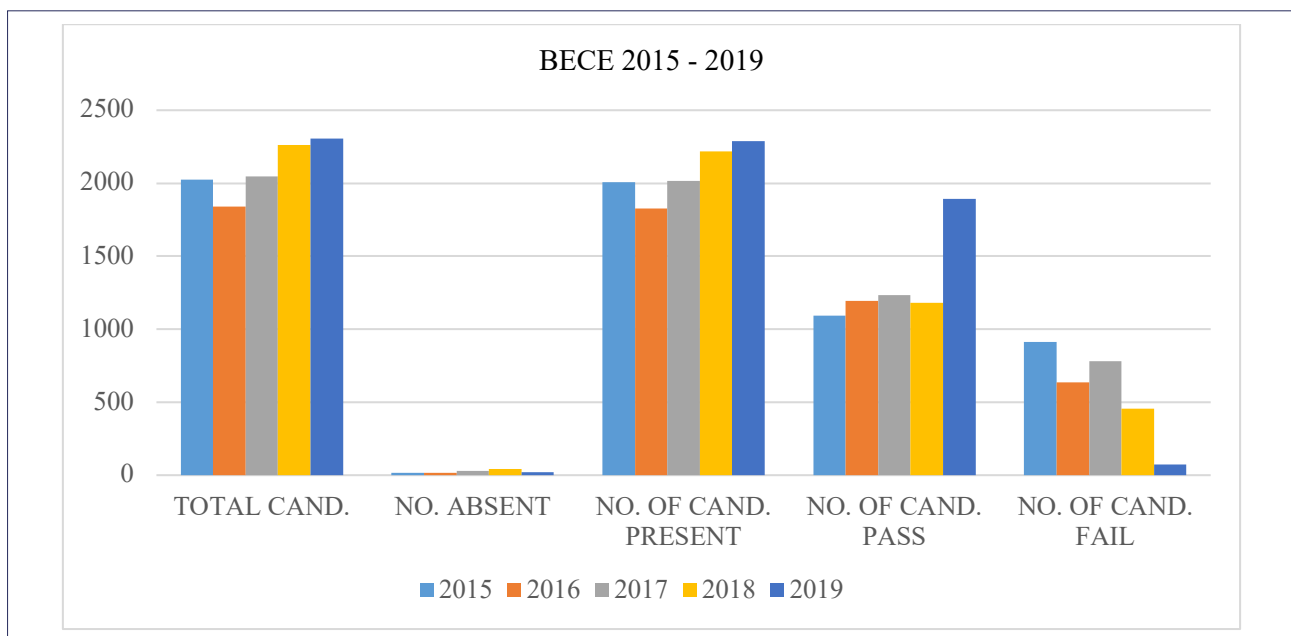


access to toilet facilities (29.4 %). Eleven schools (64.7 %) at the JHS level have access to toilet facilities. The number of schools that have access to water at KG & Primary, and JHS levels are thirteen (13) and ten (10) respectively.

5.2.9 School Performance

Basic education is expected to enable pupils to acquire skills in literacy, numeracy and creativity. These learning achievements are assessed at the basic level through Basic Education Certificate Examination (BECE). Figure 5.9 highlights the BECE performance of the SPA from 2015 to 2019. The percentage of pupils who passed have been increasing from 2015 to 2018 (i.e., 54 % to 63 %). However, in 2019, the percentage of candidates who wrote the BECE and passed increased to 82.7% as depicted in the figure 5.9. This increase was achieved through adequate preparation of the candidates. With increase in passes, there is also an indication of continuity in their education, as pupils will be able to continue their education by attending either a Technical or Vocational Institute, or a Senior High School.

Figure 5.9: BECE Performance within the Period 2015-2019



Source: Education Directorate, Jomoro Municipal Assembly, 2020.

5.2.10 On-going Project

- Construction of a JHS at Ellenda Wharf

5.2.11 Key Issues

The under listed are the key issues identified in the education sector primarily for the basic level thus KG, primary and JHS.

- Inadequate ICT laboratories in public basic schools (13 out of 17 public basic schools do not have ICT laboratories)
- No official teachers' accommodation in some communities, e.g. Allowule, Egbazo, Ehoaka, Ellenda Wharf, Ellenda, Twene, Kabenlansuazo to attract trained teachers.
- Inadequate trained teachers at the JHS level
- Inadequate toilet and water facilities in the basic schools

- Inadequate logistics and office space for administrative work for public basic schools
- Limited supervision by the circuit supervisors due to inadequate funding and logistics.

5.3 WATER AND SANITATION

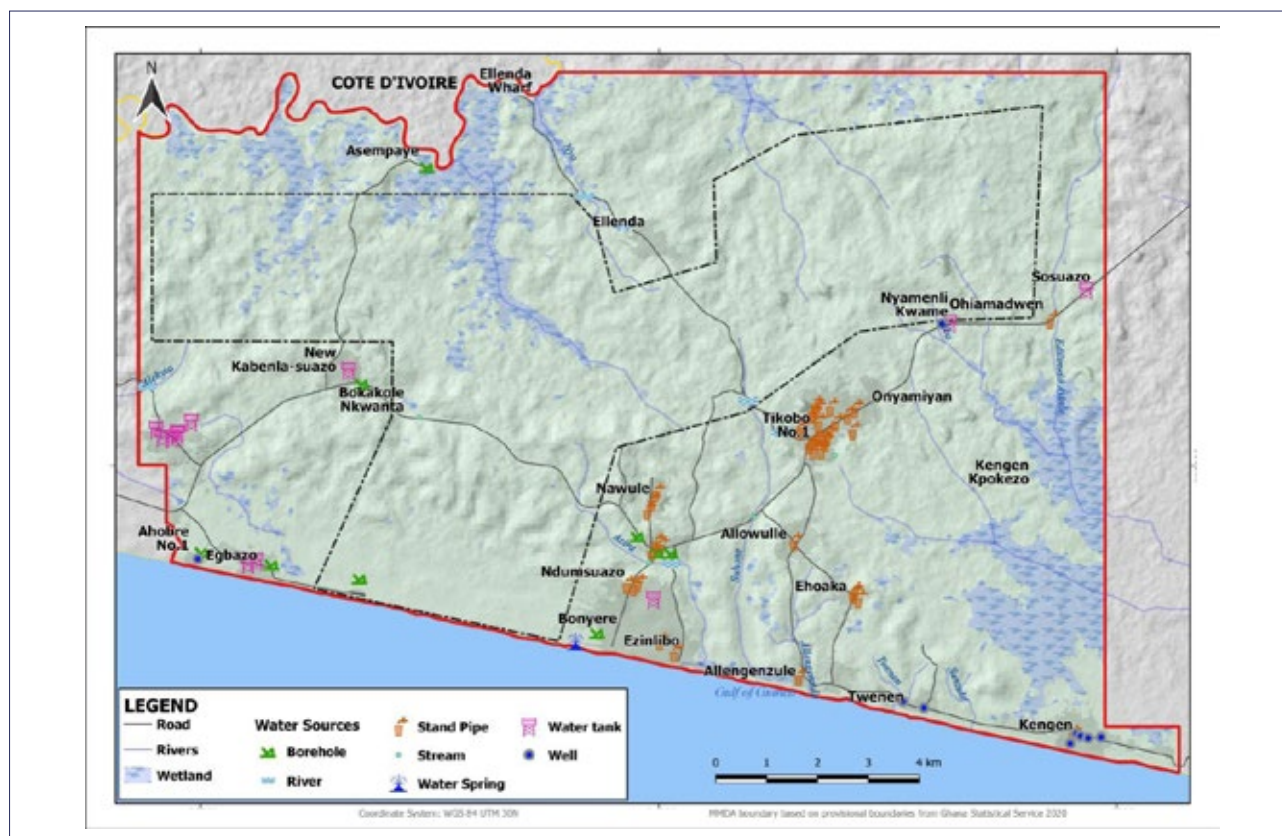
The Community Water and Sanitation Agency (CWSA) is under the Ministry of Sanitation and Water Resources and mandated with the responsibility for water supply to rural communities including small towns. Some of the policy objectives (MTEF 2019-2022) of the Ministry of Water Resources and Sanitation that guides its agencies in the MMDAs include:

- Increase the provision of household sanitation facilities
- Promote effective solid waste management at all levels
- Promote sustainable water resource development and management
- Accelerate the provision of adequate, safe and affordable water
- Implement health and hygiene education as a component of all water and sanitation programmes

5.3.1 Existing Situation on Water Supply

The available sources of water supply are small town water system, boreholes, wells and streams. Figure 5.10, displays the distribution of water supply sources within the Structure Plan Area.

Figure 5.10: Water Distribution in the Structure Plan Area



Source: LUSPA, 2020



5.3.2 Accessibility to Water Supply

In Tikobo No.1, which is an urban community, there is a small-town water system with a capacity of 120m³ that supplies the whole township. It also has four (4) bore holes, and one (1) mechanized with overhead tank. Additionally, there are twenty (20) public standpipes in the community. About 70 % of households use pipe-borne water while 30 % of household patronize public standpipes as a source of drinking water. With a population of 9824 (2020), the community is under served with water supply as the planning standard requires that at a threshold population of 5000, a maximum of one (1) 450m³ capacity of reservoir of water should be available.

