

FOREWORD

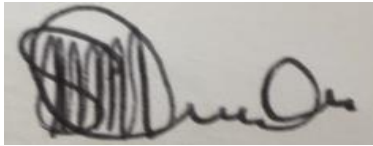
Urbanisation is one of the three pillars of “Malawi Vision 2063” which aims at creating an inclusively wealthy and self-reliant industrialized upper-middle income country by the year 2063. Government realizes that urban centres are critical for the economy. They provide jobs, markets and efficient land 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 Chikwawa Boma. The Plan puts forward proposals and strategies, which once implemented will address some of the major challenges being encountered at Chikwawa Boma in particular and Chikwawa District in general including environmental degradation; weak resilience to climate change, disasters risks and shocks; delays in travel time, traffic congestion and accidents; shortage of land; 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 Chikwawa Boma, Non-Governmental Organisations, 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 Chikwawa Boma for a period of 30 days. During this period the substance of the draft Plan was made known throughout the Boma for the purpose of bringing it to the attention of the people residing or working at Boma 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 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 under the Ministry of Agriculture for financial and logistical support. The 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 Chikwawa Boma 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.

A handwritten signature in black ink, appearing to read 'Masanza', is written over a circular stamp that contains vertical lines.

COUNCILLOR MASANZA
CHAIRMAN
CHIKWAWA DISTRICT COUNCIL

EXECUTIVE SUMMARY

Chikwawa Boma Urban Structure Plan has been prepared under the land reform programme activities which among others, intended to assist in piloting the implementation of new land laws. This Plan is a revision of the urban structure plan which was prepared in 1979. The Plan seeks to provide a comprehensive guide for orderly and coordinated physical development of land at Chikwawa Boma. The Plan has been prepared to achieve the following objectives: -

- To create and maintain an urban environment which ensures that physical development is orderly, coordinated and of high quality
- 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
- 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 Chikwawa Boma, and shortfalls in these activities which need to be addressed. Development proposals have been made which will address these shortfalls so that the Boma develops in a planned manner.

The socio-economic survey revealed that most of the development proposals made in the 1979 urban structure plan were not implemented. This has created a number of problems which include: -

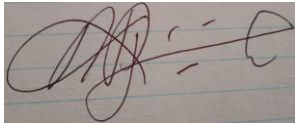
- Unorderly development
- Weak resilience to climate change, disasters risks and shocks
- Lack of service roads especially in residential areas
- Inadequate housing
- Lack of banking facilities
- Lack of proper market and bus station resulting in congestion at Dyeratu and Thabwa

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
- Construction of a bus station
- Introduction of banking services
- Conservation of river banks, flood prone areas and other open spaces

- Promotion of tourism
- Preparation of detailed layout plans

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



Ali Phiri
District Commissioner
Chikwawa District Council

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ABBREVIATIONS AND ACRONYMS

ADD	Agricultural Development Division
AIDS	Acquired Immune-deficiency Syndrome
CBCC	Community Based Care Centre
CCJP	Catholic Commission for Justice and Peace
CDPDP	Chikwawa District Physical Development Plan
CDSS	Community Day Secondary School
CK	Chikwawa
DADO	District Agriculture Development Officer
DEM	District Education Manager
DHO	District Health Officer
DODMA	Department of Disaster Management
DPDP	District Physical Development Plan
EMA	Environment Management Act
ESCOM	Electricity Supply Corporation of Malawi
EGENCO	Energy Generation Company
ECDCs	Early Childhood Development Centres
FINCA	Foundation for International Community Assistance
GVH	Group Village Headman
GWAN	Government Wide Area Network
HIV	Human Immuno-deficiency Virus
MACOHA	Malawi Council for the Handicapped
MGDS	Malawi Growth and Development Strategy
MHC	Malawi Housing Corporation
MNLP	Malawi National Land Policy (2002)
MTL	Malawi Telecommunication Limited
NAPA	National Adaptation Programmes of Action
NEEF	National Economic Empowerment Fund
NDRM	National Disaster Risk Management

NGOs	Non-Governmental Organizations
NSO	National Statistical Office
OVOP	One Village One Product
PPA	Physical Planning Act 2016
SVTP	Shire Valley Transformation Programme
SRWB	Southern Region Water Board
T/A	Traditional Authority
TTC	Teachers' Training College
USP	Urban Structure Plan
VLUP	Village Land Use Plan

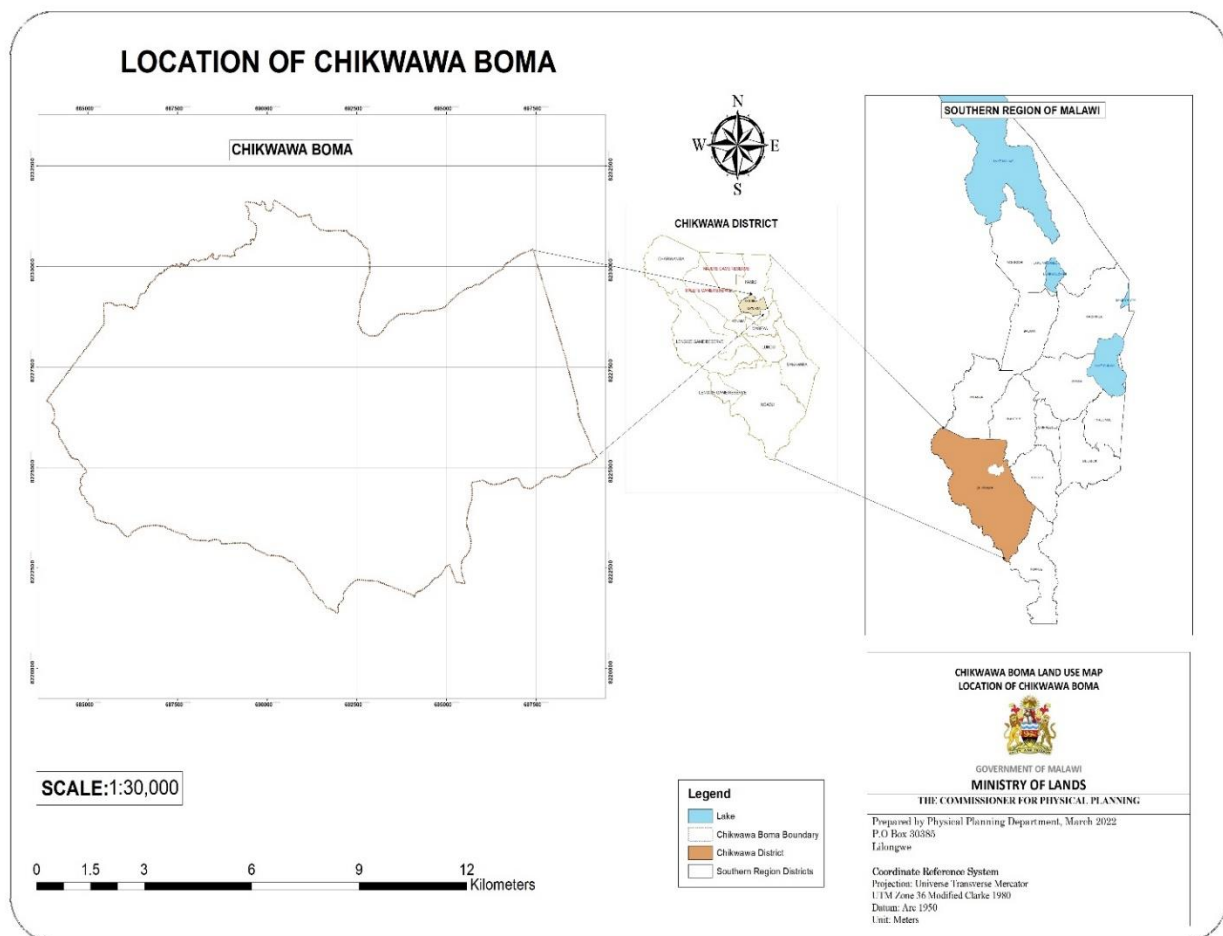
CHAPTER ONE: INTRODUCTION

1.1. Location and Size of Chikwawa Boma Urban Structure Plan (USP)

Chikwawa Boma is located north of Chikwawa District (refer to Figure 1). The Boma, which falls under the jurisdiction of Traditional Authority (T/A) Kasisi, covers approximately 9,291 hectares. It is approximately 54 km south-west of Blantyre, the Commercial City of Malawi.

Chikwawa District is located in the Southern Region of Malawi. It shares boundary with four districts of Mwanza to the north, Blantyre to the north-east, Thyolo to the east, and Nsanje to the south. Its coordinates are 16°10'0" S and 34°45'0" E in DMS (Degrees Minutes Seconds) or -16.1667 and 34.75 (in decimal degrees).

Figure 1: The Location of Chikwawa Boma



1.2. Legal and Policy Framework

The Physical Planning Act, 2016 (PPA) is the principal legal instrument governing physical planning in Malawi. The main objective of the Act 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 social and economic development. This is in line with one of the prime objectives of the Malawi National Land Policy (2002) of extending land use planning and development controls to all types of land, in effect, making the whole Country a planning area. The PPA also provides guidelines for the preparation of local physical development plans.

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

The PPA also provides for public participation at all levels of planning in the Country. Specifically, Section 23 (4) of the PPA gives freedom to the 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, the planning approach adopted in the preparation of Chikwawa Boma Urban Structure Plan was fully participatory.

Additionally, the regulatory framework acknowledges that the public has the right to demand and participate in decision making at all stages of land use planning and management. Experience has shown that plan implementation is easier where this basic right is respected because the public fully owns the plan. In the light of the above, the policy aims to promote participatory and community driven planning to ensure ownership and effective implementation of plans by all stakeholders and the public. Similarly, Land Use Planning and Management Guidelines and Standards stipulate that planning and implementation processes must ensure public participation at all times.

1.3. Hierarchy and Function

The National Physical Development Plan (1987) stipulates the hierarchy point system of ranking centres according to their functions and services. For example, a main market centre is awarded 20-35 points. According to the Central Place Survey conducted by the Physical Planning Team in 2019, Chikwawa Boma was ranked as a main market centre with 32 points. The services found at the Boma include health, education, security, administration, transport, agriculture, industrial, commercial among other services. The Boma is also vibrant because of its various small-scale businesses. The Boma serves mainly as an administrative and commercial centre of the District.

1.4. The Urban Structure Plan Review and Justification

The first and only USP for Chikwawa Boma, which covered an area of about 721.50 hectares, was prepared by Physical Planning Department over four decades ago in 1979 (refer to Annex 1). Obviously, the plan is outdated and in need of urgent review in order to reflect the current status of the centre. This plan was prepared while the Boma was an advisory planning area, hence, there was no planning committee with legal mandate for preparing, approving and enforcing physical development plans in the area. Consequently, the policy recommendations provided in the plan were not implemented resulting in disorderly development at the Boma.

Since the whole Country is a planning area as provided for in the PPA, and that the Chikwawa District Council has constituted the District Planning Committee, there is need to review the 1979 USP to accommodate new developments. In addition, most of the existing developments are in conflict with the outdated plan. Furthermore, following the development of the District Physical Development Plan (DPDP) and Village Land Use Plans (VLUP), there is a need to prepare the USP as a tool for implementing the DPDP at local level. This will ensure orderly, coordinated, efficient and sustainable development of the District.

There is also need to revise the plan in order to identify vacant land within and beyond the boundary of the Boma to accommodate current and future demands. The plan will assist the Council to formulate and accommodate short- and long-term development projects for the Boma, such as the Shire Valley Transformation Programme (SVTP), as well as promote development control and guide the expansion of existing developments. The Urban Structure Plan is also a prerequisite for the production of other local physical development plans such as detailed layout plans. 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 donor funding agencies.

1.5. Urban Structure Plan (USP) Development Process

For effective preparation of the USP, the team conducted document mobilization and literature review, orientation workshop and geo-spatial and socio-economic data collection. The initial stage included mobilizing and reviewing related documentation. Document mobilization and literature review enhanced and refreshed the basic understanding of the development process, consolidated the available literature to support the development process and developed tailor-made tools to support data collection. This ensured that the data collection tools bridge the data gaps identified

during literature review. Documentation included District Socio-Economic Profile, USPs for different centres and sample data collection tools. The methodologies included questionnaires, oral interviews, observation, consultations, literature reviews, transect walks and satellite imagery.

The orientation workshop equipped the team with data collection techniques to enhance data quality and ensure uniformity. Participants were given ample time for discussions and real-life scenarios were also presented to enhance understanding. Each data collection tool was deliberated upon to improve understanding and usability. Finally, data collection tools incorporated input from the group. After fine-tuning the data collection tools, the team embarked on collecting both geo-spatial and socio-economic data.

