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THE PROVISION OF INFRASTRUCTURAL FACILITIES AND THEIR
EFFECT ON SPATIAL GROWTH AND DEVELOPMENT OF URBAN
CENTRES. A CASE STUDY OF BUSIA TOWN. //

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MASTER OF ARTS IN URBAN AND REGIONAL PLANNING OF THE
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DECLARATION

This is my original work and has not been presented for a degree in any other University

Candidate
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This thesis has been submitted for examination with my approval as a university supervisor

Supervisor.....
DR. S.V Obiero

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I am indebted to a number of people whose generous contributions enabled me to complete this work in time. I owe immense credit to my supervisor Dr Obiero who spared his time to go through my work. His dedication and vital criticisms gave my study an academic perspective while his informal interaction did a lot to encourage me.

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The rapid pace of urbanisation together with population growth, poses great challenges to urban areas. The increasing population and demand for more services, has increased the ability of local authorities to provide of urban supportive services in addition to those that are essential for the survival of the urban population. Health, water, electricity, and other urban services are essential and which in turn have influenced the rate and trend of urban development and therefore planning. These services are likely to increase given that little is being done to alleviate the existing crisis.

The study in Busia attempts a detailed examination of the various factors that influence the growth of the town. The study focuses on urbanisation as a process and the various relationships between urbanisation and the structure of the town. The study also aims to establish other factors that influence urbanisation and play a vital role in urbanisation process.

In seeking the explanation for the rapid population growth in Busia town, the study concludes that land play a vital role in urbanisation. The study also concludes that the rapid population growth is influenced by the increase in birth rate and the decrease in death rate. The study also concludes that the rapid population growth is influenced by the increase in birth rate and the decrease in death rate.

ABSTRACT

Urbanization in developing countries is not unique. However the rapid pace of urbanization together with population growth, poses great challenges to most urban areas. The increasing population and demand for more services, has outpaced the ability of local authorities to provide or extent supportive services that should go hand in hand with urbanisation. Roads, water, electricity, etc which make the urban system functional and which to some extent influence the rate and trend of urban development are therefore lacking. These problems are likely to increase given that little is being done to alleviate the existing crisis.

The study on Busia attempts a critical examination of the forces behind the spatial growth of the town. The study focuses on infrastructure to establish the intricate relationship between infrastructure and the structure of the town. The study also seeks to establish other factors besides infrastructure that play a vital role in influencing urban growth.

In seeking the explanation for the spatial expansion of Busia Town, the study established that roads play a crucial role in influencing the structure and pattern of urban growth. It was also noted that the institutional

weakness (local authority) fail to provide effective tools that could guide the trend of development. The study has come up with a number of recommendations aimed at both alleviating the existing urban growth problems and strengthening the urban management system. The study proposes the creation of a traffic diversion route, preparation of a land use plan and involvement of the community in urban projects. It is hoped that if these recommendations are implemented, sound and sustainable urban development in Busia town can be achieved.

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CHAPTER 1

INTRODUCTION

1:1 Overview

The rapid pace of urbanization taking place in developing countries, poses a number of challenges to most urban areas both in terms of control and provision of infrastructural facilities. The rate of growth has been very fast, jeopardising the ability of most municipal councils in extending such services. In most cases this process has been associated with both the expansion of urban areas and increase in population. Without adequate finance, urban councils have found their ability and resources over-stretched to provide the required services. Central governments which are expected to support and if possible cater for these services on behalf of urban councils have also been caught up in this crisis. This failure by the local and central government in the provision of services has led to deficiency of services in most urban areas. Roads, water, sewerage system and other forms of infrastructure are therefore lacking. It has been extremely difficult to cope with the ever increasing demand for these services especially in situations where local authorities experience budget deficits. Deficiency of these services

in most urban areas is therefore quite inevitable.

It has been observed that as urban centres grow or expand in size, they tend to display a certain pattern. Thus, they can be described as linear, concentric, or radial in shape. Meir (1962) in examining human settlements as they emerge from the dawn of civilization, noted that there is a close relationship between transport system and the structure of urban areas. He noted that transport played a crucial role in human settlement interaction and therefore play a vital role in influencing human settlements and locational decision of most human activities. Roads and other components of infrastructure play a crucial role in influencing urban growth trends.

The role of infrastructure in shaping urban growth and development is quite immense. Infrastructural facilities are known to provide a framework on which urban activities take shape. Without proper planning, these facilities with their strong guiding influence can be quite detrimental to the overall growth trend of an urban centre. Roads and commerce are known to be quite intimate. Meir (1962) in his argument contended that roads determine the location of business structures which are the core of urban activities. Where the roads are

supplemented by other components of infrastructure, they become instrumental in facilitating urban growth. Indeed, there is a tendency of structural agglomeration where these facilities are adequately provided. This calls for proper structural design and disposition of infrastructure.

However due to resource limitation and institutional weakness, the ability to guide development has been quite minimal. This has led to growth of uncontrolled settlements, transport corridor development (linear growth) and incompatible land uses. Rapid growth of urban centres strains the existing services and makes the extension of public services and facilities difficult to provide. The poor road disposition associated with heavy density of settlements denies most structures access, while the unforeseen population increase deprives adequate provision of essential utilities such as water, electricity and sewerage. UNCHS (1987) points out that the problem of providing infrastructure and services to human settlements are likely to become more serious over the next decade as the urban settlement concentration increases. Furthermore the increasing costs of capital investment has outstripped the ability of most central and local governments to provide required services. Most

local authorities have been operating under budget deficit with critical financial crisis which negates the possibility of addressing infrastructural needs.

Given the gravity that infrastructure exerts in guiding urban growth, without strong urban management system and ability to invest, the urban growth trend seem to have been left to take its own course. Structures therefore emerge dictated by economic forces with least considerations to suitability of the site, compatibility with other uses and implication to the environment. It is out of this crisis that critical environmental problems have emerged making most urban areas potential health hazards.

Most local governments have found it increasingly difficult to extend infrastructure and other services to residential areas. Besides they have found the task of maintaining basic standards of these same facilities beyond their capacity and ability to manage. The future of most urban areas in obtaining desirable land use pattern that would ensure harmonious growth is bleak. The hope for most local authorities has been to look for ways of involving the community. It has been realized that community involvements can play a vital role in guiding development and reduce expenditure by municipal

councils. The communities being residents and undertakers of activities in urban areas can perform better in enhancing desirable growth than imposed administration. Their involvement and participation has a financial bearing. It will go a long way to reducing the budget burden that local authorities experience in providing and maintaining these facilities.

At the same time, the strong intimacy that exists between infrastructure and urban structure, calls for adequate planning to minimize incompatible uses, linear - growth, plus high residential and structural densities that seem to characterise most urban areas. The process may involve financial commitment, policy guidelines and sufficient managerial capacity. This is necessary especially when it has to be recalled that urban centres require adequate attention in planning. However the limited financial ability, clear land use plan and lack of competent staff together with political interference negate the whole process of sound planning and deprive most municipal councils from realising their objectives. It is out of this management and resource limitation that most urban centres have had to contend with squatter settlements and transport corridor development that give urban areas an amorphous structure. These problems need

to be addressed if sound urban development is to be achieved.

1:2 STATEMENT OF THE PROBLEM

Busia town has had a persistent linear growth along the B1 road linking Kisumu to Uganda. The road has seemingly attracted all forms of urban activities to flourish together in a very incompatible manner. Residential areas, administrative offices, commercial activities, and social institutions which do not require direct access, have all been pulled to locate along the B1 road. The concentration of activities along the main primary road of the town has made Busia town to contend with a number of problems. Since the town serves both local and international traffic, a lot of congestion is felt during rush hours. Many of the transit goods trucks park on the road reserve forcing pedestrians and cyclists to use the motorists' carriageway.

The town has a poor design of secondary roads. All of them (secondary roads in town) discharge their traffic to the B1 road. This assist in intensifying the traffic problems experienced. The burden of service exerted on this road is quite heavy. This has made Busia town to contend with traffic congestion which a town of it's status should not experience. The poor state of secondary roads in town further serves to intensified the traffic circulation problems.

The B1 road is seemly the most attractive site for business location in town. The road has attracted all forms of activities without any regard to settlement densities. The rapid growth of the town without adequate guide has led to increased densities of structures along the main road. This has greatly interfered with the natural drainage system creating pools of stagnant water around buildings during the rain season. Further, the consistent construction of structures, has deprived most structures of open space for dumping wastes compelling most residents to use the road reserve as the dumping site. With increase in urban population, this trend is most likely to grow and hence increase the chances of epidemic out break.

The border location further makes the town highly liable for immigration. The town has a unique location with potential and advantage for different activities that are likely to attract immigrants. This population inflow will strengthen the persistent linear growth of the town and increase the urban population which has already outstripped the council's ability to sustain. The rhetor behind Busia urban growth is that it has been externally induced relying on supplies from both Kisumu and Uganda. Such system is quite dangerous because with

change in political relation or economic decline in the neighbouring state, the town can stagnate. The rapid growth, which seem to be taking shape along the B1 road, is not supported by a strong economic base since the Busia-Kenya hinterland is poor and whose economic viability can least support the consistent growth of the town. The current rapid growth trend of the town is therefore questionable given that the town does not have a sound economic hinterland to sustain this trend.

The municipal council on the other hand was elevated without adequate assessment to it's resource base. The ability to initiate projects or provide services that would act as an incentive to guide investment is quite minimal. Control over land development would require the purchase of that land or provision of essential services that will act as an incentive and guide private investment. The Municipal council lacks adequate financial resources to enable it purchase privately owned land within the municipality - something that would provide a base for sound planning and control of urban development. However this has been beyond the council's ability. It has been reduced to an observer position over development in town. The municipal council at present has minimal control over most of the land development

within the town and hence the persistent growth of uncontrolled settlements. The problem of unco-ordinated growth will definitely persist.

Lack of co-ordination in land development has made the provision of facilities difficult. The mushrooming of settlements, make the extension of services such as water, electricity and roads most difficult. In the absence of the basic facilities, hardships in the urban area become an obvious phenomena. Water scarcity, poor roads and strained sewer system is quite common. These problems take too long to be addressed or fail to get municipal attention especially when the council's resources are overstretched. The population growth trends and intensive use of urban space threatens the state of health in the town. Most residents use pit latrines which are abandoned after use (refer to plates one to six on pages 12-14). It is believed that excessive use of pit latrines in the town where a good proportion of the urban population rely on ground water, poses a big health risk.

It can broadly be stated that development seems to have out stripped the provision of services. This process can be quite detrimental to the future growth of Busia town. Beaver (1967) points out that in most

developing countries, road construction in and around the town does not keep pace with urban development. This can be said of Busia. Movement in town in most cases relies on bitten footpaths. The water problem in the urban areas plus limited sewer facilities cannot be underestimated.

The worsening state of health of the town requires redress. There are chances that without proper guide, the fragile Alupe valley susceptible to erosion may soon be invaded for settlement. On the other hand, recurrent cases of epidemics indicates the poor state of hygiene urban residents have been subjected to. The problems are most likely to magnify given that the current development problems have not been adequately addressed. Without good road alignment, sewer facilities, and water, the town will persistently have skewed development which may become cumbersome in extending required services. And with such problems at hand, the town can least perform it's functions effectively both as a service centre and marketing point for the hinterland. Comprehensive planning to integrate Busia to its hinterland and limit the current crisis is quite necessary.



Plate 1: The B1 Road without adequate parking space, is liable to congestion and accident. Notice the disharmony among different users.



Plate 2: The poor state of secondary roads. This deprives use compelling even local traffic to use the B1 road.



Plate 3: Notice the deplorable living environment in Busia town.



Plate 4: The toilet facilities are located next to residential areas.



Plate 5: Lack of adequate disposal site lead to the dumping of wastes in storm drainage channel encouraging water stagnation.

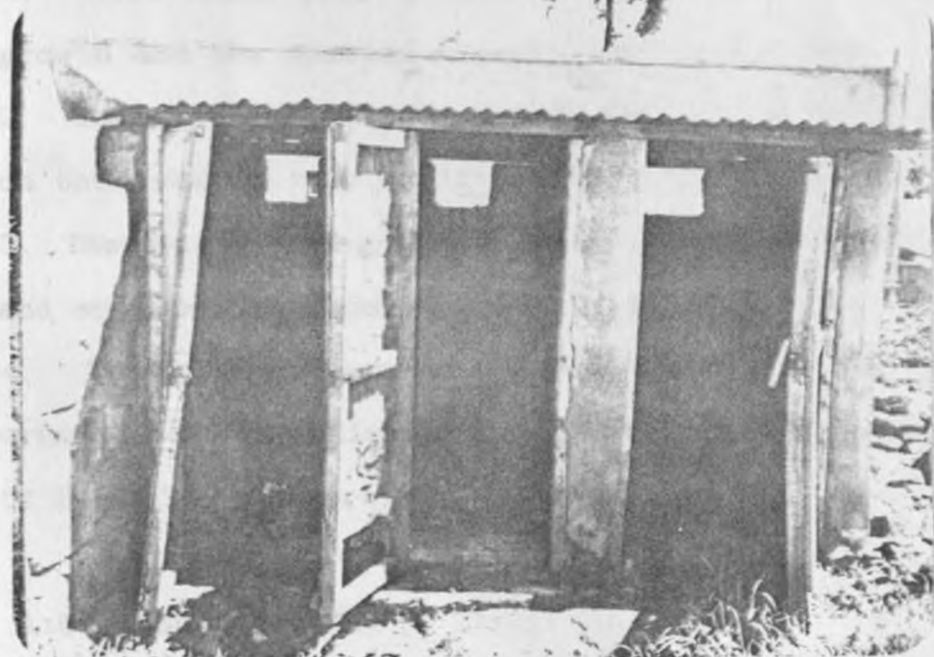


Plate 6: Residents use pit latrines and abandon them when they are filled. This is a potential risk to underground water.

1:3 THE OBJECTIVES

1. To identify the role played by infrastructure in influencing the spatial structure of Busia Town.
2. To identify problems associated with infrastructure in Busia town.
3. To identify other factors besides infrastructure that play a vital role in influencing urban growth in Busia Town.
4. Propose policy guidelines that could enhance sustainable (sound) growth and development of Busia town.

1:4 Assumptions

1. That roads play a crucial role in influencing the growth and the spatial structure of Busia town.
2. That the growth and development of the town depends on the availability of infrastructural services.
3. There is a strong relationship between infrastructure and environmental degradation in Busia town.
4. That other factors besides infrastructure play a crucial role in influencing the rate, direction and shape of Busia's urban growth.

1:5 SIGNIFICANCE

The study that has been undertaken is not unique.

Issues related to urbanization, border towns and infrastructure have been raised in several publications. But so far few studies have narrowed down to look at the intimate relationship between infrastructure and urban growth. This limited attention has led to a deplorable state of health in most towns. Planning in most towns has tended to give little weight to provision of infrastructure. The debt most towns have had to pay in terms of environmental degradation is quite enormous. Limited roads, water and sewerage facilities have a big bearing on environmental quality. Busia stands out as a striking example of urban areas whose growth has jeopardised environmental health and whose state demands redress.

Kenya's urban policy emphasize the need to upgrade small towns to lessen the burden bestowed on primate (large) cities. It's noted that large cities with their attractive force have pulled a number of investment thereby creating extensive urban problems. To minimize these problems, the government has launched a decentralization policy to promote balanced development. Despite this noble foresight, the policy has not been followed by sound planning to enable the secondary towns play their destined role effectively.

Small towns like Busia have their own special problems which the development agencies have not adequately addressed. These towns are located in a rural surrounding, they are (could be) district headquarters, market centres and service centres. The centres have their own limitations which policy makers rarely consider when devising action programmes for such towns. The issue of laying out infrastructural facilities before elevating urban centres or entrusting them with bigger responsibility has always been overlooked. Small centres have been upgraded to various functional status without adequate supportive (infrastructural) system. Obudho (1990) points out the neglected aspects in planning that renders small towns dysfunctional. He asserts that despite their important role in development, small urban centres are limited in roles due to:

1. An imprecise diagnosis of existing conditions in such towns and their zones of influence.
2. Lack of integration of settlement policies with macro development policies.
3. Simplistic and piecemeal undertaking of factors behind development.
4. Unrealistic and imprecise projections of needed investments to implement proposed policies.

These issues raised by Obudho are elaborate complexities of the problems the area under study faces. The study will therefore be an important contribution towards the understanding of these problems with the hope of providing a sound base for sustainable development.

Urbanization process in Kenya has been rapid. The growth trend of Busia town has been tremendous in the last one and a half decades. This trend has been associated with a number of problems. Expansion of the town has assumed linear growth which will prove quite difficult in the provision of services especially with various incompatible land uses flourishing in close proximity. The most disappointing aspect is that growth in the town has not been followed by sound investment. Major industrial investment are lacking and if the past growth trend is anything to go by, the town has least hopes of attracting any major industrial investment. Without such investment, the current trend is a risk. Rapid growth requires sufficient investment to facilitate other human activities. In its position therefore, Busia town does not adequately respond to the expected needs of its hinterland and its residents.

Busia has a unique location. As a border town, the location poses a number of challenges in management.

Managing a border town is a cumbersome exercise which weak municipal councils find it difficult to handle. The major problem is that of projecting demand for services. Thus the lesson learned from Busia can be used as a base for planning urban centres in similar positions.

There has been a hot debate on whether highways should by pass the town or be constructed through the town. Either way poses it's own problems. When a road passes through an urban centre, it creates traffic problems. On the other hand if it by-passes an urban area, it either kills the town or lead to shift in the growth trend. Busia lie in the former case. There is need to understand the crisis associated with highways cutting across the town.

Busia is a victim of poor urban policy associated with elevation of centres without adequate assessment. The lesson learnt could serve as a guide for future planning particularly the upgrading of urban centres. Beside, spontaneous urban development in this area, has various environmental implications. High population growth rate has led mushrooming of shanty settlements thus endangering vulnerable areas such as Alupe valley which is highly susceptible to erosion. Uncontrolled growth poses problems which if not checked in time could

intensify environmental degradation.

Given the gravity of the matter, Busia qualify in all respects to be a centre of focus. The study explores the problems encountered in the provision of services with the hope of re-orienting the urban policies. This makes the problem undertaken for study quite significant.

1:6 THE SCOPE

The study focuses on Busia town not necessarily as a border town but rather as a secondary town. It is not aimed at developing a plan for the town but to give a guide for future planning. The study focuses on infrastructural facilities with the hope of bringing out the picture of the crucial role played by infrastructure in influencing the present pattern of urban growth. Roads, sewerage system, water and electricity have been isolated to identify the special role played by each of them. The scope of Infrastructure has been narrowed to focus on trunk service systems.

Emphasis has been laid on roads, sewerage system, water supply system and drainage system in the town. These have been viewed in relation to environmental quality to establish their intimate relationship in an attempt to provide a solution to the existing problems

and lay a base for future policy guide lines. More attention has been paid to the road system because, roads seem to play a much more significant role than other components of infrastructure. The study addresses the pattern, shape, and their future implication to the future growth and development of the town.

Busia has been looked at from a regional context. This is aimed at broadening the understanding of Busia in it's functional set up. Thus as a border town, District headquarters, growth centre and a service centre. Information on the historical development of the town has been gathered to lay a base for understanding the past growth rate and pattern. The current town structure has been looked at to identify it's relationship with infrastructure. The study has broadly looked at Busia and its hinterland. It is undertaken with the hope of establishing ways in which the linkage could be strengthened to facilitate a symbiotic co-existence. This is vital in drawing the relationship between Busia's development constraint and its resource base in the hinterland. Essential resource potential in the rural areas around has been assessed to measure its future implication.

In addition each aspect of infrastructure has been

isolated and looked at separately to identify its role. The conclusive chapter comes up with policy proposals to address different problems identified.

LIMITATIONS

Though the hinterland of the town cut across the boundary, the research could not cover the Uganda side of the town which by all reasons should have been surveyed to broaden the understanding of the study area. Minimal documentation and security risks made soliciting of information from the study area quite difficult.

The border community (most urban residents in Busia town) is much preoccupied with illicit trade. This made the administering of questionnaires a difficult exercise. Salient questions of research were treated with a lot of suspicion. It proved difficult to administer questionnaires or evoke interests by interview for residents living along the border. Some vital information related to their economic involvement, income and migrations, could not be collected making it very difficult to draw conclusions about the economic profile of the urban residents and revenue base for the council.

The recent municipal boundary extensions have not been fully mapped. Limited documentation exists to reflect the recent boundary changes. Assessing the future



growth trend demands for a well outlined map. This indeed became a major draw back in preparing a tentative structure plan. There is no comprehensive mapping of the area within the municipality.

1:7 **STRUCTURE OF THE STUDY**

The study has been organised into seven chapters. Chapter one addresses key areas of research. These comprise the following: Overview of the study, statement of the problem, significance of the study, the objectives of the study, assumption, scope and limitation, The structure and research methodology. The overview gives a superficial view of urbanisation and its related problems in developing countries. Infrastructure is conceived in a wider framework of the general urbanization process. This part ushers one into understanding the need to provide infrastructural facilities. The statement of the problem comes up with the running theme of the study that deserve address and bring out the picture of the role infrastructure has played in Busia town. The objectives of the study are stated to define the intensions and extend of the study.

Chapter two deals with the review of the literature and comes up with the conceptual model of the study.

Chapter three attempts a geographical understanding of the area of the study area. This focuses on a number of aspects that make Busia functional. The chapter starts by giving the Location, topographic features, climatic and drainage. These are meant to provide a base on which Busia's hinterland can be assessed. The physical features remain the stem on which the current trend of the town is critically analyzed to draw the extend of the role they play in influencing urban form. Interregional linkage, population and other issues related to Busia's functional position have been dealt with in this chapter. The question of institutions particularly the municipal councils and it's ability to manage, guide and sustain urban development has been highlighted to facilitate the understanding of the role the council has played in making Busia what it is. Land ownership is a key indicator of urban growth trends. It gives the indication of future urban growth patterns. This issue too has been addressed by this chapter.

Chapter four addresses components of infrastructure. The role, importance and disposition have been critically analyzed. Each of them has been isolated to determine their role in urban growth.

Chapter five deals with other development forces

besides infrastructure. These include border location forces, the community, interregional linkage and the Institutional ability that is responsible for controlling urban development.

Chapter six provides an understanding of the problems associated with infrastructure. This chapter is provides a base on which the recommendations and policy guidelines in the next chapter have been drawn.

Chapter seven is the conclusive chapter of the study. It deals exclusively with the recommendation which the study has come up with, with the hope of enhancing sound urban development.

1.9 RESEARCH METHODOLOGY

The study utilized two main sources of data. Both primary and secondary sources have been used. Secondary data involved the review of various written reports on Busia town. The survey reports on Water, roads, and sewerage system were vital sources. Documented literature on urbanisation and infrastructural facilities have also been used. Other publications included annual council reports, publications by the ministry of local government and the appraisal of Busia town by various agencies. Studies done by private agencies commissioned by the

local government cemented the basis of analysis. Annual reports and statements written by the municipal council beefs up the information on the recurrent crisis in the town. The National development plan with its guide on national development provides the direction of government perception on matters related to urban planning. The plans lay the basis to justify the notion that planning in most towns is quite hypothetical and rarely meets the existing conditions. Annual reports as relates to budget allocation priorities and recommendations on various aspects help in assessing the municipal's weaknesses.

The maps from the ministry of Lands were used to facilitate appraisal of the existing road lay out and at the same time determine the future growth trend of the town. The maps explicitly show how much the present state has been influenced by infrastructure. It is on this basis that suggestions about the future growth structure and rate have been drawn. They also proved a vital tool in the delineating of the area to be sampled for study.

Other documented sources include texts written on urban centres and urbanization process in Kenya and other countries of the world.