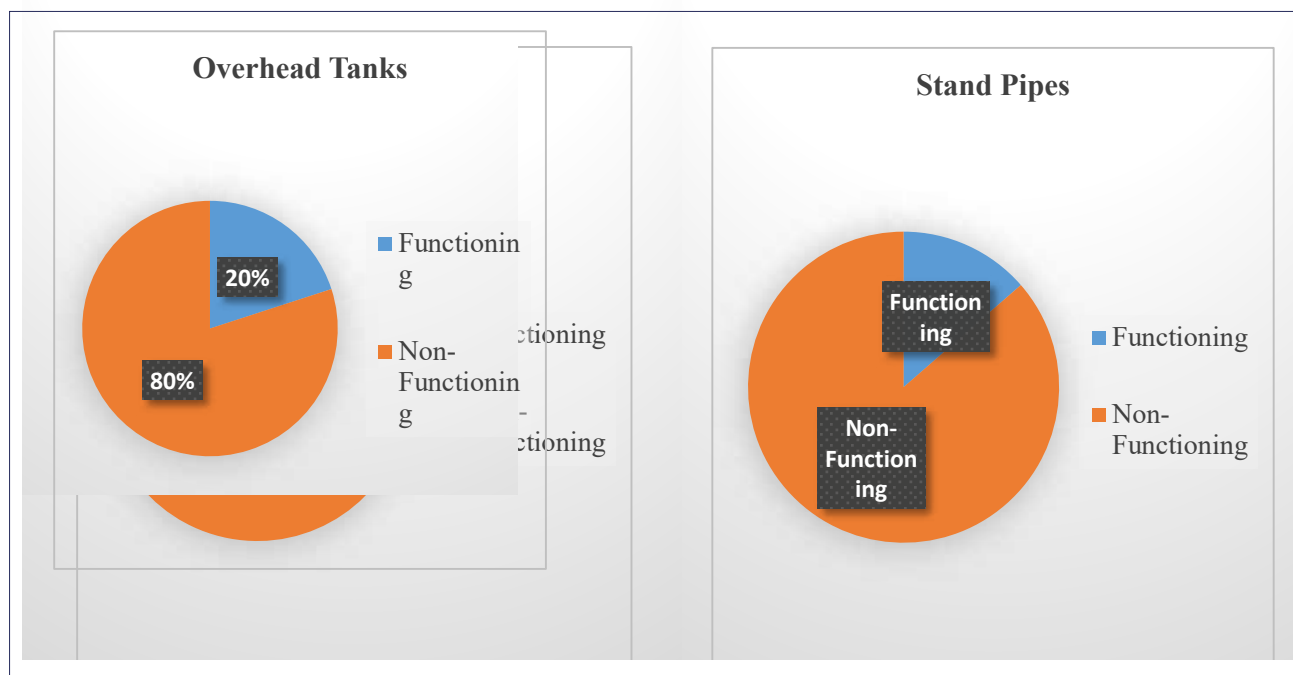
Takinta community on the other hand with a population of 5376 (2020) has four public overhead water tanks in the community. An estimated 60 % of households are connected to the overhead water tanks while, 40% of household patronize public standpipes as a source of drinking water in the community. Communities like Bonyere, Allowule and Ezilinbo share one small town water system.

Kengen, Twenen, Agyeza and Alengenzule were provided with small water town systems by Tullow Ghana Ltd as per their corporate social responsibility. However, according to the opinion leaders from these communities none of these are functioning because of the high cost of operation and maintenance. The rest of the settlements rely mostly on wells and boreholes. Access to water supply varies by community; however, none has attained full coverage.

5.3.3 Conditions of Water Facilities

It is important to note that not all of these water facilities are in good condition. Figure 5.11 depicts the conditions of the water facilities in the SPA. The analysis revealed that for overhead tanks, 80% are functioning while the remaining 20% are non-functioning. In the case of boreholes, 72% are functioning with 28% not functioning. On the other hand, 86.4% of standpipes in the communities are functioning with 13.6% not functioning.

Figure 5.11: Condition of Water Facilities



Source: Field Survey, LUSPA, 2020

5.3.4 Key Issues on Water Supply

Despite the importance of water, some sections of the communities in the SPA still lack access to improved drinking water sources. Some of the key issues identified in the field survey relate to the following;

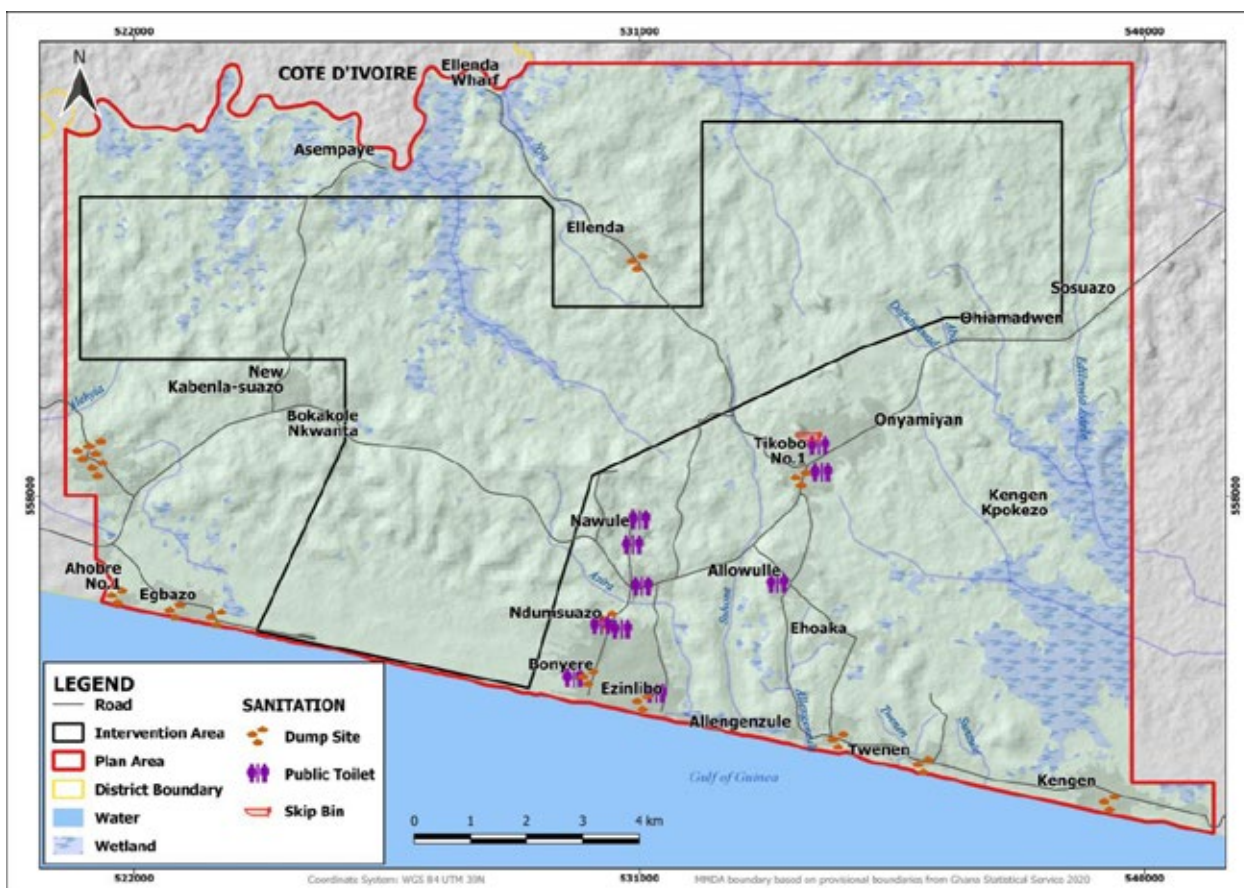
- Inadequate access to potable water
- Non-functioning and regular breakdown of some water facilities
- Poor management of the water facilities.
- Irregular flow of water supply (Water scarcity in some of the communities)
- Pollution of water bodies (River Tano) by the activities of illegal mining upstream

5.4 EXISTING SITUATION ON SANITATION (SOLID AND LIQUID WASTE SYSTEMS)

Sanitation is critical to health and development. Sanitation in this context covers both solid and liquid waste in the SPA. Basic sanitation is described as having access to facilities for the safe disposal of human waste, as well as having the ability to maintain hygienic conditions, through services such as waste collection, industrial/hazardous waste management, and wastewater treatment and disposal (WASH, 2017).

The modes of solid waste disposal within the SPA are crude disposal sites, skip bins, collection and burning. While most communities have crude disposal sites, only Tikobo No. 1 has one skip container. Also, collection and burning are practiced in most communities within the SPA. Figure 5.12 displays the solid and liquid waste disposal in the SPA.

Figure 5.12: Sanitation Map



Source: LUSPA, 2020



5.4.1 Liquid Waste

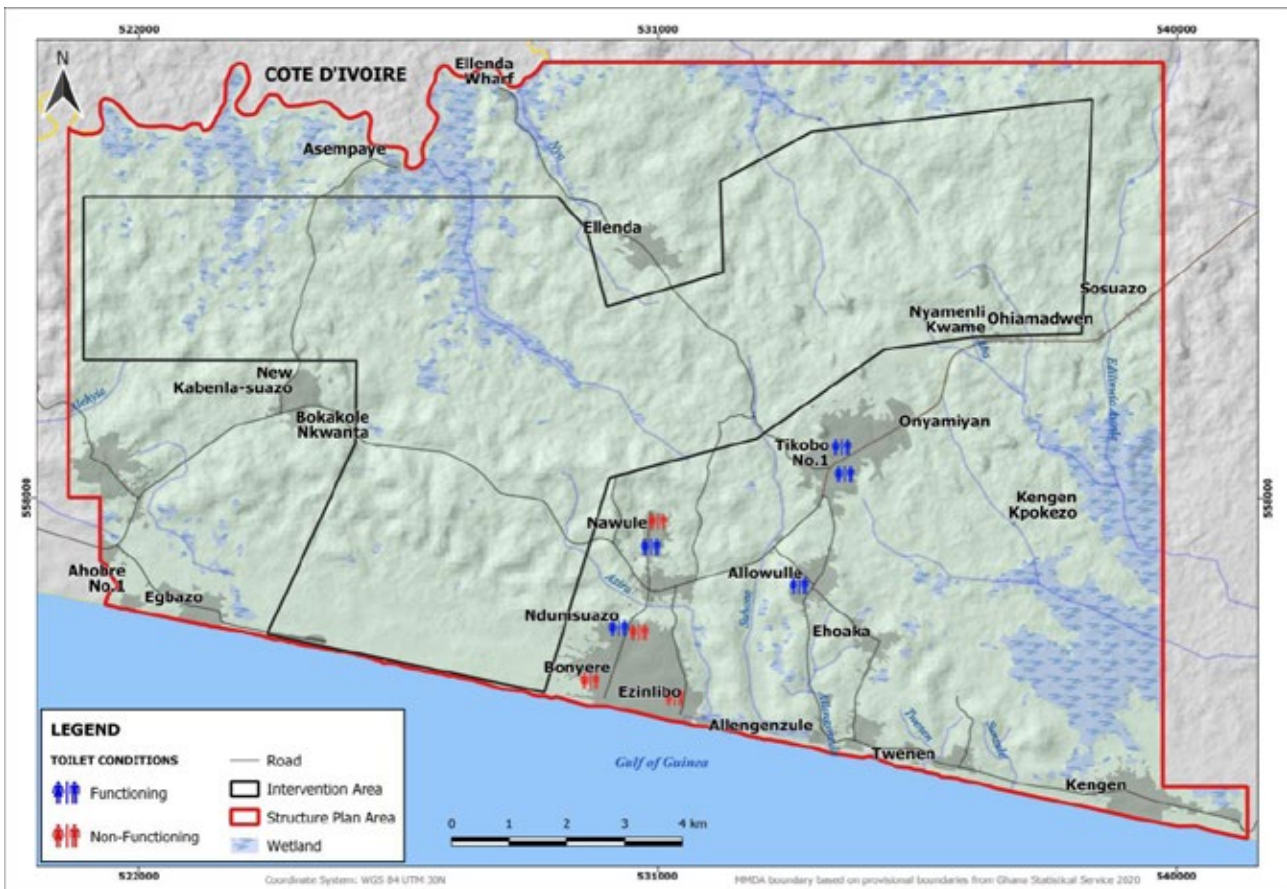
The liquid waste facilities within the SPA are public toilets, pit latrine, and household toilets. There are nine (9) public toilets within the SPA. The mode of liquid waste disposal is by open surface disposal. It is normally sprayed on large scale farms untreated. The Municipality has no cesspit tank emptier hence it employs the services of Zoomlion (a waste management company) in disposing off liquid waste. Open defecation is an issue within the SPA. Generally, in the rural communities there is no refuse collection or skip bin, and the locals indiscriminately dispose-off waste.

