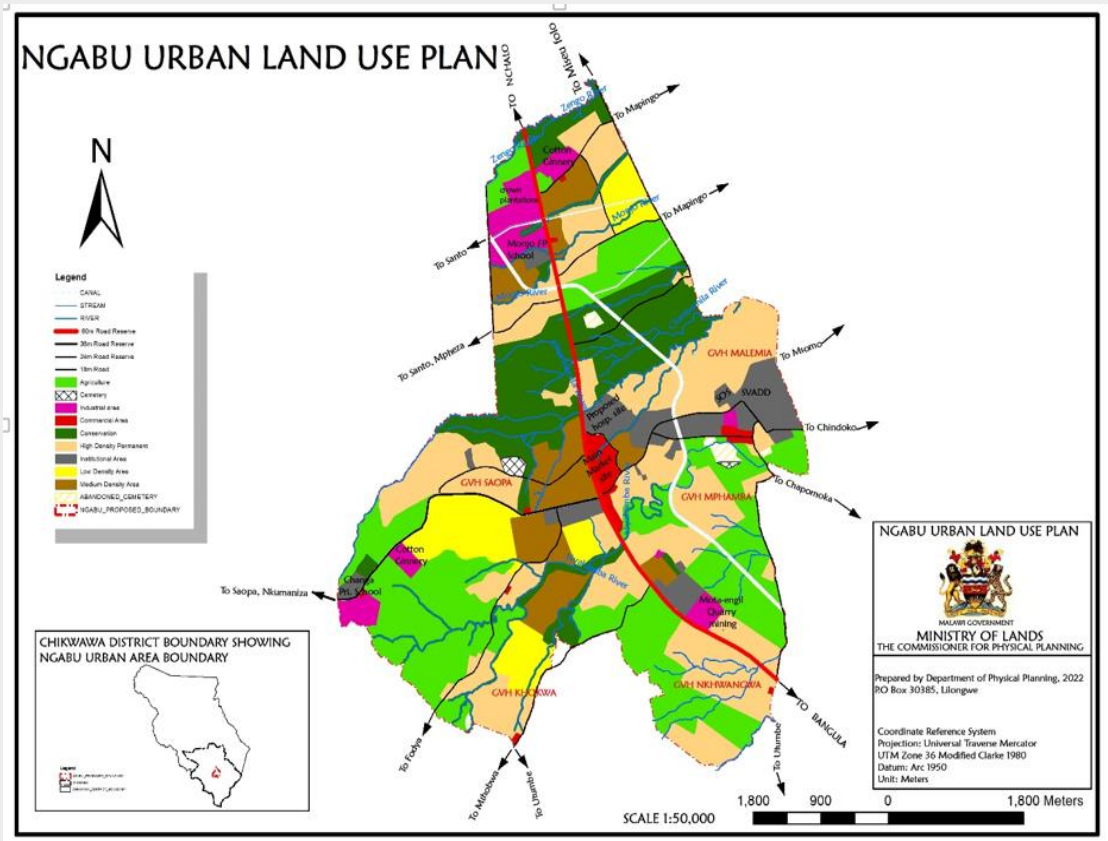
GOVERNMENT OF MALAWI

NGABU URBAN STRUCTURE PLAN



April, 2024

CHIKWAWA DISTRICT COUNCIL

FOREWORD

Urbanisation is one of the three pillars of "Malawi Vision 2063" which aims at creating an inclusively wealthy and self-reliant industrialized upper-middle income country by the year 2063. Government realises that urban centres are critical for the economy. They provide jobs, markets and efficient land use. Well planned urban centres promote efficient use of resources that create more sustainable land use and protect the biodiversity of natural ecosystems.

The preparation of this Plan is a step towards a well-planned Ngabu Main Market Centre. The Plan puts forward proposals and strategies, which once implemented will address some of the major challenges being encountered at Ngabu Main Market Centre in particular and Chikwawa District in general including inadequate and poor drainage system and poor management of the drainage network; environmental degradation; weak resilience to climate change, disasters risks and shocks; poor road network and impassable roads particularly during rainy seasons; shortage of land and encroachment into public land, road reserves and river banks; inadequate housing; and inadequate access to banking services and limited economic opportunities.

A participatory approach was adopted in the preparation of this Plan. The Plan was informed by the Chikwawa District Socio-Economic Profile and Chikwawa District Physical Development Plan among other documents. Additionally, relevant existing Government of Malawi policies were reviewed and provided guidance on the process and content. Government Ministries and Departments at Ngabu Main Market Centre and Chikwawa Boma, Non-Governmental Organisations (NGOs), the civil society, the private sector, religious organisations and Chikwawa District Council structures including the District Executive Committee, Traditional Leaders, Area Development Committees, Village Development Committees and Customary Land Committees provided their input towards the preparation of the Plan. Lastly but not the least, and in accordance with Section 23 of the Physical Planning Act (2016), a draft Plan was deposited at Ngabu Main Market Centre for a period of 30 days. During this period the substance of the draft Plan was made known throughout the Main Market Centre for the purpose of bringing it to the attention of the people residing or working at the Main Market Centre as well as soliciting representations, comments and recommendations.

Chikwawa District Council would like to place on record its heart-felt gratitude to the Physical Planning Department (PPD) and the Ministry of Lands for the tremendous effort made in preparing the Plan. Special mention go to the World Bank funded Shire Valley Transformation Programme (SVTP) under the Ministry of Agriculture for financial and logistical support. The District Council is also indebted to various institutions and the general public for their valuable contributions and cooperation during the preparation of the Plan.

It is my hope that this Plan will be translated from paper commitment to implementation so that Ngabu Main Market Centre can develop in an orderly, efficient, progressive, environmentally

sound and sustainable manner. Coordination and commitment of all stakeholders is key to the implementation of the Plan.

Councillor Wyson Bushi
Chairman
Chikwawa District Council

EXECUTIVE SUMMARY

Ngabu Urban Structure Plan has been prepared under the land reform programme activities which among others, intended to assist in piloting and implementation of new land laws. This Plan is a revision of the Urban Structure Plan which was prepared in 1997. The Plan seeks to provide a comprehensive guide for orderly and coordinated physical development of land at Ngabu Main Market Centre. The Plan has been prepared to achieve the following objectives: -

- To create and maintain an urban environment which ensures that physical, economic and social development is orderly, coordinated and of high quality,
- To ensure that physical developments take place only on land that is likely to be least affected in case of natural disasters such as floods,
- To create and maintain an urban environment which ensures provision of adequate and suitable social services and facilities to meet present and future needs,
- To promote the efficient use of land, and
- To create and maintain an urban system which promotes efficient and prosperous urban economy.

The report gives a picture of existing development activities and services at Ngabu Main Market Centre, and shortfalls in these activities which need to be addressed. Development proposals have been made to address these shortfalls so that the Main Market Centre develops in a planned manner. The socio-economic survey revealed that most of the development proposals made in the 1997 Urban Structure Plan were not implemented. This has created a number of problems which include: -

- Unorderly development
- Weak resilience to climate change, disasters risks and shocks
- Lack of service roads
- Inadequate housing
- Lack of banking facilities
- Lack of proper market and bus station resulting in congestion at the primary commercial centre

Consolidation of the urban form, adequate supply of serviced land, efficient use of land and balanced pattern of development are the guiding principles that underlie this Plan. In order to address the problems identified, a number of development proposals have been made some of which include: -

- Upgrading of the local road network,
- Provision of adequate drainage network,
- Introduction of banking services,
- Conservation of river banks, flood prone areas and other open spaces,
- Adjudication, demarcation and registration of unallocated customary and public land, and

- Preparation of detailed layout plans.

While Chikwawa District Council is responsible for the governance and development matters of Ngabu Main Market Centre, stakeholders operating at the Main Market Centre should work with the District Council in addressing issues highlighted and implement proposals to ensure that the overall goal and objectives of the Plan are achieved.

Nardi Kamba
District Commissioner
Chikwawa District Council

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LIST OF ABBREVIATIONS

ADC	Area Development Committee
ADD	Agricultural Development Division
ADMARC	Agriculture Development and Marketing Corporation
ALEC	Adult Literacy Education Centre
CCAP	Church of Central African Presbytarian
CDPDP	Chikwawa District Physical Development Plan
CDSS	Community Day Secondary School
CHAM	Christian Health Association of Malawi
CICOD	Circle for Integrated Community Development
CLC	Customary Land Committee
CPP	Commissioner for Physical Planning
DLP	Detailed Layout Plan
DoDMA	Department of Disaster Management Affairs
DPPC	District Physical Planning Committee
DRM	Disaster Risk Management
ECDC	Early Childhood Development Centre
EGENCO	Electricity Generation Company
ESCOM	Electricity Supply Corporation of Malawi
GVH	Group Village Head
ICT	Information and Communication Technology
IHS	Integrated Household Survey
ITCZ	Inter Tropical Convergence Zone
JCE	Junior Certificate of Education
MHC	Malawi Housing Corporation
MNLP	Malawi National Land Policy
MoH	Ministry of Health
MSCE	Malawi School Certificate of Education
MTL	Malawi Telecommunication Limited
NAPA	National Adaptation Programmes of Action

NPDP	National Physical Development Plan
NSO	National Statistical Office
OPD	Out-Patients Department
PHC	Population and Housing Census
PPA	Physical Planning Act
PPD	Physical Planning Department
SDA	Seventh Day Adventist
SRWB	Southern Region Water Board
STI	Sexually Transmitted Infection
SVADD	Shire Valley Agriculture Development Division
SVTP	Shire Valley Transformation Programme
TA	Traditional Authority
TNM	Telekom Networks Malawi
TTC	Teachers' Training College
USP	Urban Structure Plan
VDC	Village Development Committee

CHAPTER ONE: INTRODUCTION

1.1 Location and Size of Ngabu Urban Structure Plan

Ngabu is a main market centre located in Chikwawa District in the Southern Region of Malawi. It is situated in the southern part of Chikwawa District in the area of Traditional Authority Ngabu (refer to Figure 1). Its actual geographical position is Latitude 16°27' South and Longitude 34°52' East in DMS (Degrees Minutes Seconds) or -16.467418 and 34.873825 (in decimal degrees).

Ngabu, which is approximately 832 hectares (8.32sq km), shares boundary with Nyaikha Trading Centre to the South and Mphamba GVH to the East while the Western boundary encompasses Changa Primary School. The Northern boundary runs along Zengo River. Ngabu is well connected to other major urban centres such as Chikwawa Boma and Nchalo in Chikwawa District and Bangula in Nsanje District by the M1 Road. It is approximately 51km South of Chikwawa Boma, along Chikwawa-Nsanje (M1) Road and about 12km West of Shire River.

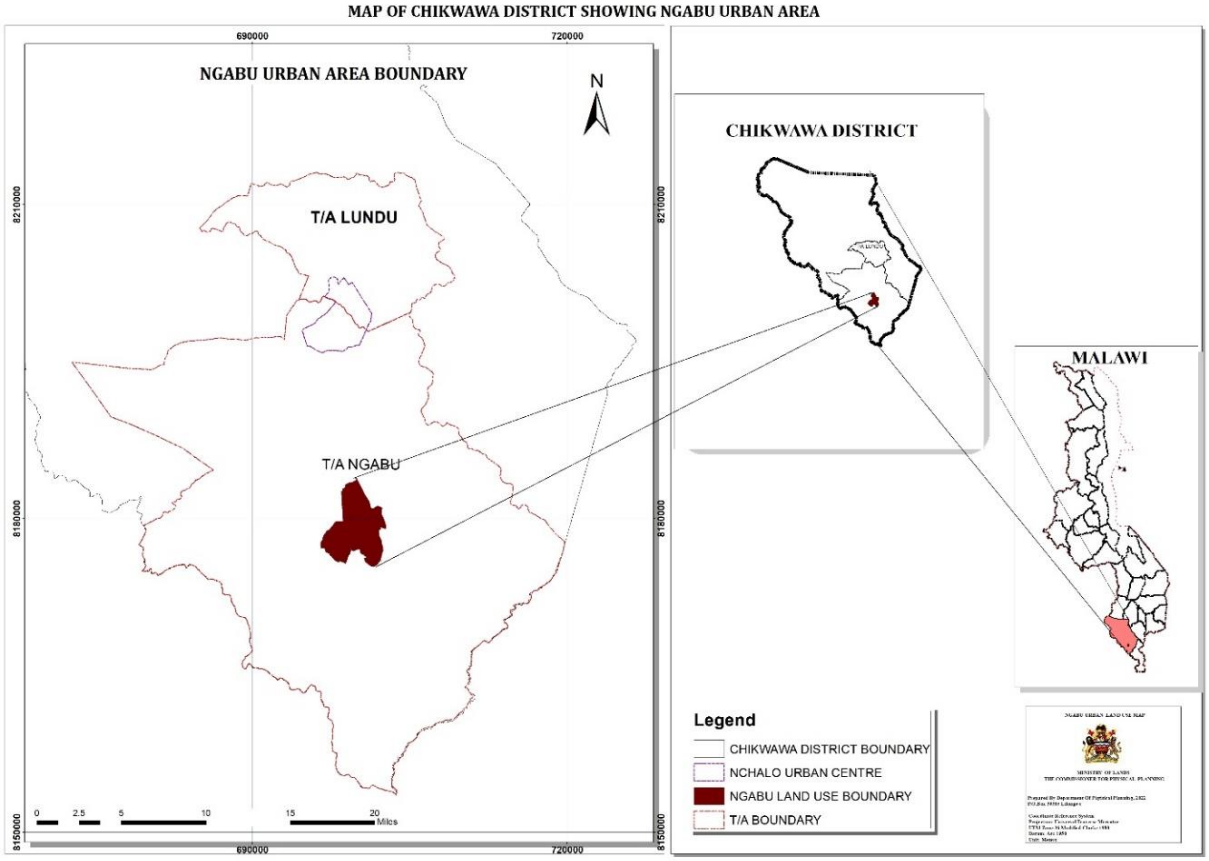


Figure 1: Location of Ngabu Main Market Centre (PPD, 2022)

1.2 Legal and Institutional Framework

The Physical Planning Act (PPA), 2016 is the principal legal instrument governing physical planning in Malawi. Its main objective is to provide for orderly and progressive development of land in both urban and rural areas in order to guide and facilitate the country's socio-economic development. This is in line with one of the main objectives of the Malawi National Land Policy (MNLP) (2002) of extending land use planning and development control to all types of land, in effect, making the whole country a planning area. The PPA (2016) also provides for guidelines for the preparation of local physical development plans.

Section 42 of the PPA (2016) gives power to the Commissioner for Physical Planning (CPP) to prepare land use plans within an area under the jurisdiction of a local government authority. Thus, Ngabu USP was prepared by the Department of Physical Planning on behalf of Chikwawa District Council under powers conferred on the CPP under the aforementioned Section of the Act.

The PPA (2016) also provides for public participation at all levels of planning in the Country. Specifically, Section 23 (4) of the PPA (2016) mandates a responsible authority to hold meetings with any persons or organizations for the purpose of explaining the proposed plan and receiving representations and comments thereon. In order to be in line with the provisions of the PPA (2016) the planning approach adopted in the preparation of the Ngabu USP was participatory. For example, questionnaires were administered to local leaders and their people on different topics under this study.

Additionally, the Land Use Planning and Management Guidelines and Standards (2014) recognize that the public has the right to demand and participate in decision making at all stages of land use planning and management. Observation has shown that plan implementation is easy where this basic right is respected because the public fully owns the plan. In the light of the above-mentioned, the Land Use Planning and Management Guidelines and Standards aim to promote participatory and community driven planning to ensure ownership and effective implementation of plans by all stakeholders and the public.

1.3 History and Development

1.3.1 Planning History

Government established a physical planning framework at national, district and local levels in line with National Physical Development Plan (NPDP) in 1987. The Department of Physical Planning prepared the first Ngabu USP in 1997 within the scope of the guidelines of the NPDP policies subject to local conditions. This was just an advisory plan, not legally binding, due to the provisions of the planning laws in Malawi then. The 1997 Plan was supposed to be reviewed in 2007 and 2017, but it was not. The Department also prepared various Detailed Layout Plans (DLPs) for Ngabu in order to guide socio-economic and physical development. The physical development plans could not be effectively implemented and enforced to guide development at the Centre due to the aforementioned legal status.

In 2016, the Physical Planning Act was enacted and became effective in 2018. This legal instrument technically declared the whole Country a planning area. In line with the Act, the Department of Physical Planning in collaboration with the Chikwawa District Council prepared Chikwawa District Physical Development Plan (CDPDP) in 2020 within the guidelines of the NPDP. The CDPDP identified and recommended some urban centres in Chikwawa District, including Ngabu, to have physical development plans prepared to guide growth and development in the District, hence, the preparation of the Ngabu USP in 2022.

1.3.2 Historical Developments

The history of Ngabu goes back to 18th Century when hunters and farmers from Nsanje District settled at Makande Village (now Makande Graveyard). Later, it became the headquarters of Chief Ngabu, from whom the Centre derives its name. It grew as an outpost of the Lundu Kingdom under the leadership of Ngabu Sesemani 1 who was given responsibility for the area extending from Mwanza River to the North and Lalanje River to the South. According to the reigning Chief Ngabu, Ngabu of Nsanje District was commissioned by Lundu to guard the rain shrine. As a result, today, there are two T/As Ngabu in the Lower Shire; one in Nsanje District and the other in Chikwawa District.

The existence of very fertile soils called “Makande” attracted many people who engaged in cotton farming. Makande is nowadays used as an alternative local name for Ngabu Urban Centre. In 1930s, the abundant cotton crop attracted Indian traders from Marka in Nsanje District and Mozambique who became middlemen between local farmers and importing countries. These Indians later on opened retail shops and wholesales at the Centre due to booming finger-millet and cotton farming in 1960s and 70s.

The Makande Soils also led to the establishment of Chikwawa Cotton Development Project in 1968 sponsored by the World Bank in order to promote modern cotton production methods. After five years, the Project was extended to Nsanje District which was included as Shire Valley Agricultural Development Division (SVADD) under the multi-sectoral Rural Development Programme with its administrative headquarters at Ngabu. The objectives of SVADD were also extended to other crops like maize, sorghum, rice and groundnuts, and to develop the livestock industry, increase fish output and improve conservation of wildlife resources. The SVADD attracted different types of infrastructure and social services which were further boosted by tarmacking of the old Chikwawa-Bangula Road (part of old M1 Road) in 1976.

Physical planning to guide development at Ngabu commenced in 1973 with the preparation of an outline zoning scheme by the then Town Planning Department. The outline zoning scheme was adopted by the SVADD Rural Development Section in 1975. By the 1980s, a number of DLPs were prepared by the Department mainly to guide the development of residential and commercial

areas. Nevertheless, the plans were not properly implemented due to lack of development control and enforcement because of their legal status and other challenges.

1.4 Urban Structure Plan Development Process

The process of coming up with an urban structure plan occurs mainly in two phases. The first phase is the preparation of land use map. This involves geo-spatial data collection of existing land uses to update the base map which finally becomes a land use map. The second phase involves the preparation of urban structure plan that shows the proposed land uses within the planning boundary. This is based on the distribution of the land uses as shown on the land use map.

Concurrently, a background studies report and land use plan are prepared, undertaking the following steps:

i. **Document Mobilization and Literature Review:** This involves understanding of the basic development process, consolidating the available literature and developing tailor-made tools to facilitate data collection. It ensures that the data collection tools bridge the data gaps identified during literature review. For the preparation of the Ngabu USP, documentation included Chikwawa District Socio-Economic Profile, Chikwawa District Physical Development Plan (CDPDP), USPs for different centres and sample data collection tools. The data collection tools included questionnaires, oral interviews, focus group discussions, observations, consultations, literature reviews, transect walks and satellite imagery.

ii. **Team Orientation:** The orientation equipped the team with data collection techniques to enhance data quality and ensure uniformity. Each data collection tool was reviewed and piloted to improve understanding and usability.

iii. **Geo-Spatial and Socio-Economic Data Collection:** After fine-tuning the data collection tools, the team embarked on collecting both geo-spatial and socio-economic data.

iv. **Data Analysis and Preparation of the Report:** Following data collection, the data was analysed and a report was prepared. Throughout the whole process, consultations were made with various stakeholders including Village Development Committees (VDCs), traditional leaders, business community, major developers, Chikwawa District Development Committee, the Full Council and other interested parties. Thereafter, the Plan was endorsed by the Chikwawa District Physical Planning Committee and submitted to the CPP for consideration and approval. After approval, the plan was produced and distributed to various implementing agencies for their reference and action.

1.5 Hierarchy and Functions

The NPDP 1987 stipulates the hierarchy point system of ranking centres according to their functions and services. A district or main market centre is awarded 20-35 points. According to the Central Place Survey conducted by the Department of Physical Planning in 2019, Ngabu was ranked as a Main Market Centre with 28 points. Institutions providing various services are found at the Centre. These include the SVADD Headquarters, a rural hospital, a police unit, a post office,

an ADMARC Sub-Regional Headquarters (research station, veterinary, wholesale and retail shops, secondary schools, primary schools, produce markets, Agricultural Residential Training Centre), non-governmental organizations' offices, cotton ginneries, bank agents (FDH, NBS, NB). The institutional services are not only provided to the community of Ngabu but also serve its hinterland. Ngabu as a main market centre has more commercial functions than administrative functions.

1.6 Urban Structure Plan Review and Justification

Ngabu USP was first prepared in 1997. A number of DLPs were also prepared following the preparation of the USP. However, the USP and its associated DLPs were not properly followed. This is attributed to lack of development control and enforcement due to the legal status of the Plan and other challenges. The Plan was advisory, hence, not legally binding and difficult to enforce. The PPA (2016) now mandates the provision of physical planning activities to both urban and rural areas. This provision led to the institution of the District Physical Planning Committee (DPPC) and the preparation of the CDPDP by Chikwawa District Council. This entails that there is now legal basis and institutional capacity to ensure development control and enforcement of provisions of any local physical development plan.

Moreover, the 1997 Plan expired in 2007 as it was supposed to serve for a period of 10 years. Hence, most of the existing developments at Ngabu are in conflict with the 1997 Plan and the DLPs. The effective and efficient implementation of the CDPDP's recommendations requires that the tools and strategies for its implementation at local level are put in place, which includes the preparation of the Ngabu USP. The Ngabu USP will help to ensure orderly, coordinated, efficient and sustainable development in the District.

Besides, the current settlement pattern of Ngabu reveals the need for the preparation of an USP in order to identify vacant land to accommodate current and future needs for the Centre. This Plan will assist the District Council to formulate and accommodate short and long-term development projects for the Centre such as the Shire Valley Transformation Programme (SVTP). It will also promote development control and guide the expansion of existing developments. The USP is also a prerequisite for the production of other local physical development plans such as DLPs which provide for minute details of the development of an area.

Finally, the concept of decentralization demands that each district must prepare its own local physical development plans for orderly and progressive land use. The plans are also essential in securing resources for various development projects and programmes from Government and other development partners.