One of the vital sources of information that the

study had to utilise was primary data. Most data was collected by administering questionnaires. The questionnaires were divided into two sets: commercial and residential questionnaires were used to collect information on the nature of premises, services available, access to the services and the problems faced. Besides questionnaires, personal interviews were addressed to key personalities in different sectors. The town clerk, physical planner, town engineer and representatives of non governmental organizations were addressed as the key informants. Informal interviews were also conducted to fill the gap in significant areas which questionnaires could not cover. Such information was collected from businessmen, residents, commuters and administrators. Like questionnaires, the interviews to the residents were sampled so that the views collected could to be representative.

Observation on various aspects was done to have personal judgement on the existing state in town and supplemented information collected by other sources. Parts of the town had to be visited to determine the nature and extend of the existing problems.

1.8.1 Data analysis

Data collected (both qualitative and quantitative

data) was analyzed. Quantitative data was coded and computed to obtain frequencies. From this data, the correlation, means, mode and other statistics were derived. The statistical information derived was then used to verify various assumptions that the study had. Frequencies were also used to construct tables and charts showing the relationship between different variables.

Qualitative data has been synthesised to establish a running theme in issues the study had intended to address. Notes written during the field survey with key informants in the district were used to cover the scope which questionnaires could not effectively address. Some of the recommendations drawn, have been derived from peoples views collected during the survey.

CHAPTER 2

LITERATURE REVIEW

2:1 Background information.

Urban growth and expansion (urbanisation) transcends human history. It has been observed that urban settlements that emerged at the dawn of civilization tended to be highly nucleated and limited in size. With the introduction of different modes of transport, impetus for spatial expansion of urban areas was initiated. Transport broke the confinement of urban settlement. Roads, which became quite pronounced during the Roman empire building anchored the base for spatial expansion of urban settlements. This broke the then established trend of urban concentration that had been laid down by the Greeks. Roads became a locus on which urban settlements revolved. The expansion became remarkable with the introduction of railways. Railways made it possible for industries and other activities to be located beyond the confines of towns especially the suburbs.

2:2 Literature Focus

Studies on infrastructure and its implicit and explicit relationship to urban growth has been done by a number of scholars. They assert that transport and its

related components have a significant role in enhancing urban development. These facilities play a leading role in determining the trend of urban activities and land use. They contend that infrastructure play a very vital role in guiding the urban development trends. Roads, water, sewerage and electricity have been noted as vital components in guiding the spatial Organisation of urban settlements. Based on this understanding, there is need to assess the extent to which activities in urban areas could be attributed to the existing infrastructure. There is also need to examine the role which each components play.

Catanese and Synders (1979) points out that community facilities especially water, sewer and road system can be powerful tools in influencing the rate, direction and type of land development. According to the two scholars, the provision of utility system and public facilities regulate private sector investments. These facilities act as an incentive for investment and can influence the location of activities, type of land use and therefore the pattern of development. The road for example guide the direction along which the town structure will take shape. The sprawl and extension of built up environment in most cases follows the existing

transport network. Where there is poor disposition, amorphous urban structure can emerge. It is therefore obvious to point out that infrastructure is a crucial element in determining the urban structure.

Transport network, water supply and sewerage provide the basic physical frame for urban growth. With such potentials of controlling the direction and extent of development, transportation and public facilities should occupy a special place in urban planning. Ribbon growth of cities is known to develop longitudinally along the main highways to take advantage of access. Most commercial activities compete to locate along the main transport line or in the central business area - where access is viable. Access is known to push land values so much so that certain activities which fail to cope are pushed out of the competitive sites. The gradation of function in urban areas is a function of access. The burgess theory of urban functional structure, is partially attributed to access. The CBD which is usually more accessible attracts more business activities. Von Thunen in his broad observation of the relationship between agriculture and land use contended that transport costs was a strong element in determining the type of activities. This same effect of accessibility is felt at

a micro level. Transport costs affect the location of urban functions. This therefore determine the gradation of urban functions.

Based on the above argument, transport and other infrastructural facilities play a crucial role in determining the rate and the scale of investment. Good infrastructure attract industrial investment. The issue of access is not only pronounced in the choice of site but also the operational costs of the investment. Poor transport system increases the company's operation costs.

Poor road transport increase the wear and tear of mobile company assets. This increases the costs of operation. Where sewerage is lacking, septic tank construction at the company's cost may be recommended. On the other hand, where water, electricity or gas are missing the company can be deprived of operating at full capacity. This means the infrastructure element is quite vital in dictating the intensity of urban activities.

Catanese and Synders (1979) asserts that the quality of public infrastructure is an important ingredient in the locational decision of private enterprises. Good infrastructure attracts investment while poor infrastructure discourages investment. This makes infrastructural facilities quite essential. Major

commercial and industrial enterprises tend to locate in primate cities where access to such facilities is possible. Indeed, Nairobi and Mombasa have offers excellent examples. Efforts to decentralize industrial investment to small towns (growth centres) has had little success because of deficiency of such facilities. Industrial development require a good supportive system. In this, case urban areas without good transport, water system, electricity and sewerage can not attract industrial investment.

Simpson (1988) subscribes to Catanese's views on transport system and investment. He observed that cities of the world are not haphazard rather that there is a closer relationship between accessibility and investment. Investment and particularly commercial investment is very much related to the existing road network. Commercial structures and transport are quite intimate and must be located in areas that are well served by road network. It has been observed that roads anchor the base on which commercial structures take shape. Where roads exist and purchasing power is high, a high rate of retail activities is experienced. Buildings tend to be located where they can be easily reached. This is clear with modern cities where tall buildings tend to be

concentrated at the main centre. Transport attracts shops, offices and small scale factories whose rate of stock turn over can be extremely low without adequate access.

The routes leaving the centre have been known to become the most obvious prey for location. Where regional interaction is strong and high volumes of traffic are experienced, the line of transport can attract heavy investment enhancing a linear development trend. Machanje (1978) noted that structural growth is experienced along the main transport corridors leaving Kampala town. This trend if not controlled may lead to heavy density of settlement along the major highway. Simpson (1988) observed that transport and location have a historical relationship. First, once the road is laid out, it opens up possibility for location hence urbanization. Secondly is that once urbanization has taken root, the need for transport emerges. Thirdly is that improvement in transport network induces further urbanization. This is indeed true with most urbanization processes.

Transport intensifies the rate of urbanisation and it is therefore very hard to delineate the boundary between transport and urbanisation. This relationship make the two aspects inseparable. A number of urban areas

have been established and grown as a result of their location. Kenya has a number of key towns that have grown as a result of the construction of transport lines i.e the railway and road. These are: Nairobi, Kisumu and Nakuru which owe their establishment and growth to the construction of the railway. Though the towns serve different functions at present, the role as transport centre remain dominant. It is noted that their pace of development is faster than any other towns in the country. Transport has also intensified the rate of investments making them the most attractive towns for industrial development. The centres have attracted rural population who seek employment opportunities.

The influx of people needs adequate infrastructural facilities in an urban area. The population put pressure on the existing facilities increasing demand for housing, schools, water, public transport and other facilities for community use. Housing in most cases is the most hard hit. Pressure on housing lead the mushrooming of shanties to cater for the low income earners and the un employed. Most urban centres exhibit a heavy concentration of uncontrolled settlements. Provision of services in such areas is beyond comprehension. This has led to deplorable living conditions for most settlements.

Public infrastructure has a major impact on community life, pattern of growth and prospects for economic development. As observed by Catanese (1979), infrastructural facilities are major parts of community landscape and significantly affect their aesthetics. Together with other facilities such as parks, waterfronts and gardens contribute to the quality of the environment (the way it looks, smells sound and feels) . However rapid population growth has denied the ability to cater for these services.

It's therefore necessary that such facilities be planned for. Since they play a role in the private sector economic activities, influence the rate direction and type of land development, adequate attention need to be paid in planning for this facilities. Vagnby (1980) notes that infrastructure should be considered a basic need. Gogler (1969) notes that the phenomenon of accelerating urbanization has come to be appreciated in a different light. In a number of countries the observed rate of growth has appeared to persistently exceed the capacity of the economy and society's concern to accommodate. By accommodation, Gogler means the ability of the town to provide essential services and employment plus other opportunities that will create an opening to

the immigrants in an urbanized environment. Evidence drawn shows symptoms of deficiency. The influx into cities of largely unskilled immigrants has led to pressure to increase the pitifully thin layer of public services while there is little evidence of expanding opportunities by which the new immigrants can quickly gain from. Meagre resources in developing countries deprive industrialization which could contribute to the resource base of most municipalities. Lack of finance make the extension of such amenities quite difficult. The municipal councils have had to cope with this for a considerable period.

Planning in this case is a must. It has been defined by Simpson (1988) as steering future development to meet desired ends. Planning addresses future need so that the existing facilities are expanded in time to meet the desired services. Such action requires projection. The common view of planning is to see to it that the interest of the society is protected against the will of the individual. The problem is how to provide easy access whilst protecting the environment. The big threat being reconciliation between the environmental requirement and the basic needs. Policies designed should ensure compatibility in use. In spatial distribution the

planner must provide for space so that the location of functions is not constrained by the space limitation or that future expansion in demand will not jeopardize the function of a given facility.

The disposition of transportation services such as streets, highway, mass transit system can influence significantly the patterns of economic growth and decline. Proper distribution of transport network is fundamental to economic and social welfare of the town. However, urban management to ensure adequate provision of these services has been the major set back. This has been characterised by lack of funds, lack of technical staff to maintain services and lack of a pre-conceived plan to co-ordinate development. Despite the noble concern, municipal council's are usually constrained and are unable to address this problems.

Commenting on poor planning in urban areas, Waterson (1965) notes that less developed countries know that they have a better chance of attracting foreign financial assistance if they have development plan. Pressure from aid giving countries and agencies in recent years have also converted some countries to planning almost solely because of the need to be in possession of a national development plan or an urban development plan which are

used as a shopping list for obtaining foreign grants and loans. There are countries where comprehensive plans have been prepared in a capital city miles away without the planner having consulted the relevant ministries or agencies. Waterson points out Ghana's seven year development plan as having taken five weeks to prepare without incorporating any organization in the preparation. This is a typical characteristic of planning in most developing countries and more so, planning in most urban areas. Planning does not touch the depth of the problem neither are they implemented in time.

The above case is quite true in Kenya where colourful urban housing schemes have never been put into implementation. The plans are kept for record but no effort is done to implement them. The time lag that a plan take to be implemented, leads to the deterioration of the urban environment. By the time they are revisited for implementation, the magnitude and gravity of the problem will have changed course.

Planning should be forward looking. But planning in most countries has been treated as a mere procedure. It is very much divorced from the existing realities. In most cases the term has had to be dismissed as being futile and unable to articulate human needs. Planning in

most instances is supposed to be associated with sustainable development but rarely has planning in most developing countries attained this. The failure in most municipal planning has been attributed to structural control from above. The local government ministry has excessive responsibility which make management and policy articulation at a lower level extremely difficult. The municipalities have had to cope with a number of directives which seem quite alien in their operations. The directives are unrelated to the existing realities.

Planning has never been responsive. The five year development system grafted to Kenya's development has limited courtesy to change. Good planning should focus on priority issues and be primarily concerned with the satisfaction of fundamental needs of the most vulnerable groups. The plan is supposed to be highly flexible to accommodate change. Such flexibility ensures that the problem is addressed before it worsens. In the provision of infrastructure, a flexible plan will keep changing with time to ensure adequate address of the problem.

Lack of sound planning has created a number of problems for most municipal councils. The increased migration and urbanization trend put a severe strain on facilities. Ahmad (1983) points out that municipalities,

rich and poor, large or small faces challenges that are similar in nature if not in gravity and magnitude. These challenges correspond to the basic needs of every citizen. Shelter, health, education, security among others are the needs that citizens long to satisfy. The role of the municipal government as a direct provider of basic need is becoming ever weaker. This calls for participation by the resident community.

In an urban setting, housing is inconceivable without basic services as water supply, drainage and electricity. The influx of rural population to urban centres will inevitable set a chain of reaction in motion. The increase in both population and the accompanying activities cause spreading out of physical living habitat and this consequently necessitated an expansion in infrastructure and social facilities. However, the local authorities entrusted with administration are unable to provide either of the two i.e housing and services. It becomes essential or other agencies to come in.

Failure to keep pace with the demand has led to overcrowding within the town boundary. The sprawl of unplanned settlements devoid of sanitation and other services become very much pronounced. The existence of

mountains of garbage (solid waste), human pathogen and stagnant water is a health hazard, that cannot be overlooked. Good infrastructure safeguards health, protects the environment and promotes efficiency operations of human settlements. Inadequacy in the provision of infrastructure and basic services cause poor health conditions and degradation of the environment. UNHC (1991) notes that need to integrate infrastructural provision with overall human settlement development is well recognised and is based on the knowledge that upgraded infrastructure has a beneficial effect on human settlements making them more liveable and improves efficiency.

Unlike other towns Busia is uniquely placed. Mwaibale (1979), points out that border towns have their hinterland extending on either side of the border. The town may spread to either side of the border though in most cases they do not. With increasing migration, more services are needed. A joint body needs to be established to facilitate the adequate provision of such but in most cases they do not. Like regional co-operation, such issues are pointed out in discussion but they are never implemented. The political difference make it quite difficult to perceive a border town as a

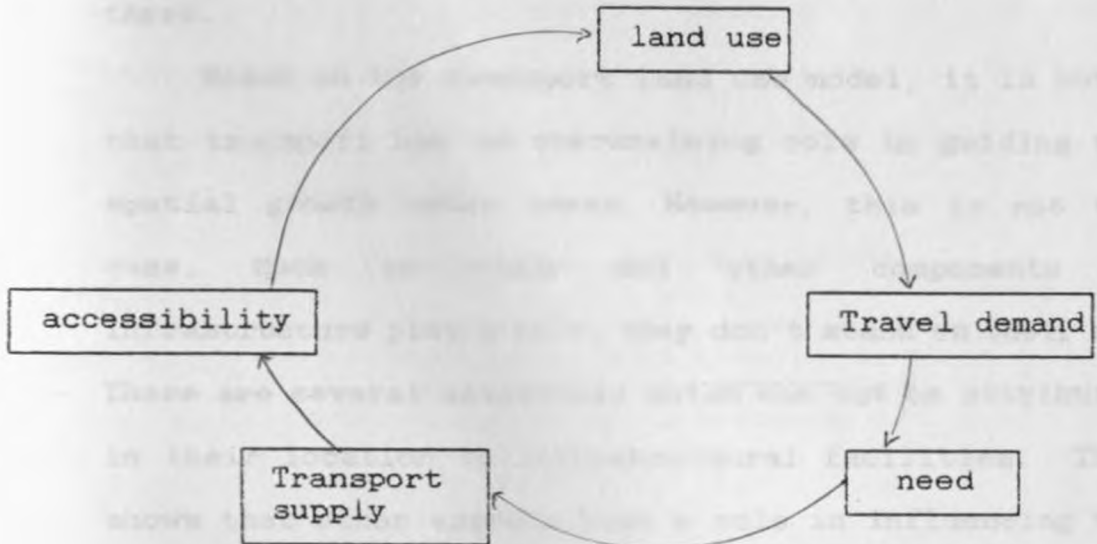
single unit with a given focus. This creates problems in planning. Since they spread on either side of the boundary, joint planning is necessary.

2:3

THEORETICAL FRAMEWORK

Scholars like Synders, Catanese, Simpson among others assert that infrastructural facilities are powerful machinery in influencing the rate, direction, shape and pattern of urban development. They assert that the quality of infrastructure such as roads, water, sewerage and electricity are vital ingredients in the locational decision of entrepreneurs. Johnson (1972) in articulating the relationship between roads and urban growth noted that motor cars have encouraged urban dispersal not only for residential areas but also other urban functions. He observed that quick transport enable people to stay far from their work place. This enables a city or town to spread, thus creating distinction between residence and work place. To him, urban growth and transport should be viewed within the context of land use transport cycle. The chart for land use transport cycle is shown below.

FIGURE 2:1 Land use transport cycle



source. Catanese and synders (1979)

When transport access to the parcel of land is improved, land becomes more attractive and is developed. Increased activities lead to increase in travel demand and this in turn lead to overload of transport facilities.

The reason for this is that roads provide access and anchors the base for urban activities. Business enterprises tends to pick up at a faster rate in the most accessible area leading either to congestion or linear growth depending on the existing set up of infrastructure. When the quality of such services decline, investment also declines and if other area in

town offers better potential, new development will shift there.

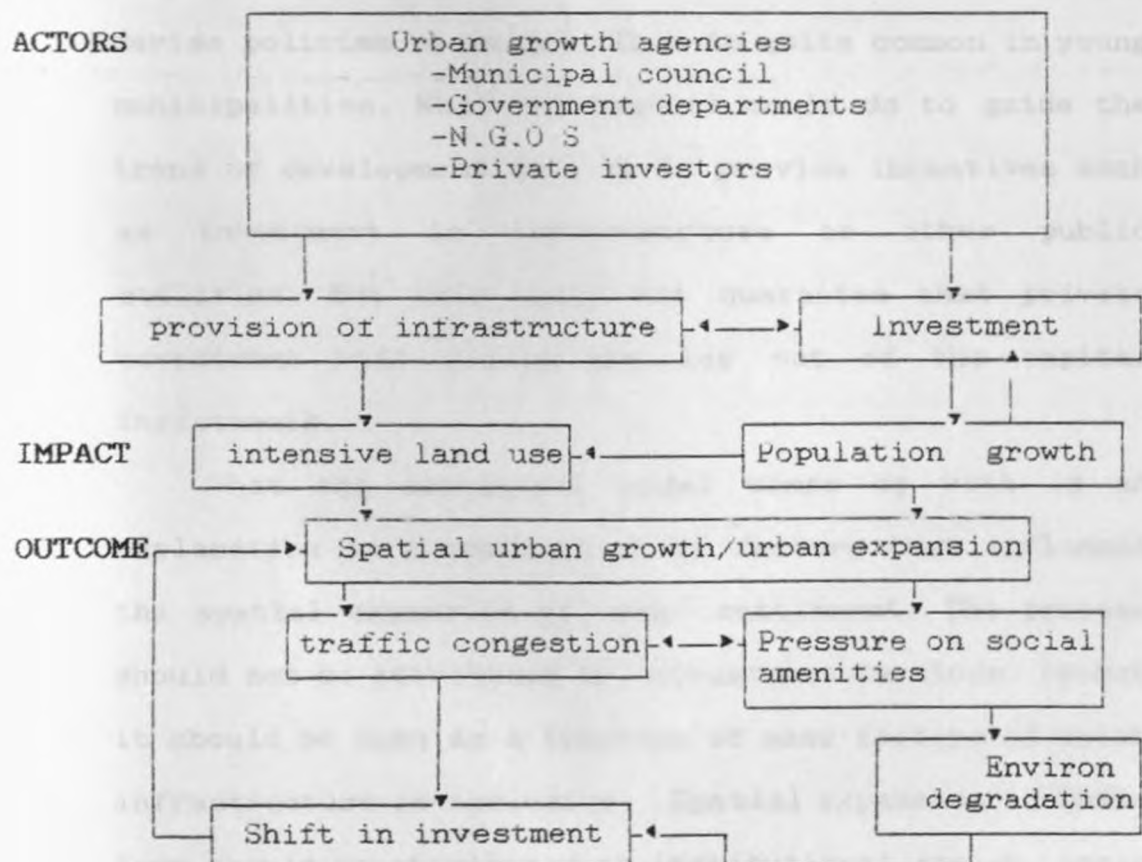
Based on the transport land use model, it is noted that transport has an overwhelming role in guiding the spatial growth urban areas. However, this is not the case. Much as roads and other components of infrastructure play a role, they don't stand on their own. There are several activities which can not be attributed in their location to infrastructural facilities. This shows that other aspects have a role in influencing the spatial trend of urban areas particularly Busia town. This calls for a broad examination of the development trend.

The urban space should be seen as a system with various actors. Thus we have developers (investors), the institution, and land owners. The actors provide infrastructure or invest in urban activities. The investments and provision of infrastructure intensifies land use and lead to increase in population. The two forces initiate urban expansion which will on the whole lead to pressure on amenities and deterioration of services. This can either lead to shift in location of business activities thus enhancing the urban expansion process. Each of this actors has a special role to play.

The extend and trend of urban development is an interplay of all the above factors. Thus each of the above factors has a role in determining urban growth. The table below shows the conceptual view of urban growth.

FIGURE 2:2

conceptual model on urban growth



Source: Own conception

Each of the actors is quite important. Much as the

Municipal council may have powers to influence the trend of growth, it may have a limited control over on private investors. The decision to built is solely taken by the private developer based on their own value judgement and resources at their disposal. The institutions can least exert control over privately owned land much as it can devise policies to guide. This is quite common in young municipalities. What the council could do to guide the trend of development will be to provide incentives such as investment in infrastructure or other public utilities. But this would not guarantee that private investment will follow the lay out of the capital investments.

What the conceptual model comes up with is an explanation to a combination of factors that influence the spatial expansion of urban settlement. The process should not be attributed to infrastructure alone, rather it should be seen as a function of many factors of which infrastructure is inclusive. Spatial expansion of Busia town should be attributed to institutional set up, basic infrastructure, the community both as consumers of services and investors and the border economics. For sound urban growth, there is need to have:

- A comprehensive plan that addresses the projected

needs of the urban residents.

- A sound management system that fully understands the urban environment and therefore facilitate balanced growth.
- Before a town is elevated in status, it should be accorded some of the basic infrastructure to minimise the potential problems that are likely to be experienced in case of deficiency.

The town should not be seen as an island but rather as part of wider region. Sustainable growth can be achieved if the town is linked to its hinterland thereby promoting the forward and backward linkage that can enhance mutual co-existence between rural and urban areas.

CHAPTER 3

3:0 THE STUDY AREA

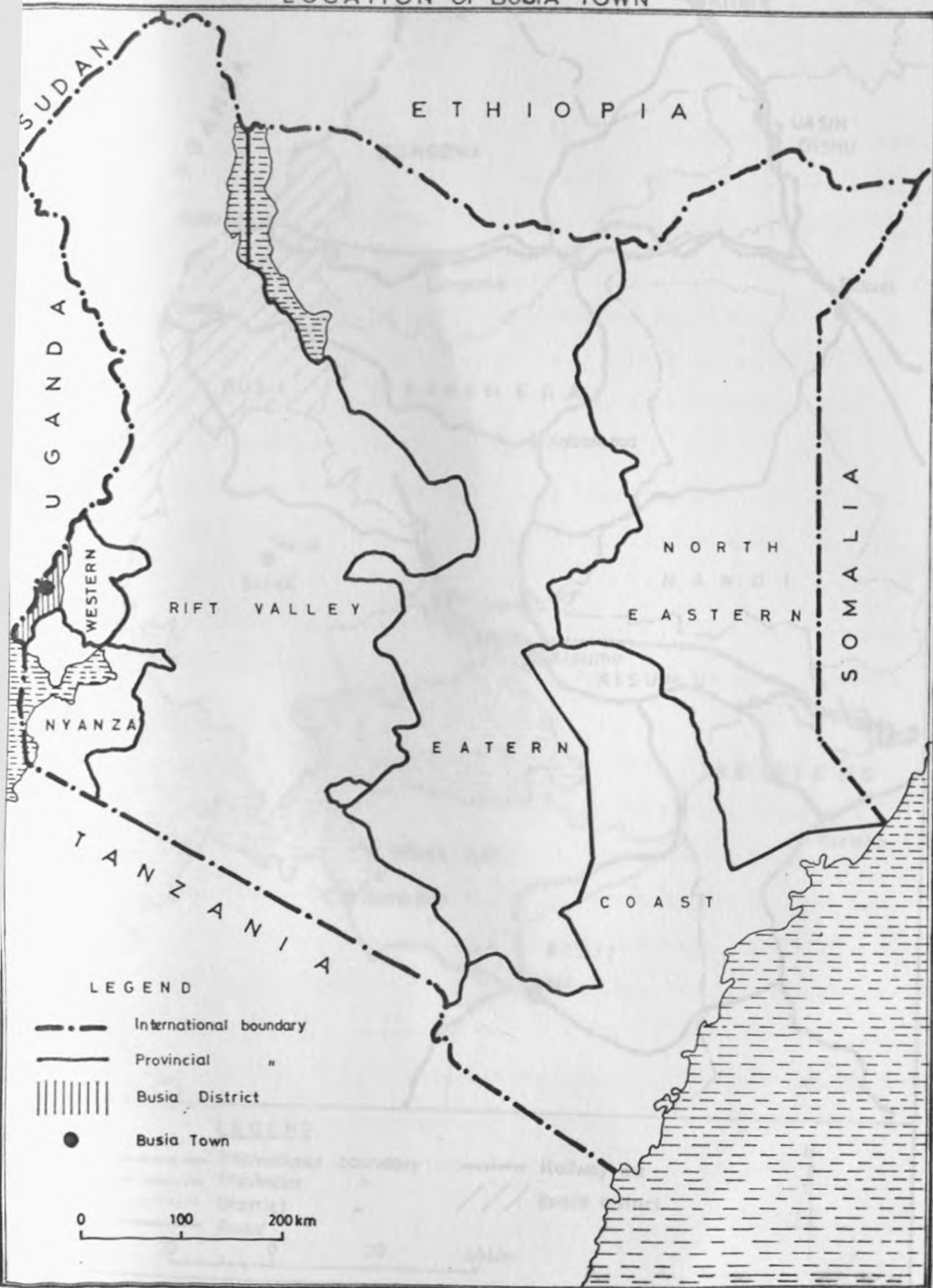
3.1 Geographical Factors

This chapter addresses geographical factors with the aim of providing the background information to the study area. In order to provide a clear picture of the area, the chapter has been subdivided into section each of which dealing with a special characteristics of the factors identified. Among these are: location, topography, geology, climate and geology. Besides this geographical factors, the chapter further addresses the historical growth of the town, the urban structure and management of the town.

