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Urban Growth Dynamics

Analysis of the Evolution process of small urban centres
in Developing Countries

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Growth Dynamics in the Small Urban Centres

Abstract

Despite the fact that small urban centres accommodate the largest share of urban population, in most developing countries small urban centres are neglected by urban analysts. This means there is inadequate information on their growth characteristics and patterns of land use development.

The overall aim of this study is to explore the growth, land use and socio-economic characteristics of small urban areas in developing countries, to inform policies and theory. The study used coding and SPSS techniques to analyse data from the in-depth study of a single case study area. Tools and methods for data collection included mapping, household surveys, document review, storytelling, in-depth interviews and observation in the field.

The results indicate that the growth of interactions with other centres, the way people access and develop land, and rapid spontaneous growth of settlements are key factors affecting the emergence of different land use categories, while patterns of settlement growth also reflect the uneven provision of basic services. Theoretically, the study supports the propositions regarding land replacement and patterns of settlement development, while challenging assumptions about socio-economic segregation. The thesis contributes to knowledge on the evolution of settlements and their dynamics, changing settlement patterns, and land use reorganisation.

Keywords: Small urban centre, Land use, Growth dynamics, Emerging settlements, Developing countries

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Ukuaji wa Mabadiliko katika Maeneo ya Miji Midogo

Ikisiri

Licha ya uhalisia kwamba maeneo ya miji midogo yana idadi kubwa ya wakaazi, katika nchi nyingi zinazoendelea maeneo haya yanapuuzwa na wachambuzi wa miji. Hii inamaanisha kwamba hakuna taarifa za kutosha kuhusu tabia za ukuaji na mifumo ya maendeleo ya matumizi ya ardhi.

Lengo kuu la utafiti huu ni kuchunguza ukuaji, matumizi ya ardhi na tabia za kijamii na kiuchumi za maeneo ya miji midogo katika nchi zinazoendelea, kuarifu sera na nadharia. Utafiti huu ulitumia mbinu za usimbaji na Programu ya Kitakwimu ya Kuchambulia Data za Kisayansi Jamii kuchanganua data kutoka katika eneo moja la uchunguzi kifani wa kina. Zana na mbinu za ukusanyaji wa data zilijumuisha uchoraji wa ramani, uauzi wa kaya, upitiaji wa nyaraka na masimulizi ya hadithi, usaili wa kina na ushuhudiaji.

Matokeo ya utafiti huu yalionesha kwamba kuongezeka kwa maingiliano na maeneo mengine, namna watu wanavyopata na kuendeleza ardhi na ukuaji wa kasi wa makazi holela ni sababu kuu zinazoathiri kuibuka kwa aina tofautitofauti za matumizi ya ardhi, wakati mifumo ya ukuaji wa makazi pia inaashiria utoaji usio sawa wa huduma muhimu. Kinadharia, utafiti huu unaunga mkono hoja kuhusu ubadilishwaji wa ardhi na mifumo ya maendeleo ya makazi, hivyo unakataa madai ya ubaguzi wa kiuchumi na kijamii. Tasinifu hii inachangia maarifa kuhusu uibuji wa makazi na tabia zake, ubadilikaji wa mifumo ya makazi na upangaji upya wa matumizi ya ardhi.

Maneno muhimu: Eneo la mji mdogo, Matumizi ya ardhi, Ukuaji wa Mabadiliko, Makazi yanayoibukia, Nchi zinazoendelea.

Anwani ya mwandishi: Maglan Charles Sang'eno, Chuo Kikuu cha Sayansi za Kilimo cha Uswidi, Idara ya Maendeleo ya Miji na Kanda, S.L.P 7012, 750 07, Uppsala, Uswidi; na Chuo Kikuu Ardhi, Shule Kuu ya Mpango Maeneo na Sayansi za Jamii, Idara ya Mpango Mji na Maendeleo ya Kikanda, S.L.P 35176 Dar Es Salaam, Tanzania.

Preface and Acknowledgement

The journey to attain this academic exit level, PhD, study started once I joined the university as a tutorial assistant in 2010. Despite the desire to attain the acceptable rank as a university tutor, I had the passion since I started my university education.

I was trained as an Urban and Regional Planner in my Bachelor degree at the University of Dar es Salaam and Master's degree specializing in Urban Planning and Management at Ardhi University. The two levels of study developed my interest on capitalizing on spatial planning in human settlement and the growth dynamics of cities. During masters study I had opportunity to train abroad at the Stockholm University-Sweden as an international exchange student in 2012 where among others I learnt regional planning in Nordic countries. This exposure expanded my understanding of urban and regional planning from a different perspective and practice hence influenced my desire to train at PhD level where I joined in 2016.

The PhD journey has never been easy but a jungle of thorns and struggles. Without support of various people, I wouldn't have made it. It is therefore my pleasure to acknowledge all those in one way or another made this journey successful.

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Dedication

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Abbreviations

ARU	Ardhi University
CBD	Central Business District
DC	Developed Countries
HTC	Handeni Town Council
LDC	Least Developed Countries
LGA	Local Government Authority
MLHSD	Ministry of Lands Housing and Human Settlement Development
NBS	National Bureau of Statistics
PORALG	President's Office, Regional Administration and Local Governments
RQ	Research Question
SLU	Swedish University of Agricultural Sciences
SPSS	Statistical Package for Social Sciences
SSA	Sub Saharan Africa
TARURA	Tanzania Rural Roads Agency
TSHs	Tanzanian Shillings
UPA	Urban Planning Act
USD	United States Dollar

1. Introduction

This chapter provides an account of the thesis topic and the discourse on the subject that is relevant to the study. The discourse about the importance of the subject is summarised in section 1.1. Section 1.2 focuses on the urbanisation rate and section 1.3 discusses existing categories of towns. The subsequent sections set out the motive for the study and identify the knowledge gaps it aims to fill. Section 1.5 and 1.6 outline the aims, objectives and research questions. The chapter ends with section 1.8, which describes the structure of the thesis, summarising the components of each chapter. This chapter therefore provides a road map to the rest of the thesis.

1.1 Urban development patterns

If average urban densities continue to decline at the annual rate of 1.7% as they have during the past decade, the built-up areas of developing countries cities will increase to more than 600,000 square kilometres by 2030. In other words, by 2030 cities in developing countries can be expected to triple their land area, with every new resident converting, on average, some 160 square metres of non-urban to urban land during the coming years (Angel et al., 2005).