1.7 Planning Goals and Objectives

The Plan aims to ensure a well spatially planned Main Market Centre for effective socio-economic development at Ngabu. In order to achieve this, the Plan has the following objectives;

i. To ensure that physical, economic and social development takes place in an orderly and coordinated manner,

ii. To ensure that physical developments take place only on land that is likely to be least affected in case of natural disasters such as floods,
iii. To create and maintain an urban environment which ensures provision of adequate and suitable social services and facilities to meet present and future needs,
iv. To promote efficient use of land within the planning area boundary, and
v. To create and maintain an urban system which promotes an efficient and prosperous urban economy.

1.8 Planning Principles

The following are the principles underlying this Urban Structure Plan:

i. Consolidation of the urban form:

To ensure optimal utilization of space and resources, vacant pieces of land within the old planning boundary will be rezonned while taking into account the new boundary of the area in order to determine the most suitable use for each piece of land. Rezoning of vacant land will be the most economic and efficient way to develop Ngabu as it will promote growth, improve the quality of life for residents and enhance the overall functionality of the Centre. Ultimately, the goal is to create a sustainable and vibrant urban environment that meets the needs of current and future residents.

ii. Adequate supply of serviced land:

With the foreseeable agriculture commercialization and industrialization in Chikwawa District following the development of the new irrigation canal, there will be high demand for serviced plots at Ngabu. Adequate supply of serviced land will provide a housing alternative to unplanned housing areas, and stimulate development of new commercial and industrial areas. Thus adequate supply of serviced land at Ngabu will promote better land use practices and encourage sustainable growth in an organized and regulated matter. Furthermore, serviced land will attract investors and businesses looking for suitable locations to establish their operations, hence, creating job opportunities and stimulating economic growth at Ngabu.

iii. Efficient use of land:

The recently revised Land Use Planning and Development Management Standards and Guidelines (2014) will be followed to ensure creation of plots that take into account the scale of development. The DLPs for residential, commercial, industrial, among other land uses will be designed for maximum use of land in order to minimize development costs, reduce distances and energy consumption for daily travelling.

iv. Balanced pattern of development:

The Plan aims at ensuring that each sector of development has complete range of housing types, employment opportunities and other facilities and services. Reference has to be made to Land Use Planning and Development Management Standards and Guidelines (2014) prepared by the Physical Planning Department (PPD) whenever development is being carried out.

1.9 Outline of the USP

Chapter One introduces the USP, highlighting historical background, objectives and justification for the plan. Chapter Two provides description and analysis of physical features while Chapter three gives a baseline of existing planning subjects. Chapter four examines key issues and their planning implications whereas chapter five outlines planning policies and development proposals. Lastly, chapter six outlines the implementation arrangements.

CHAPTER TWO: DESCRIPTION AND ANALYSIS OF PHYSICAL FEATURES

2.1 Introduction

In this section, the following physical features at Ngabu Main Market Centre have been briefly described: topography, geology, soils, vegetation, hydrology and drainage system, climate and climate change and seismicity. These have also been analysed in older to assess their planning implications.

2.2 Topography

The general relief of Ngabu Main Market Centre is that of the rift valley floor. It lies on the Makande Plain in the Lower Shire Valley which is a depositional geo-morphological feature. Most developments took place on the low-lying, moderately undulating basaltic ridge sloping gently from West to East at a gradient of 1.8% or 1:56. Successive cycles of erosion and deposition, as streams erode the higher areas to the West and deposit the load to relatively low areas to the East, cause this kind of topography. Its altitude is one of the lowest in the Country at an average height of 122m above sea-level. However, the hills to the West rise up to 148m whilst the land slopes down eastwards towards the Shire River below 94m above the sea-level. Just as it is the case with most places in the Lower Shire Valley, the very high temperatures at Ngabu Main Market Centre are attributed to its low altitude.

2.3 Geology

The geology of Ngabu area is varied, comprising mainly gneiss and granulites of the basement complex. These rocks are obscured by colluvium and river alluvium whose deposition was followed by a period of volcanic activities to the East of the Makande Plain. There are volcanic rock outcrops from the late Karoo age to the West and South of the area which are rich in red ornamental agates, the only important mineral widely distributed in the soils there.

The geology of the area provides firm building aggregate for the construction industry. However, it is important that appropriate and necessary pre-cautions are taken into consideration since the area lies within the East Africa Rift Valley which is an earthquake prone zone.

2.4 Soils

There are mainly two types of soils; lithormorphic and topomorphic vertisols derived from Karoo basaltic and sandstone sediments. The lithormorphic vertisol are shallow, stony and strongly structured soils. They are dominant in the West from areas around the T/A Ngabu Court towards Saopa, though lithosols are also noticeable.

In the Makande Plain, to the East of SVADD, the topomorphic vertisols are dominant. These are fine textured soils derived from weathered minerals from basaltic hills to the West and are highly fertile. The top soils are very fertile, hence intensively cultivated with cotton. However, these soils are poorly drained, heavily textured but poorly structured, hence susceptible to erosion. Thus, top

soil slakes upon wetting into small easily carried away aggregates reducing in size with continued cultivation thereby increasing erosion hazard.

The soils are generally brown/dark coloured sandy loam soils which are non-saline, fertile and well-drained. However, areas near or along the rivers have dark brown to dark grey clay soils which become water-logged and swell when wet and develop deep cracks when dry. Thus, these clays have good chemical properties but difficult physical properties for farming. In summary, the dominant soils at Ngabu are sandy loam in the Makande Plain and Makande (grey clay) soils near rivers. The alluvium and colluvium soils within the Plain are also not stable and are easily shaken while the grey clay soils expand when wet and contract when dry thereby causing some infrastructures to crack. This is an aspect that has to be considered when assigning land uses in the area as this is a constraint to development within the planning area.

2.5 Vegetation

The main type of vegetation in the Makande Plain is Savanna. It is also known as the woodlands of the fertile areas. It is characterized by isolated trees and small patches of woodland. The dominant tree species include acacia and its presence has been taken as indicating fertile soils. However, woodland and mixed Savanna species such brachystegia, appearing as scrubby regrowth, dominate.

2.6 Hydrology and Drainage System

There are two major rivers making up the natural drainage system at Ngabu Main Market Centre. The northern part is drained by Chimbamira River and the southern part is drained by Nyakamba River. Both rivers have tributaries, drain into the Shire River and they are seasonal. The ridge area is well-drained but there is high water-table in the Makande Plain which becomes water-logged in the rainy season especially along the Nyakamba River whose flush flood-water spreads in most areas along the river bank. The area can experience floods for just a few hours or several days.

Other rivers include Zengo and Monjo which are both located on the northern part of the area. Additionally, there are also a lot of streams around the area. The rivers cover a total land area of about 42.42 ha. They serve the surrounding community with water for irrigation of crops along the river banks, livestock drinking and for domestic use.



Figure 2: Nyakamba River at Ngabu Main Market Centre (PPD, 2022)

2.7 Climate and Climate Change

Ngabu experiences Tropical Climate which is defined by two seasons; dry season from April to December and rainy season from January to March. The climate is influenced by the Inter Tropical Convergence Zone (ITCZ) which brings dry weather conditions in the dry season due to stable South East Trade Winds and convectional rains from October to April due to unstable South East Trade Winds as the ITCZ moves southwards from the Equator. It is also observed that the current climate change phenomenon is also taking its toll, changing the usual weather conditions in the area.

Rainfall is very low and unreliable as Ngabu Main Market Centre lies within the rain shadow area of the Thyolo Escarpment. Onset of rains also varies from December to January, the reason for, sometimes, postponing crop planting to January. The heaviest rainfall occurs between end December (174mm) and January (184mm). Mean annual rainfall is 711mm. The relative humidity is about 60%.

Temperatures are very high at Ngabu Main Market Centre. The lowest temperatures are experienced in June when minimum temperature is 27˚C. The area experiences highest temperatures in November every year when mean maximum is 37.6˚C. Ngabu is one of the hottest places in the Country where daily maximum temperatures of between 40-50˚C are not uncommon during the dry season. The high temperatures also mean very high evaporation rate averaging about 1,994mm annually and this further reduces the little available moisture in the soil.

Effects of climate change are also noticeable in the area. The onset of the rainy season, for instance, has shifted from the usual month of November in early 2000s to January currently. The average

maximum temperatures have also jumped from around 34.2˚C in early 2000s to 37.6˚C currently. The total rainfall amount in 2001 was 928.4mm while it was just 544.1mm in 2021. The relative humidity has also reduced from 65% in early 2000s to 60% in recent years. A change in climate has also influenced prevailing winds by increasing its speed from 2m/s to 4.3m/s between 2005 and 2014.

Just as it is a general experience in Chikwawa District, climate change greatly affects Ngabu area. Its effects aggravate disasters such as floods, prolonged dry spells, stormy rainfall, strong winds, cholera disease outbreaks, locusts, army worms, and foot and mouth disease. There is also damage to infrastructures which result into reduction of access to potable water, sanitation facilities among others.

Poor coping mechanisms in the area render the vulnerable households helpless with no livelihoods, hence cycle of poverty. When floods and strong winds strike during the rainy season, farmers rely on the little rains at the end of the season or sometimes irrigation for replanting their crops. Nevertheless, floods bring alluvial soils which are good for agriculture in the area.

2.8 Seismicity

Ngabu Main Market Centre lies within the Rift Valley System which is characterized by intense faults along its scarp zones in the linear trough. The area is largely overlain by superficial deposits, mostly alluvium and colluvium sediments. Precambrian to lower paleozoic basement complex rock formations characterize the system area. These rocks are mainly medium to high grade gneisses such as biotite gneisses bearing sillimanites and garnets, augen gneisses, quartzites and amphibolite gneisses. Structurally, the Lower Shire Valley area had undergone through a series of brittle deformation. This is because the area witnessed all the old tectonic events of the Pre-Cenozoic and Cenozoic Age as well as the late Tertiary Age that affected the whole Rift Valley System. These tectonic-metamorphic events are the Mozambique orogenic belt, the Ubendian mobile belt from Tanzania and Irumide from Zambia. North-South, North-North East and South-South West trending faults are prominent in the area (refer to Figure 3).

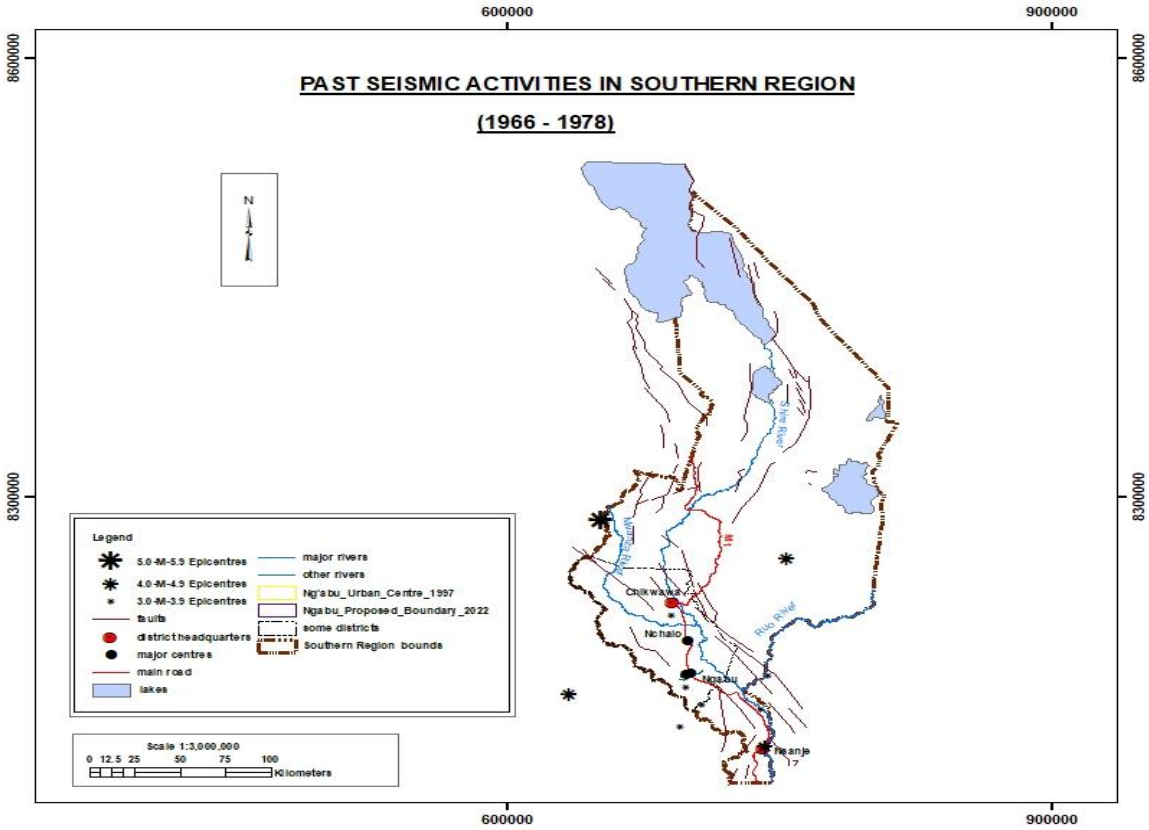


Figure 3: Past Earthquake Epicentres in the Southern Region

The geological event recordings of the activities which occurred between 1966 and 1978 by Zimbabwe Meteorological Service Network and Chileka Seismograph Station, indicate that Ngabu Urban area is relatively safe from earthquakes. The biggest earthquake close to the area, with the magnitude of 5.0 to 5.9 on the Richter scale, had an epicenter at a distance of 116km near Mwanza in Mozambique. The medium sized earthquakes measuring 4.0 to 4.9 were at the distances of about 68km also across the border in Mozambique and about 97km away in Mulanje. The small sized ones, with magnitude of 3.0 to 3.9, were local at distances of 9km near Mphonde Village in the District and 22km in Nsanje District.

The nearest fault is 10km away to the North West of the Centre in the District. The other two faults to the South East in Nsanje District are at a distance of 17km. This shows that Ngabu Main Market Centre lies over a relatively earthquake-free zone.

CHAPTER THREE: MAJOR PLANNING SUBJECTS

3.1 Population

Population, in simple terms, refers to the total number of men, women, boys, and girls of different ages, living in a defined location at a particular point in time. This definition indicates that population changes with time and location, precisely with changes in that location. Availability or unavailability of certain factors at a place will either attract or repel people. Much as population is a determining factor for the provision of certain services, it is also very much determined and affected by the same. This notwithstanding, population still remains the basis for determining current and future needs for infrastructure and services, hence, a very important aspects in land use planning.

3.1.1 Population Size and Characteristics

The 1997 Ngabu USP boundary area had a population of 6,411 which was projected to 8,744 for 2015. In the new USP boundary, the raw data of the 2018 Population and Housing Census (PHC) of the NSO, had put the population at 15,168 people. In 2022 that population has reached 21,607, a growth of 6,439 people in a period of four years. The population has, therefore, grown by 42%, with an annual growth rate of around 9.25%, which is a very fast growth. At this rate, ceteris paribus, the population of Ngabu will double in 6.6 years' time. This spells disaster if necessary infrastructure and amenities cannot be brought in the area in time to sustain this surging population.

A Survey by the Department of Physical Planning has shown that the majority of the adult population is literate, most of them have at least been to primary school, and some even have secondary education certifications of JCE and MSCE. Very few though have gone beyond secondary education. This being the case, any industry that can come at Ngabu would not benefit the communities much as most require skilled labour. Therefore, there should be an anticipation of an even more rapid population growth in the event that an industry is established since most of the skilled workers will have to be imported from elsewhere.

Moreover, the Survey also found that the majority of the population earns a living through farming, with some supplementing it with small scale business/hawking and menial piece works (maganyu). The area has few individuals with mega livestock farms and hold the economic power of the area. Communities around these farms are heavily dependent on them and are more impoverished.

3.1.2 Spatial Population Distribution

According to statistics for individual villages, the most densely populated villages are the ones surrounding the Trading Centre. The areas of GVH Malemia and VH Misongwe are the most densely populated areas (refer to Figure 4). This pattern can be attributed to socio-economic factors and ease of access at the Centre. The area has many government institutions that have brought in employment opportunities and a ready market for various products and services. These include the Rural Hospital, Agriculture Residential Training Centre, SVADD, primary and secondary schools,

Cotton ginnery, ADMARC and many more. This has led to various businesses to boom around these institutions (refer to Figure 4).

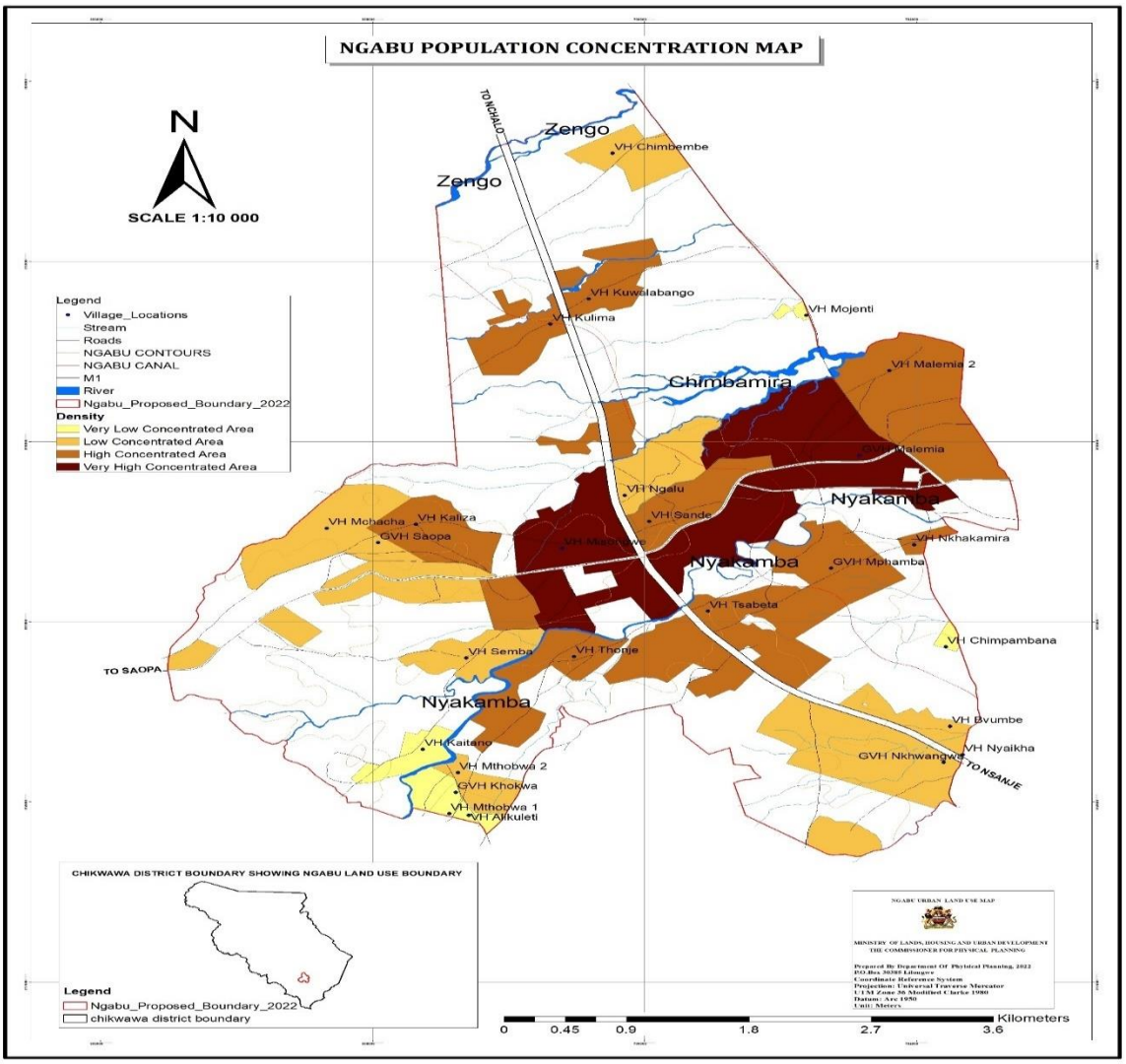


Figure 4: Spatial Population Distribution at Ngabu Main Market Centre (PPD, 2022)

3.1.3 Age-Sex Distribution

Of the 21,607 people presently in Ngabu urban area, 10,451 people which is 48.37% of the population are males where as 11,156 people, that is, 51.63% are females. A further breakdown of these shows that 10,677 people (5313 males and 5364 females) who represent 49.4% of the total population are aged between 0 and 17 years. Likewise, 9,894 people (4,636 males and 5,258 females) are aged between 18 to 59 years, representing 45.79% of the total population. The remaining 4.79% constituting 1,036 people (502 males and 534 females) is within the age range of 60 years and above. From this breakdown it is clear that there are more economically dependent people at Ngabu. The age group 18 to 59 represents the economically active group that bears the economic burden of the whole population; 45.79% supporting 54.2% of the population.

This breakdown also reveals a broad-based population structure which entails a rapid population growth. In addition, Ngabu population has 4,377 females (20.25% of the total population) in the child bearing age range of between 15 and 40. It should noted that the child bearing age range used here is very crude as some women are able to bear children even while in their late 40s, however, these have been considered as outliers. In order to understand why this is a strong indication for rapid population increase, we need to consider the concept of population momentum. This is the tendency for a population to continue to grow even after replacement-level fertility has been achieved. This occurs because the age structure has large numbers of women in the child bearing years, so there are many more births than deaths for a long time to come. Even if we could hypothetically put only two births per woman, there are so many women that there are many births, and the population keeps growing. Our Malawian tradition values children so much so that it is very difficult for many women to choose not to have children. What's more, our societies have not yet advanced much that we are still grappling with high rates of unwanted and /or unplanned pregnancies and children. As such it will still take the population growth rate a long time to reach zero. In other words, the larger the number of children entering their reproductive years, the faster the population will grow. Below are Figures 5 and 6 showing age-sex structure and population distribution by sex for Ngabu Main market Centre, respectively.