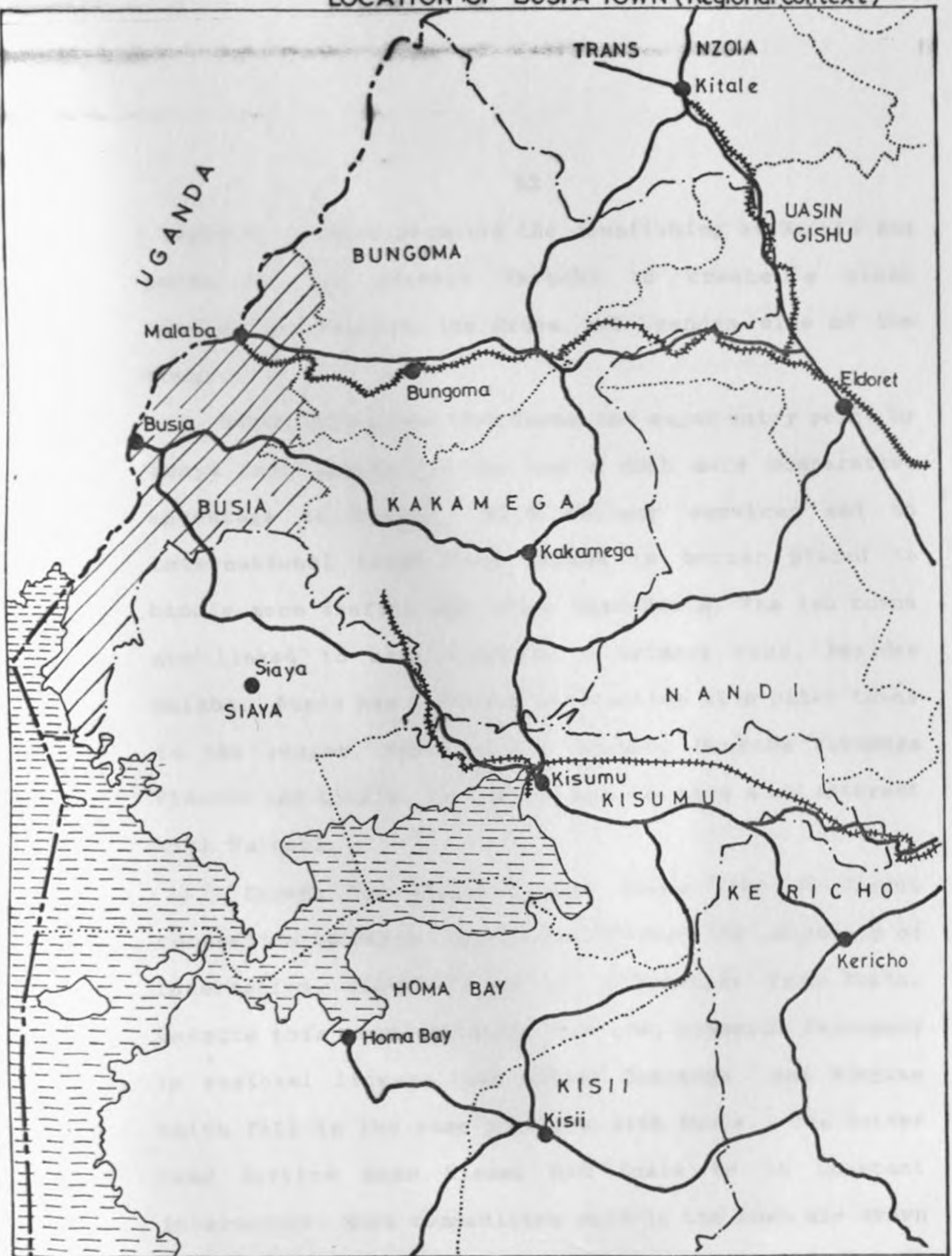
3.1.1 Location/Situation/Size

Busia town is located in Busia district on the Kenya-Uganda border. In it's regional setting, the town lies in the western part of the country. The town cuts across the national boundary with half of it lying in Kenya and the other half in Uganda. The two sections of the town are separated from each other by an artificial corridor commonly referred to as the "No-man's land". Hitherto the creation of this corridor, the then Sophia and Marachi estates of Busia-Kenya lay in close proximity to their sister estates on the Ugandan side.

REPUBLIC OF KENYA
LOCATION OF BUSIA TOWN



LOCATION OF BUSIA TOWN (Regional context)



LEGEND

- | | | | |
|-----------|------------------------|-------|----------------|
| ----- | International boundary | +++++ | Railway line |
| - - - - - | Provincial " | /// | Busia district |
| | District " | | |
| ————— | Road | | |

20 0 20 40km



Security reasons prompted the demolishing of Sophia and parts of the present Marachi to create a clear distinction between the Kenya and Ugandan side of the town.

Busia and Malaba town forms the major entry point to Kenya from Uganda. Malaba has a much more comparative advantage to Busia. With railway services and an international trunk road Malaba is better placed to handle more traffic and trade than Busia. The two towns are linked to each other by a primary road. Besides Malaba, Busia has constant interaction with other towns in the region. This include Kisumu, Bungoma Kakamega Eldoret and Kitale. To some extent the town also interact with Nairobi.

Except for Kisumu, other towns have no direct connection to Busia. This has affected the intensity of interaction. Kisumu lies 122 kilometres from Busia. Despite this long distance, the town commands supremacy in regional linkage than either Kakamega and Bungoma which fall in the same province with Busia. The better road service make Kisumu and Busia be in constant interaction. Most commodities sold in the town are drawn from Kisumu. Together with Uganda, they account for 90 % of the industrial products sold in the town. These two

giant partners, determine the rate and trend of growth. Bungoma and Kakamega have minimal regional interaction with Busia because of access. Besides, the two towns do not have a heavy industrial base like Kisumu.

Busia town occupies an area of forty kilometres square. Of this area, hardly ten percent has been built. The built up area occupy a small portion which assumes an island position with the rest of the area under agriculture and scattered rural settlements. Some of these areas now houses low income earners who are employed in the commercial sector. The area covered by the municipal boundary is too large when compared with the area which has been built.

In terms of urban hierarchy, the town occupies the highest rank in the district commanding the municipal status with Malaba coming next as an urban council and the rest of the district having market centre. This make the town highly dependable for the supply of commodities.

3.2 Topography and geology

The town lies at an altitude of 1200 m above sea level on an elevated plateau. The plateau has a flat and an undulating gradient whose slopes angle range between 20 and 40 degrees. On either side of the plateau, lie

two distinct valleys - the Alupe valley and the bottom lands. Alupe valley lie to the north of Busia town while the southern side of the town lies the bottom lands. Each valley has it's own characteristics. The Alupe valley has steep slopes slanting towards Okwema river while the bottom lands in the south have a flat terrain, water logged and poorly drained. The perennial swamps indicate both the existence of an impermeable rock that underlie the land surface of the town. It also signify the existence of clay material whose water retention capacity high. The two valley areas form the watershed for the rivers-Satora and Okwame.

The plateau provides a corridor on which urban development has been taking shape. The valleys on either side provide a frame for urban growth limits. So far urban growth to the southern part of the town has already reached brinks of the bottom lands. Alupe valley still remains aloof from the current urban growth trend. However with the wave of rapid urbanisation taking place, this vulnerable areas runs a risk of being interfered with. The fragile ecosystem that characterise these valley areas desire cautious approach to minimise erosion and any other form of imbalance. With it's steep valleys, Alupe runs the risk of severe erosion incase high

settlement densities are left to encroach. The present growth trend signify development problems that are likely to emerge incase urbanisation process in Busia town is not adequately controlled. On the other hand the bottom lands with poor drainage in the southern part of the town if encroached with settlement may exert high maintenance costs to the municipal council particularly in maintaining facilities like roads that could be serving such an area.

3:2:1 Soils

The soils are mainly alluvial and sandy clay. These soils are underlain by hard rock crust emerging from the laterisation process. The rocks and soils have low permeability which increases the potential of water stagnation and flooding. The rapid growth of settlement is therefore a risk to natural drainage in the town. However the high murram content that characterise most parts of the town provide rich sources of material for the maintenance of roads. The murram also provide a firm foundation for structure especially along the plateau where the current urban activities revolve.

3:3:0 Climate

Busia town lies a few kilometres north of the equator and therefore suffers the influence of an

Equatorial climate (The town has a modified equatorial climate). This has affected the climatic conditions of the town. Annual rainfall ranges between 1800-2000 mm. The rain appears in two seasons with the longest season lasts between March and June while the short rains falls between september and November. Temperatures are generally high with minimum temperatures varying between 9°c and 14°c in July and in April whilst maximum temperatures vary between 29°c in August and 38°c in January. The table below shows the rainfall distribution.

34	228	6	31.7	8
124	270	2	31.5	10
133	285	2	32.3	-
145	292	2	31.4	30
149	284	2	31.1	11
28	272	10	30.2	12
173	1270	179	112.5	179

Source, average month 1977

There is one pronounced rainfall season from March May. The rainfall then declines in July 1977 as it did and remains low for the short season. Rainfall in January and the driest month of the year. The temperatures for the town are shown below.

Table 3:1: Rainfall Chart

Month	Average mm	Highest mm	Lowest mm	Max rain in 24 hrs	Average No of days in a month.
Jan	70	146	10	55.6	7
Feb	84	236	23	61.7	10
Mar	145	236	95	44.2	14
Apr	278	394	97	112.0	19
May	245	343	184	54.6	19
Jun	110	161	63	52.3	13
Jul	84	208	22	97.7	9
Aug	136	256	71	77.5	13
Sep	159	266	43	52.3	-
Oct	181	333	129	62.4	19
Nov	195	302	79	69.1	15
Dec	91	232	58	69.3	10
Total	1775	2176	1639	112.0	164

Source. sewerage report 1977

There is one pronounced rainfall season from March to May. The rainfall then declines in July to pick up in August and November for the short season. December to February are the driest month of the year. The temperatures for the town are shown below:

Table 3: 2 Temperature in centigrade between
1959-1972

Month	Average	mean range Max-Min	mean max	Mean min	Max
Jan	22.5	13.9	29.4	15.5	37.
Feb	22.6	13.4	29.3	15.9	34.4
Mar	22.9	12.5	29.1	16.6	34.4
Apr	22.4	11.2	28.0	16.8	32.5
May	22.0	10.9	27.4	16.5	30.0
Jun	21.5	11.5	27.2	15.7	31.1
Jly	21.3	11.1	26.8	15.7	29.5
Aug	21.2	11.4	26.9	15.5	30.0
Sep	21.6	11.9	27.5	15.6	32.2
Oct	22.3	11.7	28.1	16.4	32.3
Nov	23.0	11.5	27.7	16.2	31.5
Dec	22.1	12.5	28.3	15.8	31.7

Source. Sewerage report 1977

The temperatures are generally high. The highest temperatures are felt between January and March. High humidity is felt during the month of march with the least being experienced in June.

The high rainfall recorded has a bearing on agricultural production in the area and the underground water potentials. The high rainfall received means that

the hinterland is viable for agricultural production which if adequately developed can boost urban growth.

Busia town is said to have enough underground water which if fully utilized could alleviate the present water deficit. LADP (1988) report suggests that underground water in Busia is available underneath the whole of the Busia town council area at a depth of 10m below ground level and at the surface where springs emerge. The town can therefore utilize the underground water potentials to supplement the existing water supply.

3:3:1 Wind

Wind patterns in the town is governed by the influence of the lake victoria. In the morning the winds blow from the N.E (towards the lake) and in the afternoon from S.W (away from the lake). The N.E wind is generally strong. The table below shows the average wind speed recorded at the Busia weather station.

Table 3: 3. Wind speed per month

Month	J	F	M	A	M	J	J	A	S	O	N	D	Year
M/ph	4.1	4.1	3.9	3.5	3.1	2.9	2.9	3.1	3.4	3.7	3.7	3.8	3.4

source sewerage report 1977

M/ph Stands for miles per hour

The of speed of wind is generally low. The future site

for the industrial location should be selected on the basis of this wind trends. It is noted from the above description that the ideal site will be the south east parts of the town.

The town divides watershed areas into two. The northern part of the town forms the water shade for Okwame river while the south part forms a watershed for river Satora. The two different drainage systems have been utilised for domestic water consumption by urban residents. The low gradient on the other hand has made most parts of the town to be poorly drained. The southern part of town is quite marshy giving way to swampy vegetation and perennial springs. These (springs) provide an alternative source of water supply in the town. Despite their proximity to the town, the two rivers have low potential to support any viable water project.

3:4 Historical growth

Busia has grown mainly as a trading centre on the Kenya-Uganda border. The first structures came up in the early fifties (1950's). Their purpose was to serve the people on transit from either Uganda or Kenya. The trend of growth took of rapidly taking advantage of the border location. By 1960, a number of shops had come up taking shape along the then existing road. Indeed the

improvement of this road at different times has had a remarkable influence on the growth of Busia town.

By 1963, Busia had undergone tremendous expansion to become a big trading centre in the district. Rapid exchange enhanced by external trade prompted it's choice as a district headquarters for the then newly created district of Busia. Nambale market with it's interior location (away from the border) could have provided suitable site for the District headquarters but it's growth and economic advantage could not match that of Busia. Throughout the 1960's, many urban structures came up concentrating along the main road with very few of them deviating from this set up. Government offices, schools and public institutions that came up at this time, were located along the then existing main road. This set a base for the current linear growth that have remained persistent.

Increased trade with Uganda in the early and mid seventies (1970's) created high impetus for the town's growth. The coffee boom attracted merchants from various parts of East Africa to Busia which was close to the coffee sources in Uganda. Some of them ended up establishing themselves in the centre as businessmen. The aim was to maximise the proximity to the coffee zone

(Uganda) which by then was fetching substantial amounts in the international market. The same period saw the elevation of Busia to a township in 1982. This upgrading, intensified the rate of urban activities. This period, witnessed the mushrooming of commercial structures and other services. The increased commercial services in the district necessitated the establishment of high level functions. Wholesaling and high level retail activities came up. Steady increase in services led to increase in population and hence the expansion of the town. The collapse of the coffee market in 1978 led to the shrinking of business activities and the rate of urban growth. This was followed by a period of political turmoil in Uganda. These two aspects combined at that crucial time to inhibit the growth of the town. The town relies on Uganda for its sustained growth and so any events in Uganda which can affect the interaction, will definitely affect the growth trend of Busia.

However political turmoil in Uganda in a way contributed to the expansion of Busia town. The border location made the town a refugee centre with war victims from Uganda taking refuge there. The current slum like structures in Marachi and Mauko grew during this time.

Currently Busia town houses a number of functions. It

is the district headquarters, has the district hospital, the police headquarters, Banking services, wholesaling services and the transport terminal for vehicles from different parts of the district and beyond. These combine to intensify activities in the town.

3:5

Population characteristics

The population of Busia town has been growing at a geometric rate. In 1979 the population was 24857 in 1988 the population was 36,845 and the projected population for 1993 is 43,777. The current growth rate is 4.03% far much lower than that experienced by town cities like Nairobi (asserted to be growing at between 12-15%). Though the rate is comparatively low at a national level, given the limited services in the town, growth signify pressure on the existing facilities. Using the population growth rate of 4.03, Busia town is projected to have a population of 57724 by the year 2000. The table below shows the population projections for other years.

Table 3: 4 population projections

year	popu
1994	45541
1995	47376
1996	49286
1997	51272
1998	53338
1999	55488
2000	57724

formula: $P2 = P1 (1+r)^n$

base year 1993 with popu of 43777

P2= the projected popu

p1= present population

r = is the rate

1 = constant

n = years projected

Field survey projection 1993

The average family size in Busia town is five people. The highest family size observed by the study is that of twelve members while the lowest is that of one member. The assumed distribution of the population between the three income classes will ultimately follow the national pattern existing in urban areas. Thus 80% for the low income, 15% for medium class and 5% for high class. The projected population for accommodation per residential area assuming they will take a national residential pattern will be as follows:

Table 3: 5: Projected resident population per class based on average national standards by the year 2000

Type of housing	%	popu by 2000
low cost	80	46179
medium	15	8659
high	5	2886
total	100	57724

source. field survey 1993

The table shows that more land for accommodation will be in high demand especially for the low income residential areas. This is likely to stimulate urban growth. Expansion of the town deserve proper guide. Busia is now a municipal council whose elevation has been based on population rather than the existing social amenities. There is need to examine what impact this would on the development pattern of the town.

currently Busia town commands the highest urban status in the District. It is the only Municipal council in the district whose population is twice the total urban population in the District. This position gives it a better position to facilitate urban growth. The rapid population growth shown above should be attributed to increased urban functions. The education of those engaged in business is shown below. It was observed that most of the businessmen in town had secondary school

education with few of them being illiterate.

Table 3: 6: Educational characteristics of Businessmen

Education level	percentage of businessmen
Primary	31.3
secondary	60.4
post secondary	4.2
illiterates	4.2
Total	100

Source: field survey 1993.

A large proportion of businessmen have had secondary school education.

3:6 The Urban Set Up of Busia Town

Busia is generally a commercial town. 90% of the activities in town are basically commercial in nature. These are mainly Kiosks, retail, wholesaling and restaurants. The activities are mainly concentrated along the B1 road linking Kisumu to Uganda. The highway has pulled all urban activities giving the town a linear shape. The D.C's office, police station, The youth polytechnic and the main commercial stem of the town are located along the B1 road. Concentration of structures is dense at the border and reduces as one moves into the interior. Less concentration of commercial structures

can be noticed around the D.C's office, municipal hall and the Ministry of Public Works. It appears as though the area is protected and has indeed broken the commercial flow experienced along the Kisumu-Uganda road.

The density of structures reduces as one moves away from the border and also as one moves away from the Kisumu-Uganda road. The main road seems to be the major focus of Business location. Majority of the business premises are within close range to the road with limited trade taking places away from the main road. The B1 road acts as a growth pole from which development in the town emanates and diffuses to the rest of the town. The road has acted as a catalyst for investment decisions and a focus for every land developer.

Business activities in Busia are mainly retail with a wide range of commodities. This include textiles, footwear, household products etc. Heavy industrial commodity, show rooms and other large scale business that characterize large urban centres, are not common in Busia. The busy nature of the town has attracted banks and insurance firms to operate in Busia. Thus the Standard Chartered, National Bank and Post Bank have opened their branches in Busia.

Despite the busy nature of the town, Busia has not

attracted major industrial investments. The town performs a mediator role. Perhaps lack of industrial establishment in Busia town should be attributed to it's location which make it more viable as a disposal point than as a convenient point for industrial location. So far only two bakeries and informal cottage industries exists. Thus the town should be seen as a transfer point with marginal marketing function to the hinterland.

The town has low employment base for the residents and the hinterland population. The commercial sector is the major employer whose potential and viability to sustain a better standard of living is un conceivable. This deprive most residents from leading a good standard of life. Poor residential structures exists with a large proportion of them being semi permanent. A cross section of the town rely on underground water. With the increasing population, this source of water risk contamination.

3:7 Economic profile of the district and urban linkage

Busia District is endowed with land and water as it's main natural resources. The district lies in a high potential zone and this makes agricultural land the most important resource the district can rely upon for rapid

economic growth. About 168000 ha (90%) of the total land area is suitable for agricultural development, 13000 ha (8%) can be irrigated to make it productive and only 2% or 3450 hectares of land in the district is unproductive. Part of this unproductive land is either water, hills or occupied by roads. The district therefore has a broad scope of expanding the areas under crop production or areas under agriculture.

Lake victoria is the District's second most important resource. it is the main source of fish which is the second most important product in the district after crops and livestock. The lake also provide a home for hippos and crocodiles which if tourism expanded to western Kenya, could become a viable potential for attraction. At present this wild animals are just a menace to fishermen and farmers around the lake.

It was noted that though the district has large tracks of land, little portions or patches have been put under agricultural use. About 83000 ha of the total agricultural land is either under bush, fallow or grazing land. The district has viable potentials for irrigation especially along the Nzoia. Rivers in the district have however been used least for this kind of practice. They have been used for domestic and livestock keeping. The

study noted that due to the geological factors and the high rainfall received, the district has high potentials for underground water production.

The potentials for developing the District, therefore lie in the promotion of agriculture. The forward and backward linkage on which chapter seven addresses has been based on this assessment. The production set up in the District is mostly agriculture and if urban- rural linkage has to be promoted, then there is need to foster Agriculture. The production per acreage is very low compelling the urban population to rely on Uganda for food stuff. The agricultural commodities brought in the municipal market are drawn from Uganda. Though the town serves the hinterland as a market centre, there is meagre interaction which can least promote viable urban undertakings. Sound urban growth requires adequate support from the hinterland. This can built a system that enhances mutual coexistence and to some extend provide viable economic base that can improve the revenue base. The table below shows land use in the Districts. It will be noted that production is generally low. Thus if forward and backward linkage between rural and urban settlements, is to be improved then agricultural production should be increased.

Table 3:7: Land use per Division (Ha)

	Budal	Funyu	Butu	Namba	Amuku	Amag
Total area	182	148	246	329	317	20
Human popu density	164	191	234	166	187	152
Rainfall	925	1420	1990	1766	1766	1300
grassing& fallow	3960	12400	11800	12520	20440	1800
Maize	2370	3150	1220	390	110	3230
Bush & woodland	1570	1970	1930	3600	2210	720
cassava	1110	720	1670	1850	980	1390
Hedges	590	500	170	200	440	960
roads	50	430	340	800	370	320
sorghum	600	1440	420	860	350	560
infrastr ucture	180	60	90	600	160	80
s/cane	0	0	2190	2990	0	0
mash/swamp	4550	0	0	0	0	0
Others	1850	10	0	2250	0	150

Source: District development plan 1994-96

The name in this table have been shortened for convenience to fit in the table: Butul should be Butula Namba for Nambale, Funyu for Funyula Budal for Budalangi, Amuku for Amukura, and Amag for amagoro.

3:8 Busia Municipal Council

The municipality occupies an area of forty kilometres. This is administered by the municipal council. The council is made of councillors from the eight electoral wards of the municipal area. The elected and nominated councillors form the main administrative body of the municipality.