To improve the sanitation situation in the SPA, the national Agenda on “Toilet for All” programme under the Infrastructure for Poverty Eradication Programme (IPEP) can be exploited to benefit the SPA. Through this initiative, the private sector (with support from cooperate entities and NGOs) can invest in recycling and recovery plants, to sustainably address the menace of plastics waste. This is in line with the United Nations’ Sustainable Development Goal (SDG) target which anticipates that by 2030 everyone should have access to “adequate and equitable” sanitation.

5.4.2 Condition of Public Toilets in the Structure Plan Area

A number of the communities have access to public toilet facilities, however, 44% are not functioning. Figure 5.13 displays the location and condition of the Public Toilets in the Structure Plan Area.

Figure 5.13: Conditions of Public Toilets



Source: LUSPA, 2020



5.4.3 Ongoing Project

Construction of 4 No. public toilets in Takinta, New Kabenla-Suazo and Egbazo

5.4.4 Key issues on Sanitation

The key issues identified relate to the following;

- a. Lack of well-engineered disposal facility in the Municipality
- b. There is poor drainage leading to flooding in some communities
- c. Inadequate toilet facilities in educational and health facilities
- d. Limited access to household toilet facilities leading to open defecation
- e. Indiscriminate disposal of waste
- f. Limited Behavioural Change Communication (BCC) and education on sanitation
- g. Increase in the generation of waste due to population growth

5.5 INFORMATION AND COMMUNICATION TECHNOLOGY

5.5.1 Existing Conditions

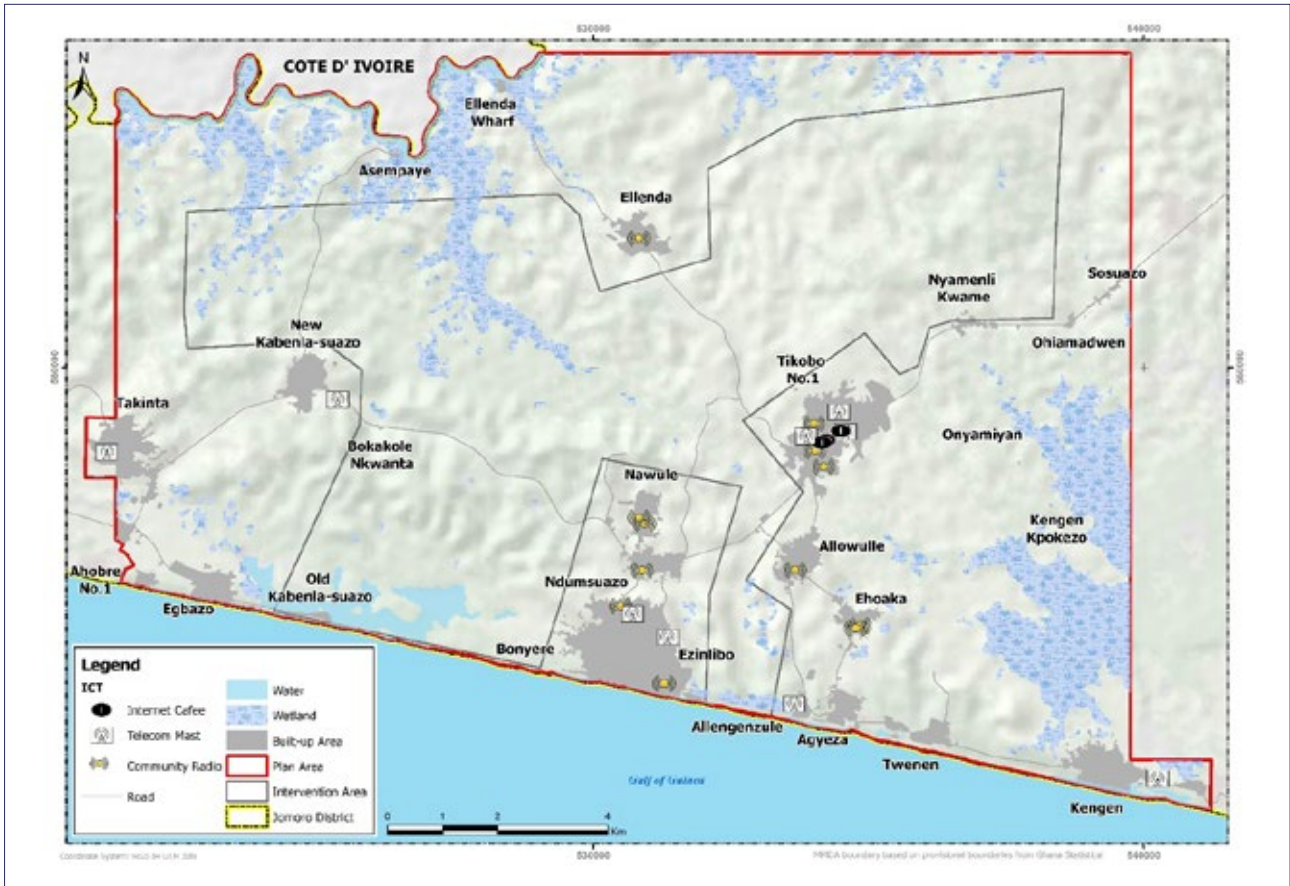
Information and Communication Technology (ICT) plays a significant role in promoting knowledge-based-information and technological advancement in society. There are currently eight telecom masts in the SPA which are located at Tikobo No. 1, Takinta, New Kabenlensuazo, Bonyere, Ndumsuazo, Allengenzulle, and Kengen. Generally mobile network connectivity is poor. However, communities such as Tikobo No.1, Takinta, Ezilinbo and Bonyere have relatively better mobile network connectivity due to the existence of telecommunication masts.

The use of internet by the population (especially 12 years and older) in the SPA is very low and it is the general situation in the Jomoro Municipality where only 2.8% of the population (12 years and older) have access to internet services (GSS, 2012). However, there are 4 internet cafes in the SPA which are located at Tikobo 1 (2), Takinta (1) and Ezinlibo (1). These commercial internet facilities are helping in the usage of internet. The application of ICT technologies for educational purposes is a challenge in the SPA. Most of the schools only teach theories on ICT, the application and practical aspect of it is lacking because most schools do not have access to ICT laboratories and equipment.

Household ownership of both desktop and laptop computers is extremely low (3%) in the Municipality. In terms of communal information dissemination in the SPA, 91% (21 out of the 23) established settlements have community information centres (community radio points) which facilitates the flow of information in the SPA.



Figure 5.14: Information and Communication Technology Facility Map



Source: LUSPA Field Survey, 2020

Figure 5.15: Communication Facilities in the SPA

An Internet Café at Tikobo No.1

A Telecommunication Mast at Ezinlibo





A Community Radio at Allowule

A Community Radio in Tikobo No. 1

5.5.2 Key Issues

- Poor mobile network connectivity
- Absence of community levels ICT facilities
- Inadequate ICT facilities in educational facilities

5.6 CIVIC AND CULTURE

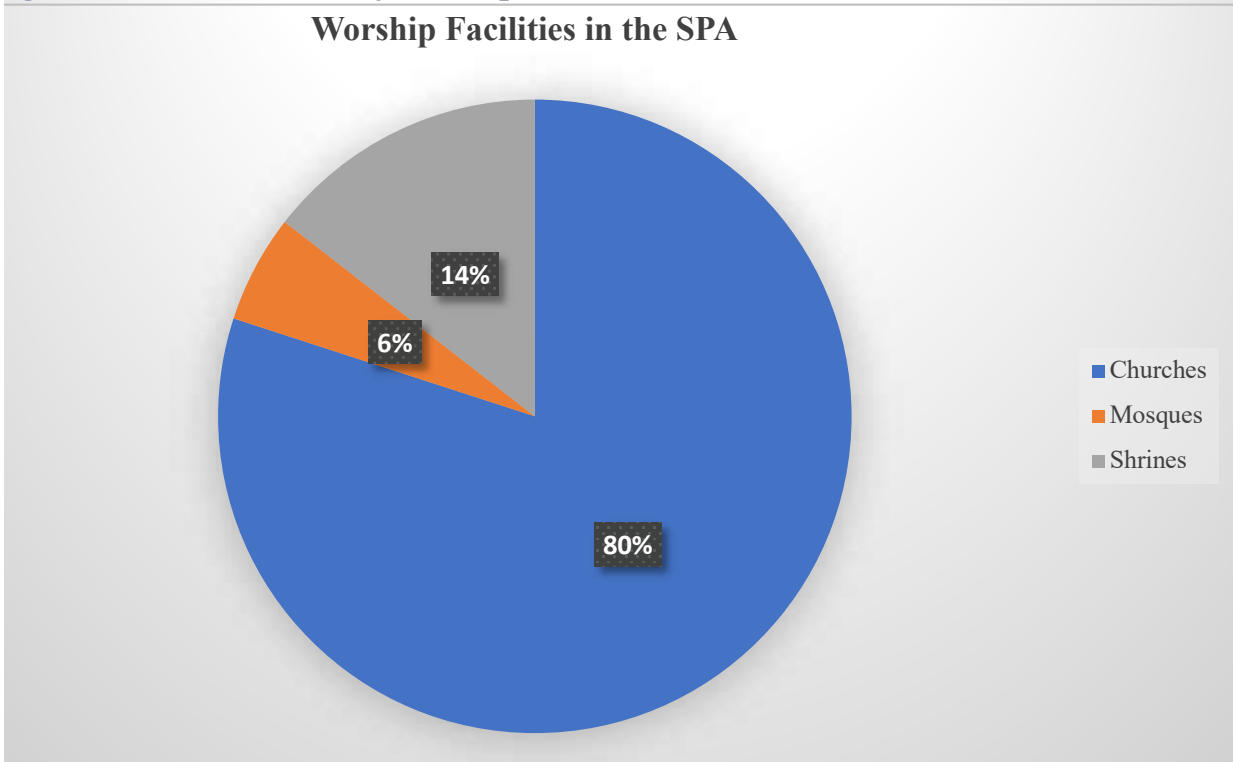
5.6.1 Existing Conditions

Half Assini is the administrative capital of the Jomoro Municipal Assembly hence, most government institutions and facilities are located there. There are few civic facilities in the SPA that relate to administrative functions such as government institutions. There is a post office in Tikobo No. 1 which is the commercial hub of the Jomoro Municipality and the SPA. The Post Office is currently not being used because of its precarious state. There is a Police Station at Tikobo No. 1, Police Post at Bonyere and a Customs Post at Ellenda Wharf. These security installations in the SPA are in relatively bad conditions and thus affect security in the SPA.