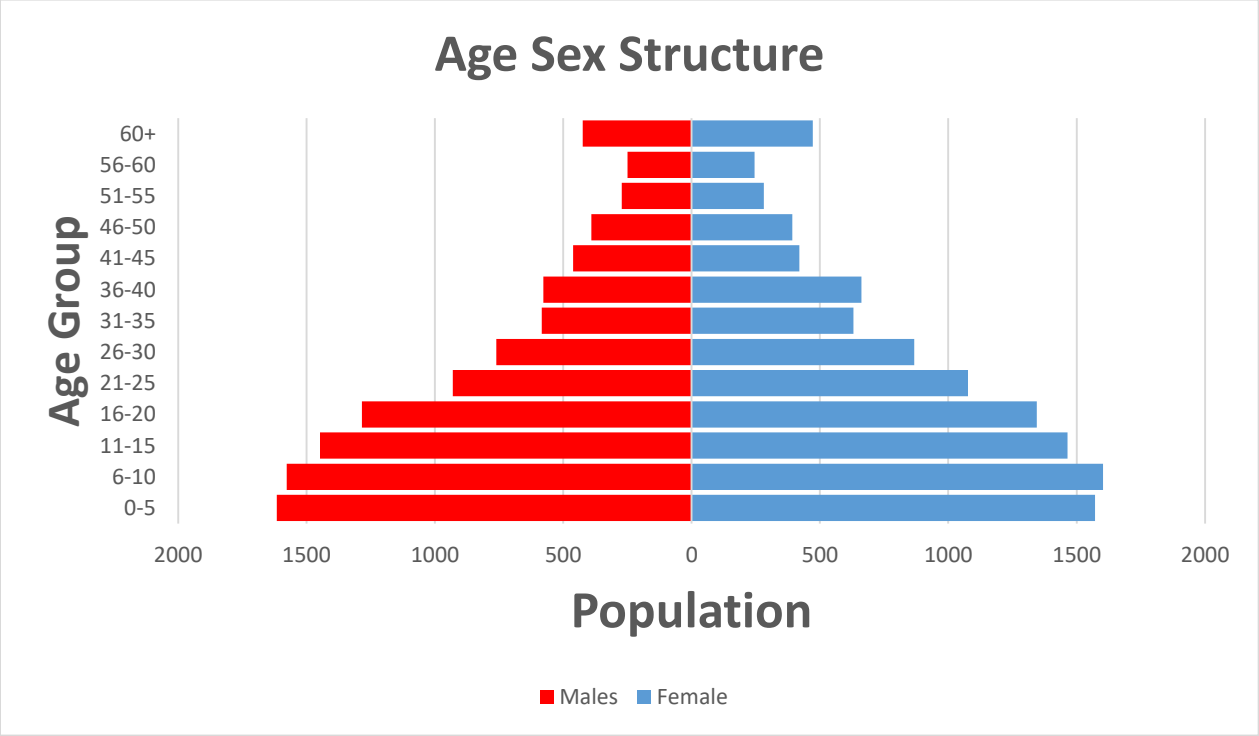


Figure 5: Age-Sex Structure for Ngabu Main Market Centre (PPD, 2022)

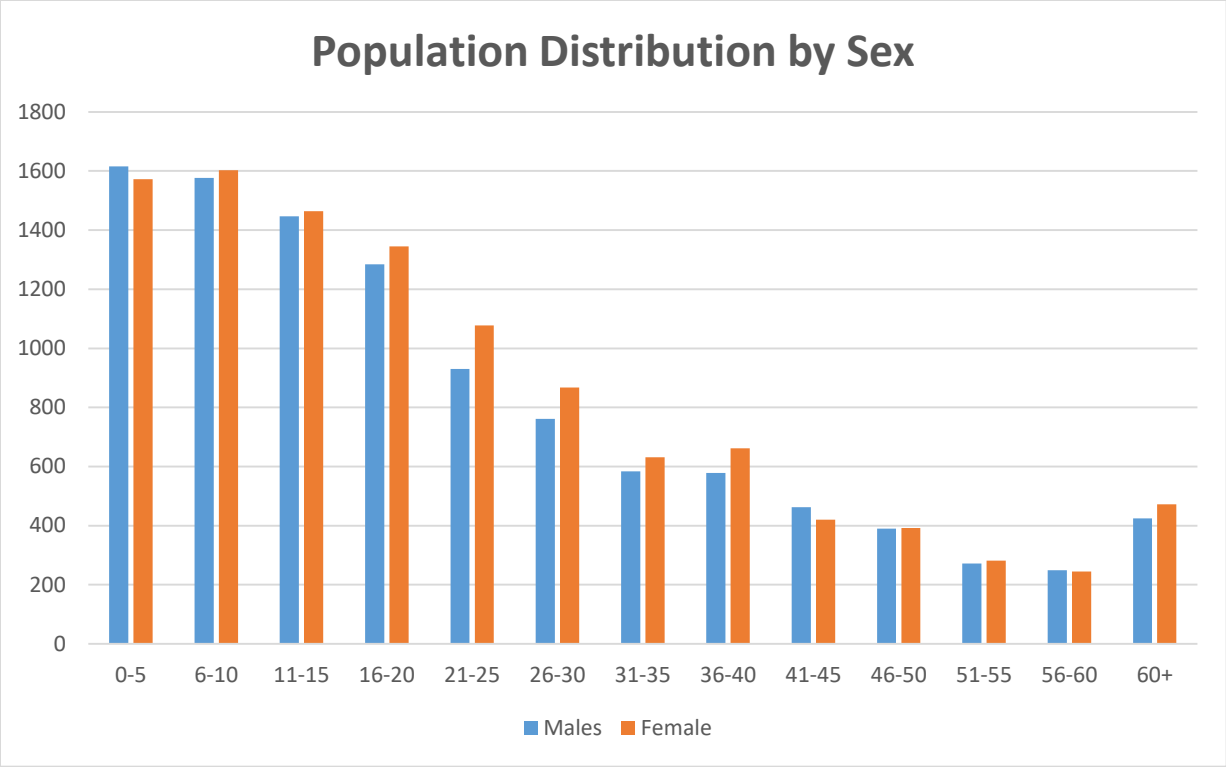


Figure 6: Population Distribution by Sex for Ngabu Main Market Centre (PPD, 2022)

3.1.4 Population Density

Total land area for Ngabu USP area (1997) was 8.32 square kilometres (832 Hectares). With expected population of 6,411 in 1997, the population density was 771 persons per square kilometre. The current population of 21,607 then gives a population density of 2,597 persons per square kilometre. This is much higher as compared to that of Chikwawa District and Malawi which was at 116 and 186 respectively in 2018.

3.1.5 Population Growth and Projection

Tabulations reveal that Ngabu has a population growth rate of 9.25%. This is one of the highest population growth rates in the Country, way higher than the District's 2.5% and the Country's 2.9%. However, this analysis has adopted the annual population growth rate of the District in projecting the population for the Centre. Considering the analysis provided above on the high probability of the area receiving more in-migrants in the event that an industry is established and having a large population in the child bearing age group means, a population of 27,659 is possible in the year 2032 (refer to Table 1).

Table 1: Projected Population for Ngabu Main Market Centre

ITEM NO.	PROJECTED POPULATION	YEAR
1	22147	2023
2	22701	2024
3	23268	2025
4	23850	2026
5	24446	2027
6	25057	2028
7	25684	2029
8	26326	2030
9	26984	2031
10	27659	2032

Source: PPD, 2022

The population of Ngabu would grow by 24.89% in ten years. This would lead to social, environmental and economic problems at the Centre and District as a whole. Social services would not be enough to cater for this kind of population. Economically, the population is already struggling to find other means of livelihood other than agriculture, a swelling in population will make this even direr. This would in turn lead to environmental degradation as every piece of land would be under cultivation to support the growing population.

3.2 Land Tenure and Existing Land Use Pattern

3.2.1 Land Tenure

Land tenure refers to the terms and conditions under which rights to land and land-based resources are acquired, retained, used, disposed off, or transmitted (Kenya National Land Policy 2011; pg. 20). Under the Land Act 2022 land is classified as private land (freehold, leasehold), customary estate and public land (government land). Public and customary land tenure systems were the two categories of land tenure systems previously recognized by Ngabu USP (1997). The socio-economic survey conducted at Ngabu showed that three primary land tenure systems at Ngabu Main Market Centre are customary, private and public land. Nonetheless, of the three, customary land predominates, making up 83% of the total land area.

Table 2: Land Tenure System at Ngabu Main Market Centre

ITEM NO.	TENURE SYSTEM	AREA (HA)	PERCENTAGE
1	Customary land	2,458.28	83%
2	Public land	295.17	10%
3	Private land	222.02	7%

Source: PPD, 2022

At Ngabu Main Market Centre, private land is owned and managed by individuals, while public land is managed and administered by Government institutions and departments. Despite significant

encroachment on some of its land, Shire Valley Agriculture Development Division (SVADD) is the largest landowner at Ngabu. According to the study, there is no security of tenure for the majority of the land in the area.

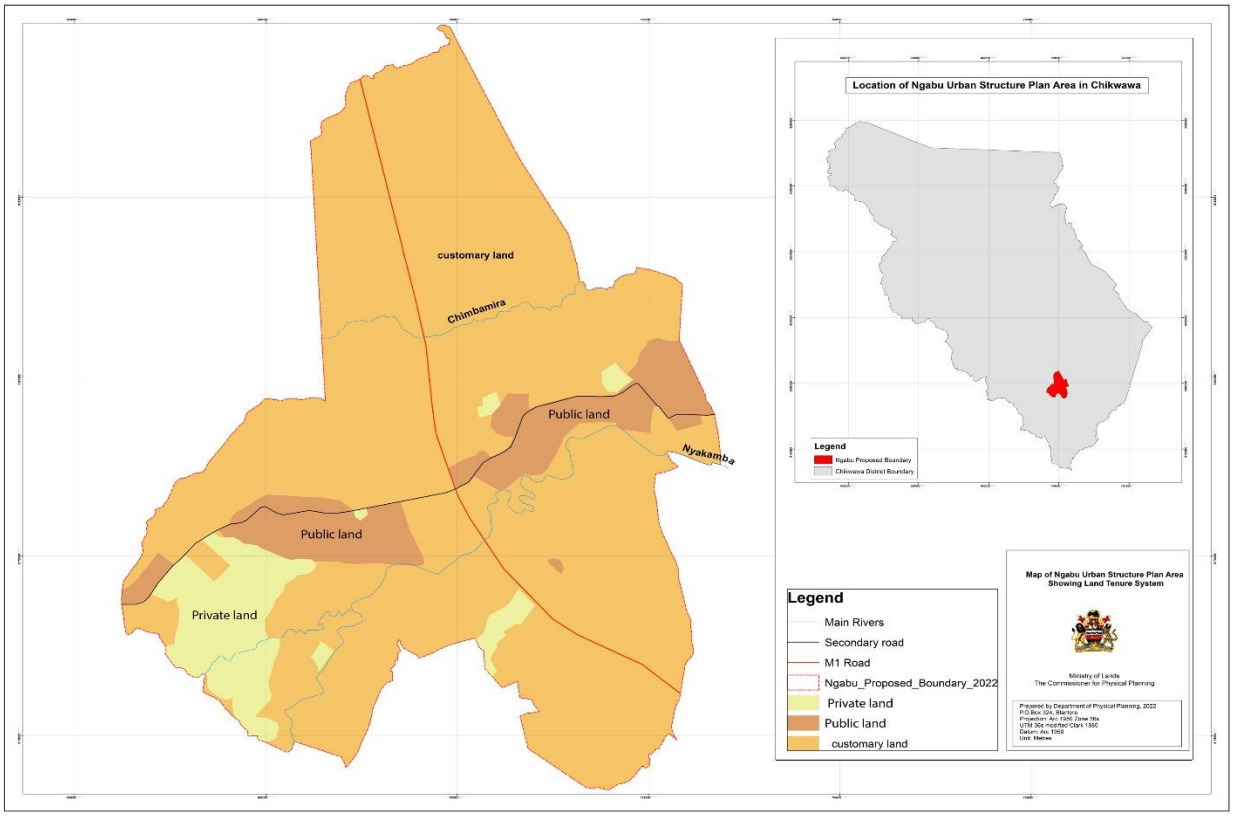


Figure 7: Distribution of Land Tenure System at Ngabu Main Market Centre (PPD, 2022)

3.2.2 Existing Land Uses

Land use planning is the most effective way of managing land. It refers to the process by which land is allocated between competing and sometimes conflicting uses in order to secure its rational and orderly development in an environmentally sound manner in order to ensure the creation of sustainable human settlements. It is, therefore, essential when preparing an USP to have a better understanding of the existing land use status and structure which include; the rate at which the land is being utilized or becomes part of the built environment and availability of land for future uses. The total land area for the existing Ngabu urban center covers 2,946.73ha (refer to Table 3).

Table 3: Major Land Uses at Ngabu Main Market Centre

ITEM NO.	LAND USE	SIZE (HA)	PERCENTAGE
1	Agriculture	1,362.64	46.23
2	Cemetery	24.21	0.82
3	Commercial	23.04	0.78
4	High Density Permanent Residential	522.91	17.74
5	High Density Traditional	474.21	16.08

6	Industrial	35.16	1.19
7	Institutional	121.39	4.20
8	Low Density Residential	44.48	1.50
9	Medium Density Residential	88.76	3.01
10	Mining	16.44	0.55
11	Natural vegetation	123.28	4.17
12	Rivers	42.42	1.43
13	Roads	67.77	2.30
TOTAL		**2,946.73**	**100.00**

Source: PPD, 2022

3.2.2.1 Agriculture Land Use Area

Currently, agriculture occupies the majority (46.23%) of the 2,946.73 hectares of land at Ngabu Main Market Centre. Customary land is the dominant land tenure in the area and is primarily found on its periphery, holding the majority of the agricultural land. Along river banks and in areas that are vulnerable to flooding, agricultural activities are also practiced. The majority of large farms and ranches are situated on the outskirts of the Centre and are held under leasehold property.

3.2.2.2 Commercial Land Use Area

Majority of the commercial activities including the main produce market at Ngabu Main Market Centre are concentrated along the M1 (Chikwawa-Bangula) Road, taking up very little space. Aonther commercial area, operating at low scale, is along the old M1 Road where there is Makande Trading Centre with an old produce market. Despite the Ngabu USP (1997) designating a total of 39ha for commercial activities, commercial land use currently occupies a total area of 23.04ha. The major part of the commercial area is generally centrally located at Ngabu.

3.2.2.3 Residential Land Use Area

The 1997 Ngabu USP reserved 240ha for residential use. However, the socio-economic survey (2022) has revealed that residential land use currently covers an area of about 1,130.39ha. There are planned residential settlements especially at the centre and on the western part of the area. And majority of high-density permanent residential developments at Ngabu belong to institutions, particularly Government departments and agencies.

3.2.2.3.1 High Density Traditional Residential Area

The peripheral of Ngabu is dominated by high density traditional residential developments, which cover a total area of 474.21 ha. This type of residential developments is found in all GVHs, including Malemia, Mphamba, Nkhwangwa, Khokhwa, and Saopa. According to the 1997 Ngabu USP, 120 hectares were reserved for high density traditional residential developments.

3.2.2.3.2 High Density Permanent Residential Area

The majority of the high density permanent residential area is located in the urban centre and spans 522.94 ha. This type of neighborhood is found in GVH Malemia and Mphamba. In comparison, the 1997 Ngabu USP designated 50 hectares for high density permanent residential areas. The

central area is currently densely populated with residential areas as more people want to be close to the market and workplaces.

3.2.2.3.3 Medium Density Residential Area

Medium density residential area is situated in Misongwe and Thonje Villages, between a low density area and Ngabu Community College. This residential zone is located to the West of M1 Road and covers approximately an area of 88.76 ha which is bigger than 30 ha allocated by the Ngabu USP in 1997.

3.2.2.3.4 Low Density Residential Area

Low density residential area covers a total area of 44.48 ha located to the far West along Saopa Road. This zone is situated in GVH Saopa and it is the smallest residential area among the four residential zones described above. Based on the current studies, the area is 4.48 ha bigger than the area allocated by the Ngabu USP (1997). Table 4 below shows residential zones at Ngabu USP area.

Table 4: Existing Residential Zones at Ngabu Main Market Centre

ZONE	AREA (HA)	PERCENTAGE
High Density Traditional	474.21	41.95%
High Density Permanent	522.94	46.26%
Medium Density Area	88.76	7.85%
Low density	44.48	3.93%

Source: PPD, 2022

3.2.2.4 Institutional Land Use

Institutional land use occupies 121.39 ha of land. This land has been used for developments such as schools, staff houses, hospitals, offices and churches. Most of the institutions are located on the eastern side along the road to SVADD. On the western side, institutions are located along the road to Saopa. Some of the institutions are within the settlement areas located to the north, east, central and southern part of the Centre. These include; schools, SDA Health Centre and Southern Region Water Board Ngabu Office. The socio-economic survey has revealed that, currently, institutional land is slightly bigger than what the 1997 USP plan provided, which zoned 110 ha for institution zone.

3.2.2.5 Flood Prone Areas

The socio-economic study conducted at Ngabu USP area shows that about 560.64ha of land is prone to flooding. These areas lie along rivers and streams of Nyakamba, Chimbamira, Monjo, Zengo and Ntayanyanga. The villages that are prone to flooding include Thonje, Semba, Julius, Misongwe, Ngalu, Kulima, Mojenti and Chimbembe. The 1997 Ngabu USP indicated only 29 ha of land as flood prone.

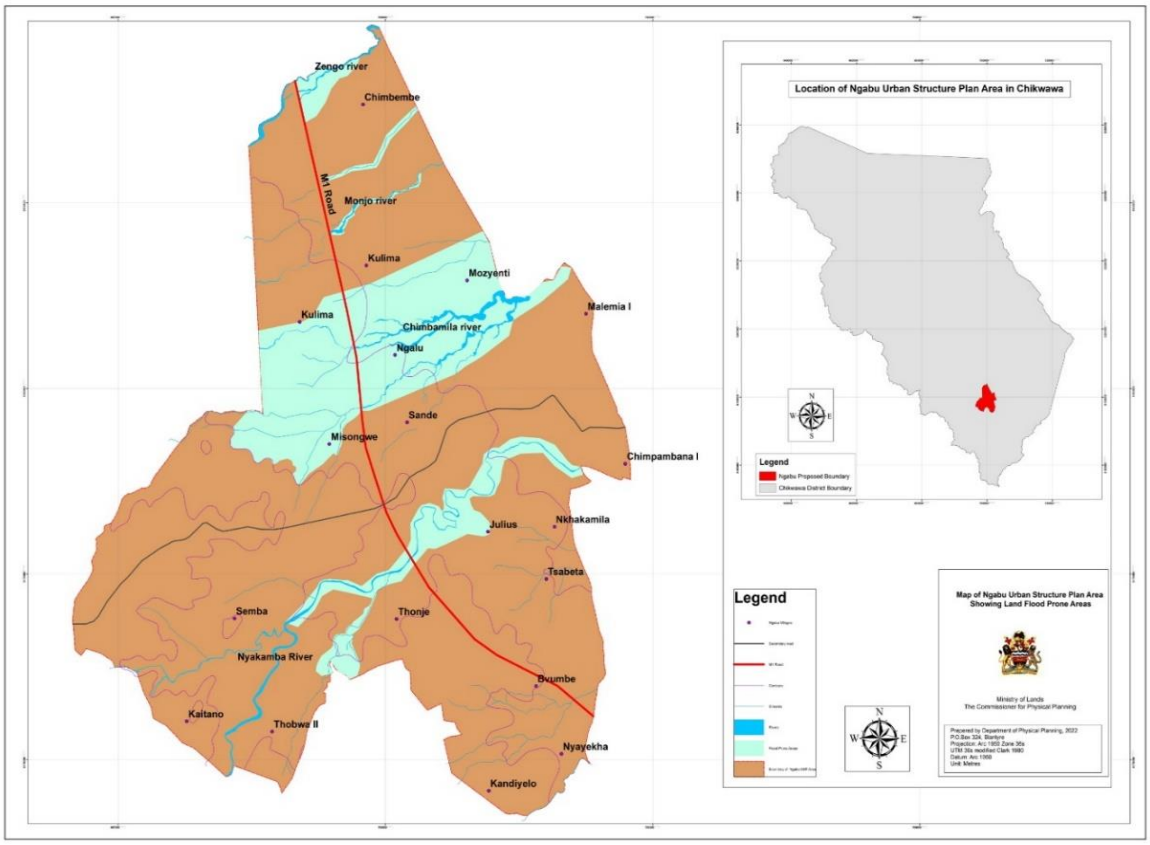


Figure 8: Flood Prone Areas at Ngabu Main Market Centre (PPD, 2022)

3.2.2.6 Natural Vegetation

Natural Vegetation at Ngabu is located to the eastern and western part covering an area of about 77.48ha. These areas are found under the jurisdiction of GVH Malemia to the East and GVH Saopa to the West. This area is covered by shrubs, trees and a natural forest. This zone is a source of fuelwood, fruits and natural medicines to the surrounding communities. In the 1997 USP, 29 ha was reserved for afforestation.

3.2.2.7 Cemeteries

Ngabu USP area is served by five (5) cemeteries which cover a total area of 24.21 ha. Among the five (5) cemeteries, three (3) are in GVH Malemia, one (1) in GVH Saopa and one (1) in GVH Khokwa. In the 1997 USP, the studies revealed that 8 ha of land was used for cemeteries.

3.2.2.8 Mining Areas

The mining area at Ngabu covers approximately 16.44 ha. There are three (3) notable sites for quarry and gravel soil mining situated in GVH Mphamba. The mining sites are located on the southern part of Ngabu, particularly to the East of the M1 Road. Out of these sites, one (1) belongs to Mota Engil while the other two (2) belong to the community. The community benefits a lot from these mining sites as their source of livelihood. Mostly, women extract quarrystone for sale to earn a living.

3.3 Housing

Housing is one of the basic human needs. National Housing Policy (2017) describes housing as shelter with basic infrastructure and services, such as potable water, sanitation, drainage, access roads, footpaths and public services. Housing provision is a key benefactor to both economic growth and improved welfare through its direct and multiplier effects on creation of employment. Hence, housing has to be done in a properly, well-coordinated and organized manner to achieve sustainable development. Housing can be analyzed in form of ownership (private and institutional housing), quality of building materials (permanent, semi-permanent and traditional) and densities. According to National Housing Policy (2017) a permanent house is described as a house of walls constructed with burnt bricks, concrete or stones and a roof made of iron sheets of any kind of durable material, and has screened flooring, tiles, concrete or asbestos. Semi-permanent houses are built with either burnt bricks or unburnt bricks having roofs made of iron sheets. The policy defines traditional houses as those with grass thatched roofs, reinforced with plastic sheeting to improve water proofing and walls made of mud and wattle.

3.3.1 Institutional Housing

Ngabu Main Market Centre has various institutions which provide housing to their employees. The housing facilities help employees reduce living expenses as transport is greatly reduced. Institutions with housing facilities include ADMARC, Ngabu Secondary School, Ngabu Rural Hospital, Ngabu SDA Health Centre, SVADD, SOS Institutions, Makande Police and primary schools such as Makande, Changa and Monjo (refer to Table 5).