The council is divided into several committees charged with different sectoral responsibilities. So far there are four committees. These are full council, finance council, general purpose and market council, and lastly education, health and social service committee. The full council has executive and legislative powers. It incorporates the elected members of Parliament from the district and heads of bodies (NGOS) working within the municipality. To facilitate the running of the council, several departments have been adopted run by revenue collected through taxation. The table shows the revenue base of the town.

Table 3: 8: Revenue Collected

source	Amount
market fee	569,138.00
Trade Licence	496,969.00
Bicycle Licence	10,875.00
Office Rent	236,799.00
Box Park Fee	174,930.00
Stall Income	156,799.00
Trader Permit	999,085.00
Private Rental	24,650.00
Site Value Rate	76,884.00
Plot Rent	4,862.00
Other Licences	592,022.75
Total	3,543,127.00

source. council annual report 1990

In total there are nine departments. These run different sectors within the municipality. The council has employed seventeen employees to help in the running of these departments. So far the revenue collected revolve around trade with the Trailer park accounts for 28% of the total revenue collected while trade licence come second in ranking. The explanation to this trend has to do with location. Being a border town, most activities in

town are mainly commercial and the border offers advantage for transactions. It is noted from this that the rent from municipal property is quite minimal. This is because the council does not own many physical assets.

The limited capital assets deprive the council of sufficient income to help in the running of her activities. The council therefore faces a big financial deficit which impairs it from undertaking capital projects in the town. some of the projects proposed for the 1990 financial year such as street lighting, road construction, site and service scheme, land rates, compensation, market shades, road rehabilitation and more housing, have not been implemented. This inability signify planning problems which the council as the main development agent faces. The implicit meaning of financial crisis, is failure to control development activities in the town. The inability is further magnified by a large proportion of land that is freehold. Exercising control requires acquisition of that land. However without adequate funds, this can not be undertaken.

CHAPTER 4

4.0 INFRASTRUCTURE AND URBAN GROWTH IN BUSIA TOWN

Chapter focus

This chapter focuses on individual components of infrastructure with the aim of identifying the role played by each one of them in influencing the spatial growth and development of Busia town. The scope narrows down to deal with three components of infrastructure which were observed to be playing a leading role in influencing the spatial expansion of Busia town. In this respect roads, sewerage and water have been accorded a keen scrutiny to establish their role in guiding the spatial trend of Busia town. Each component has been assessed from it's area coverage and the extend to which it influences development.

4.1 Roads.

Roads have been noted by a number of studies as important in determining the structure of urban areas and human settlements in general. Roads anchor a base on which urban activities take shape. Commercial, industrial, and service activities, locate where roads are present. Roads therefore dictate the extend, location and spatial trend of urban activities. In Busia town, road disposition has had a considerable role in influencing the morphology of the town. This structural

relation, indicate intimate relationship between roads and urban growth. The town spread along the Kisumu-Uganda road assuming a linear shape. Linear trends of growth and settlement patterns experienced along the main road in the town should be attributed to the road layout.

Busia town has two types of roads i.e. tarmacked and un tarmacked. The tarmacked road is the B1 road linking Kisumu to Uganda. A very small proportion (three km) of this road fall within the municipality with the rest of it cutting across the district towards Kisumu. Except for the B1, all the secondary roads in the municipality are mainly earth in nature. Some of them have been surveyed while others have been designed by foot work and maintained by regular passage. They wind around the bushes as they advance towards the B1 road. In most cases they exhibit un proportional shape characterised by potholes.

The B1 road has exerted a lot of influence on the growth pattern of the town. With it's better quality, it has become the best site for business activities in the town. Most wholesalers, retailers and the informal activities are located here. The high volume of traffic and the need to have access to the commodities

transported to the town make the site along B1 most attractive. The locational preference for commercial activities based on the types of roads is shown below. This is a comparison between the B1 road and secondary roads in town.

Table 4.1: Types of Roads and locational preference

road type	preference %
primary (B1)	81.3
secondary roads	18.7
total	100

Source: Field survey (1993)

It is observed that even among roads, there is difference in locational preference. The Primary road which serves the entire region and whose condition and quality are better, has a higher percentage of locational preference to the secondary roads. This means, there is a difference in concentration of activities along the different hierarchy of roads.

Of the existing earth roads, within the municipal boundary, the Busia-Bwamani, Busia-Adongosi (Malaba) and Busia-Bungoma (small portion of it) are the most pronounced. Others, are secondary roads linking the residential estates to the main road. These roads had

been constructed with murram but due to poor maintenance, the murram layer has worn out paving way to massive potholes. The rest of the road network in the town are mere winding path without good design. These are kept in use by regular pedestrian passage. It was observed by the study that most of these murram and earth paths, empty their traffic to the primary road spine of the town. Thus making it contend with high volumes of traffic.

4.1.1 ROAD NETWORK AND URBAN GROWTH

Transportation network transforms the value of a given site and make it more viable for development. Industries, retail business, hotels etc need access. It therefore follows that urban activities have to locate in areas that are served by good road network. Roads in this respect anchor the base for urban growth. Urban activities require access to be operationally effective. Due to the crucial importance of access, most urban activities locate in accessible place. The gravity of need however vary

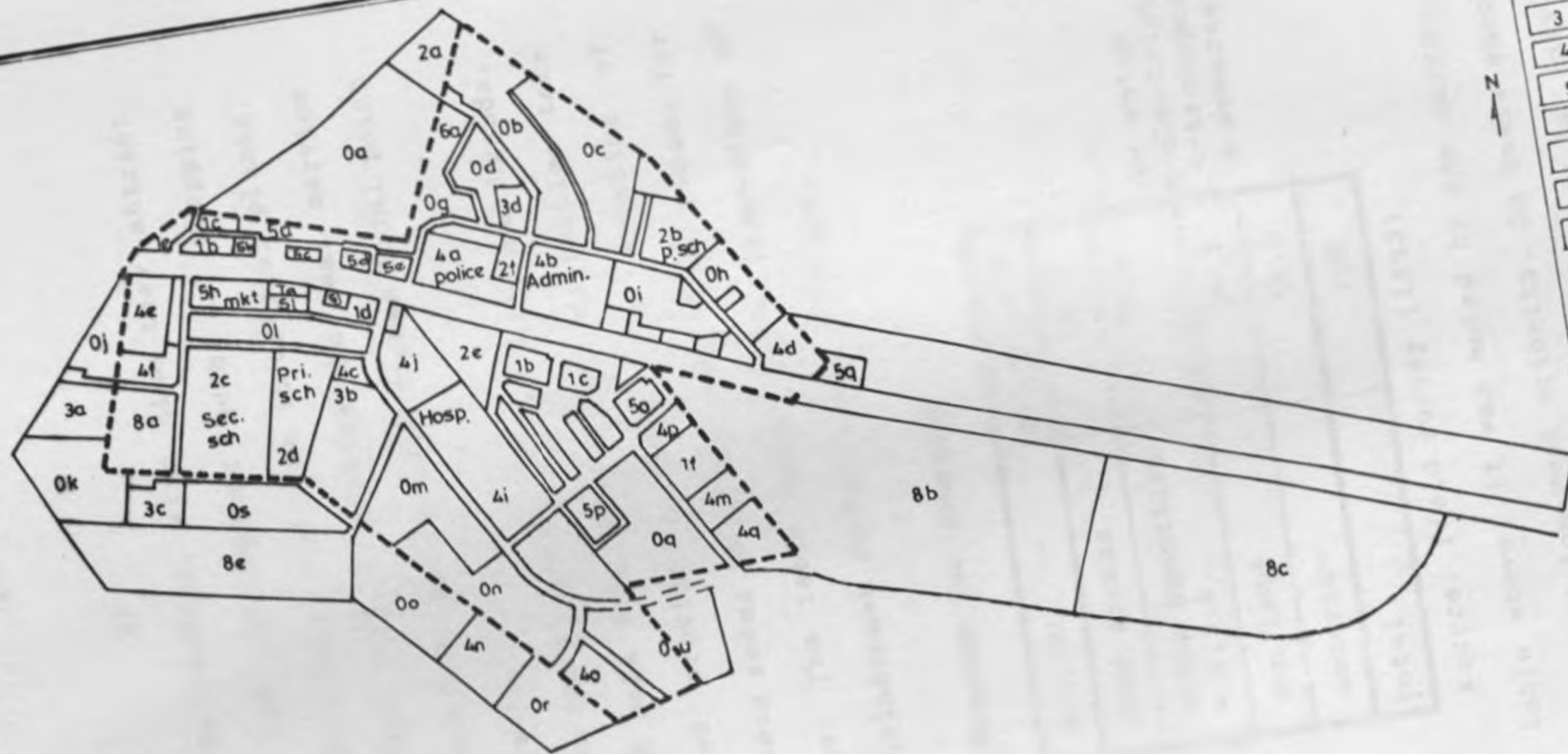
depending on the market of the product. Access is vital for commodities consumed locally and those that rely on external markets for business up keep.

Commerce is the mainstay of urban activities in Busia town. Commerce and transport have been observed to

have an intimate relation. It is obvious therefore that locational advantage for businessmen is of paramount importance. The decision for locating structures in town is based on rational choice to maximize the returns. Transport in this case is a prime mover of business performance. Poor roads deprive access to business by potential consumers and can lead to the collapse or decline business activities. More business transactions are known to take place in the most accessible points in town. It is this kind of relationship that pushes most towns to stretch along a given line of transport. It increases interaction, exchange and hence utility of the commodities. Urban growth in relation to transport facilities should be viewed in the context of land use-transport cycle. This means when access to a parcel of land is improved, land becomes more attractive and hence encourage investment. Businessmen therefore must seriously consider the most accessible point in town to increase the rate of stock turn over.

A notable example of transport system and urban growth is the construction of by-passes. These roads are originally built to relieve congestion in the city by

EXISTING LAND USES - BUSIA TOWN



LEGEND

- 0 RESIDENTIAL
- 1 INDUSTRIAL
- 2 EDUCATIONAL
- 3 RECREATIONAL
- 4 PUBLIC PURPOSE
- 5 COMMERCIAL
- 6 PUBLIC UTILITIES
- 7 TRANSPORTATION
- 8 DEFERRED
- 3 ZONE LAND USE CLASSIFICATION
- b ZONE REF. NO.
- ROAD RESERVE
- PROPOSED ROAD
- TOWNSHIP BOUNDARY

Swala F.W.

diverting some of the traffic. With time they attract major investments and development such as shopping centres, residential estates and even industrial plants. In the process, they fail to provide the real service they had been intended for and instead became focal point and nuclei for growth.

In Busia town the B1 road linking Kisumu and Uganda, acts as a growth pole from which urban activities take shape. The road provide a focus for location of activities. Access seems to be the most vital reason for urban functions. The table below shows comparison of reasons why businessmen prefer their location.

Table 4.2: Reasons for location

reason	response %
good access	53.2
other amenities w,e,t,s	17.0
own land	14.9
security	14.9
total	100

w- water
e-electricity
t-transport
s-sewerage

source. field survey (1993)

From the table above, it was noted by the survey that access occupy the top most priority. In Busia where the B1 road is the most accessible it would be inevitable

that all activities will strive to locate there. This locational preference push most urban activities to locate along the highway. The density of structures and intensity of land use reduces as one moves away from the road. The road has amassed all kinds of investment to be located along it so much so that the whole town resolves around this road spine. Being tarmacked and well placed to receive the highest traffic in town, the road offers the highest locational advantages. Most Investors in town prefer site along it irrespective of the costs.

The site value for a commercial plot (100X50ft) along the highway is being rated at between sixty thousand and eighty thousand shillings. The same size of land in Angoromo and Bulanda which are far from the highway goes for as low as Thirty thousand shillings. The study noted that a large stretch of land had been sold along the high way as compared to patches bought in other areas of the town. The large extend of land subdivision and the gradation of land values varies with access.

4.1.2 Access and business activities

Transport provides a media through which commodities can be exchanged. Most business premises therefore incline to locate along the road to enhance exchange. In

Busia town, regional interaction is crucial. Investors rely on external markets to sustain their business. Most goods are drawn from Kisumu, Nairobi and in Uganda. The need to have direct access and easy delivery of goods push most business activities along the main road. The B1 road in this case offers an ideal site for business undertaking.

The ranking of preference is shown in section 4.1.0. 53.2% of the businessmen interviewed indicated that access was quite vital in their locational decision. Good access increases the rate of stock turn over and thus ensures maximum return to the business. Most businessmen in Busia therefore see the Kisumu-Uganda highway as the most convenient site. The road is well maintained and has the highest volume of traffic to ensure good transactions. Access to both customers and commodities accounted for 97.6 % of the locational preference. Thus access play a very vital role in influencing location of Business and thus urban expansion

Since Busia relies on Kisumu for the supply of commodities, location along the main highway is very important to ensures easy and quick delivery of goods. The other sites along the secondary roads could be equally attractive if the roads were in good conditions.

The poor state in which they are, deprive business location. Most structures therefore compete for convenient location along the highway. The reason is mainly to capture the advantage of high traffic volume in town. Trucks and lorries from and to Uganda, park along the main highway to get services. This increases it's attractive ability.

Due to access, there has been competition to colonize space along the highway by various activities. This has led to location of wholesale, retail, cottage industries, open air stalls and kiosks along the highway making structures co-exist in a very incompatible manner. The B1 road receive the highest traffic in town and facilitates quick stock turnover. The location of parking facilities further strengthens the locational preference. The trailers and bus parks have been located along the same road. This means most of the traffic either passing through the town or destined to town are confined in distribution to a very small area. Retail activities have to compete for such location to ensure sufficient market for their products. This has encouraged a number of structures to crop along the highway. Kiosks and open air markets, locate their business along the road reserve to benefit from the advantage of transport. With high

traffic in town along this highway, all kinds of business activities receive the number of consumers enough to keep them in business.

4.1.3. Roads and settlement densities.

The B1 road in Busia town is acting as a growth pole. The number of structures (density) reduces as one moves away from the main road. Business activities tend to decrease as one moves away from the main road. The business hub of the town concentrates along the Kisumu-Uganda road and decreases as one moves away from this road. The road has a strong attractive ability which most secondary roads in town lack. High quality investment, are located along the B1 road. Secondary roads in the town which are poorly maintained do not offer any good potentials for location. They therefore offer the least incentive for investment. This has tended to discourage business ventures. Business stock along most secondary road in the town diminishes to petty consumer goods while Wholesale and good retail shops remain at typical characteristic of the most accessible areas (along Kisumu-Uganda road).

It's observed that the border offers better incentives than areas inside Kenya along the same road. The density exhibits yet another trend of economic

advantage with most activities concentrated along the highway but close to the border. The table below shows the opinion of businessmen on where they would like to locate if they had a chance.

Table 4.3: Best location for business in town

area	% preference
Border	69.6
DC's	17.4
Airstrip	13
TOTAL	100

Source: Field survey (1993)

Many investors prefer to locate in areas close to the border and only take a second option along the highway if there is no room or if the rent is too high to meet. This has fostered a heavy concentration of buildings around the border. Had it not been for the government effort to facilitate growth in the interior, most business premises could be on the border.

4.1.4 Residential location and spatial growth.

Residential areas are very much related to the existing urban activities. Their location is tied to the existing urban functions. Access in most cases is not an issue. The economic functions set the pace for residential growth. The demand for residential facilities

is based on the employment base of the town and the population growth. In most case the rate of residential growth is high in towns with a fast pace of industrial growth or other economic activities. Their location in town will be dictated by the location of the existing functions.

In small urban areas where transport facilities are not well developed and where most people rely on walking as a mode of transport, residential areas tend to be located close to the commercial areas. Most people are employed in the commercial sector and must reside close to their place of work to minimize transport costs. At the lower level of urban growth it is quite difficult to segregate urban functions. Roads in this case is not an issue to consider. They could be opened later to serve the growing need for transport. Residential quarters therefore tend to locate in relation to commercial establishment or sectors which they serve.

35% of the people interviewed indicated that their choice of residence was influenced by the rent or value paid for accommodation. Preference for where they could stay does not wholly depend on infrastructure. The choice for residence depend on affordability though this may coincide with the presence of good social amenities.

Table 4.4: Reasons for choice of residence.

locational decision	%
Affordability	35.1
Dist. to place of work	21.6
Own land	18.9
Infra facilities (R,W,S,T,E)	16.2
Security	5.2
Housing space	2.7

source:Field survey (1993)

Though some residential areas are located along the highway, this has been the choice of the land developer for the best use of land at the time. There is also a trend that is common in Busia town where the land owners sale the land close to the road. The reason is that such land can be easily bought. Depending on the developer, such land could be developed for residential units irrespective of it's location.

Residential areas do not emerge as independent urban units of urban activities. Rather they emerge as a supportive sector to service the most prominent sector of the town. Their location in most cases is dictated by

major urban activities and the nature of urban transport system in urban areas. Where transport network is well developed and the means are adequate, residential facilities can locate far away from the core of the urban area. This is a reflection of the transport and residential model. On the other hand, where transport system is not well developed and journeys in town have to rely on foot, residential areas tend to emerge close to other sectors that they serve. In Busia town, the sparse and sometimes congested nature of residential facilities has been dictated by urban economic structure and the existing land ownership. Residential quarters follow commercial establishment with heavy densities being experienced behind the commercial structures. While the scattered appearance is a function of difference in land ownership with different people taking different time to develop plots or holding the land for speculative gain.

In Busia town zoning of activities is non-existent. Business activities and residential quarters flourish side by side along the highway. The freehold land tenure system makes personal decision paramount for land development. Since roads anchors the base for most activities, the rational choice has always ended up directing most of them to put up residential structures

close to the roads. There is no specific area set aside specifically for residential development except for government quarters on municipal land. Perhaps this is explained by the fact that most of the land is freehold and the council has minimal control over allocation and land development.

4.1:5 Roads and their implication on future urban growth

Roads anchor the base for urban activities. The change in the road pattern and the deterioration of road quality will affect the spatial growth trend of urban areas. It was noted in chapter three that 72% of the urban land is freehold. Given the economic free play of urban land transaction which the council does not have adequately control, most activities tend to be concentrated along the established roads with the sites along the B1 road being the most attractive.

The opening of any new road in the town is associated with shift in trend of business activities especially when the road offers similar locational advantages like those offered by the B1 road. It was noted that the opening of the Busia-Bwamami road attracted a number of business activities in areas around Marachi. This almost gave Busia town an L-shape. The

road has since then deteriorated in quality pushing new investments to the Kisumu-Uganda road especially around the Air-strip area. The area has ample space with good access though located far from the border. The town will hence maintain an eastward linear growth trend.

The future of Busia town, shows a remarkable growth trend in areas far from the border but along the highway. This sites offer good facilities for commuters and will hence be the locus of all forms of activities. At present, no form of capital investment has been done to re-orient growth. From a regional diagnosis, it is observed that should the Malaba-Busia route be improved (tarmacked) then the linear growth trend will be reduced. Before this is done, Busia will stretch along the highway avoiding the swampy areas till other incentives are offered to offset linear growth. Such incentives should have a heavy gravity to outweigh the advantages offered by the Kisumu-Uganda road.

4.1.6 Deterioration of roads and urban Decay

It has been observed that when the market centres are by passed by roads, they generally tend to stagnate or at times "die". Business activities shrink at the face of reduced traffic volume. In the same way, the

deterioration of roads in urban areas is known to discourage business ventures. Most investors prefer locating premises in areas which are most accessible, and areas which can be reached by consumers with ease.

Poor road facilities deprive access and hence decline in business activities. Marachi estate is one of the areas in Busia town that has a long standing history. The estate houses almost half of the urban population. Limited financial ability and total neglect in planning has played a catastrophic role in the entire life of the Marachi neighbourhood. Roads have never been repaired for over a long time. Some of them have deep seated potholes. The deterioration of roads have led to total shift in business to locate elsewhere. Most shops in Marachi have been closed. Hotels and food related business are non-existent - only kiosks thrive to cater for the minimal demand of the resident population. Most shops, hotels and kiosks have pulled out of the dirty environment to locate along the Bwamami road. The table below shows the reasons for the shifting trend of activities.

Table 4.5: Reasons for business movement

Reason	%
insecurity	6.3
poor infrastructure	75.0
poor structure	12.5
high rent	6.2
total	100

source. field survey 1993

It is noted that the reason behind the shift in location of business activities is attributed to the deterioration of infrastructural facilities.

The poor state of the streets in Marachi reflect the close linkage between road quality and business activities. At present, only timber firms, clothing and traditional liquor dominate the business characteristics of Marachi and parts of Mauko estates. The slum like conditions that characterize residential facilities, coupled with poor roads quality discourage business investment. The quality of roads increases the land value and influence the nature of investment. Where land values are high, individuals come up with projects that compensates such value. Better housing facilities and commercial structure are known to crop up in localities

with good road network In Busia town, this contrast is clearly marked. Most new structures with storeys are located along the highway while semi permanent commercial and residential structures are much common in areas away from the highway.

The large road reserve on the other hand has provided ample space for disposal of wastes. Since most buildings along the highway are congested, hardly any space has been left to disposal of wastes. The study observed that if the road reserve is not protected against this detrimental tendency, then Busia town runs a risk of experiencing an epidemic out break and still this trend could deprive future investments and hence discourage future development.

The attractive potentials of roads for investment need to be co-ordinated to facilitated harmonious growth. Total neglect in the allocation of activities in space at the face of market forces enhance urban decay.

4.2.0 WATER SUPPLY IN URBAN AREAS

Water is known to be an essential component in determining the rate and nature of development. Virtually all activities in urban areas rely on water for their daily operation. Human life in general and other

activities such as, agriculture, industry, commercial and residential settlements can not function without water. When looking at water as an essential component in urban development, we are not only concerned with the quantity supplied, rather we are interested in both quality and quantity, the distributions, reliability and the costs that are incurred in getting it (how accessible is it to people).

Quantity supplied will determine the nature of activities taking place in urban areas and the rate at which they will be established. Industries, big commercial firm and service activities require water to facilitate their operations. Most textile mills for example use water as their major ingredient in processing. Other industries rely on it as a lubricant or cooling system. Where water is in short supply or totally lacking, it's most unlikely that industrial processes can take place. Slow industrial growth has been known to occur in urban centres where water shortage is acute. The disposition of the pipe network in urban areas will definitely influence industrial location. Where sources of water are far or expensive to drill, investors, will be discouraged. Catenese and Synders (1989) asserts that community facilities especially water

and sewerage system can be powerful tools in influencing the rate, direction, and type of land development. The provision of these facilities can influence the standards, timing and pattern of development.

When infrastructural facilities especially water is provided in advance of the actual need, and when extensions or connections are granted in accordance with an adopted plan, a community's development pattern can be effectively controlled. Thus a strong relationship exists between water facilities or sources and land use. When talking about quantity, we note that water plays an important role in private sector economics. Catenese & Synders (1988) stress that public infrastructure like water is an important ingredient in locational decision of private enterprises.

Environmental scientists have for along time observed an intimate relationship between the quality of water and human settlement. Contaminated water is known to posses health risks to human life or urban residents. Dirty water, untreated and poorly protected sources are susceptible to the spread of epidemics. Sufficient and good quality water is known to encourage land development. Good residential facilities are known to spring up in places that have a good water reticulation

system. High densities develop and mushroom in areas where this utility (water) can be accessed. It is observed that even in squatter settlements in urban areas, most of them spring up along the water courses (Though in this case water could be polluted).

Good water sources therefore attract urban settlements and acts as catalyst in enhancing urban growth. Piped water system, may attract high class residential settlements as opposed to areas where springs could be the main source of water supply. The concern for quality is enshrined in men's love for protection. Good quality water ensure safety and protection which man has all along cherished in urban areas. This can reduce some of the expenses in medical care which individuals could incur. Thus locational decisions much as they rest on quantity, they also have a bearing in the quality.

In urban areas the big concern besides the quality and quantity is access to the water and reliability. The quantity and quality could be good but the disposition of the pipe network and high charges assigned to water can deprive use. People in this situation have to walk long distances in such of alternative sources of water. Since urban residents have a rational mind, in their choice, residential concentration will definitely occur in areas

where this utility is available or where it is easily accessible. Land development could be slow in parts of the town where the supply is inadequate.