The process of coming up with an urban structure plan occurs mainly in two phases. The first phase is the preparation of a land use map. This involves picking the existing land uses and put them on base map (also known as base map updating) which finally becomes a land use map. Phase two involves the preparation of urban structure plan that shows the proposed land uses within the planning boundary based on the distribution of the land uses as shown on the land use map and the product is called a land use plan. After the socio-economic survey report and the land use plan were finalized, presentations were made at the District Council to gather final input. Thereafter, the Plan was circulated internally to other offices within the Physical Planning Department for their input.

Finally, the Plan was circulated to other stakeholders and interested parties for the same. When the comments from these areas were incorporated into the Plan, a final draft was produced. Thereafter, the Plan was endorsed by the Chikwawa District Planning Committee and submitted to the Commissioner for Physical Planning for consideration and approval. After approval, the Plan was produced in mass and distributed to the various implementing agencies for their reference and action.

1.6. Outline of the USP

Chapter one of the USP introduces the Plan highlighting historical background, objectives and justification for the review. 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. Finally, chapter six outlines the implementation arrangements.

CHAPTER TWO: DESCRIPTION AND ANALYSIS OF PHYSICAL FEATURES

2.1 Topography

Chikwawa Boma lies along the lower flat basin of Shire River, which is along the Great East African Rift Valley. In the eastern side of the District lies Thyolo Escarpment and most of the central part is flat with marshes along the Shire River, and Kirk Range highlands to the west. Chikwawa Boma has an undulating terrain, but it is predominantly flat. It is located at an elevation of 112 meters above sea level.

2.2 Drainage

Chikwawa Boma has both regular and parallel drainage patterns which reflect the undulating surface and varied soil types. Shire River is the biggest in the District and outlet for other rivers such as Mwamphanzi, Likhubula, Mthumba and Manyumwa.

2.3 Geology and Soils

A wide variety of soils have developed in Chikwawa District and these vary from area to area according to different types of sediments and rocks. Sandy loam soils dominate among the groups at 48%, with clay loam soil as the least at 2.2%.

2.4 Rainfall

Chikwawa Boma experiences general unreliable and variable rainfall ranging from about 170 mm to 967.6 mm per annum as minimum and maximum respectively.

2.5 Temperatures

Temperatures are generally high with a maximum of about 37.6°C usually experienced in November and a minimum of 27.6 °C in July every year whilst the mean average temperatures are usually above 20 °C.

2.6 Vegetation

Chikwawa Boma enjoys both terrestrial and aquatic vegetation types. The terrestrial ecosystem of the District is classified into two: acacia thicket clump savanna and open/closed mixed woodland.

2.7 Climate and Climate Change

The District experiences tropical climate and falls into wet and dry seasons. The Inter-Tropical Convergence Zone oscillations largely determine the District's climate as it is the interactions between the zonal Congo air mass and the maritime south-eastern trade winds and monsoonal north-eastern winds. It is hot and humid from October to April in the District (factover.com/geography/Malawi, 2019). The wet season extends

from November/December and ends in April/May, while the dry season occurs from May to October/November.

Climate change greatly affects the District in many ways. These effects include, but not limited to, prolonged dry spells, flooding, stormy rains and strong winds. These in turn result into occurrence of cholera, army worm and foot and mouth disease outbreaks as well as high prevalence rate of HIV and AIDS pandemic.

CHAPTER THREE: PLANNING SUBJECTS

3.1 Population

Demographic characteristics in land use planning are very essential as they provide an important set of guidelines in realizing issues and potentials for development. It provides the basis for determining current and future needs for infrastructure and services. As such, it is an increasingly challenging aspect in land use planning since planners have to innovatively manage the various needs of the existing and future populations while minimising the negative impact on land.

3.1.1 Population Size and Characteristics

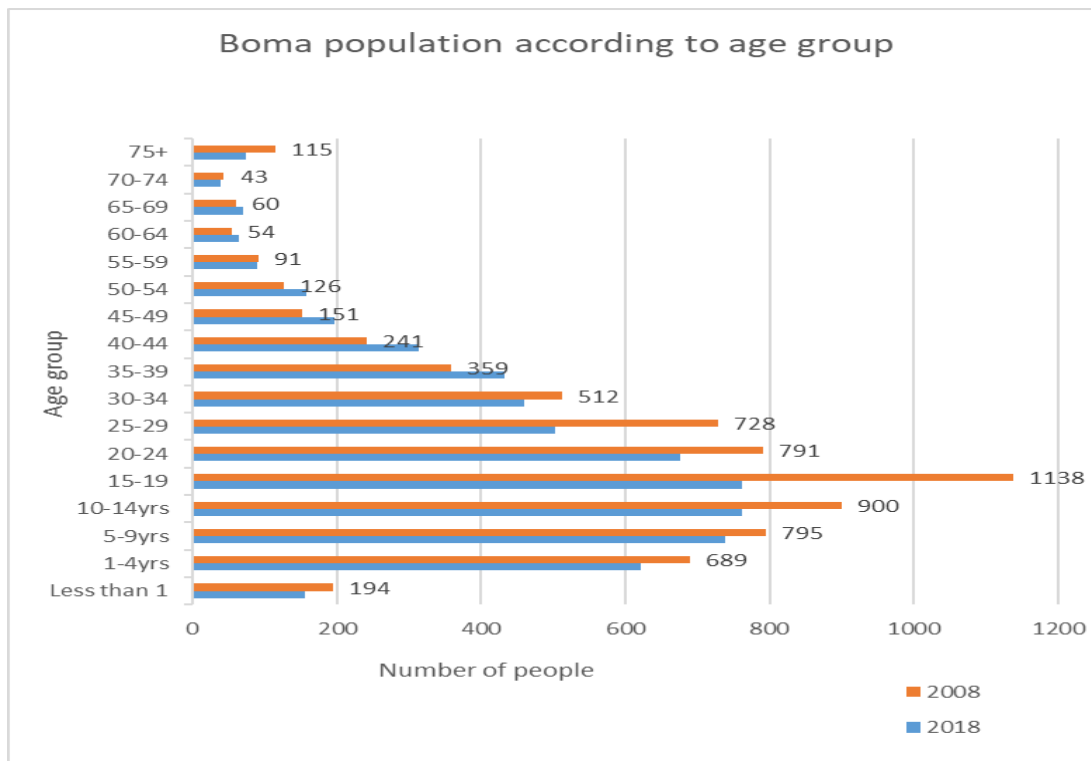
The population of Chikwawa Boma which increased from 3,482 in 1987 to 6,987 in 1998 has been on a steady increase since 1987 with the exception of 2018 when it had a slight decline (refer to Table 1). Between 1987 and 1998 the population of the Boma increased by 2,497 while between 2008 and 2018 the population dropped by 873. This decline might be attributed to several factors such as the increased incidences of natural disasters in recent years as well as migration. For instance, the 2015 floods displaced many people and damaged a lot of property.

Table 1: Population Trend at Chikwawa Boma between 1987 and 2018

Year	Population	Trend
1987	3,482	2,497
1998	5,979	1,008
2008	6,987	- 873
2018	6,114	

According to the 2018 National Statistical Office (NSO) Census Report, of the 6,114 people at Chikwawa Boma, 2,954 are males, representing 48.31% of the population while 3,160 (51.68%) are females. This difference in distribution between males and females can be attributed to the emigration of males from the area as they seek for greener pastures. Of the 2,954 males at the Boma, 1,302 are 0-17 years while 1,652 are 18 years and above. Similarly, of the 3,160 females, 1,411 are 0-17 years while 1,749 are 18 years and above. This means 44.4% of the total population at the Boma is youthful, economically dependent and being supported by an economically active adult population of 51.6%.

Figure 2: Population of Chikwawa Boma by Age-Group



Source: NSO 2008 & 2018 Population and Housing Census

According to Figure 2, the population in youthful age groups (0-34 age groups) decreased between 2008 and 2018. Other than low birth rate, this supports the idea of outmigration because this is the age group that is not yet settled hence migrate easily looking for better opportunities.

3.1.2 Population Growth and Projection

The population at the Boma has had an oscillating growth; from a very high growth rate of 7.2% in 1998 then coming down to 1.7% in 2008 and entering into the negatives in 2018 at -1.3%. Although the growth rate has been decreasing ever since, there is high probability of it increasing rapidly especially with an economic catalyst. With the coming in of the Shire Valley Transformation Project introducing subsidised irrigation farming and industrial hubs for agro-processing, this probability is more apparent. As such, it will be prudent to project the population with an average growth rate of these three intercensal periods. The projections therefore are based on an average growth rate of 2.54%.

With a population of 6,114 in an 8km² area, Chikwawa Boma has a population density of 764 people per square kilometre. The proposed urban centre is covering 92.91km²

(9,291 hectares) and has a total population of 18,266 people, giving a density of 197 people per square kilometre. Of the 18,266 people 8,110 are children aged 0-17 years, 9,425 are adults and economically active population aged between 18-59 years while 731 are the aged population of 60 years and above.

The Plan is projecting the population of the proposed USP boundary using a 2.5% growth rate. This means that by 2030, the population of Chikwawa Boma will grow by 34 % to reach 24,566 people (refer to Table 2), with a population density of 264 people per square kilometre. Such a population will need adequate housing, transportation network, public utilities and community services to ensure above average living conditions.

Table 2: Population Projection and Growth Percentages

YEAR	PROJECTED POPULATION	GROWTH PERCENTAGE %
2018	18,266	
2019	18,723	2.5
2020	19,190	5
2021	19,672	7.7
2022	20,162	10
2023	20,666	13
2024	21,183	16
2025	21,713	19
2026	22,255	22
2027	22,812	25
2028	23,382	28
2029	23,967	31
2030	24,566	34
2031	25,180	38
2032	25,810	41
2033	26,455	45
2034	27,116	48
2035	27,794	52
2036	28,489	56
2037	29,202	60

Source: Physical Planning Department analysis

3.2 Existing Land Use Pattern

3.2.1 Land Tenure

According to the Land Act (2016), land is categorised as either public or private land. Public land is classified as government land or unallocated customary land. Private

land is classified as freehold, leasehold or customary estate. All land is vested in perpetuity in the Republic. There are two tenure arrangements at Chikwawa Boma and these are public and private.

Public land at Chikwawa Boma is administered and managed by Department of Lands through the District Commissioner's office. Private land at Chikwawa Boma is administered and managed by Malawi Housing Cooperation, Customary Land Committees, individual firms and individuals.

3.2.2 Land Use

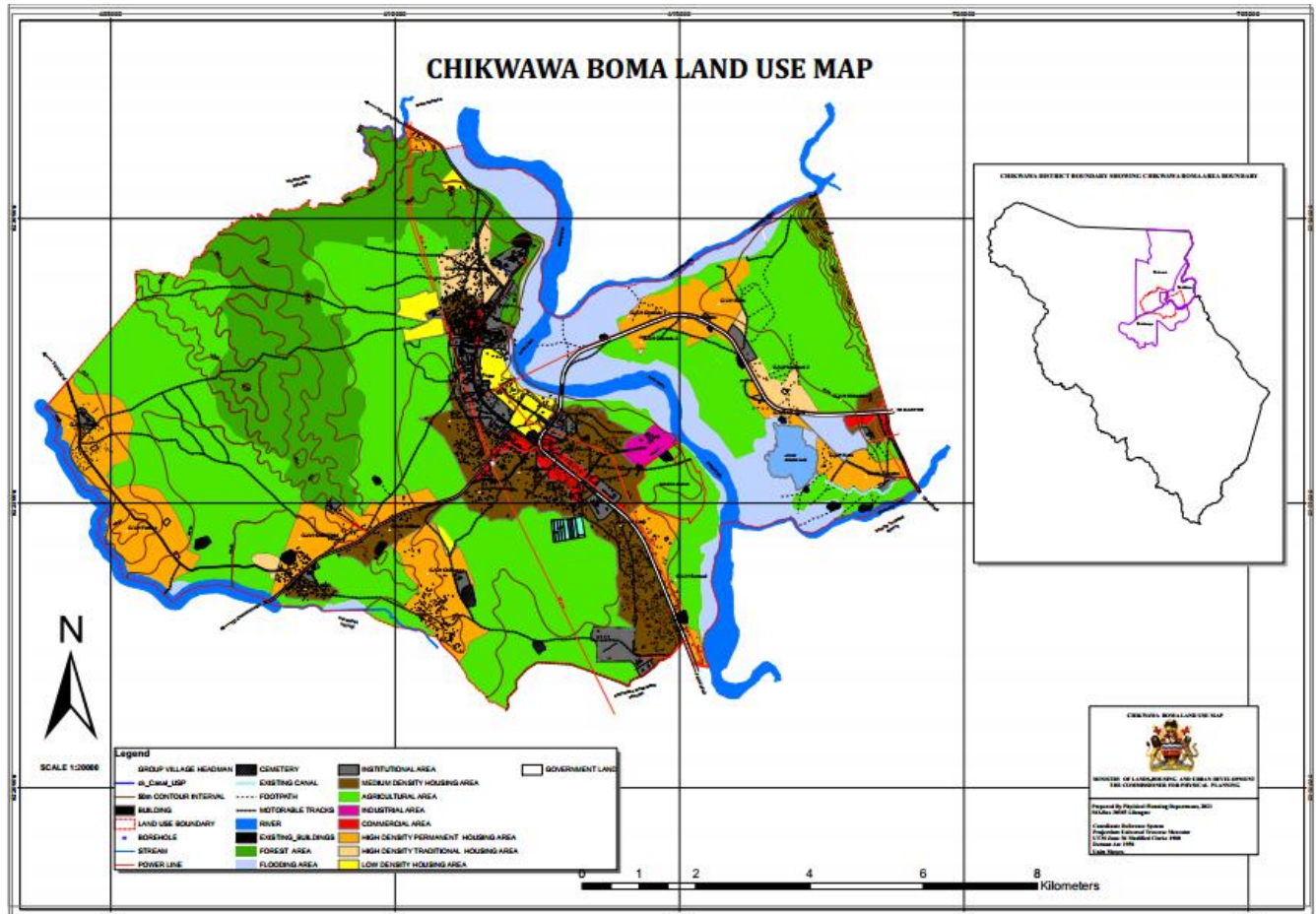
One of the pre-requisites for the preparation of an urban structure plan is a good knowledge and understanding of the existing land use structure, trends in the major land uses, natural or physical constraints to developments, useable vacant land, the rate at which the vacant land is being utilized or becomes part of the man-made physical environment and land for future uses. Chikwawa Boma has four major land uses which are; agriculture, institutional, commercial and residential (refer Figure 3); with a total of 9,291 hectares (refer to Table 3).