Table 5: Dwelling Units Belonging to Various Institutions at Ngabu Main Market Centre

NAME OF INSTITUTION	HOUSING DENSITIES			TOTAL NO. OF HOUSES
	LOW DENSITY	MEDIUM DENSITY	HIGH DENSITY	
SVADD	34	28	123	185
Ngabu Rural Hospital	0	0	10	10
Police	0	1	11	12
Ngabu Secondary School	0	13	0	13
ADMARC	1	3	15	19
Ngabu SDA Health Centre	1	2	0	3
Water Board	0	0	4	4
Court	0	0	5	5
Makande Primary School	0	0	7	7
SOS Institutions	0	0	19	19
Changa Primary School	0	0	2	2
Monjo Primary School	0	0	1	1
Makande CDSS	0	0	4	4
TOTAL	**36**	**51**	**197**	**284**

Source: PPD, 2022

The number of houses owned by institutions does not tally with the number of employees. For insance, SVADD has 60 employees against 185 houses (refer to Figure 9). The 125 SVADD surplus houses are rented out to employees of other institutions at the same low charges.

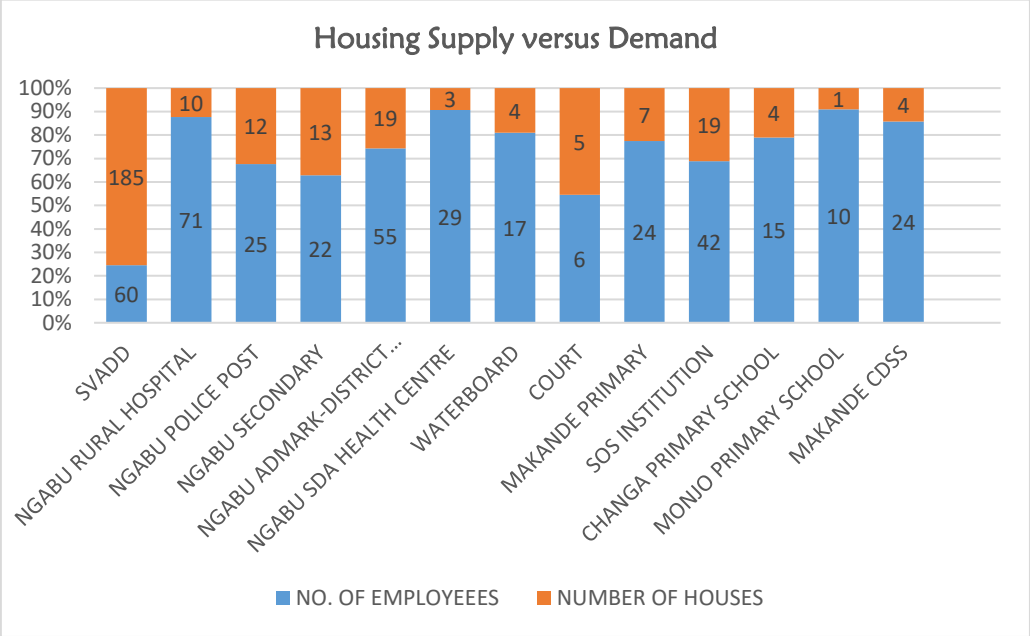


Figure 9: Institutional Housing Supply and Demand at Ngabu Main Market Centre (PPD, 2022)

3.3.2 Private Housing

Besides institutional houses, there is also a well-established private housing sector at Ngabu Main Market Centre. This housing category is mainly owned by individuals at a small-scale level and includes houses of all classes depending on the financial muscle and preference of the owner. Within the Centre, some institutional staff and self-employed individuals rely on private housing for residential accommodation.

The study undertook a small sample of 130 houses to check on house ownership and tenancy. The results revealed that 55% are on rented houses while 45% are dwelling in their own houses and 6% of those residing in their own houses have formal lease contracts (refer to Figure 10).

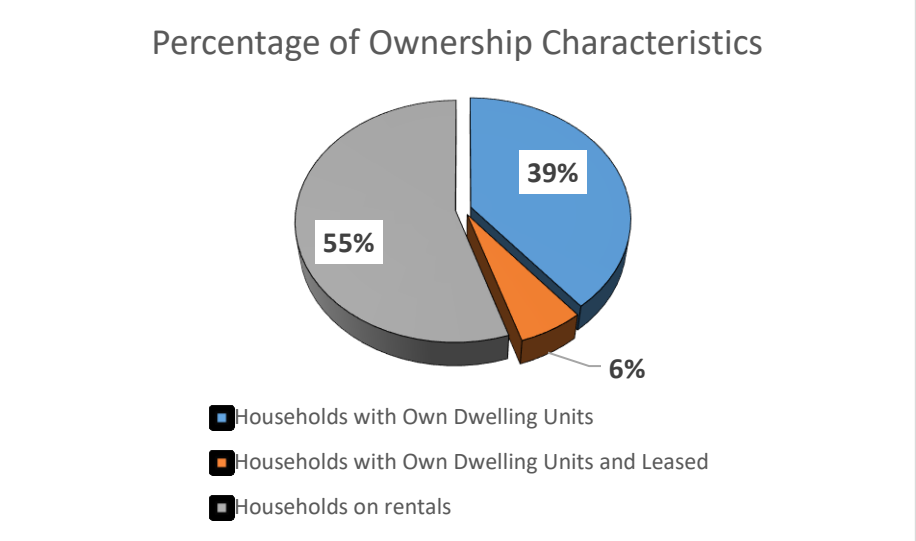


Figure 10: A Sample of Ownership of Private Housing Units at Ngabu Main Market Centre (PPD, 2022)

Housing rentals at Ngabu Main Market Centre depend on the nature and the size of the house. In as much as institutional houses are fair in terms of rentals, some of the private sector landlords at the Centre offer relatively high quality houses at much higher rates. Table 6 below shows the estimated average rentals charged by individual real estate merchants sampled during the study.

Table 6: A Sample of Housing Rentals at Ngabu Main Market Centre

HOUSING CHARACTERISTICS	AVERAGE RENTALS (MK)
Traditional Houses	4,000
Semi-Permanent Houses	10,000
Permanent Houses	40,000

Source: PPD, 2022

3.3.3 Housing Characteristics

Existing institutional houses at Ngabu Main Market Centre are generally permanent in nature (refer to Figures 11 and 12). However, some of these houses are in a dilapidated and poor state due to lack of maintenance thus, condemned for human habitation. For example, some houses for Water Board, Ngabu Court and schools like Monjo and Changa are in state of disrepair although few junior staff use them as their dwelling units. Changa Primary School and SVADD, each has two houses declared unfit for human habitation and are completely abandoned. At SOS, the newly constructed dwelling houses have been changed into storage facilities due to floor and wall cracks which developed as a result of Makande waterlogging conditions.



Figure 11: Condition of Ngabu Court Staff Houses (PPD, 2022)



Figure 12: Ngabu Rural Hospital Permanent Staff Houses (PPD, 2022)

Similarly, private rented-houses are also found in three categories (permanent, semi-permanent and traditional). Thus, some are habitable while others are in bad shape. A small sample of 130 houses from two different areas of 200 square metres within congested residential areas were randomly selected. The purpose of this sampling was to isolate and rate housing characteristics in order to identify the area of housing demand in the sector (refer to Table 7).

Table 7: A Small Sample to Identify Areas of Housing Demand

HOUSE CATEGORY	SAMPLE A/200m^2	SAMPLE B/200m^2	TOTAL SAPLING/400m^2	PERCENTAGE
Permanent	6	11	17	13
Semi-Permanent	10	29	39	30
Traditional	36	38	74	57
TOTALS	**52**	**78**	**130**	**100**

Source: PPD, 2022

Results of a small sample observation, indicates that most of the houses owned by individual real estate merchants at Ngabu Main Market Centre are traditional in nature. Mostly, housing demand is a critical factor in the lower income levels as evidenced by the type of housing in high demand. This implies that majority of Ngabu residents are in low paying jobs or are doing small scale economic activities that are not giving them much returns. This correlates with the findings of the socio-economic data collected which indicated that the majority of the population are subsistence farmers and run hawking businesses to supplement their income. Secondly, table 6 shows that there is shortage of good quality privately owned houses for rent, the sample only had 13%. This might be a subset of the same low-income levels of the majority of the population, hence, only a few can afford to construct such houses or the desire to make fast money with little investment as the traditional type of housing is very cheap and fast to construct.



Figure 13: Traditional Houses around Malemia 2 Village (PPD, 2022)

3.3.4 Housing in Various Residential Areas

At Ngabu Main Market Centre, housing has been developed in all three residential zones: low, medium and high-density permanent areas. The 1997 USP indicates zoning schemes with a clear-cut residential area in a

well-defined manner. However, recent findings have revealed that there are planned and unplanned residential areas within the USP boundary.

3.3.4.1 **Housing in Planned Residential Areas**

The majority of permanent homes are located in Ngabu Main Market Centre's central area. The region has been developed in accordance with the 1997 USP. Institutional offices and dwelling houses, primarily SVADD houses, predominate in the area. The 1997 Ngabu USP was not strictly followed in the development of the residential area; the plots' current dimensions and orientations deviate from the Plan. Furthermore, the Town and Country Planning Act's outdated standards and guidelines were referred when developing the plots. This is the outcome of the detailed layout plans having been created a long time ago. Plot sizes as per the 2014 Physical Planning Standards and Guidelines are displayed in **Table 8** along with their current equivalents.

Table 8: Recommended Plot Sizes According to Planning Standards and Guidelines

CATEGORY OF PLOT	EXISTING PLOT SIZE	RECOMMENDED PLOT SIZE RANGE
Low Density Plot	40x50m=2000 m^2	1,000 m^2 and 1500 m^2
Medium Density Plot	25mx40m=1000 m^2	375m^2 to 975 m^2.
High Density Plot	15mx30m=450 m^2	100 m^2 to 350 m^2

Source: PPD, 2022

Ngabu USP of 1997 featured distinct housing locations based on densities, even though implementers did not adhere to all of its requirements. The low density housing area is situated east of Ngabu Technical College and far west of the District Council Offices on the Saopa Road. Between the low density area and the Technical College is a medium density housing area. The 1997 USP recommended that the area be made available to the public for residential development. However, SVADD still maintains primary control over the low and medium density housing areas, which span 40 hectares and 30 hectares, respectively. Nevertheless, the community has encroached on the majority of the SVADD land.

Similarly, the 1997 Ngabu USP proposed that the public use the medium density housing area located to the west of Ngabu Secondary School; however, the proposal was never carried out. Despite the fact that the individuals developed the area, they did not follow the detailed layout plans. Similarly, Ngabu USP (1997) states that the area located to the south of Makande Road along Chikwawa-Nsanje M1 Road, between the commercial zone and the Magistrate Court, was designated for high density permanent housing use. Rather, the ADMARC and SVADD's high density institutional housing make up a portion of the area. Moreover, there are private housing developments occupying some of the gaps between the area's existing homes. Additionally, the other portion of the region, which is along the Nyakamba River, has also been developed haphazardly by the people.

3.3.4.2 **Housing in Unplanned Areas**

The housing pattern at Ngabu Main Market Centre reveals that private housing is predominantly located in unplanned residential areas and other zones reserved for other uses. Some of these areas

are found within the boundary of the 1997 Ngabu USP. These ones have developed according to the needs of the land owners and are characterized by lopsided plots and mixed housing setup that can be classified into category of densities through housing proportions.

The houses in unplanned residential areas are not different from those in planned housing areas. Moreover, these areas have also attracted the rich in search of land of unregulated size for housing development to satisfy their needs and preferences. Within the boundary of 1997 Ngabu USP, private houses are located to the west of the M1 Road along the northern side of Saopa Road under high density traditional housing area and high density permanent housing area. The other high density permanent housing area lies to the north of Makande road between the commercial area and Ngabu Secondary school. High density traditional housing area is also just North of SOS orphanage institution across the road going to SVADD around Malemia 2 Village. Some traditional houses are found to the west of M1 Road between Kaliza Cemetery and the tributary Namichimba River. Remarkably, all these proposed high density housing areas have been developed haphazardly despite the Plan's availability. Table 9 below depicts the developments in planned and unplanned housing areas at Ngabu Main Market Centre.

Table 9: Housing Developments in Planned and Unplanned Residential Areas

Category of Housing Area	Housing in Planned Areas (HA)	Estimated Haphazardly Developed Area (HA)	Vacant Land (HA) in Planned Areas	Estimated Legally Developed (HA) Accorading to New Plot Standards	Total Housing Area Used in Unplanned Areas	Total Housing Areas	Total Housing Area in Percentage
Low Density	40	2.1	35.38	2.52	6.58	44.48	3.9349%
Medium Density	30	10.694	8.219	11.087	16.653	88.76	7.8522%
High Density permanent	50	46	0	1.28	46	522.94	46.262%
High Density Traditional	120	120	0	0	120	474.21	41.951%

Source: PPD, 2022.

3.3.5 Population and Housing Demand

Housing is a basic need for everyone. Demand for housing depends on the total number of households. Additionally, a type of a house one can have depends on the affordability by an individual in relation to income level. An increase in urban population will demand more houses of various densities to be constructed within the urban centre or at least close to it.

According to socio-economic survey, 1% of the population at Ngabu Main Market Centre lives in low density areas. Currently, the zone is inhabited by 70 households which have occupied 7 hectares out of 44.48 hectares. Based on standard plot size of 0.1 hectare per household, there is

currently enough land. In 10 years' time, based on the growth rate of 2.5 percent the household population will rise from 70 to 90 which will occupy 9 hectares. This means 44.48 hectares will still be enough if the Plan is implemented accordingly.

The survey indicated that about 10% of the population at Ngabu Main Market Centre lives in medium density areas. Currently, the zone is inhabited by 462 households which have occupied 27.74 hectares out of 88.76 hectares available. Based on standard plot size of 0.06 hectare per household, currently there is enough land for housing. Again, based on the growth rate of 2.5 percent, in 10 years' time, the household population will rise from 462 to 592, hence, they will be a demand of 35.52 hectares. Regardless of the increase in household population, in 10 years' time there will still be surplus land for medium density housing area since the 1997 Plan set aside 88.76 hectares.

The 2022 socio-economic survey, shows that 89% of Ngabu Main Market Centre's population lives in high density traditional and high density permanent housing areas. Currently, about 4,165 households have occupied 124.956 hectares out of an aggregate of 995.53 hectares available in both areas. Based on standard plot size of 0.03 hectare per household, there is currently enough land in both areas. In 10 years' time, the household population will grow from 4,165 to 5,332 based on the 2.5% growth rate. The new household population will demand 159.96 hectares out of the 995.53 hectares available. This means, even in 10 years' time there will still be a surplus land for high density areas.

3.4 Economic Activities and Sources of Livelihood

3.4.1 Income and Employment

The socio-economic survey revealed that 46% of the population at Ngabu Main Market Centre fall in the economically active age group of 18 to 60 years. About 13% of the total economically active population are employed in both public and private sectors. Only 27% of the total employed population are females. The survey also shows that 77% of the total employed population has formal employment. The rest of the economically active population relies on farming, casual labour and small-scale businesses for their income and livelihood

3.4.1.1 Major Employers

The 1997 USP indicates that the SVADD was the major employer at Ngabu Main Market Centre. The current findings, however has shown that the major employer is SAEED Investment, taking up about 20% of the total employed population.

The survey has also revealed that the major employer in the public sector is Ngabu ADMARC taking up about 35% of employees in this sector, majority of which are attached to the Cotton Ginnery. On the other hand, SAEED Investment (Group of Companies) is the major employer in the private sector, taking up about 40%, seconded by the Cattle Ranches (farms) with 18% of the total employees in the sector. Overall, majority of employees at Ngabu Main Market Centre are in

the private sector, representing about 51% of the total employees (refer to Figure 14). This includes formal and informal employment in both formal and informal sectors of the economy at the Centre. These findings imply that the cotton production as well as cattle farming has the potential of creating substantial number of jobs in the area, which can boost the economic activities for the Centre, a similar case with the 1997 USP findings.

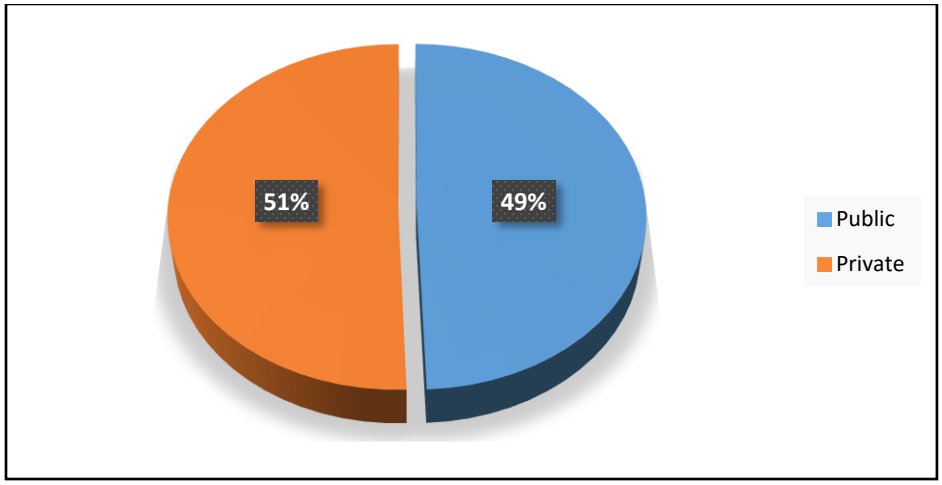


Figure 14: Employment by Sector at Ngabu Main Market Centre (PPD, 2022)

3.4.1.2 Wages and Salaries

Despite having a large share of the labour market, the private sector has very low wage and salary levels. About 75% of employees in this sector earn on average less than the Malawi's minimum wage of MK50, 000.00 per month compared to only 1% in the public sector. The highest earning employees are in the public sector, with 27% earning above MK200, 000.00 monthly compared to only 19% in the private sector. However, these highest earners only constitute 23% of the total employed population in the area. This implies that the income levels of the employed population at Ngabu are very low with the majority living below international poverty line. As such, the economic activities are highly dependent on the unreliable informal sector which include small-scale enterprises, street vending and farming among others.

3.4.1.3 Other Sources of Income

The other source of income at Ngabu Main Market Centre remains farming as indicated in the 1997 USP, with no major differences from the current findings. Cotton continues to be the major cash crop grown in the area, with sesame little by little becoming the second major cash crop. The majority of the population depends on these two cash crops for their income.

Other crops like maize, rice, millet, pepper, tomatoes and leaf vegetables are grown in small quantities and are sold either at ADMARC or locally at produce markets. Livestock farming is also common in the area which includes cattle ranching, and goat and sheep rearing similar to what the 1997 USP established. The main markets for ranchers are cold storage companies and major super markets in Blantyre. The smallholder livestock farmers mostly sell to the nearby ranches or

to local butcheries at the local market within the Centre for slaughtering so that beef, mutton and goat meat are readily available.

Ngabu Main Market Centre is a home for diverse commercial activities. The 1997 USP indicates that commercial activities at Ngabu Main Market Centre include; retail, wholesale and trade auxiliary enterprises. The only difference from the current findings is the increase in numbers of these enterprises. The current findings show that a large share of the commercial activities, about 84%, are small-scale retail enterprises, which includes mini-shops, hawkers, barbershops, motor vehicle garages, motorcycle and bicycle repairs, and farm produce enterprises among others. Only 1% of the activities are wholesale enterprises. There are also a number of small-scale trade auxiliary service enterprises such as mobile money, banking services and logistics, which constitutes 15% of the commercial activities in the area (refer to Figure 15).

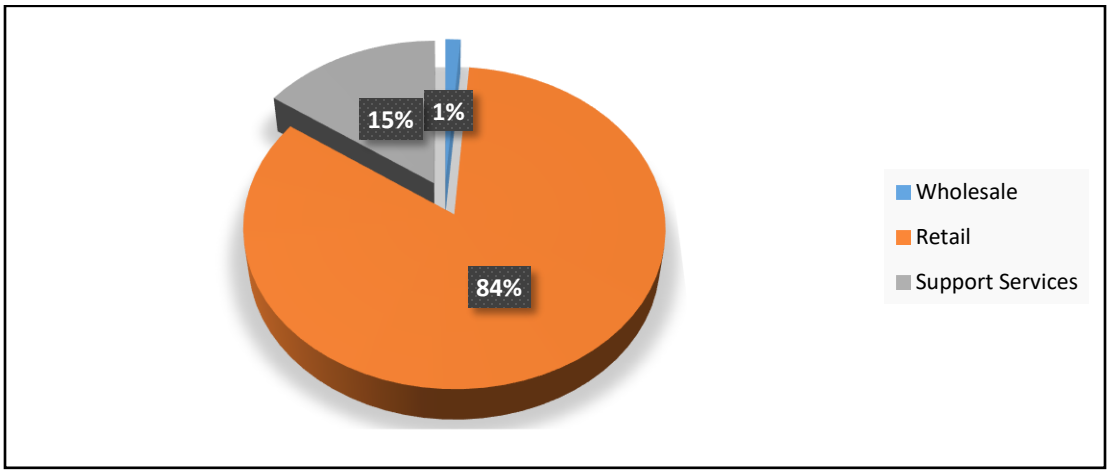


Figure 15: Commercial Activities at Ngabu Main Market Centre (PPD, 2022)

In terms of Information and Communication Technology (ICT), the area has only 2 larger electronics shops, selling cell phones and other electronic products and 18 small-scale electronic shops selling mostly cell phone accessories, implying an Information and Communication Technological (ICT) development lag in the area.

There are two main trading centres in Ngabu Main Market Centre, one at the centre along the M1 Road and the other located on the eastern side of the area and is called Makande. Commercial activities at the trading centre located along the M1 Road are concentrated on the eastern side of the Road, this is because the 1997 USP marked this side for a market. The western part is also slowly developing probably due to lack of a provision for a commercial area in the 1997 Ngabu USP. However, this side was marked for residential purposes in the 1997 USP.

Ngabu Main Market Centre does not have a permanent and modern produce market structure, despite an indication by the 1997 USP that the Chikwawa District Council had plans to construct one. The current market, located at the trading centre along the M1 Road, is made of temporary structures, and is very small and congested. The market also has a small structure, recently

constructed, centrally located. However, vendors refused to enter and operate from the structure. According to them, the structure is too small and not well designed, which makes it difficult to be accessed by customers. As a result, most of the businesses are conducted along the access pathways of the shops. For example, vegetables and other commodities are laid on the ground along the access paths of the shops as there is no market space for them (refer to Figure 16).



Figure 16: Vegetable Vendors at Ngabu Produce Market (PPD, 2022)

There is however, sanity along the M1 Road as street vending is not extreme except for Thursdays, which is a periodic market day for Ngabu Main Market Centre. The heavy congestion experienced on Thusdays along the M1 Road has led to loss of lives for both livestock and human beings through road accidents.

3.4.2 Industries

The 1997 USP indicates that the Ngabu Main Market Centre had all the three types of industries: heavy, light and service. Just like in 1997, the current findings indicate that the area is dominated by service industry which comprises of warehouses, pharmaceuticals, wholesales, retails, electronics and all other enterprises selling goods and services. The service industry has over 387 business activities (refer to Figure 17). The light industry is the second major industry available at the Centre, with 13 enterprises which include; production of goods at a lower cost such as maize mills and edible oil among others. The heavy industry is the least among the three industries with only four (4) enterprises which includes three (3) cotton ginneries and a quarry mine.