There are other civic facilities in the SPA for religious and cultural functions. At present, churches constitute 80% (116 out of 145) of worship facilities in the SPA as shown in Figure 5.15. This compares with that of the municipality (84%) (GSS, 2012). Mosques and Shrines constitutes 6% and 14% respectively.

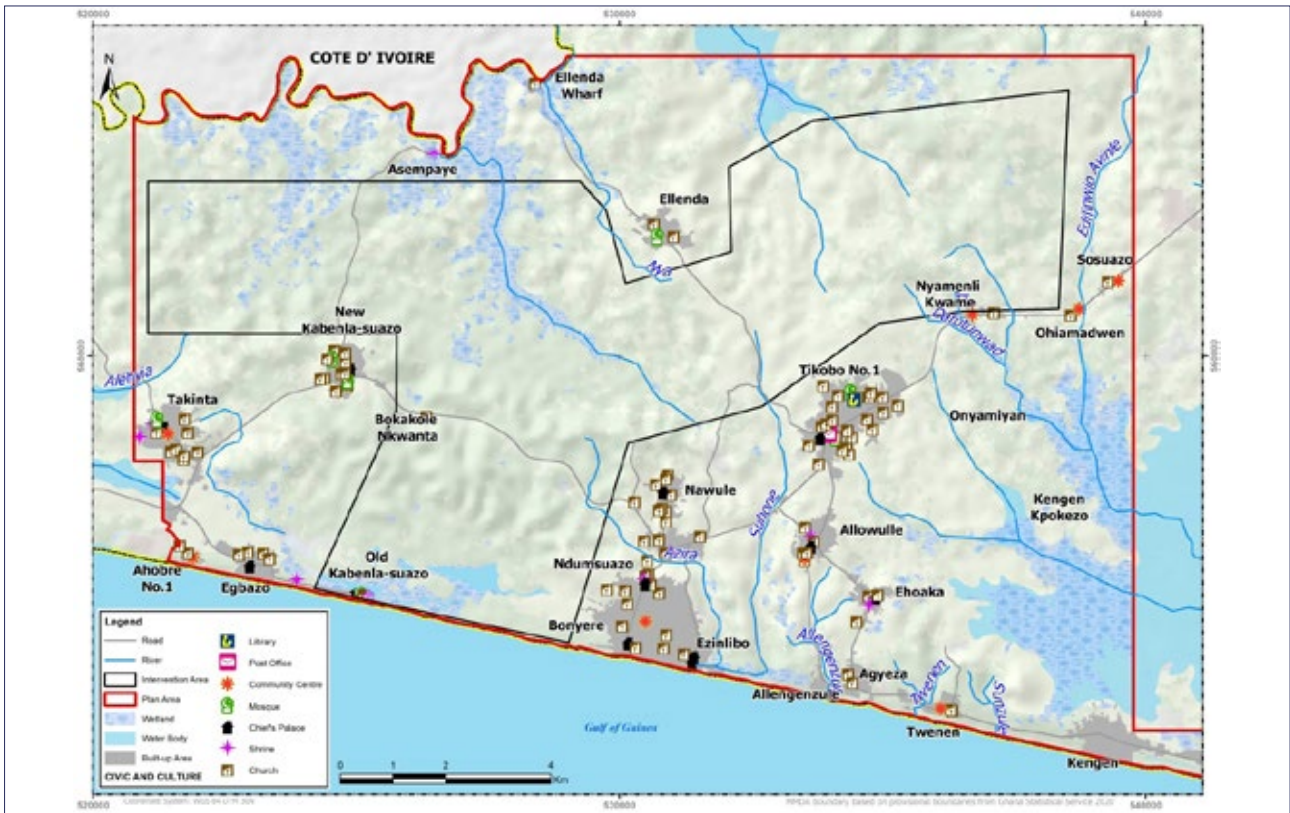


Fig



Source: LUSPA Field Survey, 2020

Figure 5.17: Civic and Cultural Facilities in the SPA



Source: LUSPA, 2020

Figure 5.18: Pictorial View of Civic and Culture Facilities in the SPA



Existing Library at Tikobo No.1



Existing Police Post at Bonyere



Existing Church at Ehoaka



Existing Shrine at Allowulle

Source: LUSPA, 2020

5.6.2 Key Issues

- Non-functioning important civic facilities such as post office and library in the SPA
- Lack of Durbar Grounds for civic activities

5.7 SPORTS, RECREATION AND OPEN SPACES

5.7.1 Existing Conditions

At present, the outlook of sport and recreational activities in the SPA is similar to the entire Jomoro Municipality where football and swimming account for the predominant sports and recreational activities. The major sports and recreational facilities in the SPA are parks which are either grassed or bare as well as beaches which are underdeveloped. The beaches in the SPA are similar to the rest of the beaches in the coastal areas of the Jomoro Municipality which are clean and sandy. They are very suitable for recreation and the hospitality industry.

At present, 22% (5 out of 23) of the established settlements in the SPA have existing parks for sports and recreational activities as shown in Figure 5.17. The existing schools in the SPA with parks are also being used for sports and recreational purposes because of the inadequacy in sports and recreational facilities. There are ongoing plans by the Jomoro Municipal Assembly to upgrade the existing Tikobo No. 1 Park into an Astro Turf to boost sports and recreational facilities in the SPA.

Most of the cemeteries within the SPA are located close to the communities (16 out of 23). This was more of a cultural preservation issue where people want to feel close to their departed relatives. The coastal communities have their cemeteries located at the beaches and this will affect the use of beaches as recreational areas. The possible relocation of these cemeteries will require extensive stakeholder engagements and negotiations.

Figure 5.19: Pictorial View of Parks and Beaches within the SPA

An Existing Grassed Park at Ndumsuazo



An Existing Grassed Park at Tikobo No.1



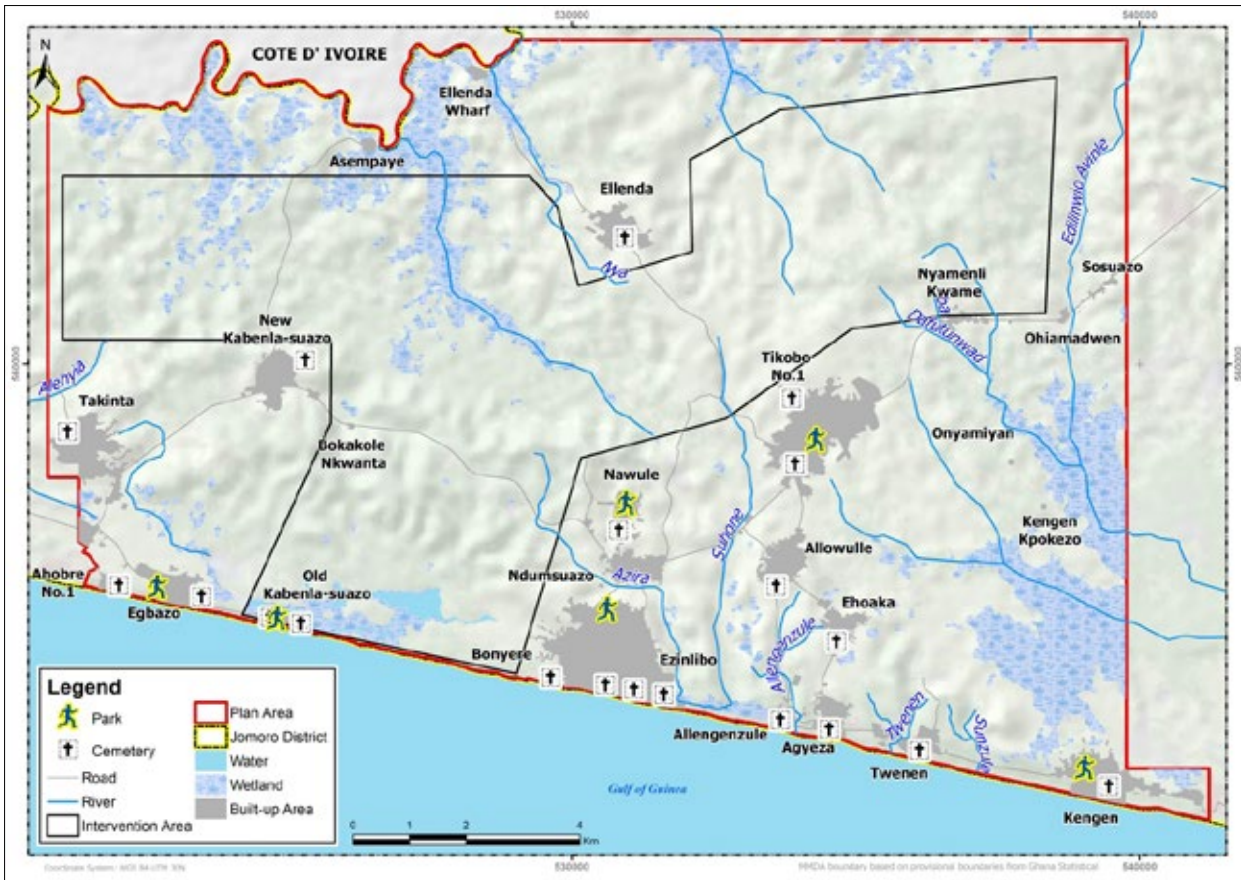
Clean Sandy Beach at Kengen



Clean Beach at Ezilinbo



Figure 5.20: Sports and Recreational Facilities in the SPA



Source: LUSPA, 2020

5.7.2 Key Findings

- Lack of local sports facilities in 18 out of the 23 settlements in the SPA
- Underdeveloped existing sports and recreational facilities in the SPA
- The location of cemeteries and dump sites along the shore in the SPA
- The sandy beaches in the SPA are suitable for recreation and the hospitality industry
- Beaches in the SPA and the Jomoro Municipality are favourable nesting habitat for marine turtles which are of global conservation interest