Table 3: Major Land Uses and their Sizes

No	Land Use	Hectares
1	Agriculture	4,148.88
2	Natural vegetation	1,526.75
3	Flood Prone Area	792.08
4	Low Density	163.25
5	Medium Density	753.24
6	High Density Permanent	1,034.88
7	High Density Traditional	365.21
8	Institutional	252.53
9	Commercial	107.79
10	Cemetery	35.85
11	Lusuli Oxbow lake	66.72
12	Industrial	43.82
Total		9,291

According to Table 3, agriculture, natural vegetation and residential take up higher percentages of the total land at Chikwawa Boma while commercial and industrial take the lowest percentages. It is, therefore, important that the Plan should consider increasing and identifying suitable land for commercial and industrial use as these are drivers of economic growth. Taking up some land under natural vegetation for these uses would be one of the approach of enhancing growth of the centre economically since most of the land under natural vegetation is currently idle.

Figure 3: Chikwawa Boma Existing Land Use Map



There is also about 8.5% (792 hectares) of land within the USP boundary that is fragile and prone to floods, especially land which is in proximity to Shire and Mthumba Rivers. These are the areas that cannot be zoned into any land use other than conservation.

Population growth is inevitable in the urban centre being the central place of the District and the headquarters of many institutional bodies. Population projection for the Boma shows that the population is going to increase from 19,190 in 2020 to 24,566 by 2030, as a result, the increase will affect the number of households as they are expected to increase from 4059 to 5459.

3.2.3 Housing

Housing at Chikwawa Boma is of four types: low density, medium density, high density permanent and high density traditional. The total residential area is approximately 2,316.58 hectares of which 7.05% is low density, 32.52% is medium density, 44.66 is high density permanent and 15.77% is high density traditional (temporary houses).

From these statistics, it is clear that high density permanent category forms the largest concentration of residential units, followed by medium density. Most of the low and medium density houses are owned by the Malawi Housing Corporation (MHC) which covers approximately 22.1 hectares.

There are a number of institutions that provide housing for their staff at the Boma. Notable institutions providing accommodation for members of staff include MHC, Police, Prison, Agriculture, District Council, District Health Office and District Education Office (refer to Table 4). However, most of the accommodation structures provided by these institutions are not adequate to meet the current demand.

Table 4: Institutional Houses at Chikwawa Boma

Number	Institution	No. of Houses
1.	MHC	66
2.	Health	39
3.	Education	65
4.	Police	44
5.	Prison	29
6.	Agriculture	23

3.2.3.1 Malawi Housing Corporation (MHC)

Malawi Housing Corporation has 66 houses, of which 64 are habitable while 2 are dilapidated. Although MHC constructed these houses, housing is a challenge within the Boma as there are a lot of people on the waiting list. However, there are plans to construct additional housing units.

3.2.3.2 Health

The District Health Officer's (DHO) office has 39 habitable staff houses. The available houses are permanent in nature and are in good condition. However, accommodation is still a challenge since the houses are few as compared to the health personnel.

3.2.3.3 Education

According to the District Education Manager (DEM) for Chikwawa District, the education sector has 65 institutional houses at Chikwawa Boma. Out of the 65 houses, 59 are for public schools and 6 are for private schools (refer to Table 5).

Table 5: Education Institutions and Housing availability at Chikwawa Boma

No.	Name of School	Temporary Houses	Permanent Houses
1.	Bethel Pvt. Primary	0	0
2.	Chikwawa Roman Catholic Primary	0	7
3.	Chikwawa Secondary	0	7
4.	Chilongoma Primary	0	2

5.	Dyeratu Primary	0	5
6.	Mantchombe Primary	0	1
7.	Mfera CDSS	2	5
8.	Mfera Primary	2	4
9.	Mikolongo Primary	3	6
10.	Mitole L.E.A Primary	0	2
11.	Mthumba CDSS	0	2
12.	Mthumba Primary	0	7
13.	Mzimuwoyera Pvt. Primary	0	4
14.	Namalindi Primary	1	3
15.	Penda Pvt. Primary	0	3
16.	Penda Pvt. Secondary	0	0
17.	St. Lawrence Pvt. Secondary	0	2
18.	St. Michael's Secondary	2	3
19.	Thabwa Primary	0	2
20.	West Bank Pvt. Secondary	0	0
	Total	10	65

3.3 Economic Activities and Sources of Livelihood

3.3.1 Employment

According to Chikwawa District Labour Office, Chikwawa Boma has an economically active population of about 51.6% and is mostly employed in the informal sector. Government institutions like District Council Office, District Hospital, Education, Agriculture, Police, Malawi Prison; and Non-Governmental Organizations and private institutions which include Presscane, Kasinthula Cane Growers, Plem Construction, Majete Wildlife Park, Phata Cooperative, Conduril, World Vision and GOAL Malawi are some of the major employing organizations at the Boma.

The informal sector has a higher percentage of employees and mainly includes employment in small scale retail businesses, light industries, agriculture and vending. Self-employment in motor vehicle repairing and maintenance, bicycle and motor-cycle transport services, vending of various merchandise, including agricultural produce are among other major sources of income for the informal sector.

Socio-economic study conducted within the area in 2020 indicated a difference in terms of employment between males and females, with a higher number of males being employed in both sectors. Females represent about 20.5% of those employed within the Boma (refer to Table 6).

Table 6: Number of Persons Employed by Gender at Chikwawa Boma

Name of Workplace	Male	Female	Total
Presscane	107	19	126
Kasinthula Cane Growers	309	64	373
Majete African Parks	76	14	90
Kapichira EGENCO	84	11	95
Plem Construction (TTC Project)	403	92	495
Conduril (Canal Project)	85	19	104
CBC (TTC Project)	62	12	74
Kasinthula Research	22	7	29
St Lawrence Pvt Secondary School	24	9	33
West Bank Pvt Secondary School	26	11	37
JEMEC Filling Station	12	4	16
Puma (Mushi) Filling Station	10	1	11
Total Filling Station	7	2	9
Chipiku Stores (CK)	4	6	10
Simbeko Rest house	6	8	14
Hope Lodge	9	8	17
Vasco Milinyu Lodge	6	3	9
Penda Pvt School	18	10	28
Mzimuwoyera Seminary	22	0	22
CCJP (Chikwawa)	8	3	11
Shire View Lodge	4	0	4
J & M Lodge	4	3	7
Red Cross	9	8	17
One Community	7	8	15
Phata Cooperative	95	32	127
Police	43	22	65
Total	1462	376	1838

Source: Chikwawa District Labour Office 2020

3.3.2 Commerce and Industry

3.3.2.1 Commerce

There are three designated markets within Chikwawa Boma; at the District Headquarters, Dyeratu and Thabwa. In addition, some local market centres have gradually evolved at Mbenderana, Fombe, Chikhambi and Kanthema. Commercial activities at the Boma are mostly along both sides of the road at Dyeratu and Thabwa Trading Centres. Most of the structures, particularly at Dyeratu, are within the road reserve. This is because there was no development control when the structures were being constructed.

Figure 4: Total Filling Station at Thabwa



Source: Physical Planning Department 2020

Chikwawa Boma has no bus or mini-bus depots. As a result, minibuses and taxis pick and drop people haphazardly, resulting in traffic congestion in the area. Currently, the construction of Thabwa Market and Bus Depot has stalled, while the construction of the Market at Dyeratu has commenced.

Figure 5: Dyeratu Market Construction Site



Source: Physical Planning Department 2020

Some commercial structures at Thabwa and Dyeratu were constructed with permanent materials while others are temporary in nature. They include: wholesale and retail shops; grass thatched shelters made of wood; and kiosks selling various merchandise ranging from groceries, food stuffs, bicycle spares and agricultural produce. Service industries, such as accommodation, restaurants, hair salons, barber shops, tailoring shops, shoe, radio, watch and phone repairs and other cottage industries are also available at Dyeratu.

Street vending is becoming significant at Dyeratu and Thabwa. The Chikwawa District Physical Development Plan (CDPDP), therefore, proposed construction of a modern market and bus depot at Dyeratu to decongest the area.

Figure 6: Street Vending within the M1 Road Reserve at Dyeratu



Source: Physical Planning Department 2020

3.3.2.2 Industry

Large scale industries at Chikwawa Boma comprise institutions like Energy Generation Company (EGENCO) and Presscane Limited. A bigger proportion of industries are service industries which include crafts, maize mills, carpentry, bicycle and shoe repairs, finsmiths, welding and small restaurants.

Table 7: Categories of Industries and their Examples at Chikwawa Boma

Type of Industry	Example	Number per each type
Heavy Industry	Processing	1
	Power Generation – solar	1
Services Industry	Filling Stations	3
	Bottle stores	14
	Carpentry	59
	Grocery	174
	Maize mill	63
	Maize Sheller	30
	Mini shops	450
	Restaurant	31
	Rest house	15
	Retail shop	22
	Welding	32
	Wholesale	4
	Curio makers	5
	Pharmaceuticals	5

Presscane Limited, using molasses supplied by Illovo Sugar Company, is one of Malawi's leading ethanol fuel producing company. The Company is strategically located at Dyeratu on the western shore of the Shire River which supplies water for the distillery's operations. The company produces and supplies approximately 99.6% alcohol quality which is blended with imported petrol. The Company also produces rectified spirit ethanol that is used as a solvent in the printing and pharmaceutical industries. Presscane Limited's distillery is capable of producing 18 million litres of ethanol annually. Its highest plant capacity utilization of 89% was achieved in 2015. This was due to molasses that were sourced from Companhia de Sena in Mozambique. This means that Illovo alone does not satisfy the supply of molasses to the company. The company is in constant conflict with the local community because of its waste management sewers which pollute the area with odor and overflow. The overflowing sewers destroy crops and degrade soil fertility.

Business advisory services in the District are provided by Government institutions and some Non-Governmental Organisations (NGOs). The main institutions providing such services are the Ministry of Trade, through One Village One Product (OVOP) program, office of the District Agriculture Development Officer (DADO), the District Forestry Office, the District Community Development Office and Malawi Council for the Handicapped (MACOHA).

3.3.2.3 Banking Services

FDH Bank is the only financial institution providing banking services at Chikwawa Boma. The Bank is operating at small scale with staff less than 20. Most banks are located at Nchalo Township, which is 27 kilometers to the south of Chikwawa Boma, due to its proximity to Illovo Sugar Company. Other financial institutions at Chikwawa Boma are National Economic Empowerment Fund (NEEF) Limited and FINCA. The focus of these institutions is mainly on loan provision.

Figure 7: FDH Bank at Chikwawa Boma



Source: Physical Planning Department 2020

Banks play a critical role in the economic growth of an area by ensuring access to credit/loans by different investors and facilitating local and international trade. It is, therefore, imperative that land for banking and financial services be proposed in the USP.

3.3.3 Tourism Facilities and Conservation

Chikwawa Boma has great potential for tourism development. The Boma has competitive advantage over other urban centres in providing tourists with affordable transport and lodging facilities, among other services. This is because of its proximity to tourist attraction sites such as Kapichira Falls, Madziotentha Spring, Diwa Spring, Kapichira Hydro Electric Power Station, Majete Wildlife Reserve, Lengwe National Park and the meandering Shire River view from Thyolo – Chikwawa escarpments. Currently, the tourism sector's potential has not been exploited to the fullest. This is an opportunity for the would-be investors.