Water supply and urban growth relation should be viewed from the light of urban areas as a system whose operation revolves around water. The availability of water initiates other activities.

4.2.1 Water Supply in the Busia town

Busia town has a piped water supply system operated and by the Ministry of Water Development. The Busia sewerage project report (1984) notes that water is pumped from Busia-Mundika water scheme to Busia town and distributed from an elevated tank to different residential areas in town. This supply system serves the Milimani area, Marachi, Airstrip area, Omeri and Alupe. Besides the Mundika-Busia water supply, urban residents rely mostly on spring and borehole water.

The Mundika-Busia water supply scheme phase I was completed in 1979. The scheme was designed to supply treated water to Busia township, Mundika and Bugendi-sub location catering for a water demand of 816 m³/day. Since then extensions to the intake and treatment works have been expanded to cater for additional water demand for Busia township (municipality) and the Busia-Mundika

rural area. The extension have been done with the aim of incorporating the Angoromo market in the area served by the scheme. The programme was to go along way into improving the reticulation system that was intended to serve the Angoromo market and the surrounding area. According to the water engineer it was observed that the treatment works at present had the design capacity of 2650 cm^3 . The project had been designed to cater for a projected population of 20,000 people with the production capacity of $1450 \text{ m}^3/\text{day}$. It was noted that the current piped water serve a population of 20714 people. The projected demand by then was $2400 \text{ m}^3/\text{day}$ hence the need to augment the water supply system. The current supply is augmented by water from the boreholes.

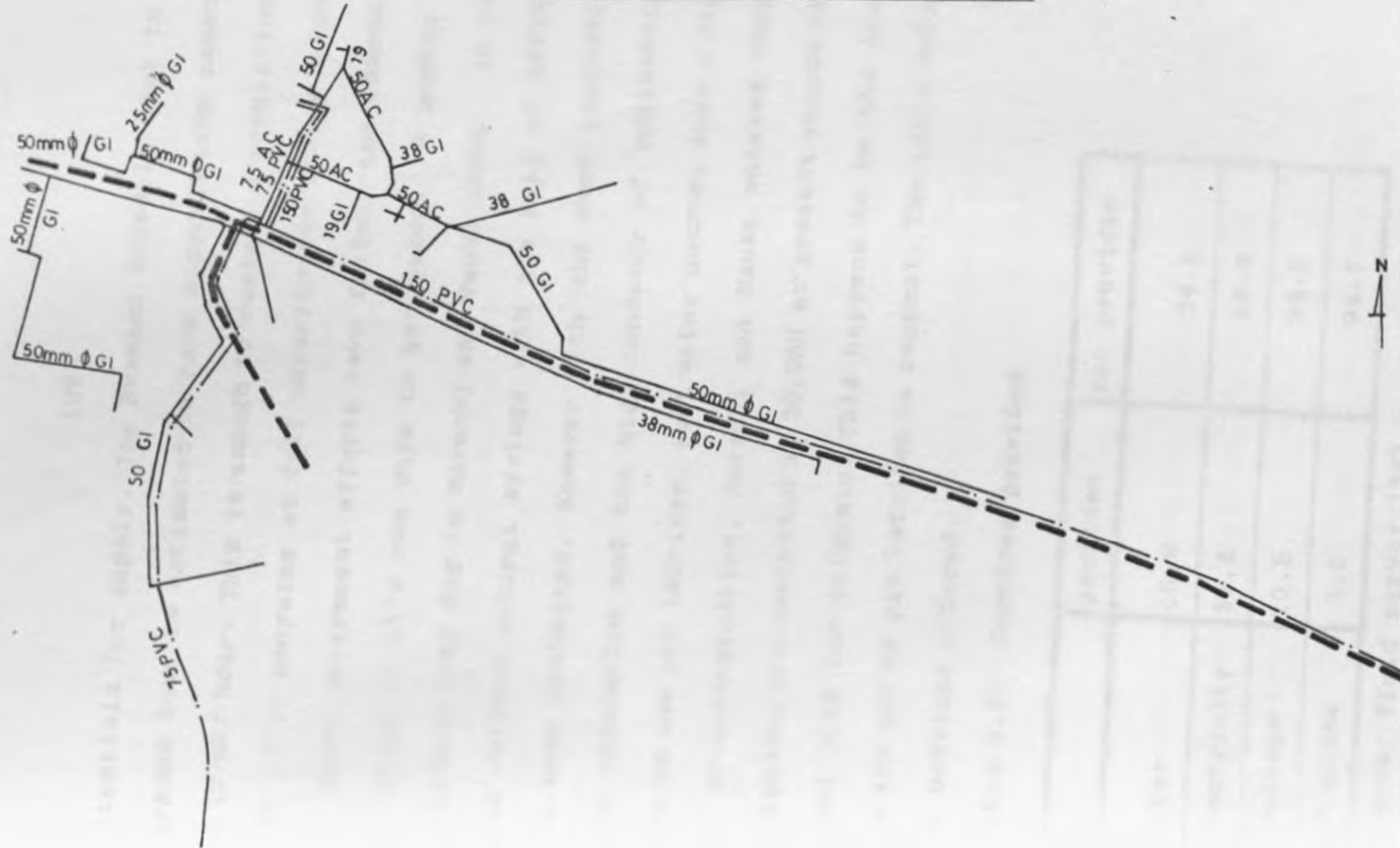
The source of water supply for the town is reliable. The water engineer observed that the phase II of the project which is yet to be completed is capable of increasing water production by more than half of the current capacity. If the project is implemented, it will raise the production capacity to $5000 \text{ m}^3/\text{day}$. However these only remain in proposals and documented sources. Currently the water supply is inadequate for the demand and rationing is quite common. Water shortages are generally frequent during the dry month.

The Ministry of Water Development has liaised with a number of institutions to help alleviate the water problems. The water development officers have done extensive survey of water in the town to devise alternative sources. It was noted by the survey that the existing underground water is enough to offset the current water deficit. Since 1990, eight boreholes have been sunk. This has been done with the hope of augmenting the Mundika water supply scheme. So far individual institutions especially the Farmers training centre, Catholic mission and the hospital have boreholes within their compounds.

To avoid excessive tapping of underground water, individuals coming up with borehole projects must get clearance from the Ministry of Water Development in the town.

Kenya Finland Company (KEFINCO) whose projects are basically rural, has been requested to step in and initiate water projects that could alleviate water problems. With their co-operation, six of the eight borehole were sunk. These serve major institutions in the town as well as supplement the water in the elevated tanks. The boreholes as observed earlier have high

WATER DISTRIBUTION NETWORK IN BUSIA TOWN



LEGEND

- EXISTING WATER PIPE
- - - PROPOSED WATER PIPE
- - - EXISTING PAVED ROADS

potentials for supply. The Bwamami borehole next to the Ugandan bore is estimated to have a production capacity of 12 m³/ hour. This is enough to sustain a population of 2057 if it operates at full capacity for twelve hours.

Where government efforts have failed, the community has tried in it's own ways to get water. A number of wells have been dug in Marachi and Mauko areas. In some cases certain natural springs with the help of KEFINCO have been protected. However with the ever increasing urban population and the high tendency of residential areas to use pit latrines, such water sources runs a high risk of contamination. Marachi and Mauko estates whose populations are estimated at 20,000 at present stands the highest risk for epidemic. This happens to be the area where the use of pit latrines is rampant. The table below shows services offered.

Table 4.6: Services provided

	provided	not provided
water	45.9	54.1
electricity	31.6	68.4
sewerage	10.5	89.5
telephone	5.3	94.7

source: Field survey 1993

Table 4.7:

Distance to water sources in case of shortages.

distance in (m)	% of traveller
<100	76.7
101-1000	13.3
>1001	10

source: Field survey 1993

Community's effort to meet the water demand has driven most of them to walk long distances. The rivers on either side of the town are vital sources of water for both domestic and livestock. Urban residents were observed trekking along the road to fetch water from the rivers. Those who have carts and wheelbarrow use them to trade in water. Indeed water in Busia is an expensive commodity. A twenty litre container goes for five shillings. With an average family of five people, the minimum a family can spent in a day is 87.50 shillings. This is quite high for poor families. The alternative has been to minimize consumption or draw water from rivers. The restaurants and bars fall in this same crisis during the dry season.

4.2.2 The Role of Water in Busia Urban Growth

As noted in section 4.2.1, water is a vital tool in

urban growth. Busia town has had immense water problems. The unreliable quantities, scarcity, rationing and obsolete reticulation system have been issues to contend with. The problems have gone far in influencing the rate and nature of urban development. Though roads play a crucial role in influencing the existing patterns of growth, it should be noted that the quality of commercial structures, residential and social institutions is a reflection of the water facilities available. Poor residential facilities is a function of inadequate water supply. The land developers choose to invest in low quality housing because facilities to maintain good quality structures are lacking - one of them being water.

Good housing structures require regular supply of water. To be able to maintain required hygienic standards, the water supply should be available in sufficient quantities. Otherwise the sewer system will block and render the residential units quite unhealthy. The obsolete reticulation system coupled with rationing discourage construction of modern residential structures in Busia town. Indeed as will be observed later few housing units are served by sewer line and most of them lack sufficient water to run.

Since there are many sources of water in the town,

the location of most activities with the exception of for hotels and bars are not confined within areas that are served by piped water: rather, settlements tend to sprawl into areas not covered by the piped water net work. Most settlements though linear in shape are not a response to water availability. The study noted that areas along the border and the DC,s office had piped water and yet growth of settlements had spread far beyond piped water areas.

The high densities that characterize estates like Mauko and Marachi are posing pressure on the capacity of the urban water supply. There is a danger (latent danger) that should this development trend be left to continue then the town may in future suffer catastrophic water shortages. Besides shortages lack of water poses environmental hazards. Busia has recorded a number of epidemics in the past, one of them being cholera. The increase in the number of latrine is likely to contaminate the springs and boreholes which have been the major source of supply in the town.

However, with the effort of the Ministry of Water Development water problems have since 1990 reduced. There has been efforts to protect water sources such as springs. Efforts have also been made to solve the crisis

by sinking more boreholes. marginal alleviation of this crisis has been reflected in certain investments which hitherto, had never been experienced. Hotels, particularly Farm view, Rock hotel and Paradise have become operational because of constant water supply (supplemented from boreholes). Paradise hotel has since 1990 recorded 80% bed occupance which hitherto the improvement of water supply would never have been experienced. The high bed occupance level coincides with the improvement in water supply. It is observed that though the spatial expansion of the town tends not to follow the distribution of water, at a micro level, certain urban functions such as hotels tend to have a strong inclination in location to water supply. Their geographical disposition in Busia town fall mostly in areas covered by piped water supply.

The current water supply can only foster faster growth of commercial investment. These activities do not require a lot of water except for hotels and bars. The marginal supply of water comfortably keep most of them going. However major industrial investments that consume large quantities of water, are least likely to locate in Busia. It can be concluded that scarcity of water will deprive the taking off of the earmarked vegetable oil

industry and hence retarded urban growth.

4.3.0 SEWERAGE AND DRAINAGE

Sewerage and drainage have almost similar development impact as water supply. The sewerage lines act as an incentive for development investment and land development. Drainage facilities on the other hand are known to keep the quality and health of the environment. Where the drainage facilities are not provided, diseases and epidemics like cholera and dysentery and other waterborne diseases can be quite common. Urban areas prone to inadequate sewer and drainage are known to discourage investment. If developers have to bear the costs of providing for this facilities, then the capital investments will be too high. They can opt to locate in areas which already have such facilities. The availability of sewerage and good drainage system minimizes the investment costs. Their bias in distribution at a micro level dictate the pattern of investment.

4.3.1 BUSIA SEWER SYSTEM

The first sewer project in Busia town was commissioned in September, 1983. This was done with assistance from the Danish Government under the Development Agency DANIDA. The support for the programme

was based on the policies presented in the "WHO" sectorial study and regional programme for community and rural water supply, sewer and water pollution control" prepared during 1972-74 which acted as government policy guidelines-Sewerage house connection project report in Busia (1991). Four pilot towns were considered for sewerage project with Busia being one of them. Others included in this programme were Isiolo, Nyahururu and Homabay.

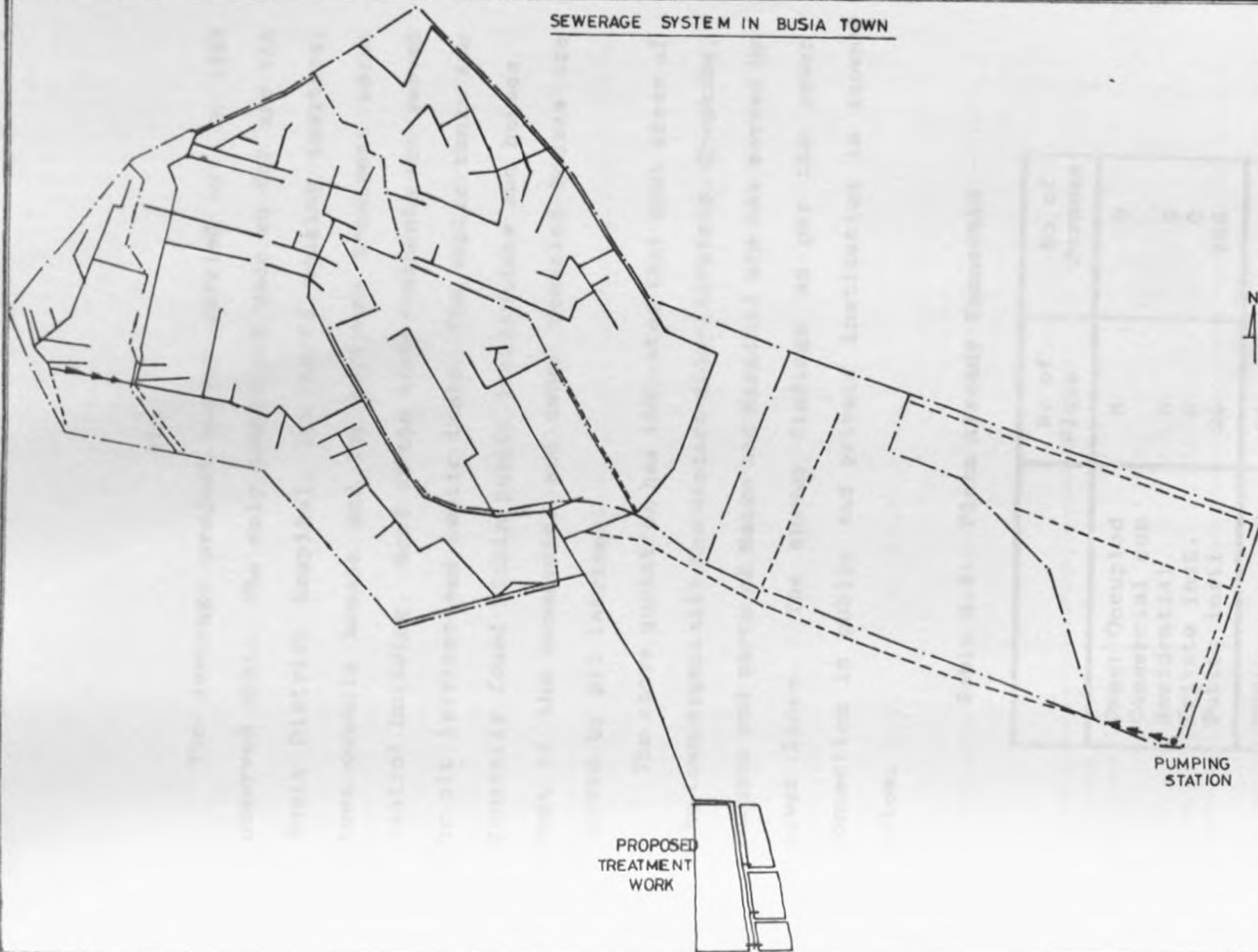
The first phase of the sewerage project in Busia town covered a micro area of the town. This included areas around the border- covering major government institutions and the core of business activities in the town. The statement should not be taken to mean all the areas stated above have individual household connection but rather that the project's scope covers an extensive area occupied by commercial activities.

The project does not adequately cover all the sectors in the drainage area. Major institutions like the Farmer's training centre and the polytechnic, District Commissioner office have septic tanks. The remaining areas of the town, have pit latrines.

SEWERAGE SYSTEM IN BUSIA TOWN

LEGEND

- PHASE I SEWERS
- - - PHASE II SEWERS
- ➔ PHASE I PRESSURE MAIN
- ➔ - - PHASE II PRESSURE MAIN
- · - · - DRAINAGE AREA BOUNDARY



Swala F.W.

The sewerage project survey carried out in 1984 observed that: The only connection made so far are the Busia District hospital, its staff housing quarters, town council houses and the sewerage treatment works control building. Most of the town residents are served by pit latrines and septic tanks. The septic tanks are generally found within public institutions and houses. Most of the commercial and owner occupied houses are served by pit latrines.

The above quotation has indicated that most areas of the town especially the eastern side-(Airstrip, Chepkube, Burumba and parts of Mauko and Marachi) are not served by sewer lines. The survey findings as per the sewer connection in public and private institution is shown below.

Table 4.8: Plots Already Connected

	No of Plots	No of Persons
Owner Occupied	0	0
Commercial cum		
Residential	0	0
Private inst.	0	0
Public insti.	29	808
TOTAL	29	808

Source: House connection survey for Busia Sewerage Project Vol.1 1984

The table shows that by 1984, no commercial, residential and private enterprises had been connected to sewerage facilities. Only the public institution had been connected. It should be observed that despite the high number of people served, most of the residential blocks are flats. This can give a false impression of an extensive area covered where as such buildings could be found in one area. However if all the houses within the drainage area were connected, the number of those served will be increased.

The table below shows the number of plots which fall within the drainage area and which if priority to the location was given, could be connected are shown below.

Table 4.9: Priority I

	No of plots	No of persons	Length in House connection	Meters service line
Owner occupied	10	98	418	0
Commercial cum residential	92	2989	2842	0
Private insti	6	128	572	0
Public inst	91	2139	1229	0
Total	199	5154	5061	0

Source: House connection survey for Busia sewerage Project 1984

There is a big contrast between the number that could be served and potential connections. The table indicates that 199 of the plots (if given priority number one in terms of their access to the main sewer line) could be connected. However, none of the plots had access to external service line. Which means individuals would have to install their own external system - an element of cost which few developers are willing to accept. Again it must be noted that the most badly affected sectors are the private residential (rental) and commercial sectors. Individual connections in this sector will push up the investment costs which the two sectors are unwilling to incur. They would prefer pit latrines which are abandoned when they are filled than invest highly in water borne sanitary facilities. The table below shows the extension of similar scheme to a wider area of the town to incorporate areas beyond the drainage basin of the drainage basin but close enough for potential connection.

Number 13	199	1201	601	14
Number 14	105	1024	1752	3449
Number 15	10	191	769	541
Number 16	158	988	1423	3112
Number 17	363	2535	10780	4916

Source: Survey project (1984)

Table 4.10: Potential and possible connections priority II

	No of plots	No of persons	No of House conne	Length in meter service-lines
Owner occupied	23	2.0	785	668
Commercial Com residential	74	2536	2947	2148
Private insti	10	63	397	290
Public inst	59	1689	1593	1712
Total	166	4498	5719	4818

Source: Sewerage survey(1984)

The number of people would increase if extensions were done to plots in close proximity to sewer . If the first and second priority areas are combined, then the people served will be as shown in the table below.

Table 4.11: Total potential connections (p1 & p11)

	No of plots	No of persons	Length in in meters H/C S/L		Manholes
owner occupier	33	308	1203	668	14
commercial & residential	166	5325	5789	2148	39
private inst.	16	191	966	290	7
public inst.	150	3828	2822	1712	31
Total	365	9652	10780	4818	91

Sewerage survey project (1984)

It should be noted that these priorities were set ten years back and if they could be projected to reflect the present need, the number will definitely be higher than the one stated above. Apart from this, the survey was undertaken at the time when Busia town was experiencing stagnation. The trading relation with Uganda had declined after the coffee boom slump. This was the period after the great political turmoil that had changed the economic face of Uganda. But since 1986 - the period that ushered in a new era in Uganda, the trading relation has greatly improved. This improvement has increased trade interactions between Busia and Uganda. An out come of this is increase in settlements. This has more than doubled the population of Busia town.

It should also be noted that most residential units are semi permanent and therefore with or without an external sewer line, connection might least take off. Sewer system require permanent structures to facilitate use. Such residential structure are few in Busia town.

The importance of sewerage as a component of development cannot be over emphasised. Several activities require sewerage system for their efficient operation. However despite this, the spatial expansion of the town

has had little regard to sewerage. Most activities least conform to it's presence as a base for location. The location of farm view hotel which is barely fifty metres from the sewerage treatment plant cannot be attributed to the presence of sewerage because the two land uses activities are incompatible.

It seems as though other forces dictate the location of activities other than infrastructural facilities. Though from the analysis, roads play a vital role, there are certain activities in town which cannot be attributed in their location to roads or other components of infrastructure. It is out of this realisation that other consideration have been made to broadly understand forces that determine urban growth. These aspects are extensively covered in the next chapter.

In summary, it can be stated from the analysis given that, infrastructure plays a very crucial role in the spatial expansion of Busia town. However narrowing down to each component of infrastructure, it is noted that roads seem to have a more predominant role in guiding spatial growth than any other component of infrastructure. It is also noted that in Busia, there are some existing land development which can not be explained

by the existing infrastructure. This raises need to consider other factors. These issues are addressed in the next chapter.

Basic laws from a broad spectrum with the aim of identifying other components besides infrastructure that influence the existing land development. The idea has been built from the realization that infrastructure, while it is an essential component of urban growth, does not independently determine the pattern of land use. It is rather that it interacts with other factors. These factors must be taken into account in the existing infrastructure, determine the extent, location and rate of urban development. The chapter has assigned a number of relevant aspects which the study has established as quality determinants for the current growth. Urban form - Urban form, institutional and regional linkage strengthened by the historic forces in the urban community.

Institutions

Institutions are organizational units established within national borders or entities that affect the urban form. Institutions range from high ranking central government units to small local government units. They are charged with the responsibility of managing and administering development in their jurisdictions.

CHAPTER FIVE

NON INFRASTRUCTURAL FACTORS AND URBAN GROWTH.

5.0. Chapter focus

This chapter addresses urban growth and development of Busia town from a broad spectrum with the aim of identifying other components besides infrastructure that influence the existing land development. The idea has been built from the realization that infrastructure, much as it is an essential component of urban growth, does not act independently but rather it is stimulated by other factors. These factors exert gravity which together with the existing infrastructure, determine the extent, direction and rate of urban development. The chapter has highlighted a number of salient aspects which the study established as equally responsible for the current growth of Busia town. These are: institutional set up, interregional linkage strengthened by the border forces and the urban community.

5.1 Institutions

Institutions, are organisational units established to manage national matters or matters that affect the society. Institutions range from high ranking central government units to small semi autonomous local authorities charged with the responsibility of managing and co-ordinating development in human settlements.

Looked at from a local level, institutions play a vital role in meeting the needs of the inhabitants. Their role is basically to coordinate or formulate the rules that govern use of resources or facilities. In urban areas, their role has been to coordinate activities and control land use.

Institutions have a central role in providing basic utilities in urban areas. They are supposed to cater for the provision of water, sanitation, shelter, transport and implement laws which guard against pollution. The ability of local or national institution to provide guiding rules that foster harmonious growth, is an essential component of development. Well perceived policies by institutions ensures sound development that least strains the existing resources, utilities and the environment. They can also facilitate certain urban activities like commercial, industrial transportation and social amenities that augur well with the needs of the people. Institutions can only achieve the stated objectives (of meeting people's needs) if it bears three components. These are staff, finance and good working environment.