5.8 SAFETY AND SECURITY

5.8.1 Existing Conditions

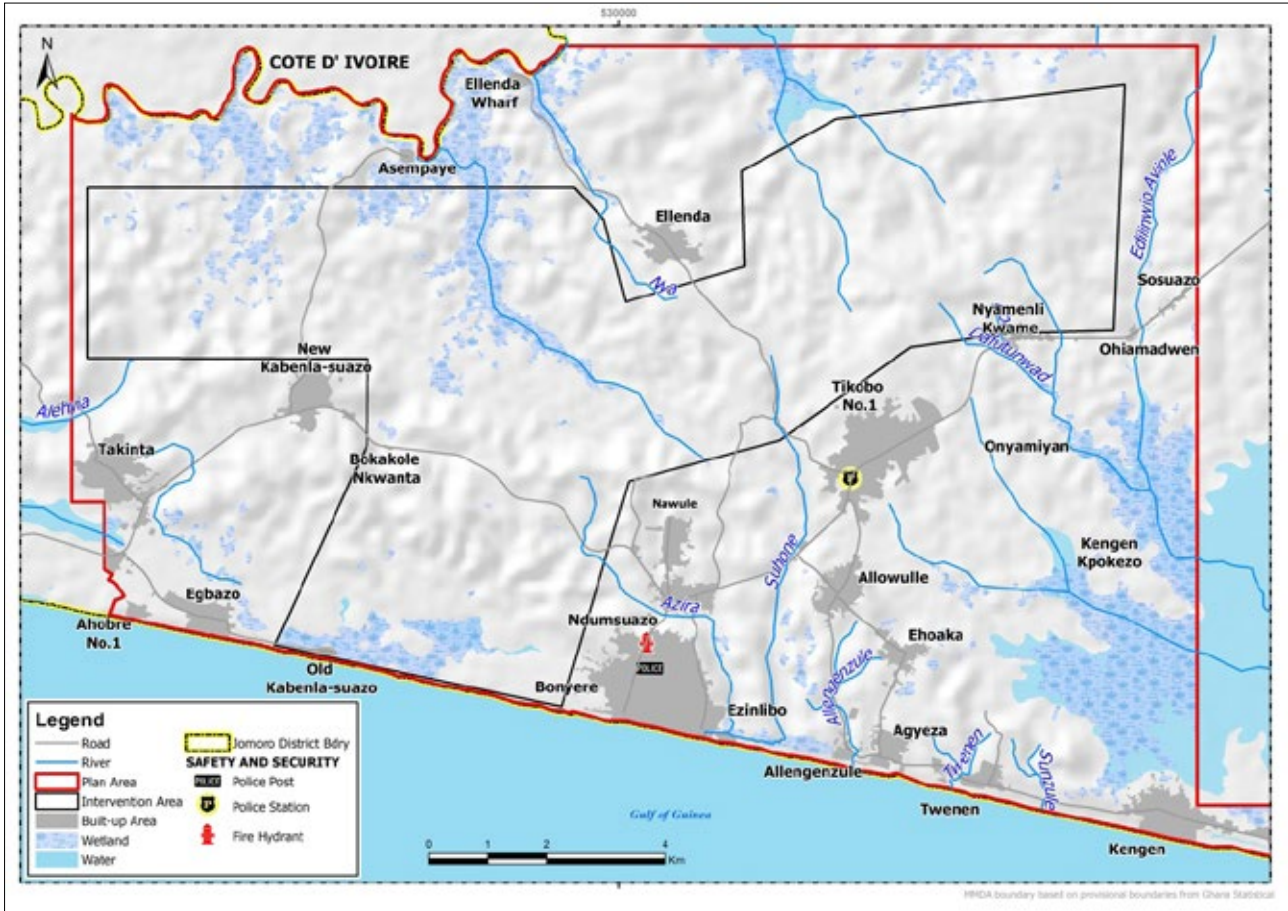
The major crime reported in the SPA is coconut theft. The other minor crimes include motorbike theft, assault and chieftaincy related violence, with Bonyere being the hotspot for chieftaincy disputes. There is a police station and police post in Tikobo No.1 and Bonyere respectively. The police undertake patrol exercises at communities with no police posts. On the other hand, all the communities have neighbourhood watches to provide additional security in the SPA. Figure 5.18 displays the location of organizations responsible for safety and security within the SPA.

Ghana Immigration Service has surveillance posts at Newtown and Ellenda Wharf respectively to ensure security at the borders. Furthermore, due to the threats on maritime security along the Gulf of Guinea and increased pirate attacks on vessels (16 incidents recorded in 2017 and



46 in 2018), the Ghana Navy is establishing a new FOB within the SPA in addition to the two (2) posts at Jewy Wharf and Newtown in the Municipality. Their roles include inspecting activities of light fishing and smuggling of arms and weapons, and riverine patrols, mobile and foot patrols along the coast including the coastal areas of the SPA.

Figure 5.21: Safety and Security Map



Source: LUSPA, 2020

5.8.2 Key Issues

- Inadequate office space for Security Personnel in the SPA
- Inadequate of accommodation for Security Personnel in the SPA
- Inadequate personnel, logistics, accommodation and incentives affect the effective delivery of safety and security services in the SPA.
- Marine surveillance through the establishment of the FOB in the SPA will consolidate security of investment and development in the Ghana Petroleum Hub enclave



CHAPTER SIX

HOUSING, ENERGY AND TRANSPORTATION

6.0 INTRODUCTION

The sector deliberates on housing typologies, materials for construction and roofing, and general housing conditions. It further discusses and explains the relationships with housing densities, and highlights key issues of the sector within the SPA.

Energy in terms of sources for cooking and lighting, electricity connectivity and infrastructure and implications for SPA are also discussed in this chapter. The Gas sector is enumerated in terms of future projects and implications it has for the SPA.

Road transport which is the dominant form of transport is deliberated in terms of the existing conditions. The other modes of transports as well as its relationship with road conditions is analysed. Water transport though limited is also discussed within the context of SPA. Finally, key issues for housing, energy and transport are summarized at the end of the chapter.

6.1 EXISTING CONDITIONS ON HOUSING

Traditional compound house is the predominant housing type within the SPA constituting about 76.96%. Bonyere is an exception as it has 60% of its housing stock being detached. The reason for this high number of detached houses in Bonyere is because a significant portion of the population are returnees⁰ and thus their desire for such types of housing within the community. Rural settlements are characterised by communal dwelling, that is, a large family with sub family units living together in one house. The more urbanized an area, the more detached units observed. This culture of living as one family has influenced the housing typology in the SPA. In effect, family-owned housing units account for 71.09%, self-owned 21.74% and rented houses 7.17%.

In terms of materials for housing, about 48.7% of the housing is constructed with sandcrete, raffia palm 17.17%, mud houses 29.35% and landcrete 4.78%. The use of sandcrete and aluminium is common in relatively urbanised settlements like Tikobo No1 and Bonyere. Relatively rural settlements like Ohiamadwen and Nyamenli Kwame use mud and thatch for building and roofing respectively because of the availability and accessibility of these materials as shown in Plate 4.



Figure 6.1: Mud Houses with in Nyamenli Kwame

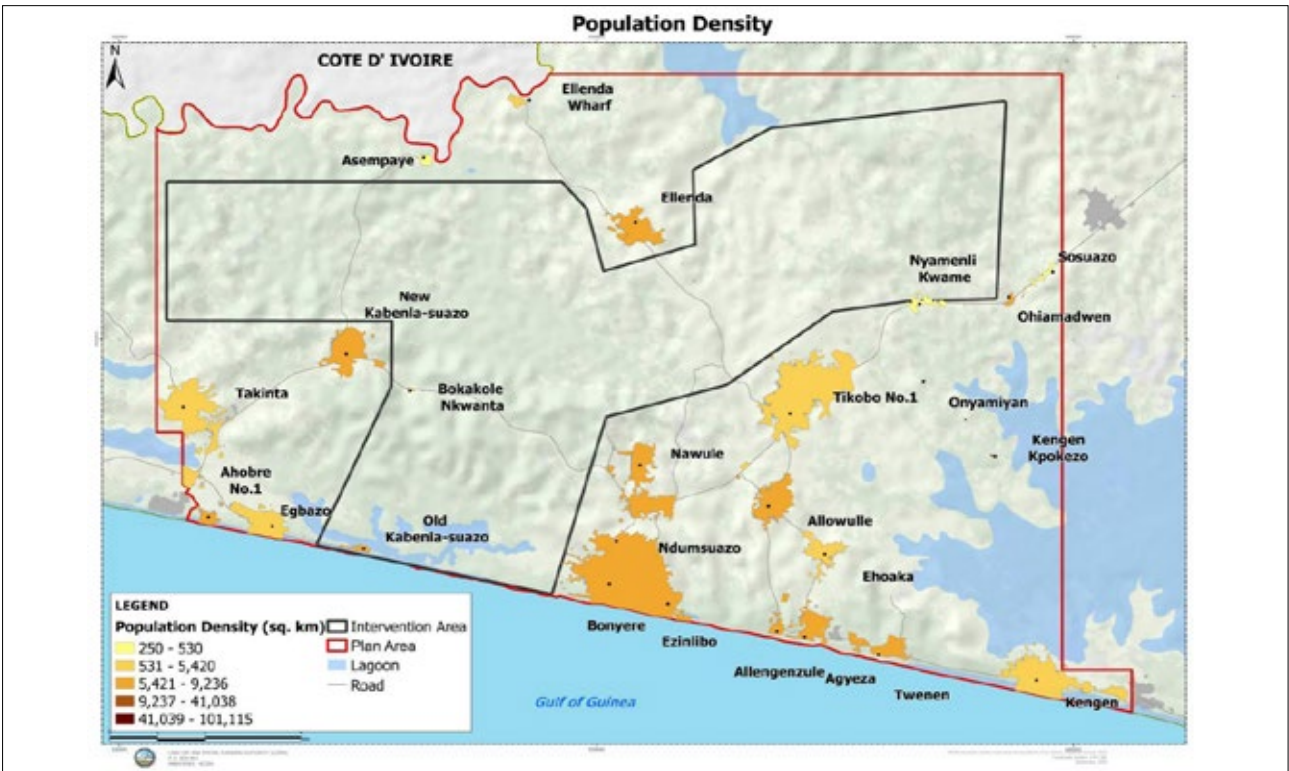


Source: LUSPA, 2020

Also, some of these rural settlements such Nyameli Kwame and Ohiamadwen act as dormitory settlements for residents from urban settlements like Tikobo No 1 where people temporarily settle to farm. Consequently, permanent structures are not constructed.