Figure 8: The Shire River



Source: Physical Planning Department 2020

3.4 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 their 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: Public utilities (power, telecommunication, piped water supply, sanitation, sewages, waste collection and disposal and piped gas); Public works (roads, dams and canal works); and other urban and rural transport facilities (railways, ports, waterways, airports). Some of the physical infrastructures that are at Chikwawa Boma are discussed below.

3.4.1 Road Network

Chikwawa Boma is well connected with the M1 Road. There is another tarmac road (S416), that branches off from the M1 Road to the District Headquarters. This road, however, is not in good condition (refer to Figure 9).

Figure 9: The District Headquarters Road (S416)



Source: Physical Planning Department 2020

Chikwawa Boma also has a new tarmac road (S136) to Chapananga that branches off the S416 Road to the west. This road is in very good condition and spacious, with pedestrian and cycle ways on both sides (refer to Figure 10). Traffic flow on this road is smooth for all road users. There is also the S152 road that branches off the M1 Road at Thabwa to Fatima. Considering that this is an earth road and becomes almost impassable during rainy season, Malawi Government is upgrading it to tarmac standard.

Figure 10: Chapananga Road (S136)



Source: Physical Planning Department 2020

There are also a number of access roads crisscrossing Chikwawa Boma which facilitate the movement of goods and services to various destinations (refer Annex 2). The total distance of all roads at the Boma is about 111.95km (refer to Table 8).

Table 8: Classification and Length of Roads at Chikwawa Boma

Class of Road	Minimum Road Reserve	Total Distance	Responsible Authority
Main Roads	60m	13.30km	Roads Authority
Secondary Roads	36m	6.27km	Roads Authority
District Roads	36m	4.98km	Roads Authority
Tertiary Roads	36m	5.75km	District Council
Feeder Roads	18m	81.65km	District Council
Total		111.95km	

According to the survey which Physical Planning Department carried out in March 2019, (Refer the Chikwawa District Physical Development Plan of 2020), a traffic count at three designated points along the main road showed a variation of movement of traffic at different days and times of the day. The data was collected at different times of the day: from 08:30 to 09:30, 13:30 to 14:30 and again from 16:30 to 17:30 both on a market and non-market day.

The survey revealed that the major road users are pedestrians and cyclists, followed by motorcyclists and motor vehicle users. There was however, no specific count for pedestrians. There were 614 and 597 bicycles recorded at Chapananga junction on market and non-market days, respectively. In addition, 88 and 69 motor cycles were captured at Chapananga junction on market and non-market days, respectively. At Kamuzu Bridge, 402 and 374 bicycles were recorded on market and non-market days, respectively. Similarly, more mini buses were counted at Kamuzu Bridge compared to Chapananga junction. The table below shows variations of traffic count per type of road users between market and non-market days.

Table 9: Variation of Traffic Count for various Road Users on a Market and Non-Market Days

No.	Road User	Market Day	Non-Market Day	Variation
1	Cyclists	614	597	17
2	Motor cyclists	88	69	19
3	Motor vehicle users	402	374	28

The statistics above show that there is considerable traffic flow for the various modes of transport on all major roads in the area. Chikwawa is undergoing a transformative process in the area of infrastructure development, such as Shire Valley Transformation Program (SVTP). These projects are, upon completion, expected to boost agricultural

and industrial sectors at Chikwawa Boma, thereby improving disposable income for the people in the area. This will in turn enable more people own vehicles, motorcycles and other modes of transport. This will result in an increase in traffic, and hence, traffic jam on the existing roads. In view of the foregoing, there is a serious need for proper planning and effective physical development control.

Tables 10 and 11 below give an overview of volume and flow of traffic along the Secondary Road to Chapananga and Main Road.

Table 10: Traffic Count at Chapananga Junction

Traffic Count on Market Day at Chapananga Junction (Chikwawa Boma)								
Direction	Motor Vehicles						Motor Cycles	Bicycles
	Saloon Cars	Pick - ups	Trucks	Buses	Mini-Buses	Others		
Out	13	17	6	0	3	10	29	270
In	15	10	12	0	1	19	40	344
Total	28	27	18	0	4	29	69	614
Traffic Count on Non-Market Day at Chapananga Junction (Chikwawa Boma)								
Out	10	22	9	0	2	9	47	295
In	24	18	7	0	2	13	41	302
TOTAL	34	40	16	0	4	22	88	597

Source: Chikwawa DPDP, 2020

Table 11: Traffic Count at Kamuzu Bridge

Traffic Count on a Market Day at Kamuzu Bridge (Dyeratu)								
Direction	Motor Vehicles						Motor Cycles	Bicycles
	Saloon car	Pick - ups	Trucks	Buses	Mini-Buses	Others		
Out	27	8	14	0	27	40	11	197
In	34	37	29	0	34	6	6	205
TOTAL	61	45	43	0	61	46	17	402
Traffic Count on Non-Market day at Kamuzu Bridge (Dyeratu)								
Out	24	18	14	0	28	40	4	191
In	23	36	23	0	31	17	14	183
TOTAL	47	54	37	0	59	57	18	374

Source: Chikwawa DPDP, 2020

3.4.2 Bus Depots and Markets

There are no bus depots and formal markets at Chikwawa Boma. However, there were efforts to construct a Market and Bus Depot at Thabwa but the construction has stalled.

Presently, traders use the informal markets located at the District Headquarters and Dyeratu while passengers are picked and dropped in undesignated points along various roads. However, notable pick-up and drop-off points of passengers include Dyeratu and Thabwa. No public buses pass through the District Headquarters. According to Tables 10 and 11, the dominant public passenger vehicles are minibuses. A traffic count of minibuses at Dyeratu on a market day showed that 86 minibuses with a capacity of 16 and 4 with a capacity of 12 passengers were captured. The count was done for a 3-hour period from 6.15 am to 9.15 am and targeted minibuses going in both directions i.e. Blantyre and Nsanje (refer the Chikwawa DPDP, 2020).

3.4.3 Water Transport

The Chikwawa Boma has the Shire River as a major water body, but currently it is rarely used as a mode of transportation, with canoes as the only means.

3.4.4 Education

There are a number of education institutions at Chikwawa Boma, both public and private, catering for all ages (refer to Annex 3). The institutions include early childhood development centres, primary schools, secondary schools and Chikwawa Teachers' Training College (TTC).

3.4.4.1 Early Childhood Development Centres (ECDCs)

Chikwawa Boma is endowed with a number of pre-schools or ECDCs. Five (5) of the ECDCs at the Boma are public institutions (refer to Table 12).

Table 12: Early Childhood Development Centres (ECDCs)

Name of School	Public	Private	No. of Teachers		Support Staff	
			Male	Female	Male	Female
Mpotazingwe	√		5	5	0	3
Tiasamale	√		3	7	0	4
Mlambe	√		3	7	0	3
Mgwirizano	√		5	5	0	2
Nchalo	√		5	5	0	2

In addition to child care services offered by the institutions in Table 12, they also offer adult learning services. For instance, Mpotazingwe Community Based Care Centre (CBCC) has had an enrollment of 115 learners, Tiasamale CBCC had 120 learners, Mlambe CBCC had 181 learners and Mgwirizano CBCC had 141 learners.

3.4.4.2 Primary Schools

The Boma has 14 primary schools, of which 11 are public and 3 are private (refer to Table 13).

Table 13: Primary Schools at Chikwawa Boma

Name of School	Private	Public	No. of Teachers			No. of Qualified Teachers	No. of Classrooms
			M	F	Teacher/Pupil Ratio		
Thabwa		√	8	13	80	21	8
Mfera		√	16	13	90	29	13
Mikolongo		√	11	18	70	29	16
Gumbwa		√	12	3	70	15	10
Mitole		√	10	22	60	32	16
Dyeratu		√	8	30	74	38	16
Namalindi		√	8	14	90	22	10
Mantchombe		√	9	10	80	19	6
Mthumba		√	10	12	70	22	14
Chikwawa		√	10	32	80	42	12
Chiphazi		√	3	1	60	4	4
Bethel	√		4	4	60	8	8
Penda	√		6	4	70	10	8
Mzimuwoyera	√		4	0	20	4	4

3.4.4.3 Secondary Schools

There are nine secondary schools within Chikwawa Boma and they comprise both public and private. Out of the nine, three are public and six are private. These include Chikwawa Secondary School, St Lawrence Girls' Secondary School and Mthumba Community Day Secondary School (refer to Table 14).

Table 14: Secondary Schools at Chikwawa Boma

Name of School	Private	Public	No. of Teachers			No. of Qualified Teachers	No. of Classrooms	Boarding Facilities
			M	F	Teacher/Pupil Ratio			
Chikwawa		√	10	6	34	16	12	Yes
Mfera CDSS		√	8	4	40	12	6	No
Mthumba CDSS		√	10	2	44	12	6	No
St Lawrence	√		9	3	30	12	8	Yes
Bright Future	√		6	2	30	8	4	No
Penda	√		6	2	25	8	4	Yes
Mzimu Woyera	√		6	0	30	6	4	Yes
Elephant Marsh	√		8	0	40	8	4	No
West Bank	√		8	3	40	11	8	Yes

3.4.4.4 Tertiary Education

The TTC, located at Kasinthula, when construction is completed will be the only tertiary education institution at Chikwawa Boma. It covers an area of about 27 hectares and is expected to have boarding facilities with a capacity of 600 students (300 for males and 300 for females). The institution will have 30 dwelling units for junior staff and 15 for senior staff. There will be a water tank with a capacity of 103,000 litres and the Southern Region Water Board will be responsible for the provision of the water. The institution will also have a provision of two boreholes sunk within the compass as a backup.

Figure 11: Chikwawa TTC under Construction



Source: Physical Planning Department 2020

3.4.5 Health

Chikwawa Boma has both public and private health facilities (refer to Table 15). The main public and referral hospital for the District is Chikwawa District Hospital, located at the Boma. It treats various ailments such as malaria, TB, cholera, COVID-19, diarrhoea, and provides services namely family planning, antenatal, outreach programs, under-five clinics, HIV/AIDS antiretroviral therapy, various operations/surgery among others. The old and dilapidated nature of its buildings and proximity to Shire River pose a danger to patients and medical personnel.

Figure 12: Chikwawa District Hospital



Source: Physical Planning Department 2020

Figure 13: Chikwawa District Hospital Mortuary



Source: Physical Planning Department 2020

Table 15: Summary of Health Facilities, Medical and Supporting Staff and Common Ailments

Name of Health Facility	Public	Private	No of Doctors	Nurses	Ward Attendants	Health Surveillance Assistants	Supporting staff	No. of Outpatients (May-July, 2020)	Bed Space	Doctor/Patient Ratio	Common Ailments treated
Chikwawa District Hospital	x		4	87	98	285	260	21,109	230	1:1000	Malaria, Diarrhoea, HIV/AIDS, Covid-19
Abwenzi		X	1	1	0	0	1	400	0	1:30	Malaria, Diarrhoea
Chinyanje		X	1	0	0	0	3	1,500	2	1:30	Malaria, Diarrhoea
Alinafe Mother Care		X	1	2	1	0	1	120	2	1:40	Malaria, Diarrhoea
Mphate		X	1	0	1	0	1	1,200	2	1:30	Malaria, Diarrhoea

Source: Physical Planning Department 2020

3.4.6 Communication

3.4.6.1 Postal and Courier Services

Communication plays a critical role in the socio-economic development of any centre. Chikwawa Boma has one post office. Its main function over the years has been mail delivery. Due to the emergence of various communication technologies, the relevance of postal services has diminished over the years. Therefore, the post office has diversified its operations to include courier, money transfers and sale of airtime. The post office facility is relatively old and requires maintenance.

Figure 14: Chikwawa Post Office



Source: Physical Planning Department 2020

3.4.6.2 Internet Services

Internet services are generally accessed through mobile phone service providers namely TNM, MTL and Airtel. Most people use wireless internet through mobile phones and dongles to access internet service. Some companies, organizations and individuals access internet through cable internet provided by MTL. The District Council and DEM's offices are the only government offices that are connected to the Government Wide Area Network (GWAN) at Chikwawa Boma. However, the GWAN is currently not accessible at the Boma since optical fiber cables that connect Chikwawa District to GWAN were washed away during the January, 2022 floods. Chikwawa Boma also has internet café or telecentres.

Figure 15: Chikwawa Telecentre



Source: Physical Planning Department 2020

3.4.6.3 Mobile Phones

The area is connected by the two main mobile network providers in the Country: TNM Limited and Airtel Malawi. However, at times in some localities the network is weak.