The discussion on urban growth characteristics and land use changes is both wide and extensive. Various studies have pointed to the complexities of growth characteristics and changes in land-use development in urban areas. Forms of urban spatial growth are so extensive and complex that there is little agreement on approaches for studying them (Bourne & Simmons, 2017). Studies on urban growth in Sub Saharan Africa reveal a

tendency toward land-use chaos, and incompatibility, conflicts, and poverty among residents (Hugo & Chapman, 2004; Worrall et al., 2017; Peter & Yang, 2019; URT, 2015). The rapid rate of urbanisation is due to rural-urban migration and natural population increase (Dodman et al., 2017).

Despite accounting for the largest share of the world urban population (United Nations, 2016) small urban centres tend not to be considered in the urban planning debate, while the discourses on urban challenges continue to be dominated by large towns and cities (Bell & Jayne, 2009; Steinführer et al., 2016). The neglect of small urban centres in the debate not only limits information about their growth characteristics but also underplays the roles and functions they play in regional and country development.

The literature on small urban centres in developing countries indicates that they play several roles in regional and country development: accommodating rural migration, servicing rural areas, reducing poverty by providing employment for urban and rural populations, and reducing population pressure in cities (Tacoli, 2004; Steel & van Lindert, 2017; Tacoli, 2018). Developing countries particularly those of Sub Saharan Africa, still contain a larger proportion of their population in rural areas than in urban areas (Muzzini & Lindeboom, 2008). Rapid urbanisation rates and improvement of road infrastructure linking rural areas and cities have facilitated the movement of the rural population to urban areas, including small urban centres (Christiaensen et al., 2018; Wenban-Smith, 2015).

The lack of up-to-date information on land use, urban growth, and demographic trends constrains studies of urban areas in developing countries, the majority of which remain under-studied (Hugo & Chapman, 2004; Deng et al., 2008; Seto & Shepherd, 2009). A lack of research and hence detailed knowledge means that statements about most aspects of African society including urbanization, are limited to generalisations. This situation led Potts (2012) to conclude that the rate of growth of Africa urbanisation is misrepresented.

The rapid growth of towns and increased rate of urbanisation lead to the development of unregulated settlements. The majority of towns, including small urban centres, are characterised by sporadic development of settlements, leading to land-use conflicts and environmental degradation (URT, 2000; Muzzini & Lindeboom, 2008; Peter & Yang, 2019). Over 50 per cent of the towns in Tanzania arose and grew without land-use planning

and the few plans that exist are outdated (URT, 2014b), so that land use in growing urban centres develops informally (Bhan, 2013; Roy, 2005; Porter et al., 2011). The unregulated growth of settlements raises questions about how land uses should be organised and what strategies should be adopted by planning agencies to deal with the emerging land-use challenges. As argued by Oluseyi (2006), managing and planning urban areas requires understanding of the forces and processes that drive their growth.

Apart from the forces effecting urban location mentioned by Rondinelli (1983) such as natural resources, security, proximity to borders and administrative importance, most urban centres in the Sub Saharan Africa, are ex-colonial administration centres, whose subsequent growth has been affected by political influence (Owusu, 2005). Because of the diverse factors involved, contextual approaches are more suitable for analysing their development.

The characteristics of emerging urban centres entail different rate of land-use change and spatial development. A study by Angel et al. (2005) indicates that by the year 2030 the rate of global arable land depletion due to urban activities will reach about 1.1 per cent of the total land area per annum. The land, once converted to urban use, loses its potential for agricultural activities. At the same time, the work force engaged in agricultural production is displaced, adversely effecting food supply (*ibid*). The rate of spatial urban growth, threatening the surrounding land and environmental resources, is alarming; hence the need for strong governance mechanisms to manage the changes (Cohen, 2015).

The majority of urban centres in developing countries grow outside of state control due to the lack of effective land use planning (Owusu, 2005). Planning agencies in these countries use concepts which originated in different contexts and do not take account of the existing reality. The plans they produce are rooted in western ideology (Baker et al., 1992), which is incompatible with local social-cultural norms and limits spaces for traditional activities within the towns or their surroundings. under the influence of changing ideologies following different schools of thought, oriented towards, for example grid streets plans, clusters, or garden cities (Brilhante & Klaas, 2018), urban authorities tend to restrict rural activities, such as farming, in urban areas. At the same time, most countries in developing world, when they designate their urban areas treat the remainder of the areas as rural (Hugo & Chapman, 2004).

In most developing countries, spatial growth and land use changes in urban areas are unguided by the planning machinery, because the rapid pace of urbanisation is beyond the capacity of governments to manage (Agwanda & Amani, 2014). As a result, the growth and development of areas exceed limits determined by natural endowments and economic development. The unguided growth of settlements and conversion of urban land use leads to development of sporadic settlements which threaten the environmental resources of the surrounding areas.

1.2 Urban growth rates

The world is experiencing a rapid rate of urban population growth, leading to an unprecedented increase of the number and size of urban centres. Current population projections by the United Nations indicate that the urban population is increasing in developing countries faster than in developed world (Cohen, 2015), partly because the rural population in developing countries still outnumbers the urban population (United Nations, 2015).

Table 1 compares general trends in urban population growth in the major regions of the world, showing that growth, in numerical terms, is greatest in Asia, with Africa the second position. Urban populations are projected to increase rapidly in the developing countries, and most of all in Africa, where the urban population in 2030 will be 1.63 times greater than in 2015. Asia is in second place with an urban population 1.3 times greater in 2030 than in 2015.

Table 1. Projected urban population by major regions, 2015 and 2030

SN	Region	Urban population 2015 (millions)	Urban population 2030 (millions)	Differences 2030-2015	Ratio of 2030/2015
1	World	3957.3	5058.2	1,100.9	1.28
2	Africa	471.6	770.1	298.5	1.63
3	Asia	2113.1	2752.5	639.4	1.30
4	Europe	547.1	567	19.9	1.04
5	Latin America and the Caribbean	502.8	595.1	92.3	1.18
6	Northern America	294.8	339.8	45	1.15
7	Oceania	27.9	33.7	5.8	1.21

Source: (Cohen, 2015)

Despite the currently small number of urban residents in Africa, projections indicate that Africa will be the most highly urbanised region by area by 2030. The growth ratio in Africa is high compared to all other regions of the world. This raises the question of how Africa can develop the capacity to cope with this rate of urbanization, including the capacity to supply basic social services and manage land uses to create sustainable settlements.