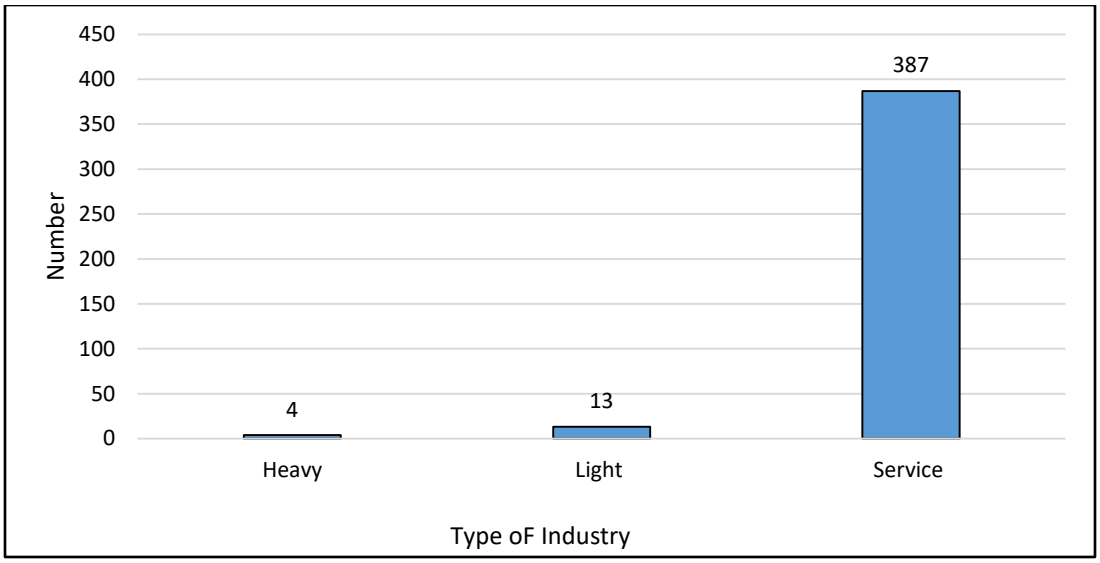


Figure 17: Industrial Developments at Ngabu Main Market Centre (PPD, 2022)

Findings of both the 1997 USP and the 2022 Socio-Economic Survey show that Ngabu Main Market Centre does not have reliable production industries which are the critical drivers of development. Even the numbers have not significantly changed. For instance, currently there are three (3) cotton ginneries and 10 maize mills against one (1) cotton ginnery and 11 maize mills respectively in 1997. The Centre also has one (1) groundnuts mill and one (1) palm oil factory. The palm oil factory is currently dormant but there is expectation that it will be operational. This is despite the Centre being surrounded by a vibrant cotton and sesame growing population as well as large- and small-scale livestock production, a great opportunity for the growth of cotton ginneries, oil factories as well as meat products factories among others.

3.4.3 Leisure and Entertainment

Ngabu Main Market Centre does not have a vibrant leisure and entertainment sector. There are five (5) rest houses at the Centre, and three (3) of the rest houses are not in an attractive state for accommodation. The sector just like the Ngabu Main Market Centre economy, partly relies on the farming season with harvesting season bringing the best performance. The performance of these rest houses, determined by their occupancy rate is very low with a combined average of 24% off-season and 71% on-season (refer to Figure 18).

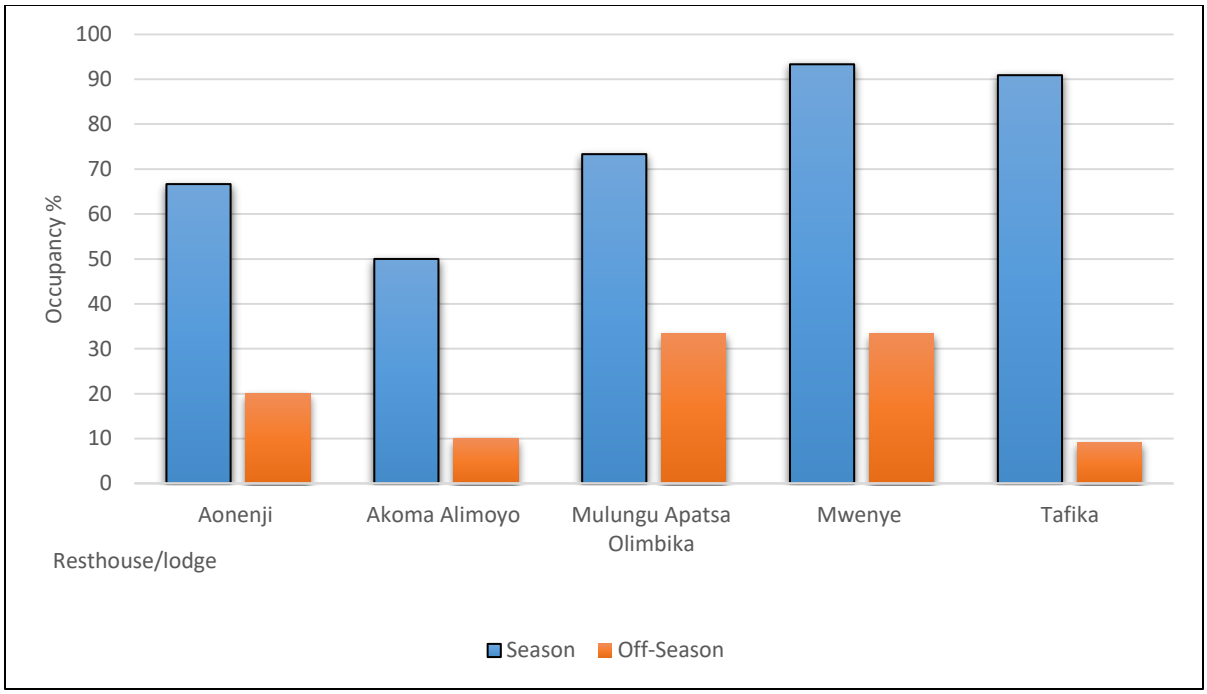


Figure 18: Performance of Hospitality Facilities at Ngabu Main Market Centre (PPD, 2022)

Ngabu Main Market Centre also has four (4) bars and five (5) bottle stores. The bar and bottle store businesses are an ideal for the area as it has a lengthy hot weather condition per annum. However, it is also slightly affected by the farming season, like other economic activities at the Centre.

3.4.4 Banking Services

The 1997 USP indicates that the Ngabu Main Market Centre had one (1) bank, Post Office Savings Bank (later called the Malawi Savings Bank) and one (1) financial lending institution, Malawi Rural Finance Company (MRFC). These two (2) institutions gave the Ngabu Main Market Centre access to banking and financial lending services.

The current findings, on the other hand, show that the Centre does not have wellestablished banking infrastructures. There are banking agents that provide some of the services on behalf of the banks in the Centre and these include: NBS Bank, National Bank, FDH Bank and MyBucks Bank. However, these banking agents only provide basic banking services of depositing and withdrawing of money at a high transactions fee than the actual banks. The banking agents do not provide crucial services for economic development such as loan services, making the Centre's access to financial services limited. The banking sector is also supplemented by mobile money services such as Airtel Money, TNM Mpamba, Mukuru and Hello Paisa. The mobile money providers are dominated by Airtel money and TNM Mpamba which are very common at the Centre, providing depositing, withdrawing as well as money transfer services.

3.5 Conservation

Evaluations were done in terms of macro rainfall catchment area that is an ecosystem approach. Three major drainage catchment areas were identified within Ngabu USP area. These are Nyakamba, Chimbamila and Zengo rivers catchment systems. This section describes the current general environmental conditions at Ngabu Main Market Centre in terms of conservation of built, natural and biotic environment.

The evaluation considered aesthetic, vegetation, faunal, soil and water conservation. It is clear that the general Ngabu Main Market Centre has been and is subject to extensive urbanization and agriculture. In the process, a number of environmental issues have emerged, some with significant implications.

In the current built environment, with the exception of government-built environment, building regulations and development planning guidelines were to a large extent not applied, and that led to development of slums which have in turn degraded the visual character of the urban environment. Development has generally been haphazard due to poor development control. Again, undisciplined aesthetics specifically visual, such as poor construction and maintenance of infrastructure and buildings and uncoordinated painting have resulted into blight conditions.

The loss of natural vegetation due to clearance for building structures, cultivation, quarry stone and gravel mining as well as harvesting of fuel wood have degraded the natural environment. Eventually, some of riverside forests and grasslands have been removed to create space for structures and cultivation; resulting into degradation of vegetation within what should have been conservation areas. However, in some small sections of the built and cultivated environment, some natural trees and bushes have been retained and some exotic trees introduced. According to Department of Forestry, the Centre has 41 natural forests and 80 woodlots and almost every home or plot has trees to protect people and their livestock from scotching heat and heat waves as well as to protect housing units from strong winds. Clearance of the natural vegetation has also resulted into cascading effects, leading to loss of wildlife and soils. There is degradation of water in rivers and streams as well as soils through soil erosion at the Centre, mainly caused by tilling of soils and cultivation in the river banks. In addition, runoff water has brought fertile soils and chemicals into rivers, resulting into siltation and pollution of water. Also, brick making and quarry mining have contributed to defacing of the earth surface, deforestation and exposure of surfaces making them more vulnerable to natural disasters.

3.6 Existing Physical Infrastructure

Physical infrastructure is a collective term referring to various goods and services that promote prosperity and contribute to quality of life including social well-being, health and safety of citizens and the quality of their environments (OECD, 2006). Electricity, water, transport and communication all fall into this broad term of infrastructure. World Bank categorized infrastructure into three broad sections: public utilities (power, telecommunication, piped water supply, sanitation, sewages, waste collection and disposal and piped gas), public works (roads,

dams and canal work) and urban and rural transport facilities (railways, ports, waterways, airports). The assessment of infrastructure in the subsequent sections is in line with the above synopsis.

3.6.1 Transport

The Chikwawa District Physical Development Plan classified the existing road network for Chikwawa District into main, secondary, district, tertiary and feeder roads. Ngabu Main Market Centre is connected by the M1 Road running from Nsanje to Blantyre. The rest are feeder earth roads meant to provide access to destinations outside the Centre.

3.6.1.1 Road Transport

The M1 Road is the only tarmac road at Ngabu Main Market Centre. There are a number of motorable tracks and footpaths that radiate from both sides of the M1 Road to various destinations facilitating the movement of goods and services. One such road is a 24m T424 earth road to Saopa. On the western side of the trading centre located along the M1 Road, there is another 24m earth road, previously tarred, which runs from the trading centre to the old M1 Road on eastern side connecting at the SVADD offices. There is also an 18m earth road running from the Ngabu Magistrate Court serving Chindoko, Nkhodzo and Msomo Trading Centres on the south-eastern side of the Ngabu Main Market Centre. Another 18m earth road runs from the M1 Road going to Fodya, on the south-western side of a trading centre, located behind the low density area. Another 18m earth road runs from the M1 Road going to villages like Mthobwa and Khonkhwa on the south-western side. To the far south is another 18m earth road to Utumbe which is also serving as a boundary to the planning area on the southern side. There are other roads within the Centre ranging from tracks to footpaths that facilitate movements of goods and services and connecting various land uses within the area (refer to Figure 19).

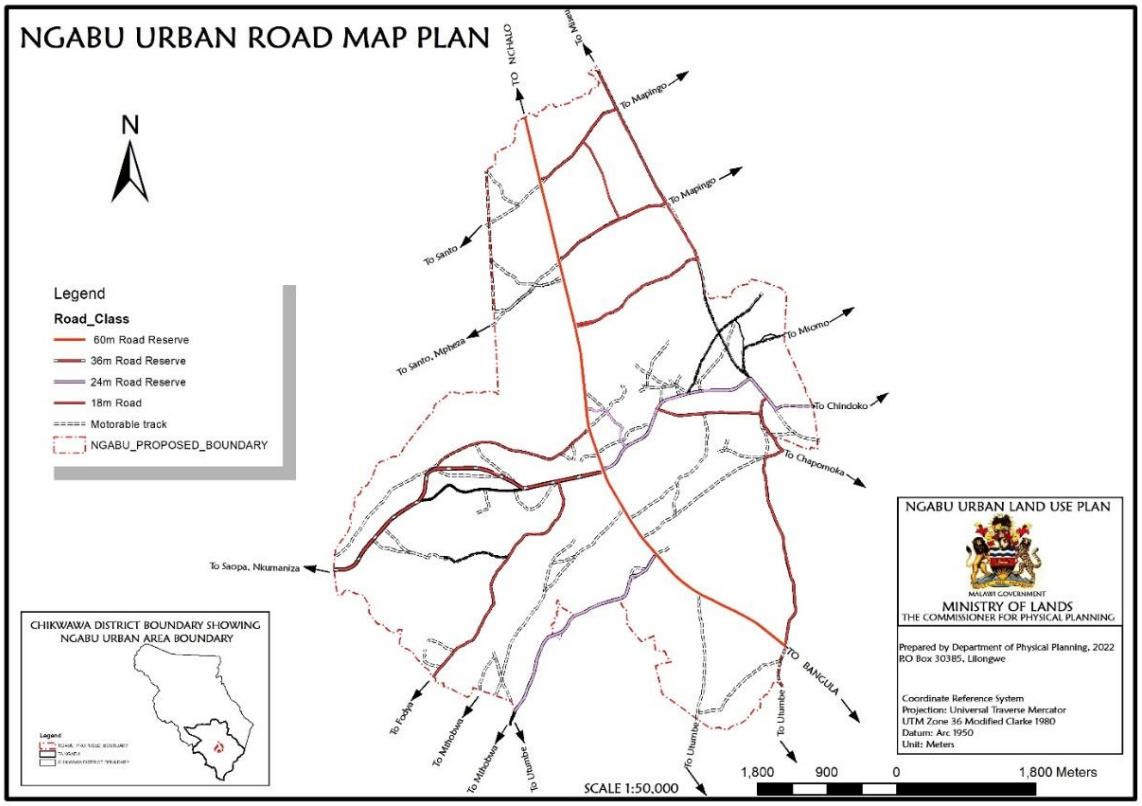


Figure 19: The Road Network at Ngabu Main Market Centre (PPD, 2022)

Apart from the M1 Road, all other roads at Ngabu Main Market Centre are not in good condition, due to potholes, narrow size and can become muddy and slippery during rainy seasons causing difficulties in movement and conflicts between road users (refer to Figure 20). For instance, bicycles, pedestrians and vehicles compete for better parts of the roads which leads to slow movement of traffic.

Another challenge is that some road reserves have been heavily encroached. Furthermore, some areas at the Centre do not have direct access due to lack of roads.



Figure 20: A Road to Msomo during Rainy Season (PPD, 2022)

Some roads in the area have also been abandoned or are no longer passable because the rivers increased their courses rendering them impossible for motor vehicles to pass (refer to Figure 21). For example, old M1 Road from Miseu Folo to Makande Trading Centre was abandoned because it was washed away by Nyamikalango River located outside the Main Market Centre and Zengo, Chimbamila and Namichimba Rivers which are within the Centre.



Figure 21: Old M1 Road Washed Away by Chimbamira River (PPD, 2022)

3.6.1.2 Air Transport

Currently, Ngabu Main Market Centre does not have any infrastructure for air transport. The aerodrome which was previously used by the early settlers in this area was heavily encroached by the cotton ginnery and some private farms. The nearest aerodrome is a private one owned by Illovo Sugar Company at Nchalo located at a distance of 23km while the nearest public facility is located 30km away at Bangula in Nsanje District.

3.6.2 Bus Depot

Ngabu Main Market Centre does not have any designated bus depot. However, there is a bus bay with a shelter along the M1 Road which is in good condition (refer to Figure 22). Due to absence of truck bays, trucks park at the same bus bay causing minibuses to park on the M1 Road, particularly on market days.



Figure 22: Ngabu Bus Stop Shelter along the M1 Road (PPD, 2022)

3.6.3 Dykes and Channels

Ngabu Main Market Centre is not heavily affected by flooding as most of the land is on higher ground. Most of the areas along the rivers are the ones that are prone to flooding. For example, houses along Chimbamira and Nyakamba Rivers as well as areas which are along other water channels such as Namichimba, Nzengo, Ntayanyanga, Chifidi, Monjo Rivers are frequently affected by floods. As a result of non-frequent flood occurrence at the Centre, there are no dykes constructed specifically for flood control. However, the M1 Road and other planned roads in the area are raised, hence they act as dykes to control water runoffs at the Centre.

3.6.4 Fire Fighting

Currently, there are no firefighting services in the Ngabu Main Market Centre, as it is the case with all other urban centres in Chikwawa District.

3.6.5 Education

There are a number of public and private education facilities within the Ngabu Main Market Centre. These facilities include Early Childhood Development Centres (ECDCs), Adult Literacy Education Centres (ALECs), primary schools, secondary schools, as well as tertiary education institutions.

3.6.5.1 Early Childhood Development Centres (ECDCs) Centres

The area has a total number of five (5) ECDCs (pre-schools); three (3) are public and two (2) are private. The public pre-schools are free and the caregivers provide the services on voluntary basis. Public pre-schools have a total enrolment of 155 (43 males and 72 females) while the private pre-schools have a total enrolment of 97 (36 males and 61 females). The total enrolment for pre-schools at Ngabu Main Market Centre is 212 (refer to Table 10).

Table 10: Pre-Schools at Ngabu Main Market Centre

Name of School	Public	Private	Trained Caregivers	Total Caregivers	No. of Children		
					Male	Female	Total
Chisomo CBCC	✓		2	4	15	27	42
Alinafe		✓	-	4	25	30	55
Mthandizi CBCC	✓		1	4	11	18	29
Makande CBCC	✓		-	2	17	27	44
Bright Future Angela Foundation		✓	1	3	11	31	42
TOTAL	**3**	**2**	**4**	**17**	**79**	**133**	**212**

Source: PPD, 2022.

3.6.5.2 Adult Literacy Education Centres (ALECs)

Ngabu Main Market Centre has a total of six (6) ALECs with one instructor per each centre. The ALECs include: Tadala, Limbikani, Tamandani, Tikondande, Ndachimwanji and Chisomo. Currently, the ALECs are attended by females only. It was found that men are shy and reluctant to enroll in ALECs. On the other hand, instructors are not working as expected since they lack motivation. The ALECs do not have their own learning structures and they lack learning materials such as blackboards and pieces of chalks.

Tadala and Limbikani has 18 learners each while Tikondande and Chisomo has 15 learners each. Tamandani and Ndachimwanji has 14 and 11 learners respectively. This gives a total enrolment of 91 learners.

3.6.5.3 Primary Schools

The 1997 Ngabu USP indicates that there were 2 primary schools at Ngabu. The socio-economic survey, however, shows that there has been an increase in the number of primary schools at the Centre with a total of 7 primary schools and 7,966 pupils as total enrolment (refer to Table 11).

Makande Primary School has the highest total number of pupils with disabilities (15 pupils) since it has the capacity to educate them, particularly pupils who are blind. Makande Primary School is also the only school which serve as a flood evacuation centre for the victims mainly from outside the Main Market Centre. Consequently, the school faces a lot of challenges on water and sanitation during the time of floods as the pupils scramble for water and toilets with the flood victims.

Table 11: A Summary of Primary Schools at Ngabu Main Market Centre

NAME OF SCHOOL	NUMBER OF TEACHERS		NO. OF CLASS ROOMS	NO. OF STUDENTS WITH DISABILITIES		TOTAL ENROLMENT
	M	F		M	F	
Changa Primary School	7	8	10			1,100
Mwanamakoko Primary School	8	9	14			1,426
Ngabu SOS Hermann Gmeiner Primary School	4	6	10			497
Makande Primary School	21	9	18	14	15	2,343
Monjo Primary School	4	6	4	4	7	1,201
Madugu Primary School	7	7	4			1,213
Diversity Academy	4	7	9	0	0	186
TOTAL	55	52	69	18	22	**7,966**

Source: PPD, 2022.



Figure 23: An Office Block at Monjo Primary School (PPD, 2022)

3.6.5.4 Secondary Schools

The 1997 Ngabu USP shows that Ngabu Main Market Centre had two (2) secondary education institutions. However, the current survey has revealed that the number of secondary schools has doubled to four (4) at the Centre; two (2) are public and the other two (2) being private (refer to Table 12). All of the four (4) secondary schools are co-education.

Ngabu Secondary School and Makande Community Day Secondary School (CDSS) are public and have girls' boarding facilities. Makande CDSS has the highest enrolment with 556 students (259 males and 297 females). The total number of secondary school student enrolment at the Centre is 1,042, of which 519 are males and 523 are females.

Table 12: A Summary of Secondary Schools at Ngabu Main Market Centre

Name of School	Public	Private	No. of Teachers			Teacher/Pupil Ratio	No. of Classrooms	Boarding Facilities	Support Staff	Students with Disabilities		Total Enrolment
			M	F	Total					M	F	
Ngabu SS	√		18	4	22	40	8	8	17	21	3	**303**
Makande CDSS	√		13	2	15	69	8	2	8	2	1	**556**
Royalty Pvt		√	2	0	2	63	4	0	0	0	0	**125**
Maziko Institute		√		0	5	12	6	0	1	0	0	**58**
Total												**1042**

Source: PPD, 2022.



Figure 24: Ngabu Secondary School (PPD, 2022)

3.6.5.5 Tertiary Education

Ngabu Main Market Centre has a newly constructed Ngabu Technical College located on a site previously called Ngabu Inn along the road to Saopa. Consequently, people from Ngabu will have an access to tertiary education once the college is operationalized. Additionally, tertiary education will also be accessed at newly constructed Chikwawa Teacher Training College (TTC) in Chikwawa Boma.



Figure 25: Ngabu Community Technical College (PPD, 2022)

Other tertiary education institutions at Ngabu Main Market Centre include Ngabu Residential Training Centre which provides agricultural training courses to rural farmers drawn from the Shire Valley sub-region. Currently, the Centre provides the trainings periodically.

3.6.6 Health

Health services are imperative to the growth of any urban centre, as with rapid population growth and new immigrants coming into an area entails more health threats. Therefore, provision of health services in an urban area is essential in helping to curb communicable diseases, prevent disease outbreaks as well as meet the growing demand for health services. Ngabu Main Market Centre has made strides in terms of health services in comparison to the 1997 situation. In 1997 there were only two (2) health service providers, namely: Ngabu Rural Hospital and TALRES Hospital currently known as Ngabu Seventh Day Adventist Health Centre.

Currently, the Centre has three (3) more health facilities, namely: Medu Care Private Clinic, Hope Private Clinic and Banja La Mtsogolo Clinic (refer to Table 13). Common ailments treated at these health facilities include malaria and pneumonia. Ngabu Rural Hospital, which provide OPD, antenatal, theatre, maternity, laboratory, dental, family planning and under-five clinic services, is the only Government owned health facility at the Centre (refer to Table 14).