3.4.6.4 Radio and Television Services

The radio stations with good coverage at Chikwawa Boma include Zodiak, Times, Gaka Community Radio (based in Nsanje District), MBC Radio 1 and 2 among others. Television services are also available in the area through MBC Tv, Zodiak, Times Tv, DSTV, GoTV and Kiliyekiliye. International channels such as Supersport, BBC, Aljazeera and many more are also accessible at a cost through subscription.

3.4.7 Community Services

3.4.7.1 Cemeteries

One of the notable community service infrastructures worth mentioning at Chikwawa Boma is a cemetery. There are 19 cemetery sites within Chikwawa Boma (refer to Annex 3). Except for two cemeteries at Mzimuwoyera Seminary under the Roman Catholic Church, 17 cemeteries are under the authority of

traditional leaders. These cemeteries are meant for burial of persons of all age groups and open to the general public. Of the two cemeteries at the seminary, one is exclusively for burial of Roman Catholic priests and the other is exclusively for Roman Catholic faithful ones. An assessment of the 19 existing cemeteries revealed that six (6) cemeteries are not suitable for burial (refer Table 16).

Table 16: Assessment of Cemeteries at Chikwawa Boma

SITE	Topography	Access	Flood Risk	Groundwater Protection
GVH Mbenderana (West of Mzimuwoyera Seminary)	Gentle slope	Foot-path	No flood risk	More than 250 meters away from water source
GVH Mbenderana (Behind Mosque)	Gentle slope	Foot-path	No flood risk	More than 250 meters away from water source
Mzimuwoyera Seminary (Cemetery for Priests)	Gentle slope	Access road	No flood risk	More than 250 meters away from water source
Mzimuwoyera Seminary (Cemetery for Roman Catholic faithful ones)	Gentle slope	Access road	No flood risk	More than 250 meters away from water source
GVH Sadulo (Dyeratu Commercial area)	Flat terrain	Road	No flood risk	More than 250 meters away from water source
GVH Sadulo (Chizanja Scheme)	Gentle slope	Access road	No flood risk	More than 250 meters away from water source
GVH Chadula 1 (Along M1 Road)	Gentle slope	Road	Experiences floods	Within water source catchment area
GVH Mtwana (East side of M1 Road)	Gentle slope	Road	No flood risk	More than 250 meters away from water source
GVH Mpangeni 1 (West of Oxbow Lake)	Gentle slope	Road	Experiences floods	Within water source catchment area
GVH Kera (East of Oxbow Lake)	Gentle slope	Road	Experiences floods	Within water source catchment area
GVH Fazema (along Mwamphazi River)	Gentle slope	Foot-path	Experiences floods	Within water source catchment area

GVH Lauji (east of M1 Road)	Gentle slope	Road	No flood risk	More than 250 meters away from water source
GVH Chikhambi (North of Fombe-Boma Road)	Gentle slope	Access road	No flood risk	More than 250 meters away from water source
GVH Chikhambi (West of Chapananga Road)	Gentle slope	Access road	No flood risk	More than 250 meters away from water source
GVH Fombe (North of Boma Fombe Road)	Gentle slope	Access road	No flood risk	More than 250 meters away from water source
GVH Chinangwa	Gentle slope	Access road	No flood risk	Within water source catchment (proposed canal)
GVH Nyamphonda (Dambo Scheme)	Flat terrain	Access road	No flood risk	More than 250 meters away from water source

Cemeteries located in flood prone areas and within water supply catchment areas are not suitable burial sites as they have potential to contaminate water sources that supply water for human consumption. In this case, the following sites do not qualify: GVH Chinangwa, GVH Fazema (along Mwamphazi River), GVH Chadula 1 (Along M1 Road), GVH Kera (East of Oxbow Lake), GVH Mpangeni 1 (West of Oxbow Lake). In addition, the emotional attitude towards cemeteries is against locating them in commercial areas. Therefore, GVH Sadulo cemetery (Dyeratu Commercial Area) does not qualify.

According to the Chikwawa Boma Land Use Map, cemeteries cover a total area of 35.85 hectares which translates into 51,831 burial spaces. These spaces are adequate to cater for needs throughout the plan period. However, the Boma lacks a public cemetery which should be sorely managed by the Local Council.

3.4.7.2 Religious Facilities

Chikwawa Boma has a number of religious institutions. The institutions include Church of Central African Presbyterian, Roman Catholic, Seventh Day Adventist, Assemblies of God, Anglican, Calvary Family Church, Living Waters and Islam. Most of these religious institutions do not have adequate land for expansion.

3.4.7.3 Community Facilities

The Boma does not have community facilities such as a community hall, a community playground and recreational parks. As such people, particularly the youth find it difficult to engage in various sporting and recreational activities.

3.4.7.4 Judiciary Services

Chikwawa Boma has a magistrate court with 10 employees (5 males and 5 females). Major responsibilities of the magistrate court include hearing both civil and criminal cases and conducting legal clinics where communities are sensitized on various legal issues. Common cases tried include theft of livestock, burglary and defilement among others. The court building is in dilapidated state.

3.4.7.5 Security Services

3.4.7.5.1 Immigration

The Boma has an Immigration Office which offers services like processing of visas to foreign nationals and applications from nationals for passports and border passes. However, the department does not have an office building and enough institutional houses to accommodate officers. As such some officers commute from Blantyre to work each working day. It is, therefore, necessary to deliberately reserve land for the construction of such facilities.

3.4.7.5.2 The Police

Chikwawa Boma has a Police Station with 43 male officers and 22 female officers. The Police Station has 39 staff houses against the 65 officers. This means that some officers stay in rented houses. Common crimes reported at the Police Station include theft of livestock, burglary, defilement, unlawful wounding, common assault and land grabbing. Neighbourhood community policing complement the police in providing security services at the Boma. Private security services are also available at the Boma through KK Security Company which mostly provides security in sugarcane plantations. It is, therefore, important to consider the construction of new office blocks and the possibility of reserving land for the construction of housing units for the officers for the police station.

3.4.8 Utilities

3.4.8.1 Water Supply

Chikwawa Boma as one of the main urban centres in the District is serviced by an urban water supply scheme. Water is supplied by the Southern Region Water Board (SRWB) from an underground source. Water is pumped into tanks and

supplied to the communities. The Board's total water supply capacity at the Boma is 180 cubic meters per day.

The water is supplied to about 2,046 consumers and these include domestic, industrial and commercial. The Boma has 21 water kiosks which mainly serve traditional housing areas and are managed by local water committees. Some communities at the Boma depend on boreholes and shallow wells as sources of water for domestic use.

3.4.8.2 Source of Energy

According to Chikwawa District ESCOM Office and Southern Region Power Control Centre, there is no specific data solely for Chikwawa Boma. There are several sources of energy at Chikwawa Boma. According to the 2016/17 Integrated Household Survey, about 85.8% and 13.6 % of the population in Chikwawa District were using firewood and charcoal respectively for cooking. Further, 81.6%, 6.8% and 5.9% were using torches (dry cell batteries), firewood and electricity for lighting respectively (National Statistical Office, 2017). The results of this survey show that the majority of the population in Chikwawa District is using firewood and charcoal to meet their energy needs for cooking.

Electricity Supply Corporation of Malawi (ESCOM) supplies Chikwawa Boma with hydro-electricity from Kapichira Scheme whose overall production capacity is 128 megawatts. In Chikwawa District in general, power transmission is done through a 132 KV power line and capacity of transmission lines is 345.5 amps. Thereafter, power is distributed through 33kv and 400V power lines (ESCOM, 2018).

ESCOM currently has about 4000 customers at Chikwawa Boma while over 1000 customers are on the waiting list. The average current peak demand is 12,448.3 kilowatts. Other than domestic consumers, the main users of the electricity at the Boma are Presscane Limited, Chikwawa District Hospital, Chikwawa District Council, Chikwawa Secondary School, St. Lawrence Secondary School, St. Thomas Lodge and Mzimuwoyera Seminary.

3.4.9 Waste Management

Waste is unwanted matter or material of any type, especially what is left after useful substances or parts have been consumed. And waste management is the collection, transportation, storage, treatment and disposal of waste. Solid and liquid waste are the two main types of wastes at Chikwawa Boma. Both solid and liquid waste can be hazardous or non-hazardous.

Figure 16: Waste Disposal Site at Chikwawa Boma



Source: Physical Planning Department 2020

3.4.9.1 Waste Generation and Disposal at Chikwawa Boma

3.4.9.1.1 Waste Generation

Generally, the sources of waste generation at Chikwawa Boma encompass construction sites, residential, commercial, industrial, institutional, Council service areas and agricultural areas (refer to Table 17 and Annex 4).

Table 17: Waste generation by Location at Chikwawa Boma

Location	Typical Waste Generators	Solid Wastes Generated	Liquid Wastes Generated
Residential	Dwelling units	Food waste, yard waste (leaves, grass and bush), paper, plastics, rubber, cardboards, textiles, leather, wood, glass, metals, ashes and special wastes such as batteries, consumer electronics and light bulbs	Sewage and waste water (sanitary sewage and storm sewage)
Commercial	Markets, trading shops, lodges, restaurants, repair workshops, office buildings and filling stations	Cardboards, food wastes, paper, glass, metals, special wastes, hazardous wastes and e-wastes	Sewage and waste water
Industrial	Presscane Ethanol Plant, fabrication and construction sites	Packaging wastes, food wastes, construction and demolition materials, ashes, metals, hazardous and special wastes	Sewage and waste water (industrial sewage, sanitary

			sewage and storm sewage)
Construction and Demolition	New construction sites, road repair, renovation sites and demolition	Wood, steel, concrete, dirt, bricks and tiles	Sewage and waste water (industrial sewage, sanitary sewage and storm sewage), depending on the location of the site
Institutional	Schools, hospitals, prison and offices	Cardboards, food wastes, paper, glass, metals, special wastes, hazardous wastes and e-wastes; Medical wastes: infectious wastes (bandages, gloves, culture, swabs, blood and body fluids); Hazardous wastes (sharp instruments and chemicals) and Pharmaceutical wastes	Sewage and chemicals
Agricultural	Crops, orchards, vegetable gardens, feedlots, livestock and farms	Spoiled food wastes, livestock droppings/dung and crop residues	Storm waste water (agricultural contaminants)

3.4.9.1.2 Solid Waste Disposal

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

At Chikwawa Boma, methods of waste collection employed are self-delivered, curbside pick-up and contracted or delegated service. Self-delivered is the most used method of solid waste collection while curbside pick-up is confined to Dyeratu market 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 Chikwawa Boma, waste is transported by humans using wheel barrows, farm carts, trucks and lorries to disposal sites. Transportation methods vary according to type of waste, method of waste collection and distance to disposal site.

However, most of the garbage is not transported because it is reused, recycled or burned at source, or not collected at all as is the case around the Boma market. The area lacks designated municipal disposal facilities for the generated waste. Therefore, rubbish pits are common disposal facilities used and these are not safe as they lead to contamination of soil and ground water.

3.4.9.1.3 *Sewage and Liquid Waste Disposal*

As regards liquid waste disposal, sewage disposal is done privately by means of pit latrines behind homes and other premises or by means of cesspools, septic tanks and soak-ways. In specific cases, industrial sewage from Presscane Limited is treated at sedimentation ponds located at Lauji and sludge is thereafter disposed at Fombe pits. Chikwawa District Hospital disposes expired drugs in pits at Fombe. However, the Boma does not have a designated municipal disposal facility for liquid wastes.

3.5 Urban Agriculture

Urban agriculture is widespread at Chikwawa Boma. Major food crops grown in the area are maize, sorghum and millet. These are complimented by beef, goat meat, pork, milk and fish. Cash crops grown include maize and vegetables (which are also food crops). Despite that cotton remains the major cash crop for Chikwawa District in general.

Major livestock types at Chikwawa Boma are cattle, poultry, pigs, goats, and sheep. Other types of livestock raised are rabbits, turkeys, guinea fowls and ducks. In addition, the Boma has good environmental conditions for fishing and fish farming along the Shire River and in ponds.

3.6 Disaster Prevention and Risk Management

This section examines the types of disasters which are common at Chikwawa Boma. It also briefly describes the National Disaster Risk Management (NDRM) Policy and the National Urban Policy on disaster issues in the country to give an overview of the policy framework governing disaster risk management. The occurrence of natural disasters is on the increase in terms of frequency and intensity with potential to negatively affect all sectors of socio-economic development. The increase is attributed to the effects of climate change.

3.6.1 Common Disasters at Chikwawa Boma

There are a number of factors that influence occurrence of disasters at Chikwawa Boma and the details are discussed below.

3.6.1.1 Flooding

This is mainly attributed to the low altitude of 112 metres above sea-level at which the Boma lies and the location of some parts of the town in relation to the Shire River which make them prone to floods (refer to Annex 5). This has been worsened by lack of flood control infrastructure such as dykes and resilient house construction. Another challenge that contributes to flooding is lack of development control. However, large part of the Boma is safe as it is lying at an elevated area.