In the Global South, small urban centres are reported to contain a majority of the urban population, and to be growing at a faster rate than cities. The increase of population the small urban centres is considered stated to be among the main factors driving rural change in developing countries, as well as affecting the growth of towns, in terms of both size and number (Ibrahim et al., 2018; Cohen, 2015).

1.3 Urban categories

The growth of towns in developing countries depends on the existing relationships between cities, secondary towns and the emerging small urban centres. While the small urban centres provide major towns and cities with various resources such as food, materials, markets and people (Tacoli, 2017) they tend to be disregarded in the discussion of urban development.

The categorisation of urban centres varies according to context (Hugo & Chapman, 2004). The population threshold for defining a settlement as a small urban centre in developing countries is more than twice as high as in a developed country. For instance in most of Europe small urban centres

are defined as having a minimum population of 2500 (Steinführer et al., 2016; Fertner et al., 2015) whereas in the majority of developing countries of sub Saharan Africa a small urban centre has a minimum population size of at least 10,000 people (Cohen, 2006; Agergaard et al., 2021). This difference is important because majority of small urban centres in the developing countries grow outside of official planning mechanisms (Peter & Yang, 2019). Given the challenges associated with the growth and development of small urban centres, context-specific studies are crucial to understand the changes taking place and their effects on land use.

An understanding of urban categorisation is important for the study of conditions in urban areas, relationship between them, and the nature of their growth. Scholars such as Cohen (2004), Bell & Jayne (2009), Daniela Zamfir et al. (2009) and Pedersen (1997) suggest that difficulties arise when attempting to classify urban areas based on population size, service levels, and degree of urbanness in a particular country. These difficulties create challenges for tracking the level and the rate of urbanisation overtime in developing countries. A study by Owusu (2005) in Ghana noted the lack of clear definitions and categorisations of urban areas, particularly relating to small urban centres. This difficulty becomes even more evident when criteria adopted for classifying towns from one region is applied to another (Bryceson, 2011). For instance, if populous countries such as Nigeria and Ethiopia use the same criteria for urban classification as a less populous country such as Seychelles, the populous countries will end up with far more urban centres than less populous ones. Without considering other factors, population alone is insufficient to categorise towns.

The grouping of urban centres under a single umbrella of ‘towns’ without understanding the contextual characteristics and differences in land-use development, obscures the distinct challenges encountered by different kinds of urban areas (Servillo et al., 2017). Such a generalisation impede the application of appropriate conceptual models of how emerging urban centres function and develop (Seto & Shepherd, 2009; Bell & Jayne, 2009).

Urban categorisation in Tanzania is inconsistent with conflicting technical (regulation and laws) and political (ministerial position) points of view. For instance, number and sizes of urban centres recognised by the political authorities (President’s Office, Regional Administration and Local Government) are different from data used by the Ministry responsible for

human settlement development (MLHSD)¹ (Muzzini & Lindeboom, 2008). The differences in urban classification can lead to oversights when prioritising development projects and planning for land uses in urban areas. To confuse matters further, the census office uses their own categorisation of urban and rural areas. This confusion derives from a lack of consensus on the criteria for classifying towns. Because each government institution clarifies town differently, inconsistencies arise in the setting of priorities and provision of development resources to these centres.

1.4 Statement of the problem

As noted above, the rate of urbanisation in the developing countries, and in Africa in particular, is higher than the world average (see Table 1). Cities are growing more rapidly in developing countries than in developed countries of the Global North. At the same time, within the developing regions, the rate of population growth in the small emerging urban centres is higher than in cities. Statistics indicate that emerging small urban centres accommodate the largest share of the urban population; they are where more than half of the world urban population live. Despite this understanding, the majority of small urban centres, especially in the developing countries of Sub-Saharan Africa, develop and grow without land-use planning guidance. Most governments of developing countries struggle to solve the challenges facing cities and secondary towns, while the small urban centres are overlooked in prioritising resources and strategies for settlement development through land-use planning.

The financial, human and technical resources allocated to small urban centres are inadequate to solve problems associated with land-use change and the growth of settlements. In particular, the growth of unplanned settlements leads to functional incoherences, contributing to incompatible land-uses, inadequate services provision, and depletion of surrounding natural resources.

Despite the varied social, temporal, cultural, economic, and contextual features, relevant to this study, which are susceptible to generalisation,

¹ The PORALG recognizes 3 Cities, 17 Municipalities, and 4 Towns; the Ministry of Lands Housing and Human Settlement Development (MLHSD) recognizes 5 Cities, 17 Municipalities, 4 Towns and 77 Townships Muzzini, E. & Lindeboom, W. 2008. *The Urban Transition in Tanzania, Building the Empirical Base for Policy Dialogue*. 1–166.

understanding the growth dynamics and land use changes occurring in a specific small urban centre is crucial. Different centres have different growth rates and are affected differently by the surrounding environmental conditions and infrastructure development. If the aim is to shed light on the influence of towns and cities including small urban centres on the growth of regions, and on the relationships between urban centres and surrounding rural areas, this necessitates the selection of a study area that is a vibrant urban centre experiencing rapid population growth.

The primary objective of this study is, therefore, to examine the growth dynamics and land use change of a selected small urban centre in Tanzania in order to understand the forces determining spatial settlement patterns, land use changes and socio-economic development experienced by its residents. The knowledge generated will provide inputs for the development of strategies to guide land-use change and the spatial development of the emerging urban centres.

1.5 Research Aims

This research aims to understand the growth dynamics of small urban centres in terms of land use changes, spatial settlement growth, socio-economic development and the resulting settlement patterns. The understanding will contribute to the theory and policy relating to urban land use development and management approaches for small urban centres.

The research aims are operationalised through the following research questions guiding the study of land use dynamics in small urban centres.

1.6 Research Questions

The main research question guiding this study is: what are the factors influencing patterns of growth and land-use development in small urban centres?

1.6.1 Specific research questions

- i. What roles do policies play in the emergence and development of the selected small urban centre?