Generally, the housing densities in the various settlements are low. This is primarily due to the rural nature as well as the predominant compound houses in the SPA. In figure 6.1, settlements like Ehoaka, Old Kabenla-Suazo, Ahobre No.1, Sosuazo have the highest housing densities in the SPA. This emanates from their relatively smaller development footprint. On the contrary, the most urbanised settlements like Tikobo No.1 and Ndumsuazo are characterised by a low number of compound houses.

Figure 6.2: Housing Densities in SPA



Source: LUSPA, 2020

The major housing problem in the SPA is inadequate sanitary facilities and poor drainage systems. There is only one skip bin located in Tikobo No1 in the whole SPA for solid waste collection. Therefore, residents generally dump waste indiscriminately. Plate 5 shows photos of insanitary conditions from unorganised solid waste collection within the SPA.

Efforts at implementing house-to house waste collection by the Municipality was ineffective due to low patronage resulting from high costs. Also, the low housing densities within the SPA could be attributed to the low patronage of house-to house waste collection.

Figure 6.3: Indiscriminate Refuse Disposal



Source: LUSPA, 2020

6.2 KEY ISSUES

- The anticipated increase in population due to the establishment of the Petroleum Hub will stress the housing stock.
- Inadequate housing sanitary facilities
- Poor quality of housing in rural communities
- Indiscriminate disposal of waste within communities

6.3 ENERGY FOR LIGHTING

The SPA has 84% coverage of electricity as compared to 70.9% for the district. Communities such as Asempaye, Bokakole Nkwanta, Onyamiyan and Kengen Kpokezo are not connected to the national grid representing 16%). Figure 6.2 shows the electricity connectivity within the SPA.

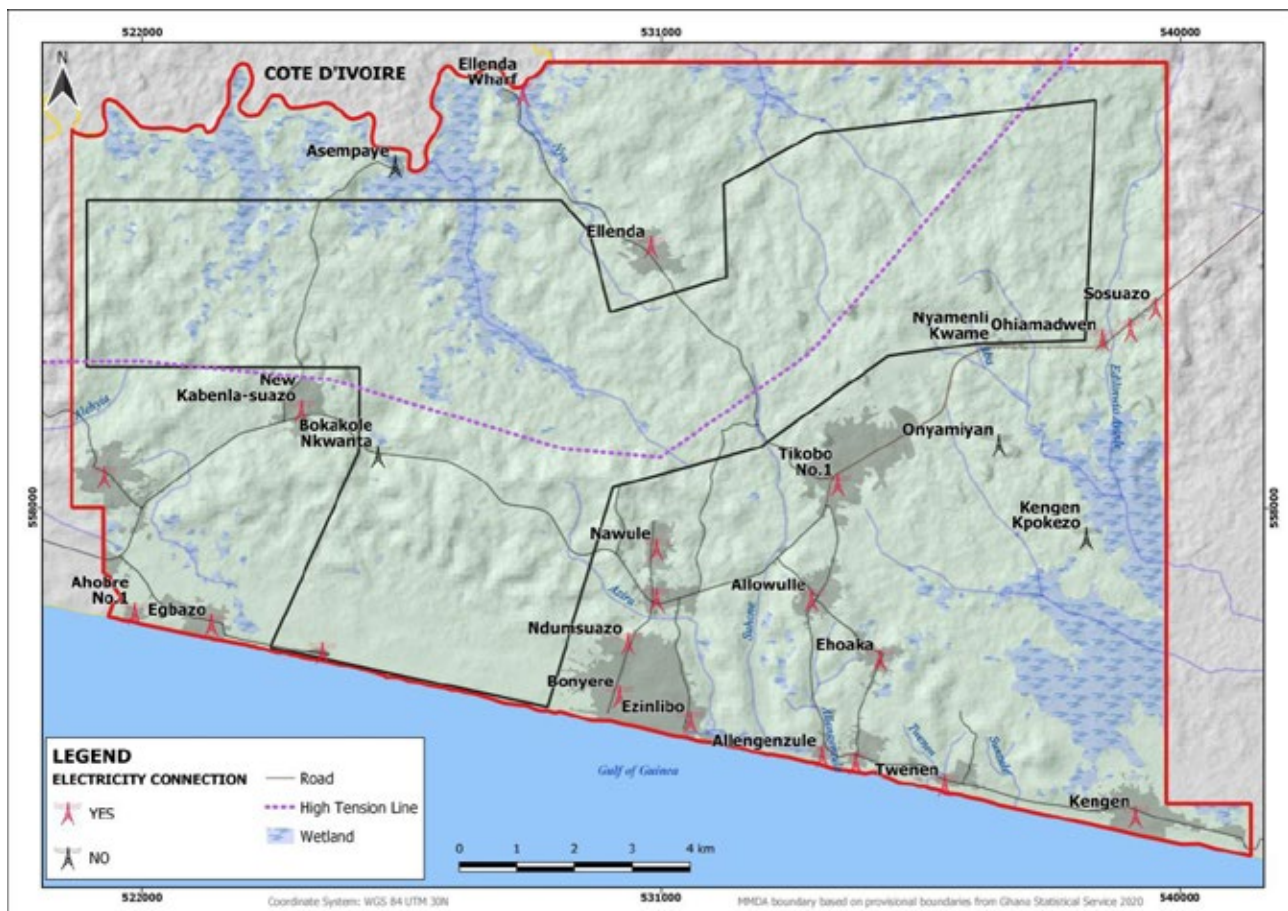
The challenge with electricity for lighting has to do with limited infrastructure for expansion resulting in low voltage and power interruptions/fluctuations. For example, the Esima

substation which supplies electricity to the SPA uses a single radial system instead of a ring system and therefore power cannot be alternated when there is a malfunction. The presence of tall coconut trees as well as human activities such as lumbering, chainsaw operations and clearing of farms also disrupt power supply when trees fall on power lines and poles.

Electricity Company of Ghana (ECG) intends to achieve 100% electricity coverage within the municipality. It also seeks to ensure the following measures;

- i. Injunction: introducing more transformers into the system.
- ii. Extension: extending electricity supply to new areas within a community.
- iii. Intensification: Intensify the installation capacities of existing transformers.

Figure 6.4: Electricity Connectivity in the SPA



Source: LUSPA, 2020

6.3.1 Opportunities of Energy for Lighting:

- Existence of Atuabo Gas plant for electricity within the Municipality could be used to generate electricity.
- The bulk supply points expected to be constructed at Elubo will boost the electricity supply within the Jomoro municipality.

6.4 ENERGY FOR COOKING

The most dominant form of energy for cooking is fuel wood comprising firewood (79.22%) and charcoal (11.91%) with a small number (8.87%) using LPG. This is consistent with the Municipal data on energy for cooking where a majority rely on firewood (36.1%), electricity (24%), charcoal (13.4%)

and LPG (4%). The common use of firewood and charcoal for cooking can be attributed to ease of access and affordability. There are three LPG stations in the Municipality out of which one is located at Ezinlibo Junction in the SPA. Some households benefited from the government Rural LPG programme which was launched in 2013. The programme’s overarching goal is to increase LPG access to 50% by 2020 (Poku-Asante et al, 2018). Cost and distance to access LPG were some of the reasons for low LPG usage after implementation of the programme (ibid: 2018). Within the SPA, access to LPG and affordability accounts for the continuous use of fuelwood for cooking. Currently identified opportunities for fuel wood is coconut husk which can be processed into charcoal for cooking.

6.5 GAS

Ghana Gas plans to establish a gas pipeline which is likely to pass through some communities within the SPA. The project is currently at the front-end engineering design stage and the closest communities to the pipelines include Ndumsuaso, Ehoaka, Kengen, Allowule, and Allengenzule. The Gas line is connected from Atuabo (where the plant is located in close proximity to those areas). There will be the siting of a Valve station/ hub where industries can access gas in these proposed sites;

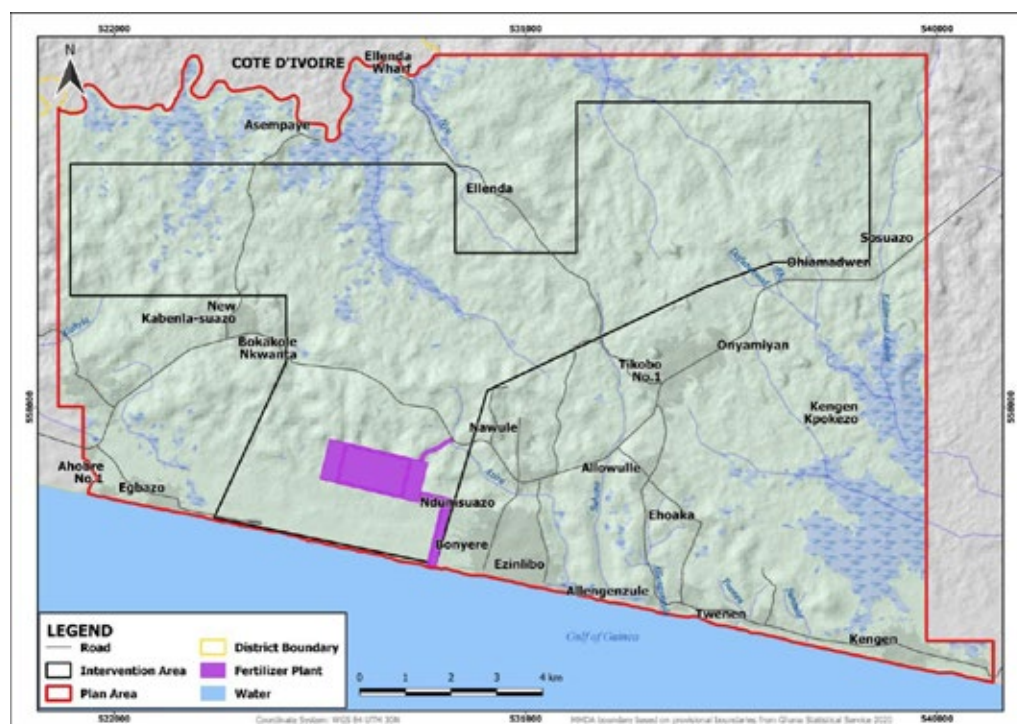
- i. the western side of Bonyere,
- ii. South East of new Kabenlasuaso, or Bokakole Nkwanta,
- iii. South West of Egbazo and Ahobre.