One of the worst floods that occurred in 2015 damaged a lot of houses, farms and irrigation infrastructure in communities near Kamuzu Bridge. This was due to Cyclone Kenneth that developed in the Indian Ocean and the El Nino phenomenon which caused prolonged heavy rainfall in South-East Africa. In 2019, Cyclone Idai caused floods especially in the same communities which were affected in 2015. The most recent floods, caused by cyclone Ana in January, 2022, also affected the same communities and damaged a lot of farms and infrastructure. One of the notable effects was the cutting off of the M1 Road as shown in Figure 17.

Figure 17: M1 Road cut off by 2022 Flooding at Chikwawa Boma



Source: www.unicef.org/malawi/report/tropical-storm-ana-situation-report, January 2022

Before flooding, vulnerable communities are warned about the incoming danger through community radios. During the floods, the affected households are sheltered in churches and schools within the Boma. Some Civil Society Organisations construct houses for the flood victims and they also distribute seed and fertilizer to compensate for the crop loss.

3.6.1.2 Drought

Droughts are common at Chikwawa Boma due to its geographical position as it lies in the leeward side of the Shire Highlands. The droughts happen every year with different magnitudes. The 2018/2019 season was the worst-stricken resulting into a lot of damage to crops. It also triggered the outbreak of migratory pests and diseases. As a coping mechanism, the Department of Agriculture advises farmers to grow early-maturing varieties of crops such as maize, sorghum, potatoes and others.

3.6.1.3 Strong Winds

This form of disaster strikes annually though with variations in terms of scale. This is so because the Boma lies in the path of the prevailing South-Easterly Winds. It has also been observed that the climate change phenomenon has caused an increase in wind speed up to the rate of 4.3km/hour yearly. The worst disaster occurred in 2015/2016 season due to Cyclone Kenneth and it caused damage at the Boma. The damages suffered include blowing off of roofs at the Prison, Department of Agriculture, Likhubula Primary School and the District Council residential houses.

3.6.1.4 Crop Pests and Livestock Diseases

According to Chikwawa Agriculture Development Division (ADD), the Boma is affected by crop pests and livestock diseases. These occur annually with different magnitude. Some of the common diseases are Foot and Mouth, Lumpy Skin and African Swine Fever. The 2019/2020 season was the worst hit by Foot and Mouth disease due to drought. This is because the drought forces buffaloes from the wildlife reserves, carriers of the disease, to feed and drink where cattle usually do. To control this disease, the cattle are vaccinated and disinfected. Another disease is the Lumpy Skin caused by biting insects like mosquitoes and flies, which adversely affect the animals after floods.

Cereal crops like maize, sorghum, millet, rice and soy beans are commonly affected by migratory pests. Some of the pests are African Army-worms. These worms multiply in large numbers during drought, and Chikwawa Boma was worst

stricken in 2016. As a mitigation measure, the Department of Animal Health distributes pesticides to the farmers.

In 2019/2020 season, the Boma also experienced outbreak of a strange pest called Fall Army-worms. These worms originated from Brazil, but the climate change phenomenon has created a conducive environment for the pests in the country. It attacks all types of crops and it is drug resistant.

3.6.1.5 COVID-19

The COVID-19 pandemic is killing a lot of people worldwide. It has symptoms similar to those of flu and it does not have cure at the moment. At Chikwawa Boma, by the time of the socio-economic survey, 42 people had been infected by the disease and all of them recovered.

As a control measure against the spreading of the disease, people are advised to practice physical distancing. This measure is negatively affecting public service delivery in that office space can now accommodate few officers at a time. It is also difficult to deliver services like live extension work to the farmers by the Ministry of Agriculture because this requires meeting farmers personally in large groups. The ADD has resorted to using community radios in delivering extension services as a coping mechanism.

3.6.2 Relevant Policies on Disaster Prevention and Risk Management

3.6.2.1 National Urban Policy (April, 2019)

The Policy Priority Area 6 advocates for urban resilience, climate change adaptation and disaster risk management. It is observed in this document that recently, disasters have been exacerbated by climate change, weak development control mechanisms and rapid urbanization. Further, the local authorities have challenges in disaster management and some affected communities and services fail to recover from these effects. This priority area promotes 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 to impacts of disasters and climate change in urban planning, development and management; supporting the establishment and management of urban disaster management structures; and promoting climate change adaptation and mitigation programmes. In conclusion, this policy will ensure that urban areas are resilient to disaster effects.

3.6.2.2 National Disaster Risk Management Policy, 2015

In this policy, it has been recognized that disaster risk management needs to be mainstreamed and guided in all sectors and at all levels of planning (i.e. village, area, district and national). The NDRM Policy was developed with the aim of providing coherent policy strategies that would reduce the impacts of disasters in Malawi thereby supporting the attainment of the MGDS II.

The Policy is linked to legislations and strategies like the now repealed Town and Country Planning Act (1988) and the Malawi National Adaptation Programmes of Action (NAPA) of 2006. The latter seek to identify immediate adaptation measures that need to be considered to reduce the risks from climate change.

Some of the policy statements are to ensure that NDRM 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 Risk Management Affairs (DoDMA) and is carried out by different stakeholders. At the district council, the District Disaster Risk Management Committee implements the Policy.

CHAPTER FOUR: ANALYSIS OF KEY ISSUES AND THEIR PLANNING IMPLICATIONS

This chapter presents a summary of issues from the analysis of existing planning subjects.

4.1 Population

- a. Highly oscillating growth rate;
- b. Emigration of the youthful population; and
- c. Natural disasters devastating people's livelihoods.

4.2 Existing Land Use Patterns

- a. Outdated USP: The last USP for the Boma was prepared in 1979 and since then, the Plan has not been revised. Hence, the Plan was no longer relevant to the changes that have occurred on the ground such as population growth, effects of natural disasters and other demands related to land use.
- b. Lack of development control: Land use pattern at Chikwawa Boma is not orderly since developments did not follow land use plans that were prepared. This has been due to lack of development control personnel at the Council to enforce the land use plans. As a result, there are no proper boundaries separating different land uses, rather, there has been haphazard development.
- c. Shortage of land: Land is inadequate within the Boma since most of it has been affected by floods rendering it fragile for developments. This poses a challenge in the anticipated expansion of some land uses.

4.3 Health

- a. Old infrastructure for the District Hospital and the threat posed by the Shire River as its banks continue to be eroded. The facility is close to Shire River which is continually taking up land and approaching facility's premises.
- b. Utility problems i.e. power outages and inconsistent water supply.
- c. Unavailability of space for expansion and/or relocation of some health facilities.

4.4 Housing

- Housing is inadequate for most Government institutions such that the number of staff outweighs the number of houses available. This has forced a lot of employees to search for houses in the distant locations. As a result,

some officers report for duties late, thereby affecting service delivery in the long run.

4.5 Employment and Income

- a. Majority of the labour force employed is in the informal sector;
- b. Only 20.5% of those employed are females;
- c. Most contractors operating in the area do not adequately and timely pay their employees, especially wages and terminal dues;
- d. Most employers and employees lack knowledge on labour-related laws and workers' rights, hence most workers suffer in silence in the face of harsh working condition.

4.6 Commerce and Industry

- a. Dyeratu is too congested with unplanned shops and vending activities, and lack a modern market and bus depot;
- b. Small businesses sprouting haphazardly dominate the industry;
- c. Lack of small-scale businesses and industries at the Boma such as bakeries;
- d. There is inadequate access to banking services given that there is only FDH bank.

4.7 Transport

- a. Poor condition of some roads which affects mobility of goods and services;
- b. Conflict of road users and consequently leading to traffic jams, accidents and delays in travel time;
- c. Water transport is not fully explored and utilized regardless of the presence of Shire River; and
- d. Delays in completion of projects due to issues of funding, i.e. bus depot at Thabwa.

4.8 Education

- a. Inadequate teaching and learning space, hence need for additional classroom blocks;
- b. Inadequate teaching and learning materials and staff accommodation;
- c. Learners traveling long distances to access school facilities; and
- d. Low funding levels affecting procurement of essential materials and also completion of projects.

4.9 Communication

- a. Poor signals for most radios and television stations;

- b. Inconsistent signal strength for mobile phones that affects communication in some areas; and
- c. Most people are using mobile phones to access the internet, thereby reducing patronage in the internet cafes.

4.10 Water Supply

- Chikwawa Boma is one of the locations in the District with high access (69%) to potable water (Chikwawa District Water Office, 2020). However, the north-eastern part of the Boma which is dominated by vast idle land that can be utilized by various land uses, is not connected to SRWB water supply scheme and there are neither boreholes nor any other communal water points. Most boreholes in this area have water with high salinity levels, and some of the boreholes become dysfunctional after sometime due to changes in levels of water table, resulting in a decrease in the number of people accessing safe water.

4.11 Sources of Energy

- a. According to NSO's Chikwawa District population growth and projections, population of Chikwawa Boma will increase at a rate of 2.54% and the projected population by 2030 will reach 24,566 from the current population of 19,190. The increase in population is one of the main factors that will contribute to the increase in demand for electricity at the Boma. This implies that by 2030 the demand will be much higher. As of now, 85.6% and 13.6% of the population use firewood and charcoal respectively for cooking. This poses a threat on the environment.
- b. In addition, the north-eastern part of the Boma is not connected to electricity. Regarding provision of electricity, ESCOM is also hindered by factors such as inadequate resources, for example transportation, and lengthy procurement systems for materials. (Chikwawa ESCOM 2020).

4.12 Urban Agriculture

- a. Farming along flood prone areas is a big challenge at the Boma. When there is flooding, all crops and some animals are lost and this causes food insecurity. Most common flood prone areas are along Shire River and its tributaries. However, these areas have proved to be productive especially through irrigation farming.
- b. Despite having all the potential, fish farming is not highly practiced at the Boma.

- c. Despite having a vast land in the north-eastern part of Chikwawa Boma, lack of irrigation infrastructure and knowledge of good farming practices lead to underutilization of Shire River by the community.

4.13 Waste Management

- a. There is no designated site for solid waste disposal.
- b. Lack of sewer line and sewer treatment facility.
- c. The liquid waste from Presscane which is deposited in designated oxidation ponds is proving to be an environmental hazard.
- d. Mismanagement of waste which threatens environmental sustainability includes:
 - Burning waste which is harming humans and damaging the environment;
 - Depositing toxic waste such as batteries and energy saver light bulbs in rubbish pits and rivers which is contaminating soil and water sources;
 - Leaving waste uncovered in rubbish pits which attracts vectors that spread diseases to humans.
- e. Littering has spoiled the scenic beauty of the environment.
- f. Ineffective solid waste collection and transportation by the local authority.
- g. Inappropriate waste disposal into the rivers which adversely affects the environment.

4.14 Disaster Risk Management

- a. The location of the Boma in relation to the Shire River and its tributaries such as Likhubula and Mwamphanzi makes it prone to flooding;
- b. The geographical position of the Boma, which is in the rain shadow area, makes it susceptible to long dry spells and droughts every year;
- c. The location of the Boma lies in the path of the prevailing south-easterly Winds;
- d. The Boma is stricken by pests and diseases such as african army-worms, fall army-worms and foot and mouth; and
- e. Uncoordinated efforts in implementation of the NDRM Policy between the District Disaster Risk Management Committee and other development related committees at district level.

CHAPTER FIVE: PLANNING POLICIES AND DEVELOPMENT PROPOSALS

Zoning proposals of the 1979 USP, existing land use, projections and estimates have been used as a basis for allocation of the various land use zones. The zoning proposals have been made so that each piece of land at Chikwawa Boma 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 Chikwawa Boma 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.

5.1 Purpose and Overall Strategy

The objective of the Chikwawa Boma USP is to assist Chikwawa District Council and its development partners to plan and implement development activities in an orderly and environmentally friendly manner. The Plan will, therefore, serve as a guiding tool for managing future urban growth and development control. The main purpose of the Plan is to create a self-sustained community where people can work, live and enjoy themselves with minimum effort and cost in terms of money, time and effort.

Proposals have been formulated in line with the following guiding principles:

- a. To check the prevailing haphazard development and consequently delineating appropriate land uses to guide future development;
- b. To extend the planned area to include existing periphery for upgrading;
- c. To create a spacious and pleasant environment in which sound economic activities can be conducted to the benefit of the entire community at a minimum cost;
- d. To ensure that there is safe, efficient and convenient circulation of vehicles, cyclists, and pedestrians; and
- e. To preserve existing amenities. Trees and vegetation be retained with new developments or re-developments and that existing features be maintained and expanded.

Development will therefore take place in accordance with the appropriate policies and land use allocation as indicated in this Plan. In addition, the following provisions shall apply:

- a. Development should be subject to minimum planning standards and guidelines, lease agreements and allocated on properly identified plots;
- b. Buildings will be well designed and constructed using permanent materials;
- c. Institutional, commercial and industrial buildings should use cement blocks and not burnt bricks;
- d. Developments will provide on-site landscaping; and
- e. Permanent development will be located on properly serviced plots.