The role staff in institutions, will be reflected in the nature of decisions made, the development of

objectives and the strategies devised to meet the earmarked objectives. Planning for urban development is a cumbersome and complicated exercise. This requires an ability to measure and interpret development priorities. Diagnosis of the existing problems is therefore necessary to arrive at any meaningful conclusion. Lack of competent and efficient staff have been noted as one of the development constraints that characterize most urban council. Mazingira Institute Publication (1990) noted that the inability of young urban councils to meet their development objectives, should be attributed to lack of staff. Some of them as was observed had only fifteen employees, who didn't have skills. This greatly hampered them from good coordination of urban development. The deep seated problems are not given the weight and depth that they deserve. Most of them are relegated to irrelevant departments which can not address them effectively. The municipalities for example are supposed to project demand for utilities (water, electricity and sewerage). However due to lack of staff, this issue is never adequately addressed. Provision of facilities does not follow assessment of need. Phasing of projects prove quite complex to be handled by such staff.

It should be noted that sound development requires

Proper articulation of planning objectives. Provision of water for example can not just be arrived at by hasty decision based on need rather it must be follow a consistent programme laid down by the council. The staff is supposed to identify ways of making the project succeed. Where possible they are supposed to identify the forth coming setbacks before they come their way. By so doing, the staff provides all possible ways that development trends ought to follow. This guide is essential particularly in protecting the fragile urban systems. Poor policies have been associated with high standing environmental hazards in urban areas. Environmental degradation for example is a reflection of poor policy articulation.

The second aspect of institutions is finance. policies, programmes and phasing of project is arrived at based on the existing finance. Like staff, finance play important function in meeting peoples development needs. The role of finance spans right from the identification of need to implementation of projects. Most municipalities are known to fail in the implementation of projects due to financial constraint. The revenue base which heavily rely on land rates, taxation, and other charges have so far done little to provide the necessary

funds require for development by local authorities. Most urban development plans and master plans have been shelved pending finance: The seminar on African urban management (1989) noted that:

Urban areas in Kenya have been unable to provide services largely because of lack of resource. Both central and local government have been suffering from poor cash flows....

The organization for economic corporation development (1983) observed that the planning and finance functions in urban government would seem to be obvious. Virtually every local government decision or action must be articulated in a finance form. Indeed urban development programme in general must have a financial commitment in resource.

In most cases the budgeting and allocation of funds for specific purposes, is based on revenue collected. Given the limited resources available for allocation, Municipal council rarely raise enough to meet their development objectives. Most of them have a severe financial strain characterized by budget deficits. Attempts to raise taxation has always been met by severe criticisms by politicians who purport to represent public interests. Many local authorities have therefore to

content with fiscal stress- a condition where revenues are not sufficient to cover expenditure resulting in cutbacks in services. it must be noted that the low taxation rates are falling below the sky rocketing increase in costs. Thus facilities which have to be maintained by local authorities must either get subsidies or as it is known to happen, such facilities are never attended to.

Since financial ability is the main hub of urban development, financial scarcity means little foresight planning can be undertaken. In order to implement a plan, the local authority must have sufficient finance. The institutions in most cases have to rely on historical information for planning. No research can be undertaken without sufficient funds. The survey mapping and updating information on the existing settlements, require adequate research. This has however been done in piecemeal. Finance therefore constraints adequate planning.

The third aspect is the approach to National planning as structured by the country. There should be clear flow of information and the stated laws or policies be well perceived to enhance growth. The break in the flow of information or the creation of hurdles and

constraints will deprive the articulation of goals. Government units or structures are very essential in facilitating development. This third aspect should be seen in two folds. Thus, sectoral conflicts and control from above. Sectoral conflicts explains a situation where two bodies operating in one area may have conflicting policies for the use of land or other resources while government control refers to a situation where there is limitation in the exercise of choice by the local authority.

The government at times fail to define the powers and limitation of one sector. In this case, there is an element of overlap in the execution of duties. Though in close proximity, they can have conflicting policies and to a large extent even their programmes. The Ministry of Industry and that of environmental conservation, water and energy, health and urban development are notable examples of clashing interests.

In the process of their daily operations, development emerges which least meets the prevailing the needs. In the process certain programmes are met at the expense of the others. Water for example may not be provided at the time when the local authority intends to extend the sewerage network. This clash in interests has

been known to hamper urban development

The laws of the country as relates to departments, ministries and local authorities should be quite clear. The flow of information from the central government to local authorities or vice-versa should be well defined. These will be reflected in the way each one of them operate. Where the roles are diffuse planning by the institution will be rendered useless. Good coordination of policy is quite essential in enhancing sound urban management.

5.1.1 BUSIA MUNICIPAL COUNCIL AND URBAN DEVELOPMENT

The Busia Municipal Council has an area of 40 sq.km. The Council is charged with the responsibility of providing services and controlling land use in the municipal area. Of the 40 sqkm only 12 sqkm is owned by the council. The rest of this land which accounts for 72% is free hold. This has an implication on management of an urban area. Only a small proportion of the urban land can be effectively planned for. A large proportion of the land depend on the ability of the council to exercise development control. It is noted that to be able to exercise these duties effectively, the council must bare three components. These are: competent staff, good resources and good policy articulation with other

agencies working within the urban boundary. Lack of finance resources, proper staff and poor articulation of policies have been detrimental to the management of Busia town.

5.1.1:1 Staff and urban management

By 1990 Busia municipal council had employed 17 workers. Most of the departments are run by officers without formal training in their duties. Unlike other big municipalities, Busia town has a limited number of departments to take care of all urban activities. As was noted, the role of staff in coordinating activities and addressing urban problems is very crucial. Planning for various utilities and providing services require trained personnel. These will facilitate the identification of the problems affecting different sectors and the implementation of the project. Busia town lacks qualified staff to run most of the activities in town. The 17 workers employed by the council are too few to offer good services. The opinion by people interviewed on the provision and maintenance of services is shown below.

Table 5:1 Services by the council

performance	percentage
Excellent	2.1
Average	10.6
poor	34.0
No maintenance	53.3
Total	100

source: Field Survey 1993

The responses above shows that services offered by the council are below peoples' expectation. The reason for this responses is because the council lacks adequate staff. The municipality for example had two workers in charge of refuse disposal. Again the same workers had only two wheel barrows, jembes and other simple tools to manage the refuse. With this kind of facilities, you can hardly expect the council to perform it's functions effectively. Sewerage repair has to rely on hired staff.

Maintenance of roads which is part of the municipal responsibility has been neglected because so far the municipality does not have its own engineer. The public works department in the town is run by the ministry of public works which only maintains the BI road and not secondary roads within the municipality. The poor design

of roads, poor distribution of services and location of functions is an attribute of incompetent staff. Planning for provision of utilities has been a difficult process particularly where survey and data for various activities has not been done. Minimal Research undertaking for extension of services has been done (by external agencies). This limitation has severely strain the planning process.

Though it is not easy to quantify the impact of staff on urban management, the kind of land allocation in town and poor allocation of activities on site can be a clear indication of lack of competent staff. Poor allocation of activities that least enhances harmony, can be an indication of un trained personnel. Busia for example does not have any by-laws to guide development taking place in town. Much as finance could be a constraint, the town does not have a consistent plan for the town. Indeed what exists is an accommodation of activities with minimal control or regulated growth. Well perceived policies by the municipal staff can be a sound tool to direct urban growth even if development could be taking place on private land. Besides, certain projects can be initiated with limited funds if policies are good. The town has rich resources of murrum which if programmes

were well articulated and the community drawn in, a lot of road repair programmes could be initiated. So far no urban programme has been designed to fit in this kind of set up. Much as finance is an issue, the coordination of activities in town rests solely with staff whose guide ensure consistent growth. The licensing of kiosks along the road reserve has a lot to do with policy than land ownership. This lack of competent staff has been detrimental for the growth of Busia town

5:1:1:2 Finance and urban management.

Finance is a vital component of urban management. Virtually all urban projects are articulated in a financial form. The 1990 annual report on Busia showed that the revenue collected was 3,542,075.50. These funds were to go in for the payment of staff salaries, maintenance and extension of services plus the initiation of projects. By then the projects earmarked for that year were the stadium, construction of secondary roads in town, street lighting and construction of market sheds. These projects were estimated to cost 14.2 million shillings. From the existing financial resources, the projects were far beyond the capacity of the council to manage. Capital projects play a vital role in private sector investment. The inability of the council to

initiate such projects is a weakness in providing indirect incentives that can guide the trend of growth.

Financial limitation affect other vital organs of the municipal functions which indirectly determine the trend of growth. The 1990 report noted that the whole transport section had been crippled. The table below shows the vehicles and the conditions in which they were.

Table 5:2 Transport Facilities

Type of Vehicle	present condition
Mazda saloon	in poor running condition and require major repair
Pick up	grounded and require major repair
Isuzu Lorry	In poor running condition
Peugeot saloon	In fair running condition an still with the trailer park Engineer

Source: Annual report 1990

All the vehicles that the council had, had been grounded and besides, the council didn't have any vehicle for the collection and disposal of waste. Under such conditions, one would least expect the council to provide services in residential areas. They are these limitations that deprive the town of providing service. The council relies heavily on foreign donation for the initiation of projects. The projects and the agents are shown in the table below:

Table 5:3 Projects sponsors and cost

Project	score	Total cost Kshs
sewerage House Conn	Danida grant	8 million
Trailer park	USIAD/LGLA	1.2 million

source: Annual report 1990

As observed from the scores, all the on going projects had been funded by external agencies other than the council. This inability and tendency to rely on the other sources renders the council quite ineffective. By the same year the council had come up with a number of proposals but so far non of them could be met. The table below shows the proposed projects and their estimated costs.

Table 5:4 Proposed Projects and Estimated Costs

proposed projects	estimated costs
Street lighting	1.2m
Road construction	5m
Site and service	NA
Land compensation	NA
Stadium	2m
Market sheds	1.5m
Road rehabilitation	NA
Tree nurseries	"
social hall	"
parking	"
More housing	"

source: annual report 1990

NA stands for the figures not given i.e no estimations had been done.

Out of all this projects, non of them could be undertaken by the council. Since capital projects play a vital role in guiding urban development, the inability by the council to initiate such project should be seen as a contributory factor to persistent linear growth that the town experiences. The council has failed to construct roads that could offer incentives to guide urban growth. On the other hand donor funded project take too long to take off. The DANIDA projects which includes the sewerage programme in Busia was supposed to be implemented in stages. The first phase which included areas along the border has so far been implemented. The second phase which was to cater for the main commercial stem of the town has not even started.

5.1.2. Land ownership and development

Land is one asset that the Municipal council should have access to in order to effectively control urban growth. Land by nature accommodates all forms of urban activities and it is the duty of the council to exercise control to enhance compatibility. The investors may have

little regard to the laws or regulations as long as they have the land. Busia as was pointed out at the beginning of this chapter has three quarters of its urban land under freehold. Land is transacted without control from the council. There is a tendency by the land owners to subdivide land next to the highway for commercial development because such land bare a higher value. In essence, this process push all forms of investments and land development to areas along the main road.

In an attempt to maximize its use, only those plots close to the means of transport are developed while those away from the road are left for either subsistence crop cultivation or left fallow. Shanty settlements emerge extensively on such land to meet the growing demand for housing. Addressing such undesirable development requires the purchase of land. However, the increasing value of land associated with the rapid growth of Busia town has made costs un bearable for the council to meet.

Control of land development by the council even with the preparation of the plan is un conceivable. The decision of development rests with the owner whose idea of preferred land use or compatibility of activities may bear little or no meaning at all. The kind of land development, rests with the owner guided by an economic

hand of return for investment. In most cases economic forces may compel individuals to curtail notions on investment, which could be detrimental to the environment and can be difficult to flex even with the imposition of strict laws. This in grand, epitomizes the development crisis which face Busia town.

5.1.3 Institutional linkage and development

Effective planning is possible where there is mutual co-existence of various agencies of development. The objective of all the agencies should be to satisfy people's needs. Where this common concern exists, departments can opt to discharge responsibilities on behalf of the other or undertake joint projects to facilitate implementation or completion of projects. Busia town has a number of ministerial departments. These include the Ministry of health, agriculture, public works and ministry of lands. Government Corporations within the town include the Kenya Power and Lighting plus the Post and telecommunications corporation. There are also Non-governmental organization working within the town which perform different functions. These bodies are unified under the roof of the municipal council but operate as independent units.

The Ministry of agriculture is concerned with broad

agricultural development programmes in the district. The ministry of health is pre-occupied with health problems and has little concern for water related problems. Though all ministries are represented, there seem to be minimal interactions. Each ministry seems committed in its own ventures without due realisation that there are a lot of commonalities/dependence in the activities that they initiate. Lack of co-ordination has been a major problem in realising meaningful development.

The ministry of public works has the duty to provide transport services in the whole district including the area within the municipality. However with the creation of the municipal council, the ministry has ceased to address development programmes within the municipality. The young municipal council is expected to develop its development programmes with minimal assistance from the ministry. Indeed the ministry of public works maintains a small proportion of the BI road that fall within the municipality. Other secondary roads in the municipal borders have no attention from the ministry.

There are major conflicts in the provision of facilities that have intimate relationship. The council and the ministry of water have been at loggerhead in their development priorities. The council's second phase

of sewerage project has failed to take off because areas which the council intends to cover do not have water and yet the ministry of water development is not willing to supply water to these areas. The ministry on the other hand has its programmes quite unrelated to the one demanded by the municipality. This clash in programme has strained the provision and extension of services.

Broadly, it is noted that institutions charged with the responsibility of coordinating development in Busia town exhibit a number of weaknesses. This is characterised by shortage of competent staff, limited resources to address the development problem and conflicts between various agencies of development. The council as the main body in urban development, lacks adequate tools to control or guide development. It does not have any single by-law to regulate development activities. Development control tools through articulate coordination of policies is therefore diffuse.

5.2 COMMUNITY PARTICIPATION

The role of the community in guiding urban development is crucial. The community are essentially investors, residents and consumers of services. Their habits, attitudes and rationality determine the kind of

activities that an urban area will have. It is therefore important to assess their contribution in urban development.

Community participation in development has become a key word in planning. The community has literally been taken to mean individuals who use the services in a locality or who are affected by decisions made in an attempt to extend services in a region. The community and institutions are quite intimate and quite inseparable. This intimacy diffuses the real essence of participation. It is noted that individuals who have been appointed to various key positions of institutions in the area are members of that locality and any time they are involved in decision making process, the community is assumed to have been involved. Most scholars however dispute the above criteria. To them, the community are individuals who benefit from services but do not take an active role in formal decision making. Indeed determining who forms the community and to what extent the community should be or has been involved in planning has been a difficult task.

The community and the nature of development are quite intimate. The community dictates the type, quality and quantity of services to be offered. Their role in

the commercial establishment, provision of water, transport, industries, sewer and tertiary activities is quite immense. The extend at which efficiency is achieved in the provision of the services will depend on how much the community has been involved. This is based on an understanding that they determine the trend of urban activities both as investors and consumers of services.

The level or the degree to which people are willing to be incorporated in communal projects vary. It has however been assumed that the degree or level of participation depends on education (awareness) and the level of income. It has been observed that in urban areas affluent cadre exert pressure on the government to provide and maintain essential services. Their financial strength, accord them more power in exerting influence on central government decision and besides with good resources, they can initiate projects to protect their environment. Education on the other hand creates awareness both in investments and environmental protection. The role played by the community is therefore quite essential.

5.2.1 THE ROLE OF THE URBAN COMMUNITY IN URBANIZATION.

It was observed in chapter one that urbanization in Third World countries is taking place at a rapid rate which state governments cannot cope with. The demand for essential services that characterise rapid urbanization need to be accompanied by a buoyant economy to facilitate the provision. Extending water, sewer, roads and drainage require colossal sums of money which the governments in developing countries cannot afford. Already their budgets are strained and need to be subsidized.

In the past most governments had assumed a provider role in all sectors of the economy. The budgets and expenditures of each sector was handled by the central government. Increasing population and recess in the international market economy have driven this approach quite cumbersome for any central government. It's role as a provider has failed to meet the ever increasing demand for services to an extend that some state corporations, ministries and local authorities have failed to deliver the required services.

It has been realized in the recent past that the government's capacity to provide all the required services is minimal. It's ability, has a limit which need to be understood to minimize criticism in case of

failure. Out of this realization, a new approach has been forged which aim at involving citizens in the development process. Their resources, skills, efforts etc which the government planning machinery had hitherto neglected should be tapped to lessen the costs in providing services. Governments all over the world (Kenya inclusive) have embraced this new approach with the hope of minimizing costs.

In urban areas participation goes along way to embrace initiating of projects that either alleviates problem in a given sector or launching of new projects in a sector. Participation here entails identifying viable projects, identifying problems and devising ways of addressing the identified problems. Projects can be initiated with or without assistance from the municipal council.

The project that deserve attention by the community are roads, water, sewer, drainage, community utilities and private investment pattern. It has been observed that infrastructural facilities play a very essential role in enhancing urban development. Adequate provision of these facilities play a vital role in guiding urban development patterns. Therefore with minimal assistance from the municipality, the community can directly implement

projects whose impact can regulate and guide the urban development. Besides a well informed community can play a very active role in devising regulations that may have an impact on the investment patterns. A business association for example can come up with rules on the kind of development they expect in an area. This can then act as a guiding frame for the future investment trend that an urban area will follow. In environmental protection, it is noted that the residents are the beneficiaries and their role in safeguarding the environment is quite immense. The management of solid wastes, the repair and extension of required services can comfortably be handled by the residents. This activities if well worked out can greatly lessen the burden levelled on municipal councils and provide a sound frame for urban development.

5.2.2 The community and urban growth.

Busia town is basically a commercial town with most of the inhabitants engaged in trade. The town has no major industry. As was noted in section 5.2, the urban residents are investors business undertakers and consumers of services. Their role as investors, determine what trend the town will follow. The ability of

businessmen to organise the location of structures, determine what form the town will take. While their standards set for investment determines the quality of both business premises and the environment. The study noted that the businessmen in town do not have any association to guide in their investment patterns. This implies that except for the council, no self regulatory body exists. There are no standards set by individual businessmen.

For those interviewed, 95.7 percent do not belong to any association while 4.3 percent do. For those who belonged to association, none of them as a group had initiated any project in either providing or maintaining infrastructure. Their concern was in the control of commodity prices. They were least pre-occupied with projects that could enhance sound urban development. The provision and maintenance of services was seen as the duty of the municipal council. This tendency to delegate all urban responsibility to the council is responsible for the deterioration of urban services.

The table below shows people's opinion on the performance of the council in provision of services. It is noted that the performance of the council is poor. The efficiency of the council in provision of services is

quite low. And in most cases, excellent maintenance of services is only experienced in places where the municipal council has property. This accounts for only 2.1 percent. A large proportion of the town is neglected.

Table 5:5 Opinion by residents on the maintenance of services

performance	percentage
efficient	2.1
average	10.6
poor	34.0
non	53.3
total	100

source: Field survey 1993.

Despite the low opinion over the effort done by the municipal council in providing and extending services, the community still holds high opinion credit for the municipal council over the provision of services. The response on who should play an active role in the provision of services is shown below:

Table 5:6 Agents in the provision of services

Agent	percentage
Govt or municipal	87.5
Private sector or N.G.O S	10.4
community or residents	2.1
Total	100

source: Field survey 1993

The above table indicate that the business community expected most of the problems in the urban area to be addressed by either the government or the municipal council. It is this kind of attitude that has led to the deterioration of services. Minor roads can be maintained by the community using the local resources. Drainage channels, water supply and good disposal of wastes can be undertaken by the community. This services if well maintained, can be powerful tools in influencing urban growth. However the study noted that this collective concern is lacking and to some extend it is a contributory factor to "careless" investment that pushes all urban activities along the B1 road

5:3:0 BORDER LOCATION, ADMINISTRATIVE FUNCTIONS AND
REGIONAL INTERACTION.

Urban growth tends to go hand in hand with the existing economic forces. Growth is known to be intensive where an area or region shows high economic potentials. Urban activities, respond to the economic forces that prevail. The border front in Busia town signify an economic base where commercial transactions are high. It has become a pivot on which the business stem of Busia town tends to revolve. The town relies heavily on external markets for it's business up keep. Uganda in this case is the major consumer of commodities.

The closure of the border will be reflected in Busia town. The buoyant economy in Uganda will act as a stimuli for business take off in Busia. The world coffee boom whose source was Uganda led to rapid growth of structures in Busia and more so in areas that housed the former Sophia and parts of Marachi estates. The border acted as the main centre of exchange. This kind of trend still remains. Their is a strong border inclination trend in the location of most activities in Busia town. It has an economic advantage which most businessmen in the town strive to get. This has tended to influence their locational decisions.

The border exerts a magnetic pull to the location of activities. The table below shows the locational preference of business activities along the B1 road.

Table 5:7 Locational preference for business in Busia town

area in town	locational preference
Border area	69.6
DC's place	17.4
Air strip area	13
Total	100

source: field survey (1993)

The sites chosen show a spatial gradation in preference. The chart indicate that the locational preference reduced as one moves away from the border. Which means if government regulations on location were let loose, most structures will tend to agglomerate along, close or at the border area. The reasons accompanying high preference for border area location is an economic element. Basically the border has a higher number of potential buyers than any other areas of the town. Those interviewed indicated that the border is viable for the quick disposal of commodities.

The municipal council with its planning machinery is doing all it can to control the directional growth of

Busia town. The town as was observed, has taken an eastward growth trend towards the interior. However, this would not be the case if the town was not subjected to any form of control. Left on it's own Busia would grow longitudinally along the border. The market forces would force the town to grow longitudinally. This is because exchange in Busia has a heavy concentration along the border than elsewhere in town.

The town's current growth is imposed. Before the demolishing of the Sophia and parts of Marachi, the town was growing north and south of the border post. But with government restriction in these areas, the town has been forced to compensate it's locational with access. Thus taking shape along the B1 road.

The government encouragement for the town to grow in the interior, has not been followed by good incentives to enhance balanced or uniform growth. Only the main road appear an attractive site. Thus to compensate for border location and maximize accessibility, most business structures have pushed to locate along the main road.

The border post area provides an entre point to Kenya. This area experiences heavy traffic of both vehicles and persons. This situation is further strengthened by the location of the Bus park and trailer

park in this area. This confines most of the traffic destined to the town and through the town to this area—a situation which makes the border most favourable for business activities than any other place in town. As was noted earlier, the town relies most on the Ugandan market for the supply of commodities. indeed most shops along the highway which were closed during the survey were observed to operate at night and late hours of the day. The commodities are transferred in bulk to the Ugandan side. This means, the more close one is to the border the quicker it will be to disposal of commodities across the border. Besides individual consumers who cross over to kenya, may not want to travel far into the interior of the town for security reasons. Most of them therefore purchase goods in shops close to the border. This means those in such areas, have a better stock turnover than those who are located far. From a micro point of view, the border becomes a locus on which locational decisions tends to revolve.

From a macro scale Busia exhibits regional forces at work. Kisumu town is the main supplier of commodities while Uganda is the consumer. The change in activities in Kisumu and Uganda, signify change in the business set up in Busia town. The recent political calm in Uganda and

the expansion of industries in Kisumu town have been vital forces in the growth of Busia. The two determine the kind of activities that will be undertaken. Improved relationship with Uganda means more goods passing through the town and therefore rapid growth of the town. However with the opening of the Kenya Uganda railway which passes through Malaba to Uganda, this trend is likely to change and Busia may experience stagnation.

Busia serves the District hinterland as the headquarters. It houses the District Commissioner, land registration, police headquarters, District hospital,

and major wholesalers in the district. Major activities in the district have to be undertaken in Busia town. This position has given the town an upper-hand in locational for most activities in the District. It consequently has a higher population than the rest of the towns (Urban centres and market centres) in the district. Busia has therefore become a market centre. Maize, Cassava, groundnut beans and other farm produce are sold in Busia town. Thus it has become a meeting point for consumers and producers in the District giving it that hierarchical advantage in location as advocated by Walter Christaller.