The line will then traverse the hub through to Singapore.

The Gas pipeline is mainly to supply gas to Ivory Coast.

Ghana Gas also plans to locate a fertilizer plant of approximately 605 acres within the Intervention Area. This is shown in Figure 6.3. Ghana Gas indicated that the fertilizer plant is complementary to the Petroleum Hub infrastructure and therefore provision should be made for it.

Figure 6.5: Proposed Area of Ghana Fertilizer Plant



Source: LUSPA based on Ghana Gas Proposed Fertilizer Site Plan, 2020

6.6 KEY ISSUES FOR ENERGY

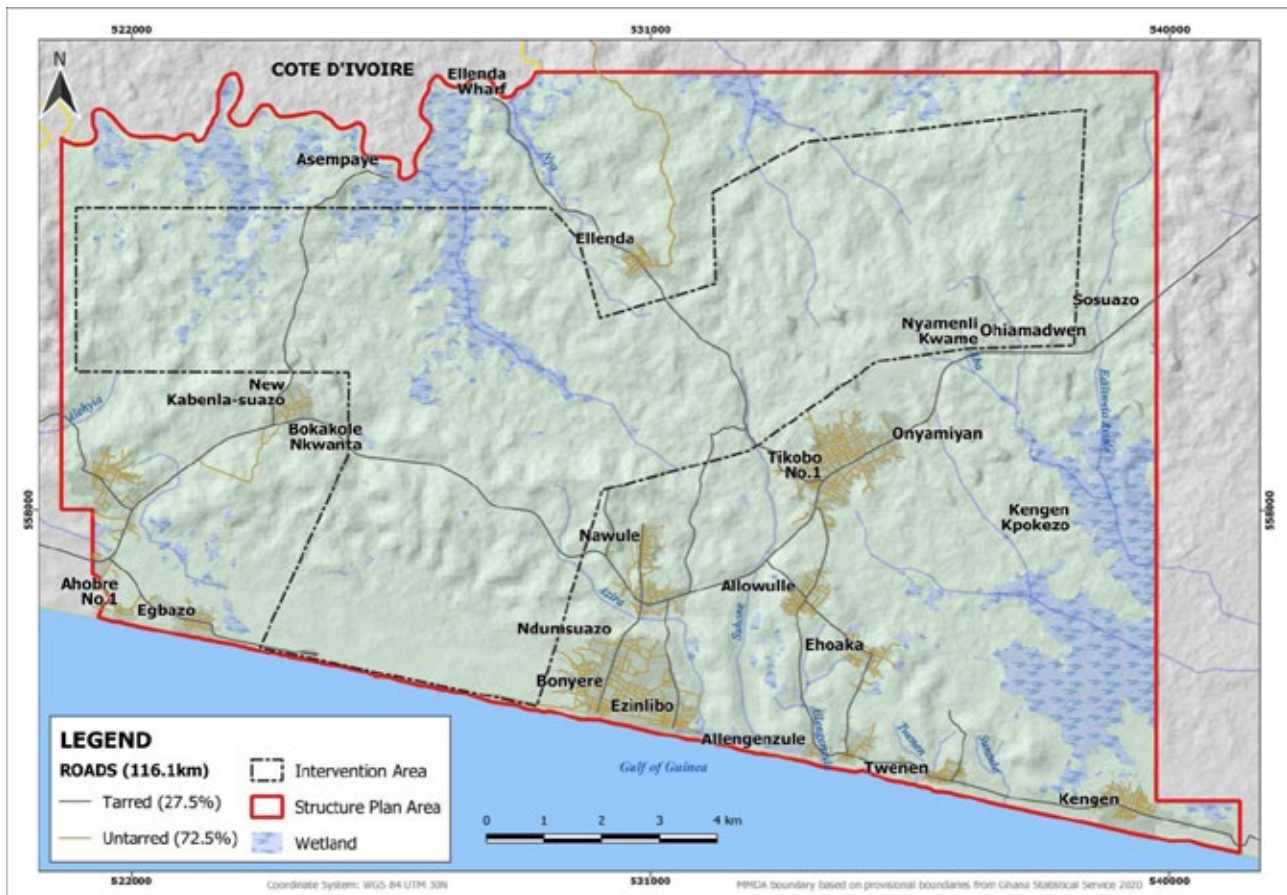
- Extensive electricity connectivity in the SPA despite inadequate infrastructure resulting in power fluctuations and interruptions.
- Fuel wood is the main source of energy for cooking.
- Alternative energy sources such as coconut husks exist for use as charcoal for cooking as LPG is still limited in supply in the SPA.
- Ghana Gas project presents opportunities for some communities in the SPA to benefit from CSR as well as availability of gas for cooking and lighting.
- Chieftaincy dispute in Bonyere area is likely to affect Ghana Gas project and could have effects on the Petroleum Hub Project if not properly managed.

6.7 TRANSPORTATION

6.7.1 Existing conditions

The modes of transport within the SPA are road and water transport. The SPA is dominated by road transport, all of which are feeder roads. These feeder roads can broadly be categorized into tarred and untarred feeder roads with 60.6 km (27.5%) being tarred and 159.6km (72.5%) untarred as depicted in Figure 6.4. The tarred feeder roads are linked to almost all major settlements within the SPA while the untarred roads network is mostly within the settlements as shown in Figure 6.4.

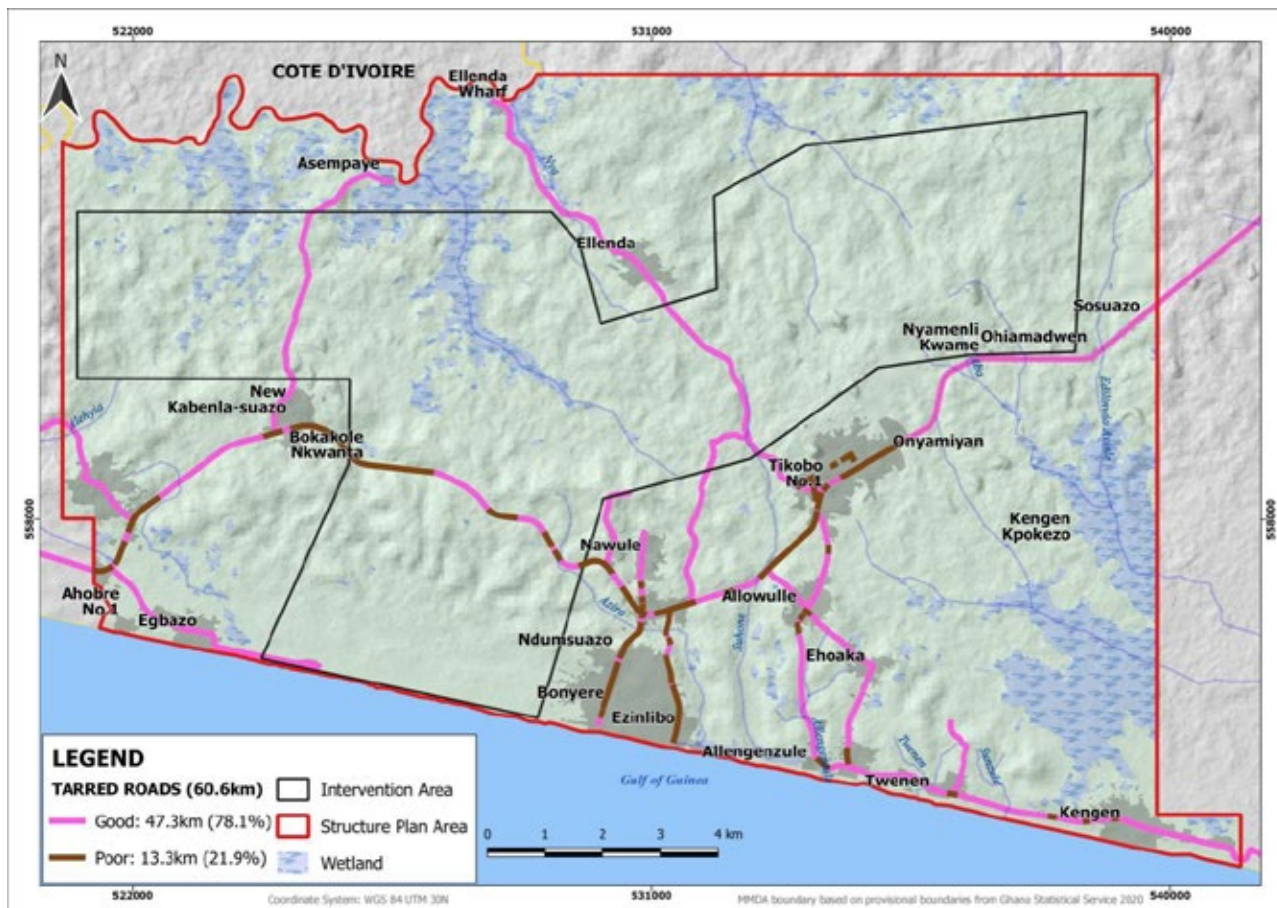
Figure 6.6: Network of Tarred and Untarred roads in SPA



Source: LUSPA, 2020

These untarred feeder roads are largely in bad condition with many littered with potholes and portions of the road shoulders eroded. Majority of the roads in the northern parts of the Municipality become unmotorable especially in the rainy season. Evidently, about 41 % of these feeder roads within the Municipality are unmotorable (USDF, 2018-2021). The tarred roads (51%) have developed potholes with shoulders of the roads mostly eroded as depicted in Figure 6.5.