- ii. How did the selected small urban centre evolve and grow over time?
- iii. How do changes in economic activities impact on land use changes in the small urban centre?
- iv. How do land access procedures impact on the growth of settlements in the small urban centre?
- v. What settlement pattern has resulted from the growth dynamics of the small urban centre?

1.7 Scope of the study

This study focused on the small urban centres in developing countries of Sub-Saharan Africa, and specifically in Tanzania. All the small urban centres reviewed and studied are emerging from a rural setup to become urban centres, with the population sizes required to be classified as ‘urban’, as defined by the respective country policies. A further criterion was that the centres should be fully autonomous and managing their own resources.

Since the study is on urban spatial growth, its scope is limited to spatial elements, with little discussion of economic effects of development or mathematical calculation relating to economics and/or mathematics or other development metrics.

1.8 Structure of the thesis

This thesis is a monograph, organised into eleven chapters. The thesis is systematically arranged so that each chapter addresses a specific theme, and the sequence of chapters constitutes the flow of arguments in the entire thesis. The flow of chapters is presented in the following.

This introductory chapter presents background information, and sets out the problem statement and research questions. It discusses the existing discourses on the topic and identifies the knowledge gap that, drives the undertaking of this research work. The research objectives, questions, and aims are captured in the chapter providing the basis for the study.

Chapter two outlines with the state of the art of research on urbanisation, urban growth, and land use. It summarises prior research, research methods, information generated, knowledge of the research area and definitions of terms and concepts to be employed in the theoretical

discussion. The chapter lays the foundation for the subsequent theoretical discussion and explains relevance of the study.

Chapter three discusses the theory and concepts applied in this study. It integrates the state of the art of research on land use and the growth dynamics of small urban centres with theoretical concepts that underpin the study of land use change and growth dynamics. The chapter introduces the urban land use and central place theories which are central to this study of land use and urban growth from the initial stages until the emerging urban settlement attains the status of a town. Since this study focuses on small urban centres, the two most relevant models of the land use theory, i.e. concentric ring model and the sector model are explored in detail. In addition to these, the chapter considers a range of goods and population threshold concepts that contribute to an understanding of central place theory and its applicability in a wide-ranging discussion of issues affecting growth patterns and the interaction of activities. The concepts are analysed to understand the change processes that urbanisation entails and to support development of tools for data collection.

The concepts and variables identified in chapter three, are used as the basis for data collection in chapter four. The selection of research strategies and design techniques, such as the case study and a mixed research design for data collection are analysed and discussed. This chapter examines and presents the, study area selection process, data collection procedures and analytical tools and techniques. Data triangulation is used to assess the validity and reliability of data.

Chapter five discusses the influence of policies on the development of small urban centres in Tanzania. The chapter describes the effects of policy implementation on the status of small urban centres in the country. The chapter considers three policies, namely Ujamaa villagisation, the growth pole strategy and the centralization of Local Government Authority policy.

Chapter six examines the historical settlement development of Handeni town as the case study. The chapter discusses the changes in land use, settlement development and infrastructures linking different areas of Handeni town. It also covers land use organisation in colonial times. The influence of the colonial regime on settlement development forms part of the discussion in this chapter.

The influence of economic development on settlement development is covered in chapter seven. This discussion explores the changing livelihood

opportunities sustaining communities in the study area. The decline of traditional socio-economic activities such as farming and livestock rearing, and their replacement by an economy based on the production of building materials, trade and services took place over the time span of the case study. This discussion explores how this economic development was accompanied by growing interaction with the surrounding urban as well as rural centres.

Chapter eight discusses access to land and its impact on settlement development in the case study area. It shows how the formal and informal mechanisms of access to land make land widely available to local actors and facilitate its transfer for development purposes. The process of land access also determines settlement patterns, whereby informal land transactions are associated with unregulated settlement growth. Planned areas cover a small percentage of the settlement area as most developers prefer to use informal channels for land acquisition and informal development mechanisms.

Chapter nine describes the settlement patterns resulting from land development processes dominated by the unguided growth, such as linear and radial development aligned with the major road network. The pattern of growth comprises newly developing areas at the periphery and along the major roads, and old dilapidated structures at the central town areas.

Chapter ten discusses and analyses the findings. The chapter integrates discussions in the previous chapters to summarise the overall contribution of the thesis. The discussion follows the flow of argument in the chapters.

Chapter eleven presents the conclusions and recommendations of the study. This chapter provides an overview of the scope of the study and identifies supplementary issues which need further analysis.

2. Urbanisation and Urban Growth in Sub-Saharan Africa

This chapter explores urbanisation, urban growth and the forces underpinning this growth as well as emergence of new small urban centres in Sub-Saharan Africa. The region is important for the discussion of urbanisation, since it presents unique characteristics and urbanisation is proceeding very rapidly across the continent, much of which is still rural in character. The chapter explores the factors necessary for urban growth, potential factors in the process of change, and the impacts of policies on the growth of towns and settlements. To focus the discussion, the chapter uses practical examples to analyse the possible factors affecting urban growth and describe its characteristics. The chapter further documents the socio-economic and environmental factors which affects growth of settlements and planning for their land uses. It starts by introducing the principal elements of urbanisation and urban growth.

2.1 Urbanisation and urban growth

Urbanisation and urban growth are intertwined. While urban growth refers to the increase in absolute number of people living in towns, urbanisation include four variables, namely the ratio of people living in urban centres compared to rural areas (Montgomery et al., 2013; Agergaard et al., 2021), spatial coverage of settlements, social or behaviour change and economic development. Urbanisation and urban growth are intertwined in the sense that the growth of each effects the other and they are the result of one another.

Generally, urbanisation is manifested through four different dimensions of change (Lupala, 2002): demographic, spatial, social and economic. These are described in the following paragraphs.

The demographic dimension of urbanisation refers to urban growth as manifested in the population size of a locality. The significance of demography lies in the fact that provision of services and categorisation of areas in many contexts are determined by demographic characteristics. This dimension is the main factor used to assess the level of urbanisation in different areas by the World Urbanisation Report (United Nations, 2016).

The spatial dimension of urbanisation refers to urban growth as manifested in spatial coverage. The extent of coverage and the way it develops determines the way an urban area grows. It is easier to observe urban growth by analysing changes in spatial coverage than with the other dimensions of urban growth. Spatial growth of settlements in the Global South entails the sprawling expansion of urban centres, which leads to encroachment upon reserved areas, such as marsh-lands, river valleys and flood-risk areas (Hassan & Nazem, 2016).