5.2 Development Proposals

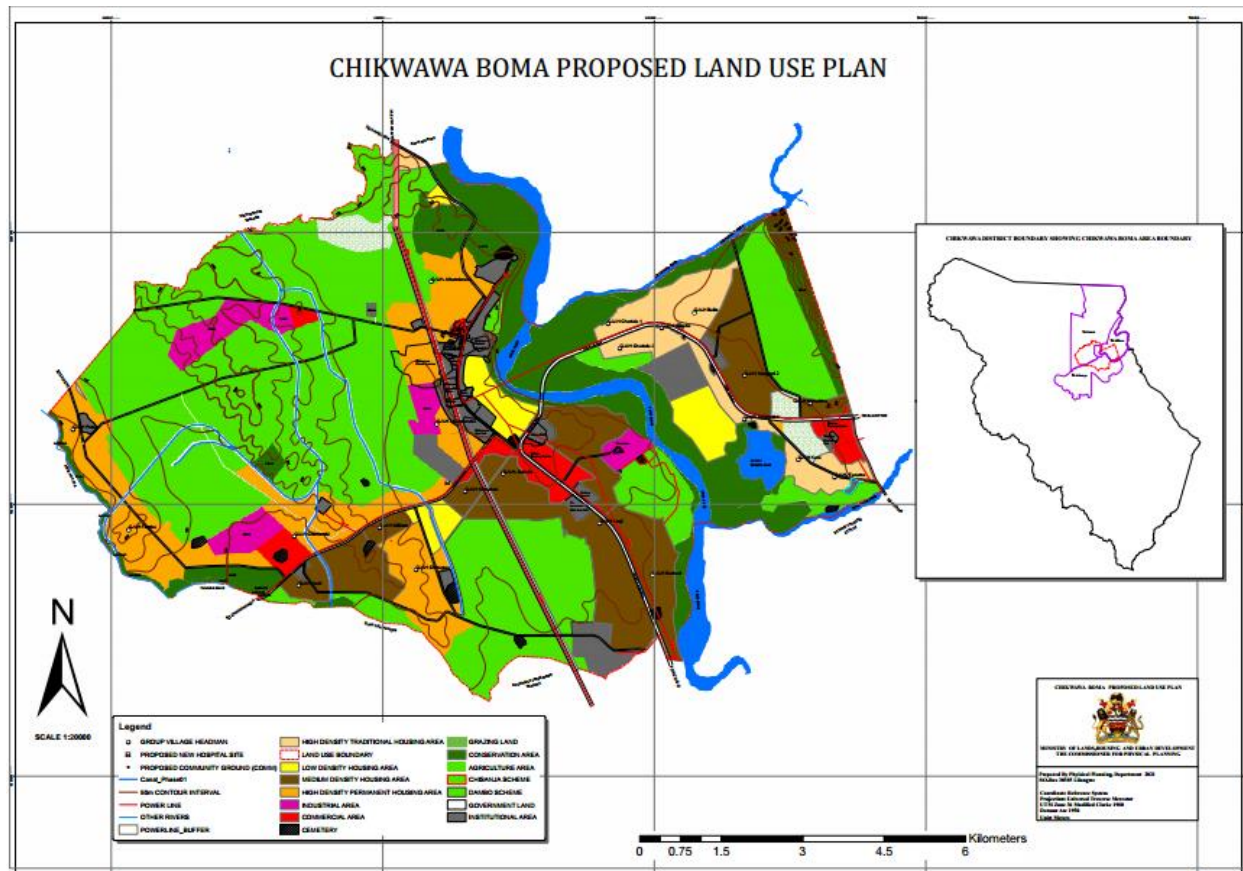
5.2.1 Land Use

The plan has made provisions for land use requirements due to population increase and other future development (refer to Table 18 and Figure 18).

Table 18: Proposed Land Use for Chikwawa Boma USP

Land Use	Total Area (Ha)	Total Area (km ²)
Agriculture	3,110.58	31.11
Conservation	1,255.18	12.55
Institutional	390.59	3.91
Low Density Housing	271.57	2.72
Medium Density Housing	1,048.48	10.49
High Density Permanent Housing	968.75	9.69
High Density Traditional Housing	381.04	3.81
Commercial	224.40	2.24
Industrial	278.86	2.79
Cemetery	35.85	0.36
Grazing	135.82	1.36
Shire River	136.06	1.36
Lusuli Oxbow Lake	66.72	0.67
Chisanja Scheme	102.07	1.02
Dambo Scheme	471.50	4.72
Road Reserves	197.64	1.98
Canal Reserve	109.05	1.09
132KV Power-line Reserve	106.84	1.07
Total Land Uses	9291.00	92.91

Figure 18: Chikwawa Boma Land Use Plan



5.2.2 Housing

The Plan proposes the allocation of additional land for residential use in order to cater for the growing population. Land for residential use should be extended towards natural vegetation and agricultural land using population projection against land requirements. There is need for additional houses in most of the institutions such as health, education, police and prison which are key service providers in order to promote effective and quality service delivery. To ensure economic use of land, the Plan proposes and encourages vertical development. Detailed layout planning for all categories of residential zones at the Boma should also adhere to minimum plot sizes for residential developments as stipulated in Land Use Planning and Development Management Guidelines and Standards. In total, 2, 669.84 hectares (28.74%) of land at the Boma is reserved for residential developments (refer to Table 18).

5.2.3 Health

The USP has reserved land for construction of a new District Hospital and its ancillary functions. The land is 30.0 hectares as per the requirement of the Ministry

of Health. The Plan proposes provision of sites for the construction of clinics within the Boma to decongest the District referral hospital. Actual sites for the clinics will be reserved on detailed layout plans.

5.2.4 Commerce and Industry

- The USP proposes commercial and industrial development sites to facilitate orderly, environmentally-friendly and sustainable industrial development and growth;
- In line with the Chikwawa District Physical Development Plan (CDPDP) proposal, the USP provides for construction of a modern market, abattoir and bus depot at Dyeratu to decongest as well as control flow of traffic in the area;
- As industrialisation boom is expected with the coming in of the canal, there is need for enhanced industrial development and agro-processing. The USP has, therefore, proposed land for banks and financial services in commercial areas;
- In general, the Plan provides for growth of the service industry in commercial areas to create employment opportunities and wealth; and
- There is great need to provide and upgrade other local centres by providing markets. The actual sites for the new local markets shall be provided for during the preparation of detailed layout plans.

5.2.5 Transport

The Plan proposes dualizing of the two major roads (M1 and S416) within the Boma and upgrading the Chikwawa Boma-Kapichira Road to bitumen standards. The M1 Road should be dualised from Kamuzu Bridge to Kasinthula (about 5.86km) while the S416 Road should be dualised from the M1 Road junction at Dyeratu to Mzimuwoyera junction (about 3.44km). Cycle and pedestrian ways should also be provided along all major roads. All other access roads at the Boma should also be upgraded.

5.2.6 Water Supply

The Plan proposes expansion of the current water supply system in order to serve the projected population of 24,566 by 2030.

The north-eastern and eastern part of the Boma should be provided with piped water which can be utilised for various land uses. Due to instability of levels of water table which leads into some boreholes not functioning, the Plan proposes engagement of new technologies of pumping underground water to ensure improved and sustainable access to safe potable water in view of the impact of

climate change. The USP is also supporting SRWB's plans of constructing a water treatment plant at Mthumba under the Shire Valley Transformation Project.

5.2.7 Energy

In response to the projected population of 24,566 in 2030, the Plan is proposing an increase in electricity supply and exploration of alternative energy sources. In order to curb deforestation, the Plan proposes promotion of alternative sources of energy such as use of briquettes in specially made local stoves (e.g. chitetezo mbaula), solar energy and gas.

There is a need to extend power supply to the north-eastern side because of its high residential development potentials. The Plan also urges ESCOM to improve its operations.

5.2.8 Urban Agriculture

To support the Shire Valley Transformation Program, which aims at increasing agriculture productivity and improving the sustainable management and utilization of natural resources among others, 3,110.58 hectares have been allocated for urban agriculture; and it will also be permitted along Shire River but specifically in areas which are not prone to floods.

However, farming along Shire River flood prone areas and all other flood prone areas will not be permitted to protect the crops and ensure safety in general. To enhance urban farming, the cultivation of crops that do not require a lot of land and those that do not take a lot of time before harvest is encouraged. Similarly, rearing of animals that do not require a lot of space is encouraged in order to complement food requirements for the urban dwellers. Therefore, recommended types of farming include: horticulture, poultry farming and fish farming. In addition, drought resistant crop varieties should be promoted.

The Plan also proposes utilization of the Shire River and canals for irrigation farming and fish farming using artificial dams along the River.

5.2.9 Education

Based on the assessment of pupil-to-classroom ratio, there is need for additional classrooms and teachers' houses at the existing schools within the Boma to meet the required minimum standards. Owing to the growing population, the Plan further proposes reserving land for the construction of additional schools.

5.2.10 Waste Management

The Plan proposes the development of a conventional land fill whose site should be identified with technical assistance from relevant authorities. A proper site for development of a sewer system should also be considered to address public health hazards that arise due to high frequency of floods.

Strategic waste collection points should be provided within Chikwawa Boma from where the Council should regularly be collecting the wastes.

The location of the oxidation ponds used by Presscane Company for discharging the waste has to be considered since the ponds are causing air pollution as well as affecting the surrounding farms.

5.2.11 Public Cemeteries

The Plan proposes additional land for public cemeteries. It is strongly recommended that the cemeteries should not be located in flood prone areas.

5.2.12 Disaster Risk Management

- The Plan has zoned flood prone areas at the Boma as land for conservation. No land uses other than conservation such as afforestation should be allocated in these areas. Maps showing flood prone areas should be followed to avoid allocating environmentally sensitive land uses in these areas.
- The Plan proposes that feasibility studies be done on the possibility of constructing dykes and dams as flood controlling measures.
- The District Council should come up with building by-laws incorporating 'Safer House Construction Guidelines' prepared by the Housing Department when approving building plans in order to mitigate impacts of floods and strong winds; e.g. roof designs and raised foundations.
- The Plan proposes provision of land to relevant stakeholders to construct a shelter known as 'safe haven' to be used by victims during disasters.
- Relevant stakeholders should consider provision of livestock drinking places wherever they are providing water points/boreholes for domestic use are to control diseases like foot and mouth.
- The Department of Animal Health and other relevant institutions should do more research on the migratory pests like the strange drug-resistant Fall Army-worms to come up with effective control measures.
- Development control and enforcement at the District Council should be strengthened by building capacity of relevant staff and the Planning Committee and providing adequate resources.

CHAPTER SIX: IMPLEMENTATION ARRANGEMENT

6.1 Plan Implementation

The District Council will be responsible for management of the urban area. This is in line with the Decentralization Policy and Act which enshrines political and administrative authority to the Council. The Council is responsible for the governance and development matters of the District. The Plan will be financed through national funding mechanisms and other financing modalities such as development partners, Non-Governmental Organisations and other available windows. The local council is responsible for resource mobilization to finance some of the proposed projects.

The Plan will be implemented in a phased approach of 5 years to coincide with the development planning framework of local governments. The Council will decide priorities in each phase given the resource envelope and funding possibilities from development partners as well as short, medium and long term needs or projects.