Table 13: Number of Medical and Supporting Staff and Common Ailments Treated at Ngabu

Institution	Doctor/ Clinicians	Nurses	Ward Attendants	Support Staff	Disability Friendly	Doctor to Patient Ratio	Common Ailments Treated	No. of Patients Treated in the Past One Year	No. of Deaths in the Past One Year
Ngabu Rural Hospital	4	36	18	26	No	1:90	Malaria, Pneumoni, Diarrhoea, Malnutritio, Skin conditions and STI's.	77,996	124
Ngabu SDA Health Centre	1	4	7	6	Yes	1:50	Malaria, pneumoni, skin conditions, eye infections.	49.213	N/A
Banja La Mtsogolo Clinic	1	1		4	Yes	1:10	Malaria, STI's, Pneumoni, diarrhoea, common cold and family planning.	7,543	N/A
Medu Care Private Clinic	3	1	0	2	No	1:48	STI's and RTI	300 (3 months)	N/A
Hope Private Clinic	2	1	1	2	No	1:120	Malaria, Pneumoni, STI's, eye conditions, ear conditions, skin condition, injuries and wounds	7200	N/A

Source: PPD, 2022.

Table 14: Rank and Ownership of Health Facilities and Services Provided at Ngabu

INSTITUTION	RANK	OWNERSHIP	SERVICES PROVIDED
Ngabu Rural Hospital	Rural Hospital	Government (MoH)	OPD, antenatal, theatre, maternity, laboratory, dental, family planning and under-five clinic
Banja La Mtsogolo Clinic	Dispensary	Private	OPD, family planning and cervical and breasts cancer screening
Ngabu SDA Health Centre	Health Centre	SDA Church (CHAM)	OPD, under-five clinic, maternity, laboratory, HIV Testing Services (HTS), family planning, antenatal and ART
Medu Care Private Clinic	Dispensary	Private	OPD, under-five clinic, minor surgery, family planning and STD's
Hope Private Clinic	Dispensary	Private	OPD, under-five clinic, family planning, STI's, minor surgeries and min laboratory

Source: PPD, 2022.

3.6.6.1 Ngabu Rural Hospital

Ngabu Rural Hospital is a Government hospital under the Ministry of Health. It has an admission capacity of 85 beds, an increase of 55 beds from the 30-bed capacity indicated in the 1997 USP. It admits a maximum of 25 patients per day. The Ruarl Hospital treated 77,996 patients from June, 2021 to May, 2022 from which it recorded 124 deaths. This implies a death rate of 0.2% for the Hospital. The Hospital receives referrals from health centers around T/A Ngabu and some from as far as Nsanje District, particularly those close to the boundary with Chikwawa District. This therefore, enlarges the catchment area to include the whole T/A Ngabu area and part of Nsanje District.

This is a large area with a lot of people, hence the hospital is usually congested as its admission capacity is not enough in relation to the population it serves. The Hospital faces a lot of challenges, the major ones being; lack of essential medical drugs and supplies, shortage of staff, poor infrastructure amongst which is lack of good latrines and lack of a fence around the Hospital to provide security and privacy. The 1997 USP found that there was no land to expand the hospital; a fact that the current study confirms. The current study observed that the 1997 USP allocated inadequate land to the Hospital to accommodate future expansion. To make matters worse, the available inadequate land has been heavily encroached, posing a further challenge for the Hospital's possible expansion.

3.6.6.2 Ngabu Seventh Day Adventist (SDA) Health Centre

Ngabu SDA Health Centre is a mission health facility under Malamulo Hospital. It was previously called Tarles Hospital which only treated leprosy patients and eye diseases. It was transformed to a health centre following phasing out of the leprosy project. With admission capacity of four (4) beds (refer to Table 14), the Health Centre only admits maternity cases and under five children. The Health Centre has a number of challenges which include; shortage of staff, inadequate supply of essential health commodities and lack of accommodation for health workers.

3.6.6.3 Private Clinics

The three (3) private clinics (Banja La Mtsogolo, Medu Care and Hope), which are ranked as dispensaries, only treat out-patients due to lack of capacity for admissions. The clinics treat common illnesses such as malaria and pneumonia among others. These health service providers are facing challenges which include; inadequate staff, inadequate infrastructures, low patronage to their clinics as well as inadequate finance for further investment in health services provision.

3.6.7 Communication

3.6.7.1 Postal and Courier Services

There is a Post Office at Ngabu Main Market Centre The Post Office provides mail delivery services as well as other services such as money transfer, courier services, express mail services and selling of Kiliyekiliye decoders. On money transfer, the Post Office offers services like

electronic money order, money gram and Paisa. Suffice to say, these services are mostly affected by poor internet connection to the point that, in most cases, some of these services are not available.

The Post Office has a total of 190 mail boxes of which only 50 boxes are currently in active use. This has been the case due to: the coming in of internet and phone messaging which has greatly affected mail delivery services from the company and the inability to adapt to change and bring in new innovations. The coming in of mobile phones and other network companies has provided a stiff market competition to the point that only a few people are using the Post Office for communication and mailing services.

3.6.7.2 Internet

Internet services are provided by Telecom Networks Malawi (TNM), Malawi Telecommunication Limited (MTL) and Airtel Malawi Limited. People mostly access internet on their phones while others use Wi-Fi and dongles. The Centre had only one internet café, namely: "Restoration Stationery Internet and Copy Centre". However, due to lack of customers, it has ceased to provide internet services. The Centre has intermittent internet connections especially in areas along its boundaries. This affects some services which rely heavily on internet connections.

3.6.7.3 Mobile Telecommunication Providers

Mobile networks are provided by three (3) entities, namely: TNM, Airtel Malawi Limited and MTL at Ngabu Main Market Centre. Network connections are erratic. This is a major challenge as some places within the Centre have poor network connections, leading to poor communication.

3.6.7.4 Radio and Television Services

There is a radio station at Ngabu Main Market Centre, Chibvomerezi Community Radio Station, which has a coverage of Chikwawa and Nsanje Districts. Other radio stations that air at the Centre include Zodiak, MBC Radios 1 and 2, Times Radio, Radio Maria, Power 101 FM, SDA Radio and many others. Television services are also available at the Centre, mainly through Kiliyekliye, Zuku, DSTV, STARSAT and GoTV which air a wide range of television stations.

3.7 Community Services

3.7.1 Cemeteries

There are five (5) cemeteries within Ngabu Main Market Centre. Three (3) of the five (5) cemeteries are located in GVH Malemia while the other two are in GVHs Saopa and Khokwa respectively (refer to Figure 26 and Table 15). Makande Mosque Cemetery is exclusively for burial of devoted Moslems while the other four (4) cemeteries are open to the cosmopolitan urban population.

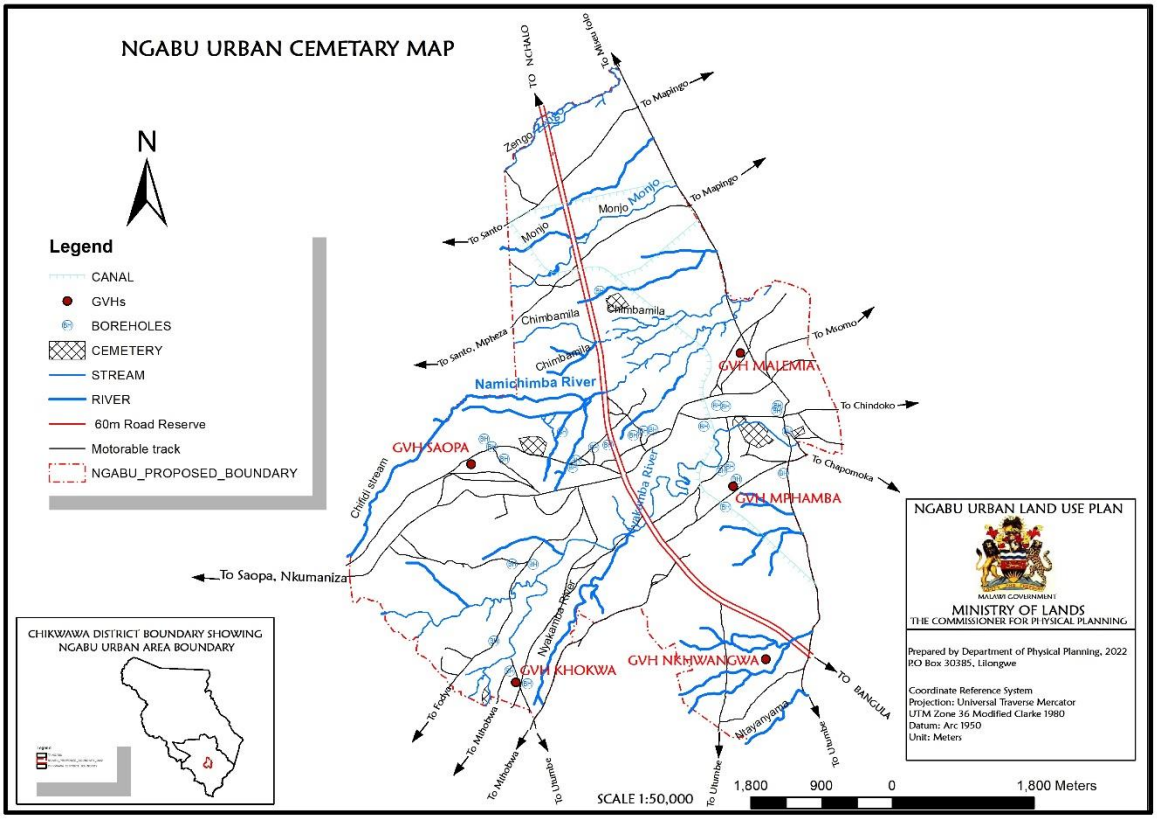


Figure 26: The Location of Cemeteries at Ngabu Main Market Centre (PPD, 2022)

Table 15: An Assessment of Cemeteries at Ngabu Main Market Centre

SITE	TOPOGRAPHY	ACCESS	FLOOD RISK	GROUNDWATER PROTECTION
Mthobwa (Along Nyakamba River)	Gentle slope	Footpath	No flood risk	Within water source catchment area
Kulima (East of M1 Road)	Flat	Footpath	No flood risk but high ground water level	Within water source catchment area
Makande (along Nyakamba River)	Gentle slope	Footpath	Half of the cemetery in flood risk zone	3/4 within water source catchment area
Kaliza (near Madugu Primary School)	Gentle slope	Access road	One third of the cemetery in flood risk zone	More than 250 meters away from water source
Makande Mosque	Flat	Access road	Flood risk	Within water source catchment area

Source: PPD, 2022.

According to Land Use Planning and Development Management Standards and Guidelines (2014), flood prone areas, high water table areas and water supply catchment areas are not suitable sites

for cemeteries. Cemeteries in these areas have the potential to contaminate water sources that supply water for animal and human consumption.

The socio-economic survey has revealed that cemeteries at Ngabu Main Market Centre cover approximately 24.7 hectares of land. Of the total area, 17.1 ha is unsuitable for burial and only 7.5 hectares is suitable for burial (refer to Table 16). This translates into 11,625 burial spaces at the Centre. These spaces are inadequate to cater for the needs of the current population of 21,607 people. The current population require 14 ha of land for cemetery, giving a deficit of 6.5 ha. The population projections show that by the end of the Plan period, there will be 59,230 people in the area who will require 38 hectares, giving a deficit of 30.5 hectares of land.

Table 16: Existing Land for Cemeteries at Ngabu Main Market Centre

Name of Cemetery	Total Area (Ha)	Usable Area (Ha)	Unsuitable Area (Ha)
Makande (Main)	11.10	0.31	10.80
Makande Mosque	1.30	0.00	1.30
Kaliza	6.30	6.30	0.00
Kulima	4.05	0.92	3.13
Mthobwa	1.92	0.00	1.92
TOTAL	**24.67**	**7.53**	**17.14**

Source: PPD, 2022.

3.7.2 Community Hall and Ground

Ngabu Main Market Centre has a total of five (5) community grounds, namely: Disco, Madugu, Nyaikha, Nyakamba and Thonje community grounds. However, most of the community grounds only have football pitches. There is an overall absence of facilities for other sporting activities like netball, volleyball and basketball. People at the Centre also access play grounds from institutions such as schools for free. These institutions include: Ngabu Secondary School, SOS Orphanage, Makande Primary School and Changa Primary School. The Centre does not have a community hall. Activities like weddings or meetings are conducted in SVADD, Ngabu Secondary School and Makande CDSS halls at a fee.

3.7.3 Religious Facilities

Ngabu Main Market Centre has three religions, namely: Christianity, Islam and Rastafarian. Christianity has a total of 58 denominations while Islam and Rastafarian have one denomination each. Christian denominations include: Assemblies of God, Nazarene, Roman Catholic, CCAP, Living Waters, Evangelical, New Apostolic, Zambezi, Seventh Day Adventist, Living Gospel, Cross Life, Glory of God, Bible Believers, Zion, Jesus Foundation, Atumwi, New Christian, True Courage, The Power of Jesus, Ecom Church, Holiness Pentecost, Church of Pentecost and other Pentecostal churches.

Islamic religion has three (3) mosques; Nyaikha, Kulima and the main one at Makande. A new mosque is under construction at Makande in order to accommodate a large number of Muslims.

There are also plans to construct a mosque near Ngabu Main Market Centre in Kulima Village. There is one Rastafarian temple at Ngabu Main Market Centre located in Misongwe Village.

Most of the religious facilities at Ngabu Main Market Centre are located in residential and commercial areas, portraying a mixed-use type of development. However, developments in these areas did not follow any plan, hence buildings were built haphazardly. As a result, accessibility to some of these institutions is a challenge. Compatibility, in some cases, also becomes a serious issue due to noise pollution. A few of the religions have good permanent buildings while a number of them, about 27 churches, have temporary buildings. Some of these religious denominations make use of facilities of institutions like schools. This means that these denominations will need land in the near future to construct prayer halls while others will need land for expansion of their existing prayer halls.

3.7.4 Security Services

Ngabu Main Market Centre has three (3) security service providers, namely: Ngabu Police Post, Stallion Security Service and Masunde Security Service. Masunde and Stallion are private security providers and mainly provide security services at filling stations, Banja La Mtsogolo clinic, Southern Region Water Board and SOS HG Primary School.

Ngabu Police Post has jurisdiction over the whole Ngabu Traditional Authority. The nearest Police Unit is Nchalo which is 15km away. The Police Post has 25 police officers from which only three (3) are females. The post has eight (8) offices, two (2) holding cells and 12 staff houses. Common crimes committed in the area include house breaking, animal theft and violence.

The Police Post faces a number of challenges which include: inadequate office space and staff houses, worsened by lack of land for construction of staff houses; lack of victim support unit; mobility challenges as the Police Post has only one vehicle; inadequate funding from the Government which affect operations at the Police Post; and lastly inadequate staff as the Police Post only has 25 officers instead of the required 100 officers for a police post.

3.8 Utilities

3.8.1 Water Supply

Ngabu Main Market Centre is supplied with water by Southern Region Water Board (SRWB). Currently SRWB's main source of water is underground water. There are seven (7) pumps, from which three (3) pumps are functioning. SRWB in the area currently has the capacity to supply 1,500 cubic meters of water to Ngabu's urban community. There are 1,438 connections, out of which 1,207 are active. In addition, there are 52 communal water points from which 36 are active and the rest are disconnected. A total of 11,567 people currently access piped water at Ngabu Main Market Centre. Most piped water is connected at the central part of the Main Market Centre while most of the areas on the peripheral such as Malemia 2, Tsabeta, Wadeka, Chimbembe, Mthobwa and Kaliza Villages and part of GVH Thonje are not connected.

SRWB faces a lot of challenges, the major ones include: aged pipeline infrastructures, frequent flooding which destroy pipelines and salty water which is a common challenge in Chikwawa District. SRWB's future plan is to use surface water by constructing a treatment plant and an intake from the proposed Shire Valley Irrigation Canal once constructed. On the other hand, people in the area complain of high water bills and delays to make connections when people apply which force them to rely on the use of communal boreholes and wells.

Ngabu Main Market Centre also relies on boreholes as sources of safe water for domestic use. The Centre has about 37 boreholes in total, out of which nine (9) are not functional. People at the Centre also use water from rivers like Nyakamba and Chimbamira. The Water Policy, 2007 states that in towns or urban areas Water Board is the sole supplier of water. However, other sources of water still exist at Ngabu Main Market Centre. According to the SRWB Ngabu Branch, this happens because there are no clear stipulated regulations for penalties to those found drilling boreholes in towns and urban areas without obtaining permission from water resources authority. Furthermore, the situation is escalated by politicians who use borehole drilling at the Centre for political benefits.

3.8.2 Electricity

Electricity, which is generated by Energy Generation Company (EGENCO), is supplied at Ngabu Main Market Centre by Electricity Supply Corporation of Malawi (ESCOM). EGENCO generates hydro-electricity at Kapichira Power Plant which has a production capacity of 128 megawatts. The electricity is transmitted through a 132KV power line to Mlambe Substation at Illovo Sugar Company, Ngabu receives the electricity from the Substation through an 11KV power line. There are 3,493 connected customers at Ngabu Main Market Centre and about 800 customers are on the waiting list to be connected. Peak demand for electricity at the Main Market Centre is about 1.2 kilowatts and major consumers include Cotton Ginnery, Issa Farm and maize mills.

Supply of electricity at Ngabu Main Market Centre is heavily affected by whirl winds which are common in the area, and vandalism of infrastructure by the local community. Late connections of power lines as well as frequent blackouts also affect supply of electricity at the centre. ESCOM's future plan is to have a substation at the Centre to boost electricity supply in the area and other surrounding areas.

3.9 Other Sources of Energy

Apart from electricity, other main sources of energy for people at Ngabu Main Market Centre are fuel wood and solar energy. Suffice to say, there is no data available for Ngabu Main Market Centre with only current usage of these sources of energy. Available statistics are for Chikwawa District as a whole. Integrated Household Survey (IHS) 2020, shows that 89%, 5.4%, 3.3%, 2% and 0.3 % of the population in Chikwawa District were using torches, firewood, electricity, candles and solar power for lighting respectively. And 91.2% and 8.8 % of the population were using firewood and charcoal for cooking respectively. The data implies that majority of the people in

Chikwawa District relies heavily on torches, firewood and charcoal as their main sources of energy for both cooking and lighting.

3.9.1 Fuel wood

Most of the households at Ngabu Main Market Centre, particularly those in low and medium density areas, use firewood and charcoal for cooking and other domestic use. However, households on the peripheral of the Centre like Malemia 2 Village, Mthobwa Village and high density residential areas mostly use firewood for cooking. The main source of firewood at the Centre are natural forests and natural vegetation which are common around the area, homesteads and in farms, mostly sesame stalks after harvesting. Charcoal and extra firewood comes from neighbouring areas like Nkumaniza and Therere.

3.10 Waste Management

Waste is unwanted matter or material of any type, especially what is left after useful parts or substances have been removed. There are several categories of waste. These include industrial wastes, medical wastes, residential wastes, commercial wastes, agricultural wastes and construction and demolition wastes; which are also regarded as sources of wastes. From these sources, wastes are further classified as solid wastes and liquid wastes. These wastes can either be hazardous or non-hazardous. Waste management is the collection, transportation, storage, treatment and disposal of wastes.

3.10.1 Waste Generation at Ngabu USP area

Sources of waste generation at Ngabu Main Market Centre are residential, commercial, industrial, institutional, agricultural and District Council service areas areas as well as construction and demolition sites.

In residential areas, the typical waste generators are dwellings, gardens and livestock kraals located in various residential areas. Types of solid wastes generated include food waste, yard / garden (leaves, grass, bush) waste, paper, plastics, rubber, cardboards, textiles, leather, wood, glass, metals, ashes, animal dung, crop residues and special wastes such as batteries, consumer electronics then hazardous waste containing mercury such as light bulbs. Types of liquid wastes generated are sewage and waste water (sanitary sewage and storm sewage).

In commercial areas, the typical waste generators are markets, shops, lodges, restaurants, repair workshops, office buildings and filling stations. The Centre has two markets, namely: Ngabu Main Market (locally known as Conjunction) and Makande Market. Waste generated include food waste, sugarcane and banana pilings, wood, cartons, plastic and glass bottles, glass, metal pieces, textile rugs, used masks, paper, used plastic bags and packets, maize cobs and sheaves, human hair, abattoir disposals, waste water and sewage. The types of solid wastes generated from shops, offices, repair workshops, restaurants and lodges, include plastics, cardboards, food wastes, livestock droppings, papers, glass, metals, special wastes, hazardous wastes and e-wastes.

In industrial areas, typical waste generators are processing and manufacturing sites. The most prominent ones being processing, fabrication and construction sites. Types of solid wastes generated include housekeeping wastes, packaging, food wastes, ashes, metals, hazardous and special wastes. Liquid wastes include sewage and waste water (sanitary sewage and storm sewage). In construction and demolition areas, the typical waste generators are new construction and repair sites, road repair, and renovation and demolition sites. Types of solid wastes generated include wood, steel, concrete, dirt, bricks and tiles. Types of liquid wastes include sewage and waste water (sanitary sewage and storm sewage), depending on the location of the site.

In institutional areas, the typical waste generators are schools, hospitals, churches and government buildings. Types of solid wastes generated are same as in commercial areas. Medical wastes are generated by hospitals and clinics. These include: infectious wastes (bandages, gloves, culture, swabs, blood and body fluids), hazardous wastes (sharps, instruments and chemicals) and pharmaceutical wastes. Types of liquid wastes are sewage and chemicals.

In agricultural areas, typical waste generators are crops, vegetable gardens, feedlots, livestock and farms. Types of solid wastes include food wastes and crop residues. The type of liquid waste generated is storm waste water.

3.10.2 Waste Collection, Treatment and Disposal

Waste collection is the process of collecting waste from point of production (residential, commercial, industrial, institutional, agricultural, and District Council service areas as well as construction and demolition sites) and transporting it to the point of treatment or disposal. Waste collection is an important aspect in maintaining public health, environmental sustainability, aesthetic beauty and economic development.

At Ngabu Main Market Centre, methods of waste collection employed are self-delivered, curbside pick – up, contracted or delegated service. Self-delivered is the most used method of solid waste collection while curbside pick – up is confined to produce markets only. Self-delivered is applied in residential areas, commercial areas, industrial areas, institutional areas, agricultural areas and in some construction and demolition areas. Contracted or delegated service is practiced in industrial, commercial and institutional areas.