The social Change dimension relates the character of people and their life experience. As people move to urban centres they transform their lives, adopting 'modern' lifestyles, manifested in fashions and style, markers of social esteem, eating habits, and forms of social interaction (Lupala, 2002; Schlesinger, 2013). These factors differentiate rural from urban lifestyles and their markers of well-being.

The administrative and economic dimension of urbanisation refers, in economic terms, to the change or growth in the income of individuals and in the value of economic outputs. Politically, it relates to decisions taken to either approve or reject the recategorisation of an area from rural to urban.

Although the concepts are related, urbanisation in developing countries is not always accompanied by urban growth. Urbanisation in developing countries is characterised by rapid population increase without the stimulus of industrialization; unlike in the developed world where urbanisation was triggered by industrial development (Farrell, 2017; Montgomery et al., 2013). The spatial extent of urban areas in Sub-Saharan African countries is projected to grow twelvefold within a 50 year time frame (between 2000 and 2050). This is primarily due to insufficient planning, rapid urban population growth, and insufficient technical and urban growth

management capacity to deliver large infrastructure projects that might support functional density (Sietchiping et al., 2012).

The rate of population increase in cities of developing countries is a result of natural population increase combined with rural-urban migration as people are attracted to towns by the availability of opportunities (Hussein & Suttie, 2016; Lynch, 2005; Tacoli, 2018; Christiaensen et al., 2018). The population growth rate drives the emergence and growth of small urban centres, despite low economic growth rates in developing countries (Cohen, 2006).

2.1.1 Challenges of urbanisation Sub-Saharan Africa

Urbanisation in a demographic sense implies an increase in the number of people in urban areas, the proportion of the population living in rural areas decrease (McGranahan & Satterthwaite, 2014). These characteristics typify the growth of the majority of small urban centres in Sub-Saharan Africa.

Among the observed drivers of urbanisation are the interests of political elites, who promote urbanisation to enhance the administrative status of the areas they control (Namangaya, 2019). To achieve the increase in political power that comes with a higher status, some small urban centres are recategorised as higher level urban centres for political rather than economic reasons; such transformations are often made without considering the possible adverse effects, for example, on farmers when farming areas in the surrounding areas are reassigned for urban uses (Schlesinger, 2013).

Historically, it is documented that, soon after national independence, the majority of the developing countries in Sub-Saharan Africa experienced an increased rate of rural-urban migration due to the removal of movement restrictions imposed by the colonial regimes (Brennan et al., 2007). Since then, the rate of urban population increase has changed over time under the influence of policy changes.

The movement of people to urban areas has a positively effect on the socio-economic circumstances of individuals (Cottineau et al., 2016). The populations of urban areas in developing countries engage in diverse income generating activities in the formal and informal sectors. These activities affect land use changes and the growth dynamics of these areas. The majority of the urban population lives in the small urban centres which are expected to continue growing rapidly (Mugabi & Njiru, 2006; Caplan & Harvey, 2010; Satterthwaite, 2017).

Urbanisation involves both an increase in the number of small urban centres and spatial growth of existing ones through settlement development (Freire et al., 2014). The World Population Reports state that more rural areas are becoming urban while the number of urban areas and their sizes are growing at rapid rate (United Nations, 2015).

Urbanisation and the spatial growth of small towns undergo spontaneous development due to the lack of plans and strategies to control their physical development (Peter & Yang, 2019). The increase in urban population creates new markets for rural products (Tacoli, 2004), but also magnifies the problems inherent in these areas due to the resource scarcity experienced by local government authorities (Lawi, 2013; Mlambo, 2018). The growth of informality, chaos, and conflicts over land uses has been the outcome of unprecedented urbanisation in most developing countries (Guevara, 2014b).

However, making generalisations of this kind about urban areas can distract attention from their specific growth dynamics; urban systems are very complex and their dynamic are context specific (Bell & Jayne, 2009; Bourne & Simmons, 2017). Due to this complexity there is no general rule which fits all towns and urban systems. Contradictions arise due to the fact that kinds of settlements defined as urban in some countries are considered rural in others. It is difficult to generalise about the degree of urbanness or rurality globally or across regions (Bell & Jayne, 2009; Daniela Zamfir et al., 2009).

In the developing countries, particularly those of the Sub-Saharan Africa, small urban centers emerge naturally from growing villages (Magigi & Drescher, 2010). Few small urban centres are planned and located as a result of policy and political decisions. Because they spontaneously, most suffer from inadequate provision of basic social services and lack of land use development guidelines. Different factors stimulate the growth of towns, including exploitation of natural resources, agriculture, land availability, and trade, which is stimulated by access to infrastructures and proximity to border (Rondinelli, 1983). Different growth characteristics result in towns with different rates of spatial growth, population growth, and socio-economic development, and different forms of interaction with their surroundings.

2.1.2 The emergence of small urban centres in Sub-Saharan Africa

The transformation of rural centres into urban ones is mainly influenced by population changes and socio-economic development (Magigi & Drescher, 2010). The formation of urban centres has historical significance. The first cities and towns started to emerge when the capacity of rural communities reached a point when they were able to settle and engage in permanent activities (Thorns, 2002). The small urban centres is a result of various internal and external factors such as natural resources exploitation, government policy changes, trade and population growth, leading to the diversification of socio-economic activities (Lazaro et al., 2017; Steel & van Lindert, 2017; Ibrahim et al., 2018).

The growth of settlements in most of the Sub-Saharan Africa follows a horizontal rather than a vertical pattern of development (Cohen, 2015; Peter & Yang, 2019). The transformation of settlements and building structures leads to the expansion of settlements into the surrounding environment. Spatial growth, accompanied by the emergence of new forms of socio-economic activity, encourage the movement of people to small urban centres, leading to growth (Bryceson, 2011). The pattern settlement growth passes through different stages, giving rise to different forms, arrangements and, structures and occurring over different time-frames, hence resulting into towns of various categories (Brennan et al., 2007).