6.2 Plan Monitoring and Evaluation

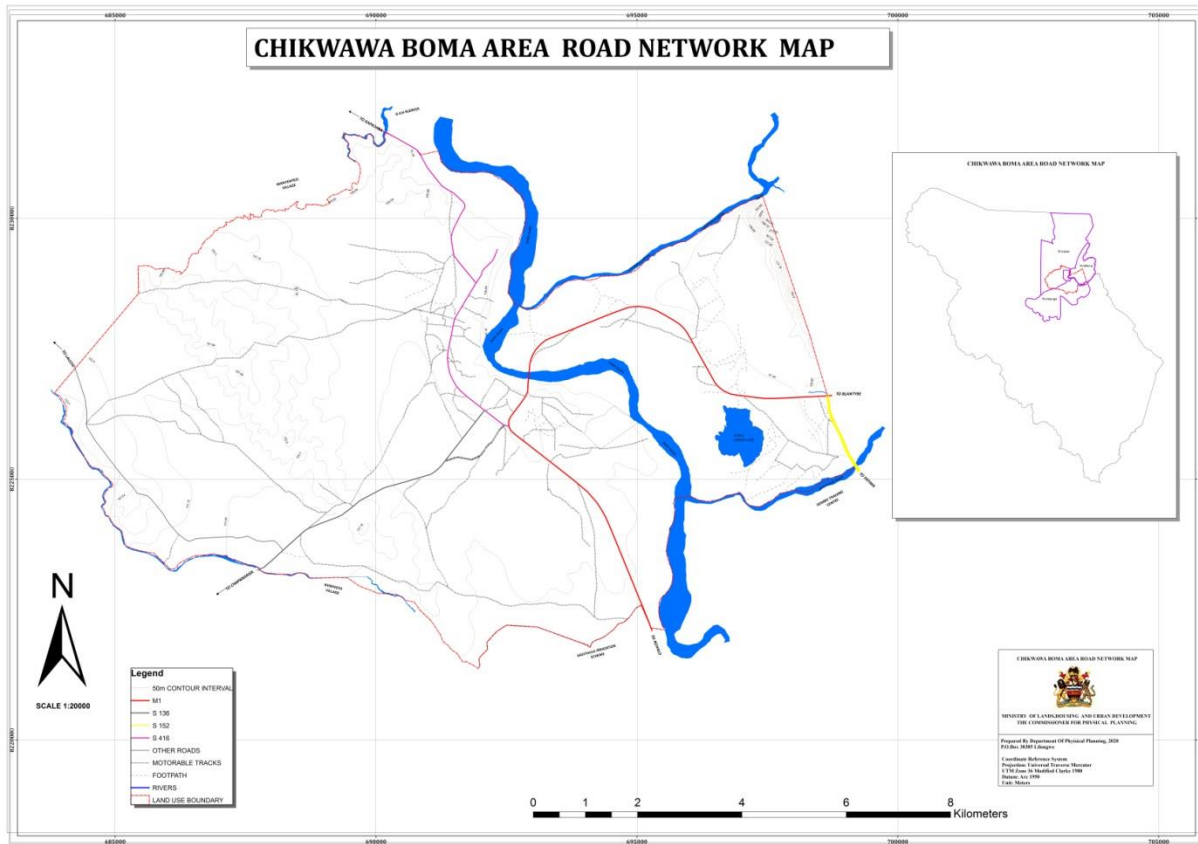
The Plan will be monitored annually by the Chikwawa District Council through Chikwawa District Planning Committee and any other designated institutional arrangement. There will be a designated office at the Council to collect, store and analyze monitoring data. Implementation of this Plan will be monitored and evaluated to ensure that the strategic objectives are met and implementation is according to plan. The evaluation will involve the process of examining actions taken during implementation period, adjustments made and ensuring 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.

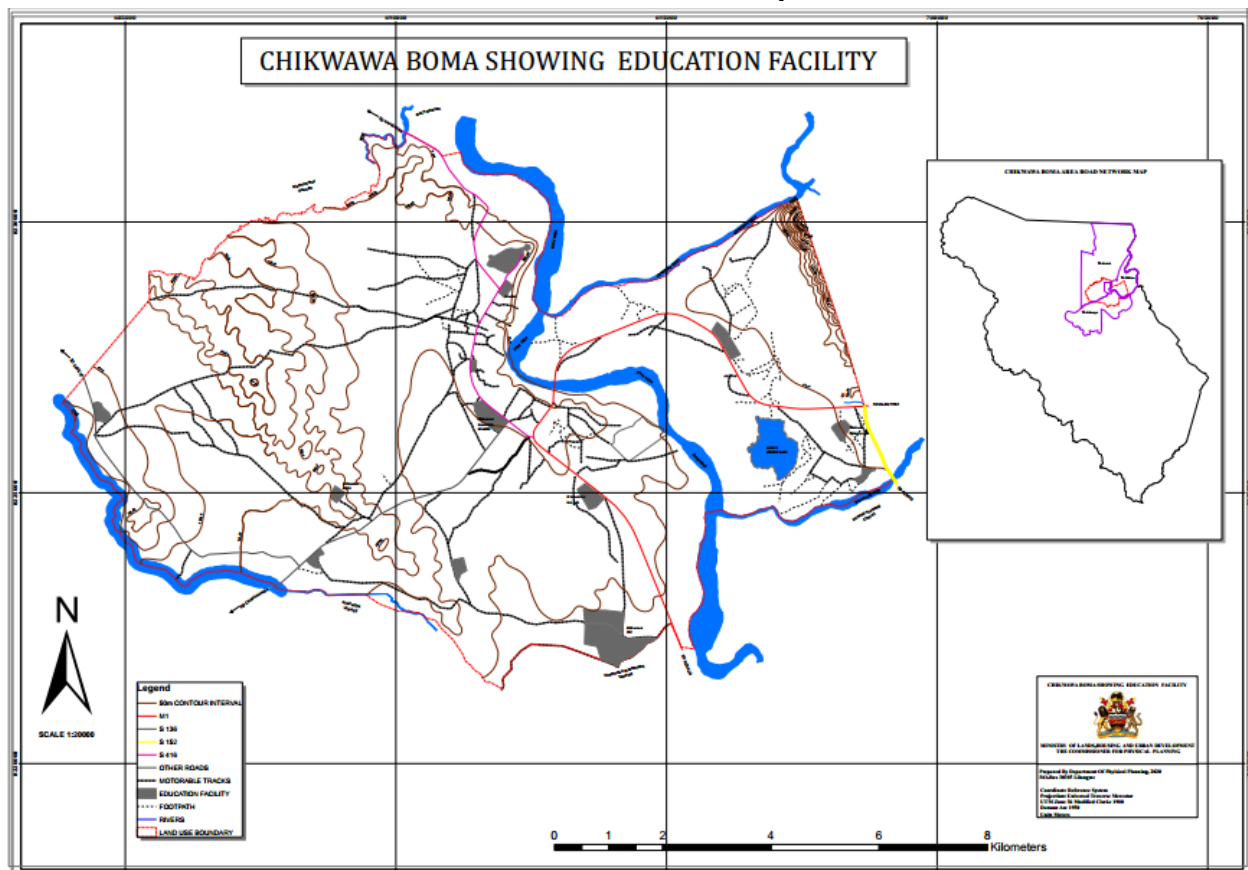
Annex 1: Chikwawa Boma 1979 USP



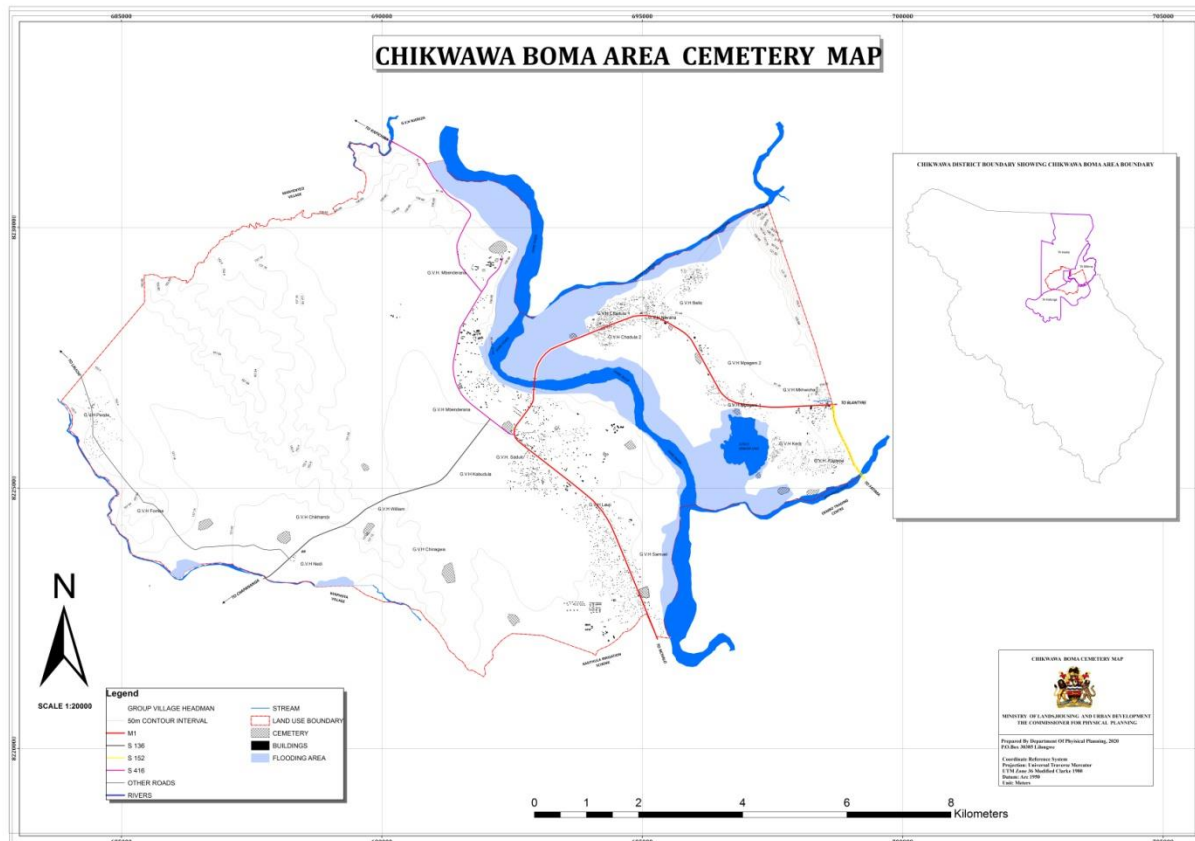
Annex 2: Chikwawa Boma Road Network



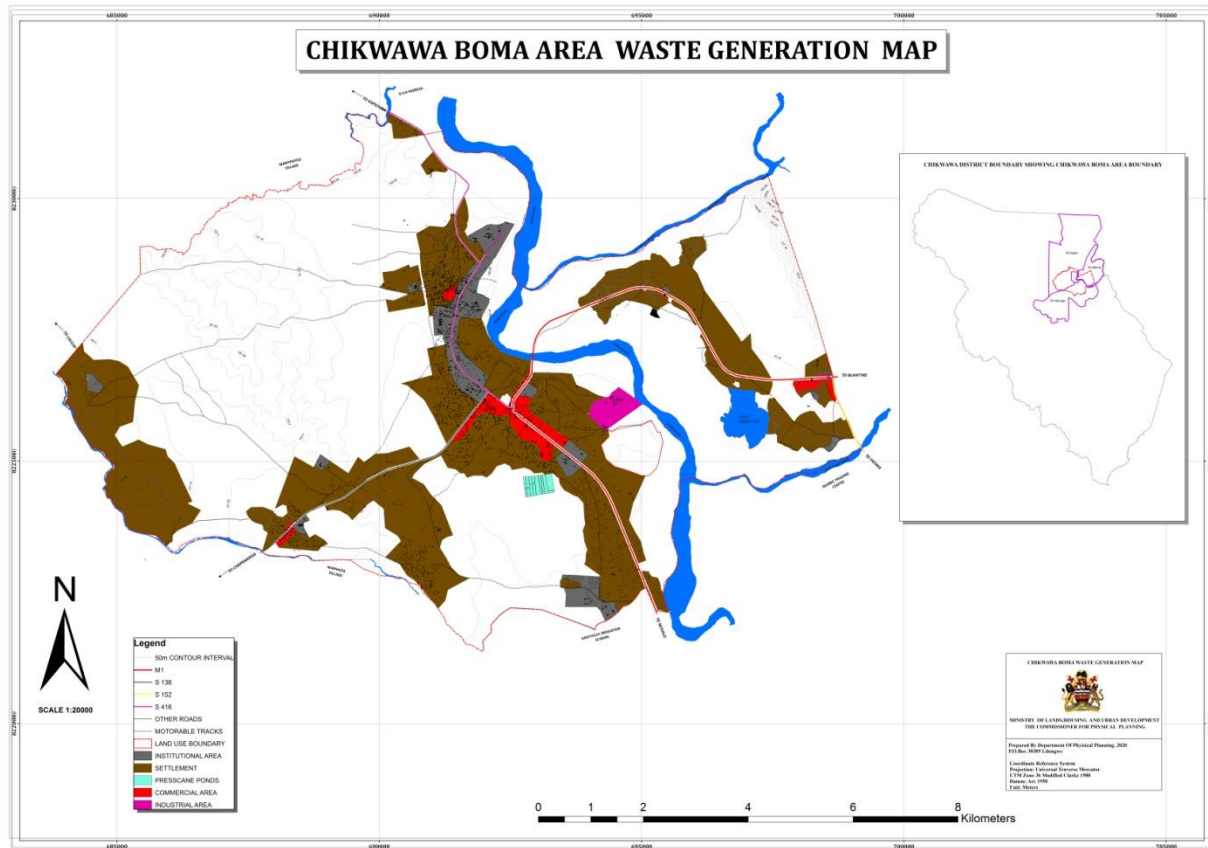
Annex 3: Chikwawa Boma Education Facilities Map



Annex 4: Chikwawa Boma Cemetery Map



Annex 5: Chikwawa Boma Waste Generation Map



Annex 6: Chikwawa Boma Flooding Map