The town is a service centre for the region. The

wholesalers and bid retail markets, supply commodities to the surrounding hinterland. With the command, Busia links its hinterland to the rest of the country by channelling commodities produced elsewhere. This position vested on it by the district is a vital force that enhances growth.

1. Urban water supply

The water problem in Busia town is complicated by factors of demand and supply. The growing urban population is insufficient to meet the water demand. The town is estimated to have had a population of 12,000 in 1974, but the current water supply is estimated to be 10,000. The water supply is supplemented by the supply of 10,000 from the hinterland. The water supply is estimated to be 10,000.

CHAPTER SIX

SUMMARY AND MAJOR PLANNING ISSUES IDENTIFIED

6.0 Summary

An analysis of the existing situation in the subsequent two chapters has revealed that Busia Municipal Council has a number of problems resulting from both inadequate infrastructural facilities and weak institutional management. It has also been observed in chapter four that infrastructure play an instrumental role in guiding the spatial expansion of the town. Based on this assessment, any strain in the provision and disposition of infrastructural facilities will be detrimental to the growth trend of an urban centre. The role played by each component is vital. There is need therefore to identify the problems facing each component in an attempt to assess the likely impact this could have on the expansion of the town.

6:1 Urban water Crisis

The water problems in Busia town are attributed to the forces of demand and supply. The existing water supply is insufficient to meet the existing demand. The town is estimated to have had a population of 43,777 by 1993. So far the current water supply is 1450 m³/per day. This is supplemented by the supply of 700m³ from the boreholes. The Mundika-Busia water project was designed

for an ultimate population of 20,000. With the projected population of 45541 people in 1994, the town has a water deficit of 1038m³ which could serve a population of 14828. This means a total of 14828 people do not have access to piped water. The current supply has therefore been outstripped by population growth thus straining the existing water supply. Water rationing is therefore quite common.

— The second phase of the Mundika treatment works when completed, will raise the water production capacity to above 5000 m³ per day. So far the construction work for this second phase has not even started. The implementation is highly unlikely given that the water department can not implement the project from her own resources. The water engineer noted that this second phase would require ten million shillings. Donor funding has taken a very different trend in the recent past. If the past record is anything to count, then it is unlikely that the implementation of this phase will take off soon. Attempts to make the project self sustaining by raising charges has been received with hostility. The councillors whose appointment rests on the electorate have proved a stumbling block in the approving the recommended water charges. The Ministry of Water (headquarters) have also

been quite reluctant in approving recommendation of increasing charges. It was observed that at least twelve shillings was spend in treating one cubic metre of water. The high costs incurred in treatment of water cannot be offset by the current charges. The flat rate charged in the immediate rural surrounding and the un maintained water metres have totally curtailed the operation efficiency of water supply system.

At present the subsidies from the ministry are no longer forth coming. The Ministry remits seventy five percent of the funds collected back to the district. This is supposed to be used for the repair and expansion of water needs to cope with the ever increasing demand. So far, this has not been enough. The Ministry of water (water department) therefore has minimal reserves to launch any project on its own or even implement the second phase of the water project.

There exists a big gap between planning and water supply. The haphazard growth taking place undermines the ability of the water department to supply water to the needy areas. Besides water supply is handled by the water department and not the municipal council. This has created great tension in management of water facilities. The Department has its own projects/programme covering

the district. The Council however does not have a forecasting plan to enable the department of water development to forecast or project which areas require water and at what time. Structures have been coming up in a very inconsistent manner and thus making it rather hard to project the future water demand in the town. The ministry and the municipal council do not have a consistent plan that would help in addressing the future demand. This crisis is likely to intensify given that there is no co-ordination.

Lack of co-ordination has brought the sewerage project in the town to a halt. Any water borne sanitary facility need sufficient water. So far the M.O.W.D has been unwilling to extend water supply to areas that are recommended by the council. The issue has not been lack of money but rather the department has it's own broad district based priorities. Minimal consultation exist between the ministry of water development and the Municipal Council. This has affected the implementation of projects.

The reticulation system is quite inefficient and has outlived its economic life time. The sewerage connection report (1991) noted that the current 6" raising main should be replaced with a 9" line whose volume will

adequately cope with the increasing demand. The conveyance system is not adequate. The pipes are either too small or too weak. This problem is further magnified by the inefficient operation of the boreholes. Boreholes are operated by diesel engines whose production capacity is low.

With the desperate situation, water has become an exchange commodity in Busia Town. Water is sold in twenty litre cans at five shillings per each. The water sold is drawn from rivers or boreholes away from the town. Restaurants and retail business rely on this sold water during the dry season. Those who cannot cope with this prices have to content with long journeys. With an average family size of five and an average consumption of 70 litres per person per day, the minimum a household can spent is about 87.50 shilling per day. This is too high an expenditure and hence most families have to rely on wells. In Marachi the crisis has pushed most of the residents to drill their own boreholes irrespective of location. In most cases they are in close proximity to the toilets. The table below shows the proportion of people using different sources of water in the town.

Table 6:1 Sources of water for Busia town

water source	% of users
Piped water	48.6
borehole	21.6
Spring	16.2
River	13.5

Source. Field survey.

The table indicate that only 48.6% of the population has access to piped water. The rest of the population rely on sources that have high risks of contamination. The increasing population and the use of pit latrines posses a great danger to those who rely on the un treated water sources. Though the survey did not establish tangible evidence of water contamination, given the un protected sources of water, the risk of water contamination are high. The fact that population has been increasing and with most of them relying on underground water supply posses a high risks of contamination. Indeed it is noted that more than fifty percent of the population in town rely on springs, wells, boreholes and rivers which bear a high risk of contamination.

The table below shows the problems associated with

different sources of water in the town. From the field survey, it was noted that each source had it's own problem.

Table 6:2 Problems facing water provision

Type of problem	% of people experiencing
un reliability/rationing	58.3
drought	33.3
Long distance	8.3

Source. field study 1994.

The problems outlined above are a reflection of the sources that exist in Busia town. Rationing and un reliability is associated with piped water, whose supply does not balance or offset the existing demand. The second problem affect springs and boreholes. Drought reduces the amount of flow in springs and at the same time lowers the water table making it difficult to get water from the borehole. For most residents who use either of the two sources, rivers become their main source of water during the rain season. Boreholes and springs experiences long queues during the dry seasons.

Water is quite significant in urban development. Scarcity, rationing and other related problems affect urban investment. Land owners make decisions for their

development based on the existing water facilities. Good structures with water borne sanitary facilities require reliable supply of water. The table below shows the proportion of structures that are viable for internal water supply.

Table 6:3 Types of residential structures

Nature of the structure	%
permanent	41.7
Semi permanent	44.4
Temporary	13.9

source. Research findings.

The table indicate that 58.3 % of the residential facilities in Busia town do not qualify for internal house hold connection both for sewerage as well as water because of their nature. Internal water reticulation system and sewerage connection requires permanent structures. Un reliable water for the town has been the major set back in developing better residential facilities. Water borne sanitation facilities require regular supply of water which Busia town does not have. Indeed the problems affecting water provision in Busia town have a bearing on the current land use and development patterns experienced.

6:2 Urban transport problems

Transport has an extensive role in shaping or dictating the trend of urban activities. Earlier scholars like Burgess saw it as a locus on which urban activities revolve. When designing urban growth model, transport was seen to play a predominant role in determining the location of urban activities. Thus the direction of land use and density of urban activities is a function of transport. The problems experienced in the town should partially be attributed to the transport system that exists. Busia town is served by one tarmacked road and a number of un tarmacked secondary roads. The disposition and design of urban roads, raises a number of traffic problems. The design of most secondary roads, does not augur well with the traffic distribution in the town. All secondary roads in Busia town discharge traffic to the main primary road (B1). This compels the road to cope with a lot of traffic both local and international. This situation imposes traffic problems that should be attributed to a higher order town than a town of Busia's status. The commercial establishment of the town on either side of the road equally generate high volumes of traffic which can not be accommodated within

the road reserve because most space on the road reserve has been constructed with kiosks. This reduces the road reserve space and confines all forms of traffic on the B1 corridor.

The disposition of parking facilities further serves to intensify the rate of congestion. The location of the trailer and bus parks intensifies the traffic problem by confining movement to one particular corridor. The circulation system in town is therefore quite poor with buses and trailers passing through the town, confined to one area. With the rapid expansion of the town, these problems are likely to increase.

Except for the B1, most roads are poorly maintained. They bear potholes, which deprive use during the rain season. The thick vegetative cover associated with poor maintenance make some secondary roads impassable. The municipality with its meagre funds can do little to improve or upgrade the states of roads. The narrow nature of the roads limits certain uses. Some of them have been given wrong standards by the surveyors. The recommended seven metres for secondary roads in Busia town has not been observed. Survey and design of these roads had little consideration to the required standard. The roads are too narrow and even if they were kept in better

state, their use could be limited.

Besides the poor conditions in which roads are, some areas are cut off from transport system. Parts of Mauko, Burumba and Marachi estates are poorly connected. Most housing structures do not have access. They rely on foot paths which are irregular and sometimes blocked by up coming structures. Such paths pass through private land whose right for passage depends on the owner. It was observed that high settlement densities coming up seal off most of the residential areas making them inaccessible to the existing roads. Incase of emergence, some buildings in Marachi and Mauko cannot be reached.

Rapid growth has deprived most structures of space for dumping wastes. The road reserve has therefore been used as a dumping site. The ample space provide a good disposal base for businessmen and residents residing along the highway. This has led to deplorable state of hygiene around residential premises. The wastes further hinder the flow of surface run off-leading to water stagnation. This state is quite pronounced in areas around Chepkube along the Kisumu-Busia (Uganda) road.

The problems observed in Busia town about the roads therefore fall in two categories. These are poor road design and poor maintenance. The two aspects deprive

efficient circulation system in the town. Any policy (strategy) aimed at alleviating transport problems in Busia town, should therefore deal with the maintenance and the design of roads. Improvement in the design and quality will make good circulation possible and minimize the existing problems

SEWERAGE PROBLEMS IN BUSIA TOWN

Busia town sewerage system, covers a very small proportion of the town. The portion of the town covered include, areas around the border, government offices and public institutions. The rest of the town (Burumba, Ojemi; parts of Marachi and Air strip areas) has not been sewerred.

The major problem affecting sewerage in Busia has been un reliability of water. The town suffers constant shortage of water. Rationing and erratic water supply is quite common. Those interviewed indicated that clogging of the system was a constant problem they encountered. Any water borne sanitary system requires adequate and constant water supply. When the system goes for several days without water, it becomes a potential health hazard. Constant shortage of water has lessened the incentive by many investors to install sewerage facilities. Most

investors therefore prefer pit latrines which are assumed to be more appropriate. The clogging of sewerage discouraged connection and hence the excessive use of pit latrines which are abandoned after use. The recurrent outbreak of cholera in the town should be seen from the light of inadequate/improper sanitary facilities.

Funding of the sewer projects has not been forthcoming. Most of the projects take too long to be implemented and by the time they are revived the problem will have changed the magnitude and course. The phase II of the sewer project which was supposed to have commenced in 1986 has never taken off. If funds are made available now, the project is most likely to have a budget deficit. The global donor funding for projects has been changing. The clerk to the Municipal council observed that in the recent past funding has become too procedural. DANIDA funded projects for example requires a complete structural breakdown of the project budget before releasing the funds. By the time the project is funded, the nature of the problem and costs will have changed bearing. This has held back the implementation of the phase II of this project.

The growth trend of Busia town inhibits projection for implementation. Settlements have been coming up in

a very haphazard way. This makes systematic planning for sewer project quite difficult. It was observed that some of the estates coming up did not have a clear cut structural lay out to facilitate the connection. Densities are high and most of them are semi-permanent in nature. This means even if funds were to be made available very few structures in the sewerage drainage area will be covered. To project the sewerage needs, one should be able to understand the population and residential growth trend. In Busia, the trend defeats ones ability to imagine and predict the future pattern. The reason being land is freehold and settlement growth on freehold land is quite volatile to predicts.

Management crisis in sewerage revolves around the charges. In Busia town, water is handled by the Ministry of water development while sewerage project is run by the Municipal council. This has created the problem of billing and collection of sewerage charges. Effective billing can only work where the municipal council controls both water and sewerage. It is rather difficult for billing to take place in areas where water and sewerage are run by two different bodies. Most people therefore pay off their water bills and neglect their sewerage bills. Again when the two functions are

controlled by one body, one can for example disconnect water to enforce payment of the two bills. The council cannot do this because water belongs to the ministry and once one has settled the water bills, there is no way his water can be disconnected in spite of the out standing sewerage bill. Again it is unhygienic and unhealthy for the council to disconnect sewer line in any residence. This has created a lot of problems in the running and maintenance of sewerage. The billing problems experienced are shown in the table below.

Table 6:4

Financial aspect of the sewerage system in (Ksh)

Billed 1990	108,000
Collected 1990	44,000
Present sewerage tariffs	3.00/M3

Source. Sewerage report 1991

The above table indicate that the amount collected in 1990 was not even half of what the council had billed. On the other hand the total amount billed was far much below the proposed operation and maintenance costs. The project has a terrible financial deficit. The table below shows the budget programme for sewerage by 1991

Table 6:5 Proposed sewerage expenditure budget

Council Sewerage Budget (1990/91)	466,200
Annual loan repayment charges	986,000
Proposed O&M budget exit-loan repayment	820,000

Source. Sewerage report 1991

The implication of the financial structure is that the council's budget for sewerage annually (by 1990) could not be off set by the bills. This means it has to receive subsidy from elsewhere to offset the budget deficit. On the other hand the collected sewerage charges were far much below the loan repayment charges. The table above show nothing less than a crisis in management.

Sewerage is a complex system and requires qualified staff for operation and maintenance. In most up coming municipalities such as Busia, qualified staff is lacking. The system is rarely checked to establish the existing problems. This has greatly affected the proper operation and maintenance of the system. Repair of the sewerage system in most cases has relied on hired staff from Kisumu. Since finance is a big limitation to the council, it takes the council a long time to have the system

repaired. It is noted that even if the second phase of the project is completed, the sewer system in Busia may never be sustainable. Staff as one component in sustainable development is lacking particularly for the up keep of sewerage system.

6:4 Border Location and urban management

The border location of the town has created both management and urban growth problems. The border provides an economic base for exchange. Due to economic advantages, the town's growth, has been quite difficult to control. Like other border towns, Busia experienced a variety of problems emanating from it's location. Migration and population dynamics is difficult to project. This creates a problem in the provision of services. Most facilities on either side are shared. The population projection to determine the provision of services can be quite elusive and a fruitless exercise. The problem of community identity and projection for social services present a major planning problem. Projecting the future need for services based on population projection can be quite erroneous unless such an exercise is conducted regularly.

Studies undertaken at different times in Busia shows how elusive the exercise is. The sewerage report

(1977) projected the proportion at 15,000 by the year 2000. The LADP report (1989) projected the population to be 43777 by 1993. The water Engineer observed that the present urban population ranges between 40,000-50000. These contrasts in population projections reflect the kind of problems experienced in managing the population in border towns. Population projection fall below the actual urban population. Migration to such town is too high. Constant migration associated with political turmoil in the neighbouring country sets the population growth trend in motion. It becomes rather difficult to estimate or say with certainty on what the future population of the town will be and the size of services demanded.

The border has influenced the behavioral pattern of the residents. The border creates a certain economic force which influences human activities. The community around the town are much inclined to petty commercial transactions taking place along the border at the expense of farming. This has compelled the town to rely on agricultural products from Uganda - a dependency which is detrimental and undermine the rural-urban linkage that planning advocates for.

The border location also inhibits a comprehensive

approach to planning. Effective planning requires a comprehensive understanding of the town from a regional dimension. Regional understanding will guide in assessing regional interaction and impact. This is however made difficult when the hinterland lie in two different political territories. The problem associated with this set up is that economic forces will not be allowed to operate freely. Political boundaries can minimize or at times magnify the scope and pattern of interaction and to some extent exaggerate the economic potential of the region. This bias set up will guide the trend of activities, the rationale of investment and the quality of development. This combination of factor make planning for a border town a difficult endeavour. Development will take place contrary to the expected normality. This is quite eminent particularly if the municipal council is weak or has limited resources to control urban development. In this case development will take place with a heavy inclination towards the border. Border control forces are a major planning problem that towns in such localities encounter.

The Municipal Council and Financial Crisis

The Busia Municipality is administered by the Municipal council. Since its creation in 1990, the council has had an uphill task in meeting the required services. To be able to extend the required services, and guide development, the council requires finance. Based on the Annual records of 1990, it was noted that the council had limited finance. The revenue collected could not meet the anticipated projects. The council operates under budget deficit. The plans and projects identified for the municipality cannot be implemented from her own local resources. In 1990 council collected 3,543,127.50 shilling. During that same year, the projects that were on going totalled up to 14.2 million shillings. What this means is that there was a budget deficit which could not enable the council to meet all it's earmarked projects. The limitation of funds make implementation of plans difficult. Land purchase and acquisition can not be undertaken since such activities require funds.

Besides finance the council, does not have any legal backing to influence development. The municipal council has no single By-laws to assist in the co-ordination of urban activities. Given the free hold

nature of land within the municipality, it is unlikely that sound urban development can be achieved. Hence any attempt to promote sound development must first aim at strengthening the urban management system.

Planning for roads in Spain town.

It was observed from the previous chapters that

CHAPTER 7:

7:0 RECOMMENDATION AND CONCLUSION.

In the light of the objectives stated and the problems identified, this chapter, sets out to propose policy action for guiding land use in Busia town. The recommendations aim at promoting sustainable urban development that would least jeopardise urban functions. The policy thrust for sound development of the town rests on strengthening the urban management system and developing a sound land use plan that would accommodate future development. In view of this, policy recommendations on the physical design or lay out of infrastructural facilities, allocation of land and control of land development will be of prime importance. Since the management capacity of most urban area is weak, an approach to involve the community in managing urban development is quite necessary. Recommendations have been proposed in due regard to environmental requirement, harmonious development and compatibility in land use. Attention has been given to utilities and specific sectors

7:1 Planning for roads in Busia town.

It was observed from the previous chapters that

roads have an overwhelming influence on the locational decision of business activities and the spatial growth of the town. It's disposition and lay out determine a great deal the direction and the spatial form of urban development. It therefore follows that guiding spatial growth of the town will depend on the ability of the council in the re-organization or re-structuring of the urban transport network. Roads can provide a good base in re-organising urban settlement. There is great intimacy between roads and retail activities which on the whole dictate the urban spatial expansion. The role of other elements of infrastructure in this case is quite insignificant.

Based on this understanding it can be stated that spatial expansion can be guided through the design and disposition of roads. The spatial growth of Busia town is seen to be linear with the roads acting as the base on which the town anchors it's structure. It therefore follows that the reorganization of the general growth trend of the town will rely heavily on the ability of the council to restructure the existing and the proposed road network. The study has come up with two complementary approaches that would help in distributing traffic in town and lay a proper base for sound urban development.

Policy proposals on road development include:

1. Constructing a traffic diversion route and a new site for bus park.

Roads distribute traffic in urban areas. At the same time they are known to provide incentives for land development. The construction of a new road will therefore attract land development and at the same time lessen traffic burden exerted on other roads. Traffic diversion routes are supposed to reduce strain on the major urban roads. Their role is similar to a by-pass except that for the case of by-pass, traffic does not enter the town. For the case of Busia, this road will ensure partial segregation of traffic functions of the roads in the town between international and local traffic whose destination is Busia town.

The proposal is to construct a road linking the Alupe junction (road block area) to the area south of the hospital. This new road will pass through Burumba estate. This road is meant to ease pressure on the B1 road and is likely to have similar locational advantages. What this means is that land development will not be confined along the B1 road. The road also aims at segregating local and international traffic passing through or to Busia town. This would enhance consistency and sound land

development. Traffic from Kisumu, Bungoma and Kakamega whose destination is Busia town will be sufficient to keep business activities along this new road operational. Tentatively this will limit the apparent linear growth that is experienced along the Kisumu-Uganda road.

Some problems are likely to emerge with the opening of the new road. The road will pass through a thickly populated area (with many residential settlements). The use of pumps as a safety measure will therefore be inevitable. The route could be characterized by slow movement of traffic. This does not matter as long as it will serve to lessen congestion.

This proportional distribution of traffic besides promoting balanced urban growth will enhance mobility in Busia Town. Reduced volumes of traffic along the B1 road will make quick movement possible. Indeed the primary road will only be left to serve international functions and the main administrative area of the town.

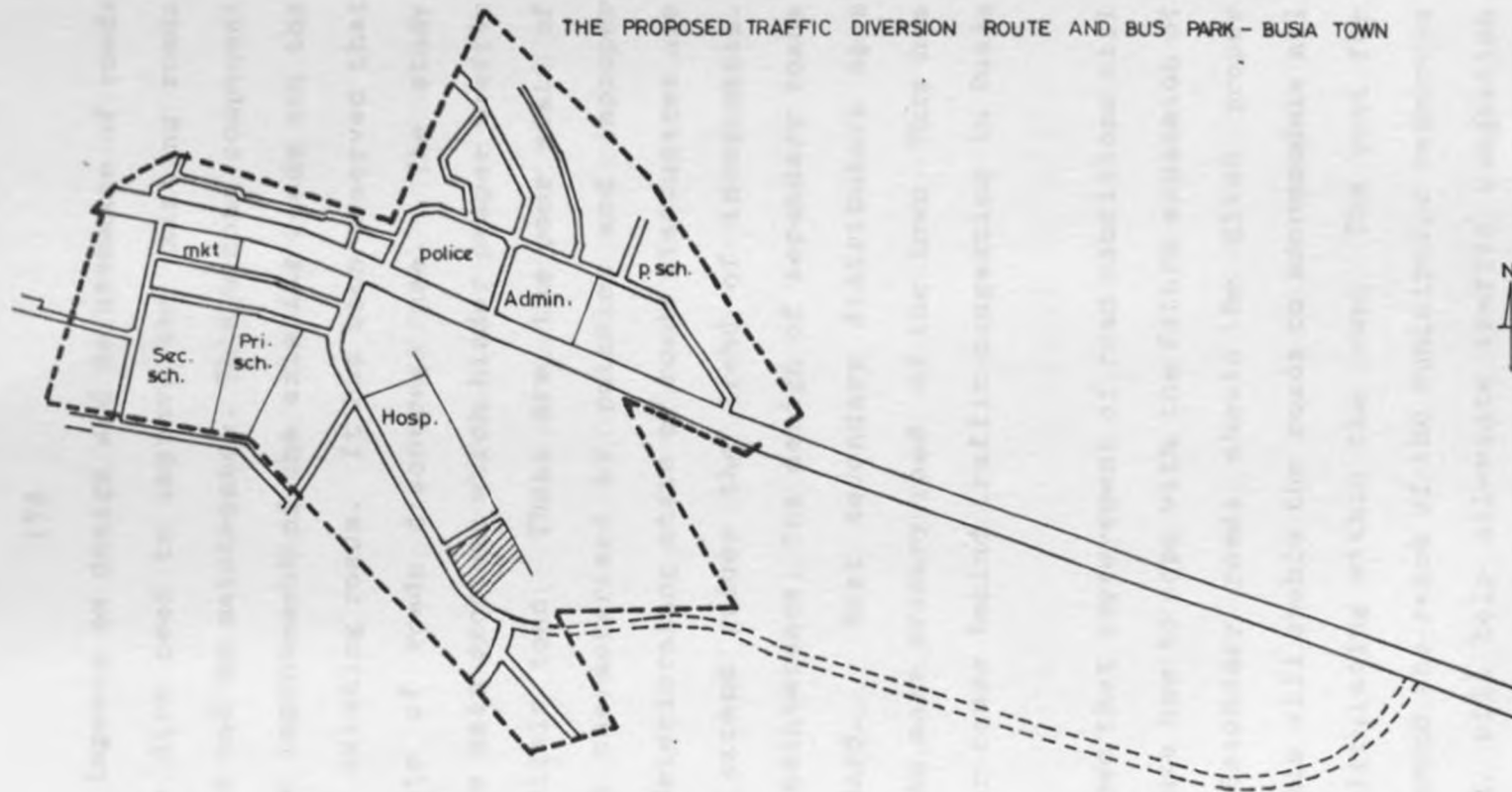
To make this model effective, there is need to transfer the Bus Park from its present location to an area where the new road will terminate. The area south of the District Hospital can be an ideal site. This point is more central and ideal for dispersing traffic within town.