The growth and transformation of small urban centres depend on various factors including contextual characteristics such as natural resources, trade, transportation and country policies (Rondinelli, 1983). One important factor leading to the rapid emergence and growth of an urban centre is the presence of mineral extraction (Damborský, 2007; Beall & Fox, 2009). The presence of mines attracts people and activities toward these centres. Towns such as Mwaui and Mirerani in Tanzania and Obuasi in Ghana started off as small villages and grew over time to become urban centres with diverse activities and large populations (Bryceson & Mwaipopo, 2009).

A study by Lazaro et al. (2017) on rural transformation in Tanzania notes that the growth of urban centres there were influenced by activities of pastoralist societies and later by the Ujamaa villagisation policy. The relevance of policy for urbanisation will be discussed in detail below.

Urban growth is mainly the result of natural population increase and rural-urban migration, and is affected by resource exploitation (including mining), changes in urban policies, and infrastructure development (Meier

Zu Selhausen, 2013; Mboup, 2019). Although other factors influence urban growth most models emphasize the significance of population growth for the formation and growth of urban centres.

According to Meier Zu Selhausen (2013), population is the major factor affecting the growth of settlements and their status. His analytical diagram depicts urban growth process as resulting from population increase, disregarding other factors such as infrastructure development and political influence. However, in Sub-Saharan Africa, the emergence and growth of urban centres more than just population growth. The transformation of trading centres and villages into towns has undermined the capacity of governments and other stakeholders to manage urban development in the majority of Sub-Saharan African countries (Laros & Jones, 2014). In some locations, the transformation of rural villages into urban centres has been politically motivated, where the change benefits the political elites and the government through increasing taxes. Political leaders often force the amalgamation of rural areas into small urban centres, in order to reach the population threshold required to achieve the new, enhanced status (ibid).

The existence of natural resources, proximity to major towns and cities, availability of services, and markets for products are among the crucial factors for the growth of small urban centres in various contexts (Ali & Varshney, 2012; Namangaya, 2019). Generally, the rate of change in small urban centres is lower than in cities (Alam & Choudhury, 2016). Compared to cities, small urban centres are disadvantaged since they are excluded from the agglomeration economies that result from the clustering of population numbers, infrastructures and development activities, which raising the income of individuals and the town in general (Turok & McGranahan, 2013).

The rate centres transform differs according to geographical context, rate of population increase and the status of the centre. For instance cities and secondary towns are less influenced by people immigrating from rural areas than the small urban centres (Christiaensen et al., 2018; Lawi, 2013). Lazaro et al. (2017) analyse the transformation of rural areas in Tanzania and changes in administrative centres over time along a rural-urban continuum (Figure 1). The village centre shown at the bottom of the hierarchy grows through interaction with surrounding areas and changes in socio-economic activities to the next level of a township. The process of change continues from one level to the next with changes in population,

socio-economic activities, interactions, and laws regulating urban development (Lazaro et al., 2017).

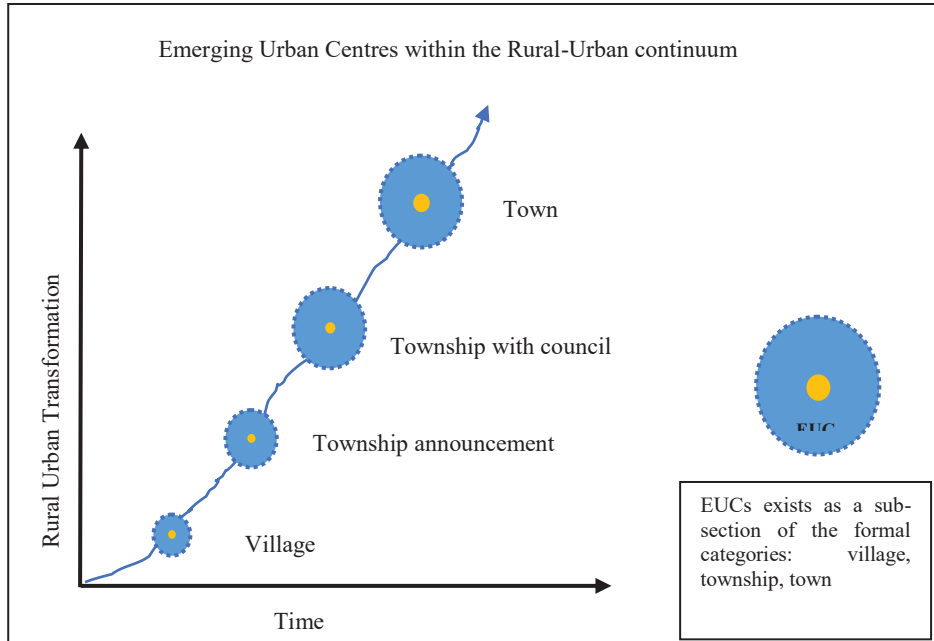


Figure 1. Stages in the transformation from rural to urban administrative centres.
Source: *Adopted from Lazaro et al. (2017)*

The emerging centres at the periphery of cities or big towns influence interactions with the main centres i.e. the cities or towns (Kundu & Sarangi, 2007). The improvement of infrastructures linking these areas and cities with rural areas provides opportunities for resources sharing along this continuum, stimulating growth and creating new opportunities for income generating activities. The communities at the lower-level centres struggle to find opportunities in the locations where economic activities are more diversified (Atkinson, 2008). This in turn motivates rural communities to move to adjacent towns that offer better livelihoods and greater prosperity.

The factors influencing the emergence and growth of urban centres therefore include the following: the growth of population size in centres from both natural increase and immigration, growth and expansion of infrastructures, political influence on urban growth, and increased interaction with socio-economic activities in surrounding areas, including mining.

2.1.3 Growth of small urban centres in Sub-Saharan Africa

The first decades of the millennium, have seen rapid change in terms of globalisation, urban growth dynamics, infrastructure development, economic growth, and ICT development. The growth dynamics of small urban centres in various contexts' lead to these centres challenging the pre-eminence of existing urban systems. Different organisations, such as the United Nations population division, analyse urbanisation trends by categorising towns using population threshold. For instance, the United Nation considers centres with populations greater than 500,000 as urban (United Nations, 2015), while centres below this minimum threshold are considered to be 'rural'.

The majority of countries in Sub-Saharan Africa consider urban centres with populations below 100,000 as towns; this size category includes the majority of towns in the region. This generalisation implies that small population centres are rural, undeveloped areas that make little contribution on urban development. However towns need to be considered as individual identities rather than through generalisation as they are not homogeneous (Thrift, 2000). The majority of small urban centres have a direct relationship with surrounding rural areas to the point of sharing populations and some economic activities. At the same time small urban centres depend on cities and multinational cooperation for their growth (Southall, 1988).