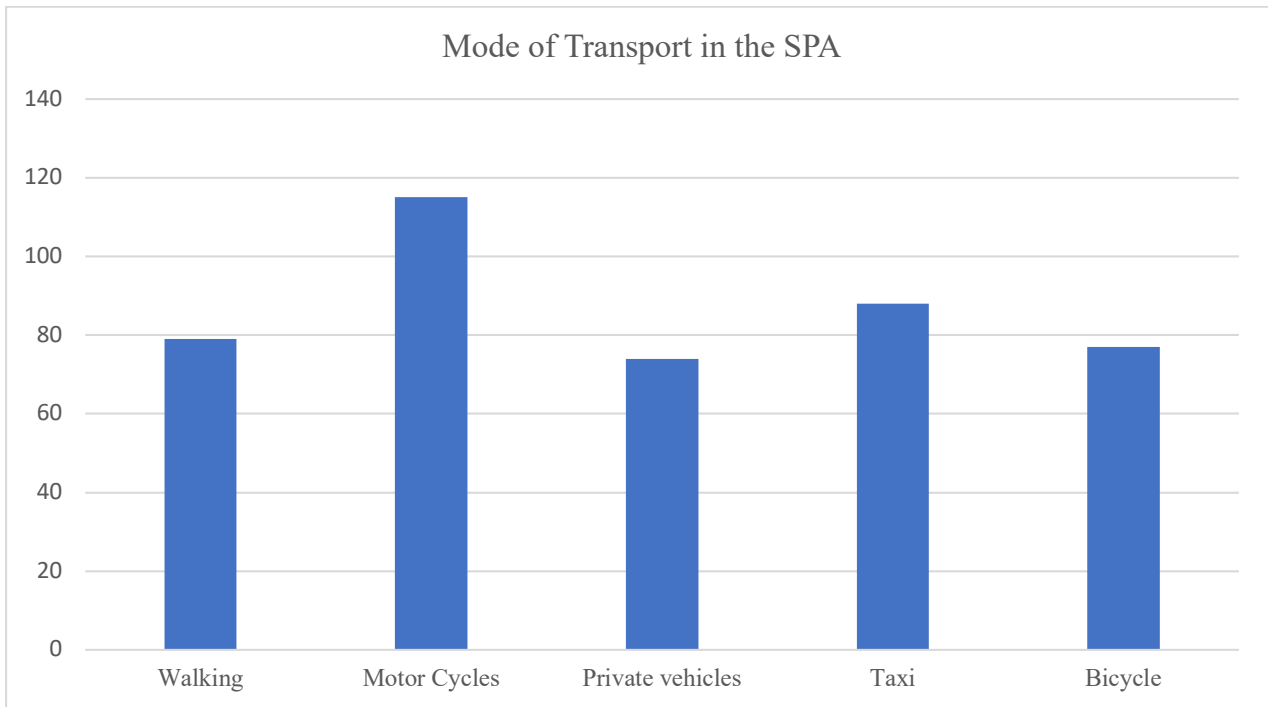
Figure 6.7: Road Condition Map for Tarred Feeder Roads in SPA



Source: LUSPA , 2020

Means of Transport

Given the unmotorable nature of roads in the SPA, the commonest means of transport adopted by commuters is the use of motor cycles. From observation, the use of taxis are recorded second with over 80%, while the use of private vehicles is lowest as shown in Figure 6.6. Stakeholders revealed that motorbikes are largely involved in accidents partly due to the poor condition of roads.



Source: LUSPA, 2020

The condition of roads and means of transport show that majority of the areas within the SPA are poorly linked to higher order services like health facilities and markets. For example, the use of taxis is higher in an urban settlement like Tikobo No 1 which has a motorable road and markets, police station, health facilities, etc. However, rural settlements like Asempaye, Ohiamadwen and Nyamenli Kwame largely use motorcycles on poor and unmotorable roads to access basic services. This has resulted in an “unbalanced distribution of services and functions” where spatial development shows pockets of moderately developed areas surrounded by largely deprived rural settlements (JSDF, 2011).

The SPA is drained by the Tano River, Abbey and Amazule wetlands and can be generally described as having undeveloped water transport system. Settlements such as Asempaye and Ellenda Wharf are located along the Tano River which is also the boundary between Ghana and Cote D’Ivoire. The residents of these communities use small canoes and boats, some of which are fitted with outboard motors for water transport. Figure 6 shows some canoes used for water transport.

Figure 6.9: Private Canoes at the Tano River in Asempaye



Source: LUSPA, 2020

6.7.2 Key Issues

- The major challenge to transportation in the SPA is the poor condition of roads, as large portions/sections become unmotorable in the rainy season. This in turn affects transportation costs of goods and services as well as limits the easy access to schools and health services from rural communities to urban centres such as Tikobo No 1.

The water transport system is currently undeveloped.



6.8 SUMMARY OF KEY ISSUES AND FINDINGS

The key issues and major findings in the SPA drawn from the situational analysis are summarised in Table 6.1

Thematic Area	Key issues and Findings
Natural Environment	<ul style="list-style-type: none"> The presence of the Domunli lagoon with species such as Monkeys and dwarf Crocodiles can be harnessed for tourism activities. Coastal erosion and flooding threaten the livelihoods of artisanal coastal settlements such as fishing and coconut farming in the SPA Coastal vulnerability to climate-related hazards such as sea-level rise and shoreline erosion in the coastal settlements in the SPA threatens coastal nesting habitats for marine turtles and the hospitality industry
Population Dynamics and Settlement Growth	<ul style="list-style-type: none"> There exist a young and active population in the plan area High dependency ratio of 86 Sparse distribution of settlements Increasing population and urbanization
Economy	<ul style="list-style-type: none"> The employment structure of the economy shows the share of Services and Primary Sector are almost equal while the industrial sector has the least share. This structure is however not too different from the Regional Sector. The services sector is dominated by the wholesale, retail and repair of vehicles (motorcycles etc). A detailed segregated analysis shows that petty trading dominates this sub-sector though it has the least income earning values in the services sector. The industrial sector is dominated by the manufacturing sector which is largely coconut processing related. The manufacturing sub-sector is threatened by the sky-rocketing demand of coconut fruit from Nigeria which is likely to disrupt the agro-processing value chain in the SPA and the Jomoro Municipality in general. The relatively old dry coconut which is used for coconut oil production among others are reducing tremendously in supply. Tikobo No. 1 is the most economically vibrant centre in the SPA as it hosts the high-end services and industrial sector workers and firms. In addition, it is the most economically diverse as it has variety of service and industrial sector firms which cannot be found in the other urban centres.
Housing	<ul style="list-style-type: none"> Population influx and the propensity for informal settlement development within the Ghana Petroleum Hub enclave Poor quality of existing housing stock Insanitary Housing Conditions in most rural and urban communities



Thematic Area	Key issues and Findings
Social Services	<ul style="list-style-type: none"> • Inadequate logistics (medical supplies) to effectively deliver quality health care • Seasonal increase (fishing season) in the population due to migration puts pressure on the health facilities • OPD attendance decreases when there are limited drugs at the hospital • Inadequate health personnel. • Some of the communities such as Allengenzule do not have access to Health facilities in their area • Indiscriminate disposal of waste is posing as a public health issue in the community • Bad condition of health facilities and staff quarters in some communities • Appropriate staff mix • Inadequate health infrastructure in the health facilities • Absence of ambulance stations in the Structure Plan Area • Lack of ICT laboratories in 13 out of 17 public basic schools • Lack of accommodation for teachers in some communities, e.g. Allowule, Egbazo, Ehoaka, Ellenda Wharf, Ellenda, Twene, Kabenlansuazo. • Inadequate trained teachers at the JHS level • Inadequate toilet and water facilities in the basic schools. • Inadequate logistics and office space for administrative work • Lack of supervision by the circuit supervisors due to inadequate funding and motorbikes. • Inadequate access to potable water • Nonfunctioning regular breakdown of some water facilities • Lack of management of the water facilities. • Irregular flow of water supply (Water scarcity in some of the communities) • Pollution of water bodies (River Tano) by the activities of illegal mining upstream • Lack of well-engineered disposal facility • There is poor drainage in the community due to its hilly nature • Encroachment of land earmarked for dumping sites • Inadequate toilet facilities in institutions like educational and health facilities • Limited access to household toilet facilities • Indiscriminate disposal of waste • High rate of open defecation in some of the communities • Limited behavioral change, communication and education on sanitation • Increase in the generation of waste due to increasing population in urban areas and market centers • Poor mobile network connectivity in most of the rural communities • Low access to computers in the SPA • Low internet patronage in the SPA • Non-functioning important civic facilities such as post office and library in the SPA • Lack of Durbar Grounds cultural activities • Peaceful co-existence of religious groups in the SPA fosters a stable environment for investment • Lack of local sports facilities in 18 out of the 23 settlements in the SPA • Underdeveloped existing sports and recreational facilities in the SPA • The presence of cemeteries along the beaches in the SPA • The clean and sandy beaches in the SPA are suitable for recreation and the hospitality industry • Beaches in the SPA and the Jomoro Municipality are favourable nesting habitat for marine turtles which are of global conservation interest • Inadequate office space for Security Personnel in the SPA • Lack of accommodation for Security Personnel in the SPA • Inadequate personnel, logistics, accommodation and incentives has affected the effective delivery of safety and security services in the SPA. • Marine surveillance through the establishment of the FOB in the SPA will consolidate security of investment and development in the Ghana Petroleum Hub enclave



Thematic Area	Key issues and Findings
Energy and Transportation	<ul style="list-style-type: none"> • Extensive electricity connectivity in the SPA despite inadequate infrastructure resulting in power fluctuations and interruptions. • Fuelwood is the main source of energy for cooking resulting in the gradual depletion of rainforest. • Alternative energy sources such as coconut husks exist for use as charcoal for cooking as LPG is still limited in supply in the SPA. • Ghana gas project presents opportunities for some communities in the SPA to benefit from CSR as well as availability of gas for cooking and lighting. However, the project could lead to loss of livelihoods, resettlement and compensation. • Chieftaincy disputes in Bonyere area likely to affect Ghana gas project and could have effects on the Petroleum Hub Project if not properly managed. • The greatest challenge to transportation in the SPA is the poor condition of roads with large parts becoming unmotorable in the rainy season. This in turn affects transportation costs of goods and services as well as limits the quick access to schools and health services from rural communities to urban centres like Tikobo No 1. • The transport system within this predominantly rural SPA is geared towards vehicular traffic at the expense of other modes of transport like motorcycles, bicycles and walking. • Underdeveloped water transport system.

6.9 CONCLUSION

A summary of the existing situation in the SPA and Jomoro Municipality as a whole has been presented in this report. Details on the natural environment, population dynamics and settlement growth, economy, social services, housing, energy and transport have been collected and carefully analysed. This sets the tone for further development of proposals and development options that seek to achieve the aim of ensuring effective distribution of infrastructure within the petroleum hub as well promote sustainable livelihood within the SPA.