At Ngabu Main Market Centre, waste is mostly transported by humans in buckets, rubbish bins, sacks, wheel barrows, by animals in farm carts and by trucks and lorries to disposal sites, mostly, rubbish pits, gardens and other undesignated disposal sites. Except for special wastes such as oil wastes from filling stations which are treated and disposed at a designated site in Blantyre, liquid waste from septic tanks, pit latrines and sewer treatment ponds at Ngabu Secondary School is privately emptied in unhygienic manner by unprotected humans and simply disposed in undesignated pits dug next to sources. Through leachate, sewage pollutes ground water. This poses a serious health hazard to the community which consumes well and borehole water.

Within Ngabu Main Market Centre, the section located above 400 metres above sea level is generally suitable for pit latrines and seep away systems linked to septic tanks and/or similar sewage systems, provided that density of these latrines or seep away systems does not exceed one (1) per 200 square meters and that they are located at least 100 metres from any river or stream to avoid polluting ground and surface water. But, at the Centre, some of the pit latrines and seep away systems are located less than 100 meters from rivers or streams and exceed the recommended density of one (1) per 200 square meters. Areas falling below 400 metres above sea level have high water table, hence not suitable for pit latrine and septic tanks, as this may result in pollution of surface and ground water.

Ngabu Main Market Centre lacks municipal solid waste collection and disposal services and sites and municipal sewer sludge emptying services as well as designated treatment and disposal sites. However, some of the garbage is reused or recycled. But other solid wastes are burned at source while other waste are not collected at all.

3.11 Urban Agriculture

Urban agriculture is practised at Ngabu Main Market Centre and is mostly practiced in the peripheral of the Centre. Most of the farming is done for subsistence, except for few cattle ranches which are into livestock business. Mostly practiced is rain-fed agriculture because the Centre does not have perennial rivers as Nyakamba and other rivers dry up soon after the rainy season. Commonly grown crops are maize, sesame, sorghum, cotton, millet, peas and groundnuts. These are complemented by livestock farming which include sheep, goat, cattle, poultry and pigs (refer to Figure 27).



Figure 27: Cattle Farming at Ngabu Main Market Centre (PPD, 2022)

Farmers at Ngabu Main Market Centre and the surrounding area are assisted by Government through SVADD which provides Assistant Veterinary Officers and Agriculture Extension Officers to help and advise the communities. Non-Governmental Organisations such as African Institute for Corporate Citizenship and Circle for Integrated Community Development (CICOD) also render agricultural assistance in the area through provision of extension workers and various seeds to farmers.

The south-western peripheral of the Centre is dominated by cattle farms. There are five (5) cattle farms in total, namely: Karim's Farm, Issa Farm, Razaq's Farm, Mlumbe's Farm and CK Farm and Cold Storage. These farms produce livestock feeds for their livestock and they rarely graze their animals in the fields. Goats are also kept in these farms, but at a small scale. These livestock are kept for business where they sale in bulk. There is also Crown Plantations Farm which is growing palm trees, pomegranate, neem trees and cross pollinated masau.

Urban agriculture is affected by many issues at the Centre which include: lack of established and reliable markets as they only rely on vendors for selling their produce who purchase at a low price; inadequate pastures during dry season as most of the pastures dry out due to the hot Chikwawa weather; floods; and pests and diseases such as fall army worms and foot and mouth diseases.

3.12 Disaster and Risk Management

In this section, the types of disasters which are common at Ngabu Main Market Centre have been examined. The National Disaster Risk Management (DRM) Policy of 2015 and the National Urban Policy of 2019 have also been briefly described to give an overview of the policy framework governing DRM. It has been observed that the natural disaster occurrence at the Ngabu Main Market Centre is increasing in terms of frequency and intensity due to the effects of climate change. This has potential to negatively affect all sectors of socio-economic development at the Centre.

3.12.1 Types of Disasters at Ngabu Main Market Centre

3.12.1.1 Flooding

The occurrence of floods at Ngabu Main Market Centre is mainly attributed to: low altitude averaging 122 metres above sea-level at which the Centre lies; very low gradient of less than 2% (1:56); and location of some parts of the Centre in relation to Chimbamira and Nyakamba Rivers. The most vulnerable villages include GVHs Kulima and Sande (refer to Figure 28).

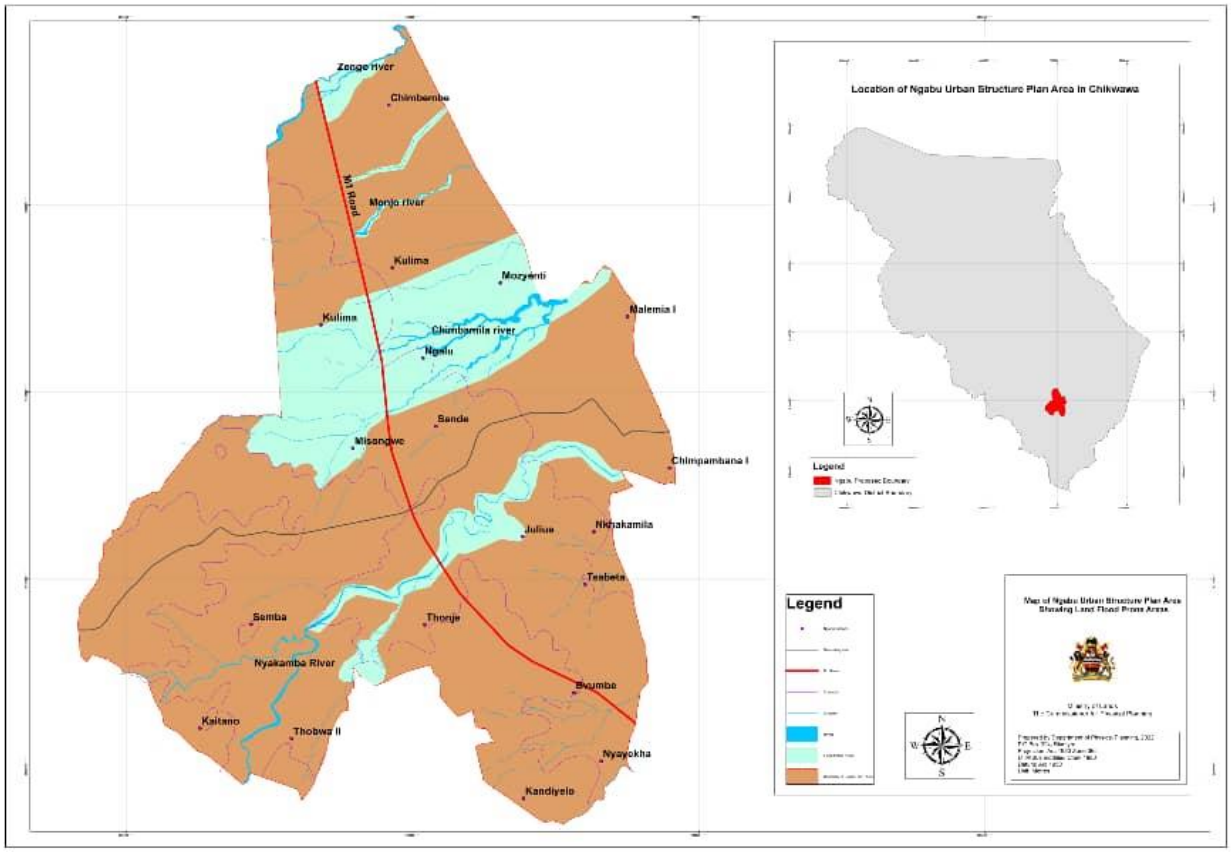


Figure 28: Flood-Prone Areas at Ngabu Main Market Centre (PPD, 2022)

Flooding has been worsened at Ngabu Main Market Centre by lack of mitigating infrastructure and equipment like dykes and water gauges as well as lack of safer house construction awareness. Water gauges were washed away by floods in 2015. Another challenge is lack of development control which has resulted in a lot of people settling in low lying areas, marginal lands or near the river banks. Low forest cover also exacerbates the situation due to siltation of rivers. However, large part of the Centre is safe because it is situated on relatively high ground and away from major rivers.

One of the worst floods hit in January, 2022, damaging a lot of houses, roads and farms. They also disrupted education at SOS HG Primary School where a tributary of Chimbamira River overflowed, cutting access to the school from the eastern part. This was attributed to Cyclone Anna from the Indian Ocean and the El Nino phenomenon which caused prolonged heavy rainfall in South-East Africa. The 1997 Ngabu USP also recognized the site where the school sits as a flood prone area. In 2019, Cyclone Idai from the Indian Ocean also caused floods especially in the same communities inflicting a lot of damage.

Early warning systems are used in the area to let the vulnerable communities know about the incoming floods through TVs, ADD warning announcements, cell phones, the police, call persons (akafuule) and community radios among others. The warning systems rely on indigenous

knowledge, seasonal forecasts preparing the communities for the rainy season and weather updates from the Meteorological Services Department. During the floods, affected households escape temporarily to primary schools, churches and relatives who are on safer grounds. Camps offering relief items are also opened at Mchenga Full Primary School in addition to Chilimba and Makande Flood Victim Camps near T/A Ngabu Headquarters.

3.12.1.2 Drought

Droughts at Ngabu Main Market Centre occur as a result of its geographical position which is a rain shadow area or the lee-ward side of the Shire Highlands. They happen every year, though with bigger magnitude immediately after a season of too much rainfall. The 1992, 2020, 2021 and 2022 seasons have been the worst-stricken resulting into loss of lots of crops, trees and livestock. It also triggered the outbreak of migratory pests and diseases. As a coping mechanism, the Ministry of Agriculture advise farmers to grow early-maturing varieties of crops like maize, sorghum, finger millet, potatoes, cassava, groundnuts, sesame, cotton and many more. People also engage in piece-works and participate in food for work programmes implemented by Government. Churches and other civil society organizations provide relief items when approached. The 1992 drought made people to encroach the wetlands for survival and Dzanjo bird netting was intensified.

3.12.1.3 Strong Winds

Strong winds, which destroy weak buildings at Ngabu Main Market Centre, strike annually though with differences in scale. This is so because the Centre lies in a path of the prevailing South-Easterly Winds. It is observed that the climate change phenomenon is increasing wind speed at the rate of 4.3km/hour yearly. The worst disasters occurred in 2019 and 2022 due to Cyclones Idai and Anna respectively from the Indian Ocean which influenced harsh weather conditions in South East Africa. It caused a lot of damage at the Centre as roofs of many dwelling houses and other buildings were damaged (refer to Figure 29).



Figure 29: Effects of Strong Winds at Ngabu Main Market Centre (PPD, 2022)

3.12.1.4 Crop Pests and Livestock Diseases

According to SVADD, the Ngabu Main Market Centre is usually affected by crop pests and livestock diseases. Some of the common livestock diseases are Foot and Mouth, Lumpy Skin and African Swine Fever. The Lumpy Skin disease is caused by biting insects such as mosquitoes and flies which worst affect the animals after floods. Cereal crops like maize, sorghum, millet and rice as well as soya beans are commonly affected by migratory pests. Some of the pests are Army Worms and Locusts. However, in 2022 the Centre was not affected as much as the other parts of the Shire Valley. The Centre was worst affected by the Locusts in 2019 while Army Worms hit the Centre every year. The Ministry of Agriculture intervenes whenever these disasters strike. To control the livestock diseases, vaccination of cattle and disinfection campaigns are carried out at the Centre and the surrounding area. It also implements pest control measures which minimizes loss of crops to the pests.

3.12.1.5 Disease Out-Breaks

3.12.1.5.1 COVID-19

COVID-19 pandemic has recently killed a lot of people worldwide. Ngabu Main Market Centre was also affected by this pandemic. Ngabu Rural Hospital is the only institution at Ngabu Main Market Centre that has Covid-19 laboratory and isolation centre. This gives the Hospital enough capacity to conduct COVID-19 tests. According to Ngabu Rural Hospital Laboratory, 299 tests were conducted in 2021. The results showed that 64 people were diagnosed with the disease and 2 lives were lost. In 2022, 31 people were tested and the results were all negative.

Ministry of Health implemented a number of interventions to curb the spread of the COVID-19 at the Centre. The interventions included hygiene practices such as washing hands, advising people to practice social distancing and public gathering control.

Some of these interventions exacerbate the impacts of the pandemic. For instance, social distancing and public gathering control negatively affect public service delivery as offices can only accommodate few officers at a time. The public gathering control also makes it difficult to deliver services like live extension work to farmers by the Ministry of Agriculture which require physical meetings with the farmers in large groups. As a result, the SVADD has resorted to use of community radios in delivering their services as a coping mechanism.

3.12.1.5.2 Cholera

According to Ngabu Rural Hospital, Cholera out-breaks do not occur so often at Ngabu Main Market Centre. This is evidenced by the sporadic frequency of its occurrence in 2014, 2017 and 2022. Cholera out-breaks at the Centre often occur in the aftermath of floods; whenever there is heavy rainfall at the Centre or its surrounding areas. This is because some people, particularly when working in the farms, use unprotected water sources for domestic purposes.

As a control measure, the Ministry of Health and other relevant stakeholders engage in public sensitization campaigns on good hygienic practices such as food hygiene and sanitation. Cholera vaccine, chlorine and water guard are also provided at the Centre.

3.12.1.6 Water Logged Conditions

Water logged conditions at Ngabu Main Market Centre are caused by poor drainage system, especially in villages near Chimbamira River. The conditions are attributed to soil type and very low gradient of the Centre. The soil type is predominantly clay-loam which retains water, leading to high water-table and the water-logged conditions. The area is also very flat and this causes the natural drainage at the centre to be poor. Water logged conditions have resulted in incidences of collapsing of residential houses and other structuresin the aftermath of floods at the Centre.

3.12.2 Relevant Policies on Disaster Risk Management

3.12.2.1 National Urban Policy, 2019

Priority Area 6 of the National Urban Policy advocates for urban resilience, climate change adaptation and disaster risk management. It is observed that recently, disasters have been exacerbated by climate change, weak development control mechanisms and rapid urbanization at Ngabu Main Market Centre. Furthermore, local authorities have challenges in disaster risk management which make some affected communities and services unable to recover from disaster effects. This Priority Area aims to promote building of resilience through mainstreaming of disaster risk management and climate change adaptation in urban planning, development and management through the following strategies:

- Mainstreaming resilience, impacts of disasters and climate change in urban planning, development and management,
- Support the establishment and management of urban disaster risk management structures, and
- Promote climate change adaptation and mitigation programs.

In conclusion, this Policy aims at ensuring that urban areas are resilient to disaster effects.

3.12.2.2 National Disaster Risk Management Policy, 2015

The National Disaster Risk Management (NDRM) Policy recognize that disaster risk management needs to be mainstreamed and guided in all sectors and at all levels of planning (village, area, district and national levels). The NDRM Policy was developed with the aim of providing coherent policy strategies that would reduce the impacts of disasters in the Country.

The Policy is linked to legislations and strategies like the Physical Planning Act (2016) and the Malawi National Adaptation Programmes of Action (NAPA) of 2006. The latter seeks to identify immediate adaptation measures that need to be taken to reduce the risks from climate change. Some of the Policy statements are to ensure that DRM activities are adequately funded, the promotion of good land use planning and management as well as sound construction of infrastructure. The implementation of this Policy is coordinated by the Department of Disaster Management Affairs (DoDMA) and is carried out by different stakeholders. At district council level, District Disaster Risk Management Committee implements the Policy.

CHAPTER FOUR: ANALYSIS OF KEY ISSUES AND THEIR PLANNING IMPLICATIONS

4.1 Population

The following are the major population issues in the area:

- Uneven distribution of population.
- A very high growth rate which is showing no signs of slowing down since the population age structure is broad base, meaning in the next ten (10) years, ceteris paribus, there will be more people in the child bearing age coming from the existing child and youth populations.

4.2 Land Tenure and Existing Land Use Patterns

- About 93% of the land have no tenure security.
- Heavy encroachment into public land. Parcels of land have been allocated to developers without following any order such as land use zones.
- Conflict of land uses, uncoordinated and haphazard development due to lack of development control and enforcement and inappropriate allocation of public land by traditional leaders. This has affected residential, institutions and commercial areas.
- Part of the flood prone areas are currently used for agriculture, residential and commercial purposes, hence posing threats to lives and livelihood of the community.
- Inadequate planning personnel to execute development control and enforcement functions.
- Heavy encroachment of river banks by agricultural activities and cemeteries instead of being protected by tree belt or vegetation in general. This causes most rivers to flood during rainy season as well as contamination of water sources.

4.3 Health

- Shortage of staff in all health facilities.
- Inadequate infrastructure as well as dilapidated facilities such as toilets and kitchens.
- Inadequate supply of essential health commodities such as drugs, beds and mattresses.
- Ngabu Rural Hospital is overstretched as it covers the population of whole area of T/A Ngabu, Nchalo and part of Nsanje District.
- Land for Ngabu Rural Hospital has been encroached by local people, hence the Hospital has no room for expansion.

4.4 Housing

- Residential areas have been developed in unorderly manner; without following detailed layouts plans for the areas.
- Encroachments in zoned housing areas.
- Dilapidated houses.
- High demand for housing leading to high rentals despite the poor conditions of the houses.

- Lack of tenancy agreements.
- Low supply of housing (unavailability of Government institutions such as MHC is one of the contributing factors).

4.5 Employment and Income

- Lack of knowledge on labour laws, workers' rights and roles and responsibilities of the Department of Labour by both employees and employers at the Centre, subjecting most employees to harsh working condition.
- Lack of adherence to labour laws by some employers, especially the private sector, leading to salaries/wages below Government approved minimum wage rate, hence creating a low-income level employed population at the Centre.
- Casualization of the employment at the Centre as most of the employers in the private sector hire workers on temporary basis.
- Lack of employable skills in most of the economically active population, contributing to high unemployment rate at the Centre.
- Overreliance of the economy on smallholder faming and small-scale businesses such as street vending, hawking and cotton faming among others. This exposes the economy to effects of adverse weather conditions and climate change.

4.6 Commerce and Industry

- Inadequate manufacturing and production industries in the Main Market Centre. For instance, only one (1) of the three (3) cotton ginneries is operational, no bakeries and the palm oil factory is currently dormant.
- Unavailability of a well-structured and spacious produce market, resulting in chaos within the commercial areas, especially during periodic market days.
- Heavy encroachment of the site earmarked for commercial and industrial developments. It is also overwhelmed by haphazard developments.
- Unavailability of banking and financial lending institutions which leaves the business community at the Centre with a very limited access to financial and loan services.
- The hospitality sector at the Centre is not vibrant, with inadequate and poor condition rest houses.
- Inadequate market for farm produce like cotton and livestock. This is because most cotton ginneries are not operational; and the only available markets for livestock are the big ranches available at the Centre, which are few in number.
- Lack of standardized prices for livestock giving liberty to ranch owners to dictate the prices per kg for buying the livestock.
- Non-existence of mining industry of important minerals like red ornamental agates.

4.7 Conservation

- Degradation of the natural environment.
- Degradation of the built environment.

4.8 Transport

- Earth roads making transportation difficult, especially during rainy season when they sometimes are impassable due to wet muddy and slippery soils.
- Uneven road surfaces caused by water logging on the roads and lack of frequent maintenance resulting in slow traffic movement, conflicts and accidents.
- Lack of street lighting at the trading centre and surrounding roads, pausing challenges to driving at night.
- Poor road network resulting in plots having no direct access.
- Encroachment into some of the road reserves, posing a challenge to expansion of the roads and utility service provision.

4.9 Education

- Inadequate teaching and learning materials, classroom blocks, staff housing and office accommodation, electricity and sources of potable water and sporting facilities in schools.
- Shortage of teachers, especially in public schools, evidenced by high teacher-pupil ratio in all the schools.
- Lack of timely monitoring and inspection of schools to ensure adherence to acceptable education standards.
- Poor condition of school blocks and other infrastructure as well as inadequate furniture due to low funding levels.
- Lack of commitment by teachers especially in adult literacy institutions, lowering the quality of education provision in these facilities.
- Makande Primary School is utilized as an evacuation centre, endangering the school's hygienic conditions and putting strain on water supply.

4.10 Firefighting Services

- Non-existence of any firefighting services at the Centre, posing a great challenge when it comes to fire accidents. The services are not even prioritized at the Centre as local leaders do not recognize them.

4.11 Bus Deports and Markets

- Lack of truck resting area and lorry rank resulting into bus stage being mostly used up by trucks, causing minibuses parking off the stage.
- No bicycle parking area leading to other cyclists carrying their bicycles as they enter the markets.
- Congestion within the market area, both on market and non-market days.

4.12 Communication

- Erratic network and internet connection.
- Low patronage of Post Office.

4.13 Water Supply

- Aged water board pipeline infrastructure.
- Frequent flooding which destroys water board pipeline.
- Dwindling of borehole usage mainly during the summer due to low water tables.
- Saline water.
- High Water Board water rates as well as long waiting periods for water connections when people apply, limiting access and affordability of potable water at the Centre.
- The majority of places, particularly those on the outskirts of the Centre, lack access to piped water from SRWB.

4.14 Energy

- Solar energy equipment is expensive for people to purchase.
- Heavy reliance on firewood and charcoal which poses a threat on the vegetation around the Centre.
- Frequent flooding and whirl winds affect electricity production at Kapichira Power Station as well as power lines at Ngabu Main Market Centre.
- Some of the areas are not connected to electricity for instance Tumbe, Saopa, Malemya 2 and Mthobwa.
- ESCOM taking long to make connections when people apply.

4.15 Urban Agriculture

- Drying out of pastures during the dry season in most of the grazing areas due to hot weather, leading to malnutrition as well as death of livestock.
- Drought which affects crop and livestock farming.
- Flooding affects most of the farms which lead to loss of both crops and livestock.
- Animal theft (cattle rustling).
- Inadequate agriculture extension officers.

4.16 Community Services

- Absence of community hall at the Centre
- Lack of other community sports facilities such as those for basketball, volleyball, handball, netball and others.
- Conflict of land uses as worshipping facilities are located without following particular order.
- Presence of many temporary religious facilities combined with emergence of new religious denominations which increases demand for land for construction of these facilities.
- Inadequate police office space.
- Lack of victim support unit.
- Inadequate police vehicles at Ngabu Police Post.
- Low funding from Government is affecting operations of Ngabu Police Post.

- Inadequate police staff at Ngabu Police Post.
- Existence of three (3) cemeteries within water source catchment area.

4.17 Waste Management

- Lack of waste management master plan.
- Lack of strategic waste collection points and designated sites for waste treatment and disposal.
- Encroachment of pit latrines and soak way systems into water sources for human and animal consumption.
- Unhygienic handling of waste.
- Inadequate and poor management of storm water drainage.