It is sometimes difficult to separate the town from the surrounding rural settlements due to their proximity and sharing of activities. The growth dynamics of small urban centres are driven by the interactions of economic activities and their potential for socio-economic development (Agunbiade et al., 2012). Urban centres in SSA are sometimes designated towns based on their political significance (Namangaya, 2019). Growth is sometimes politically induced, and in these cases, naturally, towns' internal dynamics exceed what would be possible using their own resources. The dynamics of the urban systems in the majority of developing countries are driven by policy and political decisions.

Some of the towns in Sub-Saharan Africa have their roots in colonial domination. Under colonial control, towns were located by considering the ease by which they could transport raw materials overseas. This meant that most towns were located, and their growth was concentrated along the coast. The inland areas experienced few changes. For instance, in Tanzania, central areas of the country were not developed during the colonial period

and this situation continued for a number of years following independence. This illustrates the diversity of urban growth, functions and land use changes, which makes it difficult to generalise about towns in different contexts.

The study of urban growth in SSA needs to emphasise differences in urban growth rates, socio-economic and other contextual differences, and the historical development of areas. This is important because most SSA countries were colonised by the Western powers, and hence impacted by ideologies from the West and Western influence on patterns of urban development, linked to the purposes these centres were intended to serve. It is important therefore to avoid generalisations when discussing levels of urban development in different contexts.

2.1.4 The process and system of urban growth in SSA

The spatial growth characteristics and changes of land uses in an urban area are complex and vary according to the context. Urban growth involves changes in physical characteristics, activities performed and the institutional frameworks guiding growth (Agyemang et al., 2019; Djurfeldt, 2021). Physical changes include reorganisation of functions by converting non-urban to urban land uses. Functional changes involve modification of economic base activities within the area (Cheng et al., 2003). The change in land uses in developing countries is mostly influenced by population changes, modification of activities and outward urban expansion (Cheng et al., 2003).

Understanding of urban growth can take many forms. For economists, urban growth refers to the increase and expansion of income-generating activities (Djurfeldt, 2021). For sociologists, urban growth refers to lifestyles, attitudes, and behaviour of people in an area. Demographers focus on changes in population size and composition (Fox, 2011). Spatial planners, however, understand urban growth as a combination of all these factors with the addition of spatial components. From a planning perspective, urban growth entails socio-economic development, demographic change, and spatial growth of settlements, including infrastructure improvement (Lupala, 2002).

Two main forms of the spatial growth of settlements can be distinguished: dispersed, low density growth affecting the surrounding environment, and compact urban growth (Hasse & Lathrop, 2003). The

outgrowth of settlements without planning control, i.e., settlement sprawl into the surroundings, creates problems for planners when planning new urban areas (Rahimi, 2016; Chadchan & Shankar, 2012). Most of Sub-Saharan Africa settlements exhibit sprawling growth, because of the way they are planned which encourages horizontal rather than vertical growth. The constructing of single detached buildings, which occupy large sections of towns in the region, causes outward urban expansion.

A change in land use can be achieved through formal registered change of use (i.e. plots are planned and owners apply for the change of use), formal unregistered change of use (i.e. plots are planned but owners change the use illegally), and informal unregistered change of use of land (i.e. land is unplanned and the change is illegal). The forms of land use changes determine the spatial growth of a town. Informal unregistered changes of use of land result in rapid changes as there is minimal control by the local government authority (LGA). Most towns in developing countries, particularly those of Global South, are characterised by informal growth, leading to increased rates of spatial growth. This growth affects the provision of basic social services such as water, electricity and roads, making service provision more difficult due to the long distances from available services. Lateral growth also makes it difficult to control land use control, as new developments are located away from the town centres, in areas where municipal authorities do not have a regular presence and find it difficult to control settlement growth and land use changes.

Land use planning in most urban areas in developing countries is constrained by the rapid increases in urban population and accompanied by low rates of economic development (Rodríguez-Pose & Tijmstra, 2005). Uncontrolled development in the majority of towns results in intensive (increasing internal size of small urban centres) and extensive (increasing the number of small urban centres) growth of towns (Sridhar, 2010), and hence increasing difficulties in managing land use.

The structure and growth of towns is affected by four factors which Cheng et al. (2003) list as comprising time, conceptual systems, socio-economic activities, and physical and ecological systems. Urban growth is a result of changes in three systems: the developed urban system, planned urban system and developable non-urban system (Cheng et al., 2003). The relationships among these elements are depicted in the urban growth triangle (Figure 2). For an urban area to grow, it needs time, which in the

diagram is shown as occurring from t_1 to t_2 . P is the spatial and conceptual system, which guides urban development, while U represents the socio-economic activities which stimulate the growth of the town. Letters G and N represent physical and ecological systems, respectively, which include aspects relating to spatial growth and land availability (Cheng et al., 2003). In the diagram, N (developable non-urban systems), U (developed urban systems) and P (planned urban systems) all contribute to the growth of G (urban area); the double-headed arrows indicate the relationships between these variables that lead to urban growth.

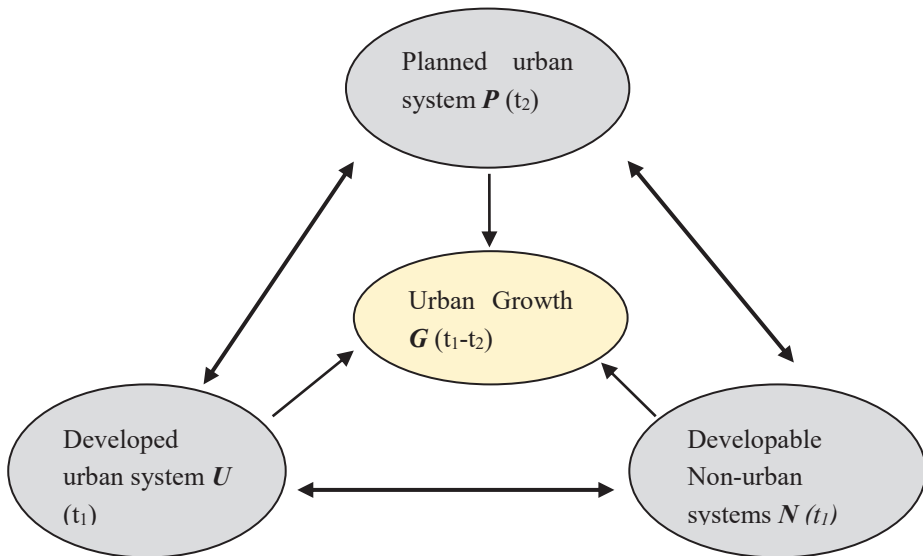


Figure 2. The urban growth triangle
Source: (Cheng et al., 2003)

Understanding urban growth requires examining the relations between these variables, which interact in complex ways. Urban growth itself can be understood as occurring at five interlinked levels, namely: policy, actors, behaviour, process, and pattern (Cheng et al., 2003).