THE PROPOSED TRAFFIC DIVERSION ROUTE AND BUS PARK - BUSIA TOWN

LEGEND

-  ROAD
-  PROPOSED ROAD
-  TOWNSHIP BOUNDARY
-  BUS PARK

N



Swala F.W.

Component 2: Improve on design and maintenance of roads

There is dire need to improve the existing roads both by design and by maintenance. This second component focuses on the improvement of the existing roads and the design of the existing roads. It has been observed that the poor state of roads discourage use. The study identified two main problems which hinder proper traffic circulation within town. These are, the poor state of road in town characterised by potholes and improper design. The deteriorating state of roads discourages use and to some extent guides the trend of investments. Besides poor maintenance, the design of secondary roads is sub standard. Most secondary distributors open directly to the main primary road of the town. This has been the major cause behind traffic congestion in Busia town.

It is hoped that improvement of road conditions will enhance adequate use to cope with the future expansion of the town. Secondary roads should be given proper standards. This will enable the roads to accommodate all the traffic circulating within the town. The cost for this can be beyond the reach of the municipal's resources but if funded, will help alleviate traffic congestion experienced.

Local roads require a minimum width of between 6-9 metres while path ways should be given the width of between 1.5 to 3 metres. The most needy areas for proper road design are Mauko, Burumba, Marachi, and Ojami estates

Road quality is known to determine traffic distribution. High traffic circulation is experienced most in areas where the road conditions are better. The deterioration of roads is known to discourage use. There is need therefore to renovate the existing secondary roads and keep them in good state. The town is endowed with rich sources of murram which should be used to keep roads in good shape.

The road design should minimise congestion along the B1 road. In this case the construction should be in such a way that can minimise direct discharge of traffic to the main road. The design should allow for more exchange of traffic between secondary roads without frequent discharge to the highway. Roads serving the estates should be structured to enable circulation without exerting weight on the primary road of the town. Proper road design increase accessibility and makes it possible for vehicles to penetrate areas which hitherto were inaccessible. For wholesalers, this may make some

points along the secondary roads convenient for their activities. The process of improving internal circulation systems will hence facilitate settlement reorganisation and facilitate systematic land development. Improved circulation system will initiate a chain of reaction that will indirectly enhance sound development.

7.2 Provision of water and sewerage

For the two road models to work effectively, other components of infrastructure need to be incorporated. Water is known to provide incentives for investment. Water, sewerage and electricity influence land development and locational decisions of most business activities. Responsible ministries and other agents should be encouraged to provide these services. Transport alone would not attract investment, it must be backed by other necessary utilities. The second phase of the Busia - Mundika water supply should be implemented and the reticulation system in town improved to alleviate the existing water crisis. The reticulation system in the town needs an overhaul. The raising main which was identified by the water engineer as being narrow, should

be replaced to cope with the supply demand. In this case the 6 inch pipe need to be replaced by a 9 inch pipe. The same case should be applied to sewerage system. Since capital investment in sewerage projects are too high, there is need to either encourage investors to use septic tanks or improved toilet facilities. It is also known from the financial records of the council that it's a ability to undertake any capital project is negligible. What this means is that the council should devise cheap alternatives for sewerage facilities. In this case, a proper plan by the council for the alternative uses or the substitute for services for sewerage such as improved pit latrines should be encouraged. The council has to provide a consistent plan for such a programme.

7:3 Initiate community participation in provision and maintenance of services

The study noted that the costs of providing service in residential areas is quite cumbersome for the council. Providing essential services require Large sums of money. The council on the other hand has had constant financial stress. This calls for a new approach in the provision of urban services. The community has been observed to have a diversity of latent potentials which planners overlook.

This range from crude labour to sophisticated decisions (indigenous skills) on the rational utilisation of resources. There is need to tap their resources to lessen the costs incurred in extending urban service.

Residents should be given incentives to participate in the maintenance of roads. The existing rich murram reserves can play an essential role in lessening financial stress exerted on the meagre municipal resources. Besides, businessmen should be encouraged to maintain drainage facilities and roads around their premises. This need not be a direct involvement. This can be done through contribution. It is important that this measures applied in road maintenance be used in other sectors of infrastructure. The community should be encouraged to participate in environmental conservation through proper waste management. Where possible they should be informed on the best ways of recycling the wastes.

The Businessmen should be encouraged to form groups (associations). This should also apply to residents because it is easy to deal with groups than individuals. This will enable some of the projects on infrastructure to be met. However, it has been observed that organizing groups in urban areas is not easy. The council should

therefore device some incentives to encourage team work.

7:4 Improve Rural-Urban linkage in Busia

It was observed that, Busia town is divorced from its rural hinterland. There has been minimal interaction between rural areas and the town. However, this does not overlook the fact that the town has provided marginal marketing facilities for the hinterland. There is need to make Busia play a much more effective role than it had done before. The town should be fitted in it's hinterland to foster mutual co-existence. The town has all along relied on Uganda for the supply of food stuffs. Given it's border location the town stands a delicate position in case of political crisis in Uganda or political strain between the two countries. Mutual co-existence and interaction to facilitate sound urban development should be forged.

Programmes aimed at making the Busia hinterland more productive and economically viable should be encouraged. Such Programmes should be geared to making the hinterland agriculturally viable to prevent the town from relying heavily on Uganda for the supply of maize, beans bananas etc. The department of agriculture in Busia town should launch a better development approach aimed at increasing

production in the rural hinterland of Busia. Though the programme could be long term, once it stabilizes, the town will have a sound base that will relieve it from relying on Uganda. The urban area in response to the rich agricultural production will expand and attract more investment that do not rely on external forces but rather that respond to the economic base and viability of the hinterland.

The likely outcome of expanded agricultural production will be industrial growth. Many crops do well in the district. This would boost small scale industries if their production is expanded. There is need to encourage and if possible give better incentives to farmers to produce more. Emphasis should be placed on horticultural crops such as vegetables, oil seed crops and etc which are known to do well in Busia District. Small scale industries generate employment both for the residents and the hinterland population and can become an outlet for agro-products. Industries are known to create a multiplier effect and can therefore enhance strong economic ties between the town and it's rural hinterland.

When drawing the issue of rural- urban linkage, the study is tentatively addressing sustainable urban growth.

The momentous growth of urban areas should be supported by a firm rural economy and for the case of Busia town, it should be agriculture. It is hoped that improving agriculture will go along way into realising sustainable urban growth.

7:5 Co-ordination in urban management and urban boundary expansion.

Finance is a major problem facing most urban councils. This limitation has compelled Busia municipal council to cut back provision of some essential services. This problem has been magnified by the expansion of urban boundaries. Thus bringing more land within the municipality. To address this financial burden effectively, urban growth and boundary expansion should be undertaken after a sound assessment to enable the council cope with the added area of responsibility. The land brought within the municipality should match the available resources to service it. In this case, the assessment should be based on: the projected population, revenue base of the town and the public facilities that could be required.

There is need to set up a special committee at a local authority level charged with the responsibilities

of working out the land budget for the town. This same body will be responsible for assessing the resource base of the town and pass the recommendations to the ministry of local government. It is on the basis of their recommendation that urban council should be elevated or determine what proportion of the land that should be included within the municipality. The committee's report will be the basis on which the proportion of land to be included within the municipal council will be based. For a town to attain a municipal status it should have sufficient sources of revenue that qualify it to manage some of the pertinent matters such as basic services (water, sewerage, and roads). The promotion should not be articulated on political good will. The essence of extending urban boundaries should be to increase the revenue base and cope with increasing land demand. It is observed that extending the boundary to rural surrounding increases land speculation and land values. This, to some extent attracts substandard land development. In most cases such land is developed by investors with limited potentials to provide the basic facilities (water, electricity etc). It has been noted that once development has taken place, providing services become quite difficult. Demolishing structures to open up way

for better land use could have a cost bearing which most municipal councils are least prepared to bear.

The land budget committee will work out the projections and land requirement. It should be on this basis that either urban boundaries should be extended or urban centres elevated. This proposal is not only confined to Busia rather, it should apply to towns in a similar development dilemma.

7:6 Provide a land use plan

A land use plan is a skeleton structure for allocation of space for the intended future use. The plan ensure systematic land development and limit in compatibility in land use that arise in the absence of an advance plan. The plan helps in:

- Providing enough space for future land use
- ensures safety and sound development that reduces environmental degradation
- ensures orderly development and makes the urban system functional.

To enable urban areas operate effectively, there is need to have a sound plan for Busia town. This will provide the departments and the municipal council with adequate information to project for the demand of services in the

town. Such a plan enables the department to know what kind of service, quantity and at what time they will be required when and where. A detailed development plan for the whole town needs to be undertaken so that preparation for the provision of services is projected. Advanced planning/ programming of land development can serve as a guide for investment as well as serve to reduce incompatibility in use. The current land development in Busia town exhibit a lot of incompatible uses. Location of Farm View hotel next to the sewerage treatment plant, The location of learning institution a long the highway and the integration of residential and commercial structures are a few examples of incompatible uses. This situation can be avoided if the town had a proper development plan.

The intended plan should show the structure of the town and adequately ensure that all the activities have been allocated a specific site enough to accommodate future development need. There is need to recurrently review the population dynamics to determine the quantity of services required. This will be the basis on which the plan will be reviewed.

It is noted that most of the land in town belong to private owners. The decision to develop and the kind of

structure to put up is solely theirs. This raises the need to advise them on the investment trends. They should have access to the plan (if possible). When necessary, seminars should be organized to disseminate knowledge on the way their investments should be done.

7:6:1: Comprehensive Planning and allocation of space

In preparing a comprehensive plan for Busia town one has to take several issues into consideration. The plan must be able to fulfil the overriding theme that characterise the current development agenda-that is sustainable urban development. There is need to ensure that land is set aside for all urban activities (residential, commercial, industrial transport, and recreational activities) is enough. The rapid expansion of the town means more public facilities would be required at a latter date. There is therefore need for the municipal council to organise the purchase of land. This should be properly worked out in the land budget to determine the proportion that will be required for the future urban expansion.

The plan should adequately segregate functions based on the planning regulation so that there is compatibility. There is need to involve land owners in

this exercise. Based on the above issues, the Busia's plan should draw an understanding of the existing land pattern to determine the future trends of land development. Like the case of commercial and residential growth, their trend is definite. Their growth will follow the existing lines of transport. The plan can opt for linear zoning. Zoning need not necessarily be in concentric rings or isolation of activities rather it is an allocation of similar functions to a specific site. There is nothing wrong with linear zoning. This brings the study to seek proper address of linear zoning. That linear zoning in Busia town is not detrimental as long as it ensures complementarily. Residential quarters can be assigned specific sites in areas close to commercial sectors which they serve.

The allocation of space need to consider the question of land ownership. Land ownership plays a crucial role in determining the trend of urban functions. For example residential development in the peri-urban areas around the city takes a spotty shape as a result of the variability in reluctance or eagerness of land owners to sale or develop the land. This kind of trend is difficult to deal with even by provision of a plan. There is always a speculative gain which most land owners

anticipate.

The land use plan must have a broad vision in guiding the anticipated development. The best way to achieve this is by involving the community. The community in this case are the land owners within the municipality and the potential land developers or businessmen. Regular meetings with the physical planning department can facilitate the dissemination of the required information. There is need for the physical planning department to identify prospective businessmen in town and advice them on the investment matters. The land use plan should if possible be accessible to potential developers to guide them in their investment trends. Alongside this should be the provision of essential services. The council need to phase the development of the town so that the land developers can comply with the plan requirements. Phasing will help protect the ecologically fragile zones like Alupe valley and areas along the fringes of the bottom lands. The steep slopes of Alupe valley and the water logged bottom lands should be adequately protected. Phasing should also minimize incompatibility and facilitate complementarity of urban activities.

7:7 Co-operation between various agencies

To facilitate the implementation of projects within the municipality, joint effort is required. An alliance between various departments (representing government ministries) and the council must be forged. This will ensure that some projects whose implementation is beyond the capacity of the council are undertaken jointly. The co-ordination is specifically necessary between the council and the ministry of public works, health, agriculture and water development. These in the past have had conflicting interests over development programmes. Joint planning, research and implementation of projects need to be initiated. This can be well articulated if specific ministries are made to view urban development projects in a broader perspective.

Complementary function should be delegated to one body. Certain functions in urban areas cannot exist in isolation or be run by different bodies. Water supply and sewerage are such functions. The two should be run by one umbrella body that will be in charge of the two functions. In this case the water supply project of Busia-Mundika should be handed over to the municipal council to enable it manage the sewerage projects effectively. At present the council cannot extend the

sewerage project or ensure effective billing because water is run by the MOWD. Most residents pay off their water bills and forego to pay their outstanding sewerage bills. To enable the council manage sewerage system effectively, there is need to have access to water supply so that the two are complemented in areas of need. In this case the Mundika-Busia water scheme should be handed over to the council.

Co-operation should not only be confined between the council and government departments but also between the council and the existing NGOs. The Catholic mission, KEFINCO and K.E.N.G.O have been carrying out independent projects in the town. If this effort is well coordinated it can help in meeting some of the services required. Their projects and efforts need to be incorporated in the overall development programme of the town. The council need to device ways of involving them so that some of the projects which cannot be realized by the council can be met by NGOs. This will ensure consistency in the provision of services. Indeed some of the water supply needs, waste disposal facilities, etc can be met by the NGOs. Liaising between various agencies will help in alleviating the existing problems and difficulties in the implementation of projects.

Liaising should go beyond the political boundary to enable the two side of the town be planned for as one. There can be cooperation in undertaking projects or the supply of services so that if water supply site in Uganda proves more viable, a joint undertaking can be launched. A border town should not be planned for in piecemeal rather it should be planned for in a comprehensive manner. This suggestion has been made with a clear knowledge on the political difference and the planning systems that exists in the two countries. This limitation can however be overcome given that we have to some extent witnessed an era of political cooperation. Planning for a "greater Busia" is feasible and can enhance effective management of the town.

7:8 Conclusion and areas for further research

The aim of the study has been to examine the role played by infrastructure in guiding the spatial urban growth of Busia town. The overriding theme has been to establish the forces behind the spatial expansion of the town and especially the persistent linear growth of Busia. From the analysis, it has been found out that weak institutional management and poor disposition of infrastructural facilities have been the reasons behind persistent linear growth and the deterioration of service

facilities in Busia town. The inability to control land use and poor disposition of roads network, anchor the base for skewed urban growth. The institutional weakness include lack of sound land policies to control development, limited finance and insufficient staff to address urban needs effectively. This problems are further magnified by arbitrary expansion of urban boundaries and elevation of urban centres to a higher functional status.

The study has taken a systematic examination of Busia town to derive ways that can guide the spatial growth trend. The first chapter highlights the theme of the study. The second chapter has attempts an understanding on the views that different scholars hold about urban growth. The Third, fourth and fifth chapters give the synthesis of the urban growth trend in Busia town. Chapter six identifies the major planning problems in town while chapter seven gives the recommendations. The study recommends cooperation between various agents, community involvement in implementation of projects, proper design distribution and maintenance of infrastructural facilities, a land use plan etc. It is hoped that if these recommendations are adopted, sustainable urban growth can be attained. However urban

problems being complex and may prove difficult to solve from a single dimension.

The study recommends more research to be undertaken to come up with tangible measure that can make Busia town functional. Future research in the town should identify ways of involving the urban community in providing and managing urban facilities. So far the urban community is complex and may be difficult to be incorporated in community projects. There is also need to identify ways in which planning for the town could be broadened to include the portion in Uganda. This is particularly necessary given that the presence of the border has an overwhelming influences on the growth pattern of the town. Besides there is need to identify ways in which effective land use control measures can be exercised on freehold land. So far the current planning laws and development control measures seem quite ineffective. Then lastly the area of urban policy need to be revisited. There is need to look for better ways in which responsibilities can be delegated to different departments or bodies without creating conflicts. An area of policy at central government level should be revisited to minimise conflicts between the councils and government departments.

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APPENDIX 1

BUSINESS QUESTIONNAIRE

ADMINISTERED BY -----

AREA IN THE TOWN -----

DATE -----

1. PERSONAL DETAILS

(a) Respondent's age -----

sex -----

marital status -----

educational background-----

where born (home district or

nationality) -----

2. Type of business (a) hotel (b) retail (c) wholesale (d) bar lodging

3. When did you start your business -----

(a) 5 years and below (b) 5-10 years (c) 10 years and above

4. Had you established such a business elsewhere here in town before shifting to your present position

(a) yes (b) no

5. If yes what forced you to move (a) rent (b) convenient location (c) comfort. on (d) Government regulation (e) others specify

6. What compelled you to locate your business here
- (i) rent is low
- (ii) accessibility
- (iii) free from competition
- (iv) others (specify)
7. Is there any different in rental rates along this road
- Yes ----- No -----
8. Is the difference related to a) location b) space in business
premise c) quality of premise d) council regulation
9. Are there restrictions for location of certain business in
the town a) yes b) no
10. If yes explain -----

11. Did you locate here because it had enough essential
facilities (water, electricity, good roads)
- Yes ----- No -----
- 12 (a) Since establishing business here have you witnessed other
structures coming up a) yes b) no
- If yes has the pace been faster than elsewhere in town
- Yes ----- No -----
- (b) If the pace has been a slow or no structures have come

up, what could be the reasons

13 Are you located along the main, highway or the secondary road

-----What
 advantage does this location have

(a) Highway -----

(b) Secondary roads

14 What is the quality of the road condition close to your
 business premise

(a) good b) moderate c) poor

15 Does this affect your business operations

yes ----- no -----

16 If yes, how -----

- 17 Are you supplied with
- | | | |
|-------------|-----------|----------|
| electricity | yes ----- | No ----- |
| water | yes ----- | No ----- |
| sewer | yes ----- | No ----- |
| telephone | yes | No ----- |
- other specify
- 18 If these facilities are missing, how far do you go to obtain them
- water -----
- telephone -----
- 19 What do you use for
- lighting -----
- sanitation -----
- 20 How do you dispose your waste
- (a) collected by the municipal trucks
- (b) burned
- (c) composite pit
- 21 Does this location hinder the disposal of wastes
- yes ----- no -----
22. Where do you get your commodities from -----
- 23 Do you have a problem in the delivery of services/goods
- yes ----- no -----

24 (i) If yes can this be attributed to location (your ~~business~~
business location)

yes ----- No -----

(ii) Incase location plays a role, explain -----

25 What is your average stock turnover -----

26 If you were located else where in this town would you be
doing a) best b) fair c) poorly
explain -----

27 If you had an option where would you have liked to locate
here in town and why -----

28 As a businessman, in this town, what problems do you face

29 What measures have you undertaken to alleviate these problems

30 Busia has recently been elevated to a municipality do think this will help in alleviating some of your problems

yes ----- No -----

31 As a business community do you have a union or any organisation that deals with specific problems in this town

yes ----- No -----

32 If yes what role does it play -----

33 If not do you think such an organisation would have helped in alleviating some of your problems

yes ----- No -----

34 Which problems could it address ----- --

35 Has the government/NGO agents ever approached you for an assistance i.e. to contribute towards:

a) road maintenance yes ----- no -----

- | | | | |
|----|-------------------|-----------|----------|
| b) | road construction | yes ----- | no ----- |
| c) | water provision | yes ----- | no ----- |
| d) | refuse collection | yes ----- | no ----- |
| e) | others | yes ----- | no ----- |

specify what problems are encountered in the provision

In case they have not, who does the maintenance

- | | | | |
|----|------------|----|---------------|
| a) | government | b) | private agent |
|----|------------|----|---------------|

How efficient is their performance

(i) maintenance of roads

- a) excellent
- b) moderate/average
- c) poor
- d) not applicable

(ii) construction of new roads

- a) excellent
- b) moderate
- c) poor
- d) not applicable

(iii) extension of water services and repair of broken pipes

- a) excellent
- b) moderate
- c) poor
- d) not applicable

(iv) maintenance and provision of sewerage system

a) excellent

b) moderate

c) poor

d) not applicable

In your opinion what problems are encountered in the provision of the of any of the services above

(i) water -----

(ii) electricity -----

(iii) sewerage facilities -----

What in your opinion could be done to alleviate this problem

41 Who should play the key role in solving these problems

a) government b) the community c) private agencies

AREA OF RESIDE OF THE FORM

DATE _____

GENERAL DETAILS

Name of the household _____

Age _____

Sex of the head of the household _____

Occupation of the head of the household _____

Address of the household _____

Telephone number of the household _____

Number of the house in the apartment _____

Number of the house (1) apartment (2) house _____

Yearly _____

Do you agree to this form? _____

Do you live in this house before shifting to _____

Yes (X) No

Do you want to live in your former residence? _____

APPENDIX 2

HOUSEHOLD QUESTIONNAIRE

AREA OR ESTATE OF THE TOWN

DATE-----

PERSONAL DETAILS

Head of the household

1) male 2) female

Marital status -----

1) single 2) married 3) otherwise sate

Age of the household head -----

Size of the household -----

Number of the rooms in the structure ----

Nature other of the house 1) permanent 2) semi-permanent

3) temporary

When did you migrate to this town? -----

Have you ever lived elsewhere in this town before shifting to
your present residence?

1) yes 2) No

If yes what made you leave your former residence? -----

5 Are you supplied with 1) water 2) electricity 3) sewerage
4) telephone 5) other facilities (specify)

6 What made you choose to stay here?

7 Water

(a) Do you use: 1) communal taps 2) individual house taps
3) spring 4) other sources specify

(b) If it is a communal tap, spring or borehole how far is
it from your place of stay 1 less than 100 m
2) 100-1000 m 3) above 1000

(c) Is the water adequate 1) yes 2) no

If no what causes it -----

(d) What problems do you experience as far as water is
concerned-----

(e) Incase of water shortage, how far do you go to fetch it

 How long does it take to be rectified -----

(f) Have you as a community ever come up with ways of
 addressing these problems

1) yes 2) no

If yes in what ways have you tried to solve this problem

 (g) Have your efforts in the above endeavour measured success

1 yes 2 no

If no what negated your success -----

 (h) Has any organisation come at your assistance 1 yes 2 no

(i) If yes what role has it played -----

 8 Have new buildings been coming up 1) yes 2) no

If yes comment on the rate of growth 1) fast 2) slow

What could be the reason behind this trend?

How far are you from the road? -----

Does your house have access/in case of emergency can it be
 reached by the vehicle? 1) yes 2) no

What are the conditions of the roads in your estate?

<u>Nature of road</u>	state/condition of the road		
	Good	Rough	Impassable

 murrum

 tarmac

 earth

 beaten truck

How do you commute to town -----

1) bicycle 2) walk 3) public service means

4) private means -----

Do you have difficulties in commuting to or within town

1) yes 2) no -----

If yes what are they -----

Does your house have electricity?

1) yes 2) no

If yes is it occasionally rationed

yes no

If no what do you use for lighting?-----

Does your street security lights 1) yes 2) no

Sewerage and waste disposal

What toilet facilities do you use

1) pit latrines 2) water closet in the house

3) communal water closet 4) bush

If communal how far is it -----

How often are they maintained 1) regularly 2) rarely 3) n/a

How do you dispose of your waste 1) burn 2) composite pit

3) collected by municipal trucks

If collected by trucks how often is it 1) regular 2) irregular

3) n/a

Do you experience bad smell from the refuse 1) yes 2) no

Incase the refuse is not collected what do you do

.....

Are there within the estate which are poorly drained

1) yes 2) no

What major problems do you face?.....

24 What do you think should be done?.....