4.18 Disaster Risk Management

- Encroachment of fragile land near rivers making some communities vulnerable to floods.
- Siltation of streams and rivers at the Centre due to deforestation thereby disrupting the natural drainage system.
- Destruction of early flood warning equipment like river gauges by the 2015 floods, affecting flood warning system at the Centre.
- Lack of traditional measures that can be used against pest and disease outbreaks at the Centre in case Government interventions prove unsustainable.
- Continued use of unsafe water by some inhabitants when working in their farms along the rivers at the Centre, making them vulnerable to Cholera outbreaks.
- Poor natural drainage system at the Centre due to the flat terrain of the area and the existence of poorly drained soils.
- Lack of coordination among stakeholders implementing DRM policies at the Centre.
- Climate change which is worsening the occurrence of disasters as it is intensifying extent of floods, wind strength, dry spells and pests and disease outbreaks.
- Absence of records on relatively new events, making the analyses base on outdated data which may hinder the possibility of probable existence of closer and larger magnitude earthquake epicenters and extension of the faults. This scenario might prove the Centre to be more earthquake-prone demanding proper coping mechanisms/measures than currently projected.

CHAPTER FIVE: PLANNING POLICIES AND DEVELOPMENT PROPOSALS

5.1 Purpose and Overall Strategy

The objective of the Ngabu USP is to assist Chikwawa District Council and its development partners to plan and implement development activities at Ngabu Main Market Centre. The Plan will serve as a tool for managing future urban growth and the control of development of Ngabu Main Market Centre in the next 10 years.

The main purpose of the Plan is to create a self-contained community where people can work, live and enjoy themselves with minimum effort and cost in terms of money and time. Development at the Centre will take place in accordance with appropriate policies and land use allocation as indicated in the Urban Structure Plan. In addition, the following provisions shall apply:

- Development should be subject to lease agreements and allocated on properly identified plots.
- Buildings shall be well constructed using permanent materials and in accordance with green housing technology and guidelines.
- Developments should provide on-site landscaping.
- Permanent developments to be located on properly serviced plots.

5.2 Development Proposals

Zoning proposals made in previous physical development plans for Ngabu Main Market Centre including the 1997 USP, proposals from consultative meetings with various stakeholders at the Main Market Centre, existing land use, projections and estimates have been used as a basis for various development proposals and allocation of the various land use zones. The zoning proposals have been made so that each piece of land at Ngabu Main Market Centre is put to its best use. They have been made to guide future physical development in order to meet socio-economic needs of people at Ngabu Main Market Centre and beyond.

It should, therefore, be realised that land is a limited resource and should be properly utilized. To ensure this, and according to the PPA, any potential developer is required to seek permission from Chikwawa District Planning Committee before development. Overall, the Plan recommends implementation and enforcement of development control for orderly, efficient, progressive and sustainable development.

5.2.1 Ngabu USP Boundary

The Ngabu USP boundary is as indicated in Figure 30. The new USP has extended the previous boundary in all directions. The southern boundary has been extended to GVH Nkhwangwa and GVH Khokwa along the M1 Road and Mthobwa Road respectively. The western boundary has gone beyond the cotton ginnery to incorporate Changa Primary School, along the Mkumaniza

Road. The eastern boundary extends to GVH Malemia, GVH Mphamba and SVADD along the Chindoko Road. And the northern and north-eastern boundaries follow Zengo River and the old M1 Road respectively.

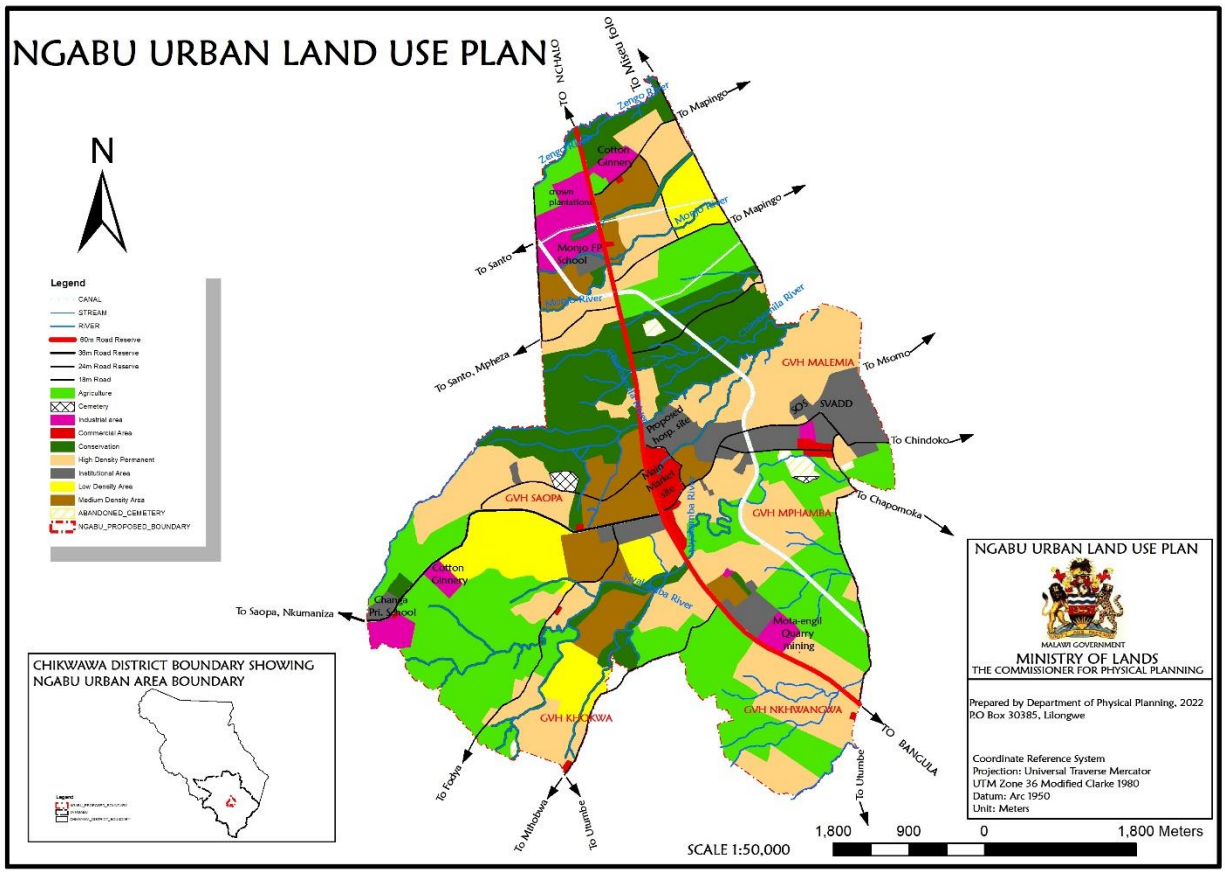


Figure 30: Ngabu Land Use Plan (PPD, 2022)

The total USP area for Ngabu Main Market Centre is now about 2,946.73 hectares (refer to Table 17), which is an increase from 832 hectares. This land is adequate to cater for all developments that are envisaged in next 10 years which is also the lifespan of the USP. The planned area will also be adequate to support the projected population for 2032. However, to achieve this the Plan recommends that Chikwawa District Council should intensify family planning campaigns and reproductive health service provision at the Centre and surrounding areas. Deliberate interventions such as by-laws to keep girls in school as well as to deter the prevalence of early marriages among girls and boys should also be put in place.

5.2.2 Land Tenure and Land Use Zones

The Ngabu USP has mainly zoned the land at Ngabu Main Market Centre into residential, commercial, industrial, institutional, agriculture, conservation and cemetery (refer to Table 17). The Plan proposes adjudication, demarcation and registration of unallocated customary land and public land at the Main Market Centre to ensure tenure security. The Plan also proposes an even

distribution of economic development activities at the Main Market Centre such as creation of local centres to reduce concentration of people around Ngabu's primary commercial centre.

Table 17: Proposed Land Use Zones

LAND USE	EXISTING LAND (HA)	PROPOSED LAND (HA)
Conservation	123.28	522.91
High Density Residential	522.91	829.13
Medium Density Residential	88.76	212.38
Low Density Residential	44.48	198.80
Agriculture	1,362.64	700.02
Institutional	121.39	181.38
Cemetery	24.21	36.76
Commercial	23.04	33.81
Industrial	35.16	111.53
Canal	0	52.24
Roads	67.77	67.77
TOTAL	**2,946.73**	**2,946.73**

Source: PPD, 2022.

5.2.3 Housing

- The Plan has reserved a total of 1,240.31 hectares for residential housing developments at the Ngabu Main Market Centre as follows:
    - 198.8 hectares for low density residential housing developments,
    - 212.38 hectares for medium density residential housing developments, and
    - 829.13 hectares for high density residential housing developments.
- Chikwawa District Council through its structures such as the Planning Committee, CLCs, ADC and VDCs should sensitize people at Ngabu Main Market Centre on the need and benefits of proper planning in house construction and use of green housing technology and guidelines.
- The communities should also be sensitized on the importance of tenure security in housing.
- Deliberate interventions should be put in place to regularize areas where development was done haphazardly. Existing slums in residential zones should be upgraded during the first phase of the implementation of the Plan.

5.2.4 Health

- The Plan proposes relocation of Ngabu Rural Hospital to a well spacious site as the current location is congested due to encroachments. A site for the Hospital has been reserved in an institutional zone located to the north of the main commercial centre along the M1 Road. The Hospital should have increased capacity to accommodate current and future demand.
- Ministry of Health as well as CHAM should deploy additional staff at Ngabu Rural Hospital and Ngabu SDA Health Centre respectively. This should include construction of more staff houses to accommodate health personnel.

5.2.5 Industry

- The Plan has reserved a total of 111.53 hectares for industrial developments. This include: 20 hectares which has been retained from the 1997 USP, 15.65 hectares for three (3) mining sites, 11.39 hectares for Crown Plantation located to the north and 13.43 hectares for two (2) cotton ginneries located to the northern and the eastern parts of Ngabu Main Centre. About 50 hectares of the land zoned industries has been reserved for future industrial developments.
- The Plan proposes the operationalization of the existing cotton ginneries and establishment of new light and heavy industries in order to create more jobs and increase income levels of people at Ngabu Main Market Centre.
- The Plan proposes that Chikwawa District Council expedite the operationalization of Ngabu Community Technical College in order to increase availability of skilled population at the Main Market Centre and support industrial developments in the area.
- The Plan proposes that Chikwawa District Council should explore the possibility and practicability of ornamental agates mining in the area. This has a possibility of establishing a viable mining industry at Ngabu Main Market Centre.

5.2.6 Commerce

- The Plan has reserved a total of 33.81 hectares of land for commercial developments. This includes 11 hectares, which was also zoned for commercial developments in the 1997 USP, located on the eastern side of the M1 Road, This piece of land will be enough for construction of a modern market, banks and other commercial developments. . The Plan has also proposed 6.2 hectares for Makande Local Centre and 2.4 hectares for other six (6) local centres located along the roads to Saopa (at Semba, Alikuleti and Nyayikha Villages) and Chimbembe, each taking up 0.4 hectares.
- The Plan proposes relocation of settlements within the commercial zone to well designated residential areas.
- The District Council should enforce standards in the hospitality industry at Ngabu Main Market Centre in order to improve conditions renthouses and lodges among other hospitality establishments at the Centre. The sector has the potential to boost employment and economic activities at the Centre.

5.2.7 Conservation

- For sustainable environmental management, the Plan proposes aesthetic conservation throughout the built environment. All developments must be subjected to planning approval. The District Council should start enforcing policies and taking actions in addressing the control of aesthetic environment which should include building regulations, development planning and management guidelines and standards throughout the Main Market Centre.
- The Plan proposes conservation of existing natural and exotic forests together with their associated fauna at the Main Market Centre.

- The Plan also proposes protection of rivers within the boundaries of the Main Market Centre by prohibiting encroachment into the river reserves.
- The Plan proposes that primary and district distributor roads should have tree belts to provide shade to pedestrians and also act as a carbon sink for vehicular fumes. This is an endeavour to bring back and maintain vegetation in every aspect of the Main Market Centre. Households are also encouraged to plant trees on their plots.
- The Plan proposes provision of public open spaces as part of river catchment areas so that they remain green. Other open spaces should be provided at detailed layout planning stage.
- The Plan proposes enforcement of measures and policies for protection of soils, trees and water quality in terms of human and environmental use. The District Council should liaise with the Department of Land Resources on the appropriate care and protection for the soils in the area which could be made into by-laws considering the severity of the situation at the Main Market Centre.
- The Plan proposes filling up defunct mining pits as they pose serious threat to life.

5.2.8 Road Transport

- The Plan proposes that M1 Road passing through the primary commercial centre of the Main Market Centre be upgraded to double lane, in line with the NPDP (1987) proposition.
- The plan proposes upgrading of the following roads;
    - Miseu Folo-Nsomo-Ngabu Road which has been maintained as a 24m road.
    - Nkumaniza-Kunyinda Road to District Road status.
    - Road to Fodya from Technical College to be upgraded to 18m road reserve to act as a bypass road to Saopa as it connects to Saopa Trading Centre.
    - Road from M1 Road to Nthobwa to 24m road reserve.
    - Road from Makande Trading Centre to Nyaikha to 18m road reserve to act as a bypass road from M1 Road to Makande Trading Centre and beyond.
- Roads at the Main Market Centre should be raised to improve their drainage system and prevent water logging. Raised roads will also act as dykes to control flooding.
- Tree belts should be planted along roads to avoid washing away of the roads by runoff water.
- The condition of the roads need to be improved to make them all weather roads.

5.2.9 Bus Depots and Markets

- The primary commercial centre, located along the M1 Road, should be properly planned when preparing DLPs to keep people away from selling their merchandise along the roads.
- Chikwawa District Council should construct a produce market at Ngabu's primary commercial centre to help link producers (farmers) to buyers. Enough land for the market has been reserved within the commercial centre.
- The Plan proposes provision of a truck bay and bicycle parking areas within the commercial area to avoid congestion at the bus bay.

- The Plan proposes provision of a purpose built bus depot at the primary commercial centre. Specific site for the bus depot should be provided at detailed layout planning stage.

5.2.10 Water Supply

- The plan proposes that SRWB should:
  - Replace aged pipelines with new ones in order to reduce cases of pipe bursting which disrupts water supply at Ngabu Main Market Centre.
  - Increase the number of pumps as well as repair the non-functional pumps in order to increase water supply capacity and expand its connectivity at Ngabu Main Market Centre.
  - Explore the feasibility of tapping water from the under construction Shire Valley Irrigation Canal.
- The Plan proposes installation of solar driven water pumps at strategic points within the Main Market Centre to supplement provision of safe water all areas.
- Non-functional boreholes in schools and other public institutions at the Main Market Centre should be rehabilitated. The schools should also be provided with additional sources of potable water.

5.2.11 Energy

- Authorities should create a favorable environment for solar power generation and usage through reducing taxes on solar power equipment.
- The Plan proposes that ESCOM should consider using steel structures, which can withstand strong whirl winds and floods, for all power lines at the Main Market Centre.
- The plan proposes that ESCOM should expand their connections to areas of Village Headmen Mthobwa and Malemia 2 which are currently not connected.

5.2.12 Community Services

- The Plan proposes the construction of a sports and recreation centre at the Main Market Centre. A specific site for the sports and recreation centre should be provided at detailed layout planning stage.
- The Plan proposes upgrading of Ngabu Police Post to a police station. A site for the proposed police station should be made available in an institutional zone at detailed layout planning stage.
- The Plan has reserved enough land for institutions to accommodate future needs of land for religious facilities.

5.2.13 Urban Agriculture

- Chikwawa District Council should take advantage of the under construction Shire Valley Irrigation Canal and construct livestock water drinking points in the area.
- The District Council should encourage agri-business activities through formation of cooperatives and schemes for agriculture intensification and commercialisation.

- The plan proposes that Chikwawa District Council should put in place strategies for monitoring livestock prices imposed by ranch owners and other traders on local farmers.

5.2.14 Education

- The Plan proposes construction of one additional primary school within the Main Market Centre to reduce overcrowding at existing schools. A site for the primary school should specifically provided at detailed layout planning stage.
- The Plan proposes the construction of additional classrooms at the existing primary schools to meet the required standards. Changa, Madugu, Mwanamakoko and Monjo Primary Schools should be extended and rehabilitated.
- Makande CDSS should be provided with more classrooms to reduce overcrowding in classrooms. Additional hostels to accommodate boys should also be provided.
- The District Council should encourage timely monitoring and inspection of all schools to ensure adherence to acceptable education standards.

5.2.15 Public Cemeteries

- The Plan proposes retention of the 7.32 hectares existing suitable cemeteries.
- The Plan makes provision for identification of a 36.76 hectares block for a public cemetery in an area of deep soil and deep water table on the fringes of residential land during detailed layout planning to cater for a cosmopolitan urban population for the entire plan period.
- The Plan recommends the closure of cemeteries that are within the 250-metre radius of sources of water for human and animal consumption such as the Nakamba River and boreholes or wells so that they stop posing a health hazard to the urban community. Alternatively, boreholes located within zones where water has been contaminated by the cemeteries should be relocated to suitable sites.

5.2.16 Waste Management

- The Plan proposes that Chikwawa District Council should prepare a waste management master plan. Designated sites for collection, treatment and disposal of waste should be identified and developed. The sites should be identified with technical assistance from the Geological Surveys Department.
- The Plan proposes that strategic waste collection points should be provided within Ngabu Main Market Centre and the District Council should regularly collect and dispose of the wastes.
- In addition, the Plan proposes that the Main Market Centre should, in the long run, adopt use of sewer lines for liquid waste disposal.

5.2.17 Disaster Risk Management

- Development control and enforcement measures should be put in place to avoid further encroachment on environmentally sensitive areas.
- The natural environment should be re-installed through afforestation initiatives.

- Chikwawa District Council should re-install the water/river gauges along the rivers which were destroyed by the floods in 2015.
- The District Council is urged to explore on traditional knowledge and recommend some local measures effectively used by ancestors in the area to control pest and disease outbreaks.
- The Plan encourages planting special tree species such as blue gum in the homesteads which may reduce water logging situations in the area.
- The District Council should ensure that there is provision of adequate artificial drainage system at the Main Market Centre as well as frequent clearing of blocked drainages.
- The District Council should implement and enforce safer house construction guidelines advocated by the Department of Housing to improve housing resilience to flooding and strong winds.
- The Council should strengthen coordination of all stakeholders' effort as well as policies on DRM programmes implemented at Ngabu Main Market Centre.
- There is need to mainstream DRM activities in all socio-economic development sectors to further develop an urban centre that is resilient to natural shocks at Ngabu Main Market Centre.
- It is recommended that relevant stakeholders like the Department of Geological Surveys should conduct further studies on the relatively recent geological events. This would in turn help the plan implementers to make informed decisions on proper coping measures for possible earthquake occurrences.
- The Plan proposes the construction of flood evacuation centres to prevent victims from seeking shelter in schools.

CHAPTER SIX: PLAN IMPLEMENTATION ARRANGEMENT

6.1 Plan Implementation

Chikwawa District Council will be responsible for management of the Ngabu USP. This is in line with the Decentralization Policy of 1998 and the Local Government (Amendment) Act, 2017 which enshrines political and administrative authority to the local government authorities. The District Council is responsible for governance and development matters of the entire district.

The Plan will be financed through national funding mechanisms and other financing modalities such as development partners, NGOs, private sector and other available windows. Chikwawa District Council is responsible for resource mobilization to finance some of the proposed projects.

The District Council will decide priorities in each phase given the resource envelope and funding possibilities from Government, development partners, NGOs and the private sector. However, it will be beneficial to prioritize the construction of drainage networks at the Main Market Centre which will in turn avail more land for development.

6.2 Responsibilities

The Plan will be implemented in a phased approach of 5 years to coincide with the development planning framework of the District Council. For this Plan to realize its intended goals, it will therefore, rely on the attention and support of the public and private sectors' inputs. Some institutions will render vital roles as follows:

a. Ministry of Lands

This Ministry through relevant departments will be responsible for policy guidance on issues ofland acquisition for various development projects, servicing of public land, plot allocation, registration of customary and public land, preparation of detailed layout plans, and monitoring and review of the USP.

b. Chikwawa District Council

The District Council will generally be responsible for development and maintenance of all development infrastructures. In particular, the District Council will be responsible for priotisation of development projects, resource mobilization to finance development projects, land acquisition for various development projects, plot allocation, registration of customary and public land, preparation of detailed layout plans, planning approval of various development projects and monitoring and review of the USP.

c. Department of Water Development /Southern Region Water board

This Department and board shall be responsible for provision of potable reticulated water to the Main Market Centre.

d. Electricity Supply Commission of Malawi (ESCOM)

The Commission shall be responsible for the provision of electricity to all areas within Ngabu Main Market Centre to reduce human dependence on fuel wood and charcoal.

e. Department of Geological Survey

The Deaprtment shall assist Chikwawa District Council in identifying a proper site for solid waste disposal.

f. Roads Authority (RA)

The Roads Authority will have a task of upgrading and maintaining the M1 Road passing through Ngabu Main Market Centre.

g. SVADD

The Department shall assist in ensuring that land reserved for future development is cultivated without being degraded and also carry out studies on how best waterlogged open spaces currently under cultivation and grazing should be used for productive urban agricultural activities.

6.3 Phasing and Programming

The phasing of the implementation of development proposals of the USP will facilitate smooth and orderly development of Ngabu Main Market Centre. New developments should occur in a gradual outward direction from as close to the existing developments as possible. Nevertheless, the District Council will decide priorities in each phase given the resource envelope and funding possibilities. However, it will be beneficial to prioritize the preparation detail layout plans for various land use zones, construction of drainage networks, construction of dykes along rivers and construction of road networks at the Main Market Centre as these will in turn make available more land for developments.

6.4 Phase One (2024 – 2029)

a. Detailed layout plans be prepared in all areas
b. Plot allocation committee be established
c. Civic education to sensitize the general public about planning issues
d. Gravel all earth roads and provide tree belt along driveways
e. Feasibility studies for dyke construction be conducted
f. Water development and distribution networks be done
g. Studies be carried out on how best waterlogged open spaces can be utilized
h. Construction of drainage networks along roads
i. Upgrade Makande Secondary School to double stream secondary school
j. A site for solid waste disposal and treatment be identified

6.5 Phase Two (2030-2035)

a. Service light industrial area
b. Service existing market centre to give room to development of other land uses

c. Identify cemetery to be managed by the District Council

6.6 Plan Monitoring and Evaluation

The USP will be monitored annually by Chikwawa District Council through Chikwawa District Planning Committee or any other designated institutional arrangement. The Monitoring and Evaluation Office in collaboration with the Physical Planning Office at the District Council will be responsible for data collection, storage, analysis and reporting as well as dissemination to various authorities for their use. Implementation of this Plan will be monitored and evaluated to ensure that the strategic objectives are met and implemented according to plan. The evaluation will involve the process of examining actions taken during implementation period, adjustments made and ensure that outcomes are achieved. Evaluation will specifically examine efficiency, effectiveness, relevance and sustainability in implementation.

Based on the monitoring data, regular management meetings will be done to deal with upcoming day-to-day issues and decide on appropriate action. Besides conducting a mid-term and end-line evaluation of the plan, bi-annual and annual reviews will also be conducted.