Planned urban systems (P) comprise the mechanisms, including policies, laws, organisational systems, resources, and management approaches that dictate the development of activities in a specific context. The functioning of these systems in a particular locality underpins the planning and management of development and of the growth of related activities. Developed urban systems (U) incorporate measures to coordinate and

regulate urban development, and strategies to promote development and the growth of urban activities. Well-articulated, planned urban systems and developed urban systems create opportunities for the incorporation and development of potentially developable non-urban systems (N) in the area, identified through land surveys and appraisals of their suitability. The growth and development of both planned urban systems and, developable non-urban systems depend to a large extent on how the small urban centre is governed.

The three interrelated systems, shown in the diagram contribute to the sound growth of a town. Policies, laws, resources and management plans contribute to guiding urban development. However, the majority of small towns in the developing countries of Sub-Saharan Africa lack resources and political readiness to solve their growth challenges (Lawi, 2013). Resource planning, and well formulated policies and laws, together with political will, support planned growth in small urban centres and hence enable the sustainability of urban growth (Ali & Varshney, 2012). They create coordinated urban systems, supporting the growth of towns at all levels from cities down to small towns. Through the functioning and interaction of policies, laws, and well managed urban growth and resources, a planned system gives rise to urban growth over time. Thus, system P, i.e. the legal framework controlling development, if integrated and managed together with the coordinated urban system including plans and strategies for their implementation in a town represented by letter U and the availability of land suitable for settlement growth represented by letter N together provide the basis for a sustainable urban growth.

The purchasing power of urban populations in the majority of the small urban centres is below the threshold required to support social economic activities such as trade and provision of services (Turok & McGranahan, 2013). Population growth and increased interaction with the surrounding urban and rural areas stimulate the development of diverse socio-economic activities (Tacoli, 2017). Most small urban centres grow without planning for their land uses; hence they are characterised by informal settlement development.

2.2 Urban land use development

The concept of urban land use is crucial in urban development discourse as it underlies the aim of urban growth. The concept highlights that changes in land uses are a key feature of the growth of towns. The concept 'land use' has varied meanings and is applied differently in different contexts and for different purposes. Studies of land use change may focus on land uses, such as land cover, on function and/or on uses within different contexts and at different scales. In other studies, the term 'land use' and 'land cover' are used synonymously in spite of having different meanings and requiring different methods of analysis (Briassoulis, 2019).

In general terms and in this thesis land use means the ways human beings utilise land and the activities that take place on it (Skole, 1994; Meyer & Turner, 1992). However, the discussion of land use changes also touches on the human manipulation of land, which relates factors such as productivity and intensity of use. Meyer & Turner (1996) claim that land use change is the human manipulation of land use; it involves activities on the land that affect its character. The discussion of urban land use goes beyond aspects such as surface quality and productivity, which are particularly relevant for agriculture; the specific focus of land use in urban areas requires consideration of how different land uses are organised. It is further argued by Kaiser et al. (1995) and Blomley (2017) that land use in urban areas involves use of land surface (spaces) for the positioning of various activities or properties.

While land cover refers to the biophysical surface of the earth, including all features on the surface, land use in urban built-up areas comprises the manipulation of the earth's surface to allocate various structures and activities (Meyer & Turner, 1992; Verburg et al., 2009). A discussion of land use in urban contexts informs understanding of the used of spaces and functional properties of land in urban areas across different sizes and scales (Blomley, 2017; Wideman, 2019). This discussion involves specification of mixes and patterns of land use types, their spatial coverage, and land tenure status (Skole, 1994). The level of detail of land use change analysis differs with scale and according to the purpose for which the analysis is carried out (Briassoulis, 2019).

According to Meyer & Turner (1996), changes in land use involve two main types of changes: conversion of one type of land use to another, and modification of existing land use types. The former involves total

replacement of one land use with a different land use type. For instance, a change from farming to settlement or from residential development to industrial development. Modification can involve, for example, a change of socio-economic status, e.g. from affordable housing to luxury housing.

Land system interactions is refers to interrelated changes in land cover, land use and land function (Verburg et al., 2009). A study of land use can focus on one or other of the three interactive systems described in the previous section. This is methodologically important since different methods are used to capture the changes in land use in each type of the study. Urban growth has internal dynamics that modify the pattern of land use, including accessibility, infrastructure, and housing development. In the discussion of land use dynamics it is therefore crucial to include these elements of land use and their accompanying features (Adebayo, 2009).

2.3 Land use change and urban growth

There are numerous controversies relating to the understanding and use of the term 'land use change' among researchers and other scholars. This thesis defines land use change as an alteration in the actual use of a piece of land at specific time in place. According to Blomley (2017) land use is the function attached to space, while land use planning involves assigning functions to spaces (*ibid*).

Numerous studies (Oluseyi, 2006; Forkuor & Cofie, 2011; Hassan & Nazem, 2016; Cahya et al., 2018) have undertaken research on land cover change by assessing the change in vegetation cover without considering the built-up areas, while employing the term 'land use change'. Verburg et al. (2009) differentiate between land uses, land function and land cover through their methodological study approaches. Land use needs to consider the actual uses of land rather than subsuming land use under land cover. According to Verburg et al. (2009) a single land cover class may comprise more than one land use. For instance, a built landscape may comprise either residential use, institutional, industrial or commercial use, or a mixture of urban land uses.

Change in land use in urban setting takes the form of outward expansion of land use (spatial extension), intensification of use (building density changes), substitution of use (replacement of structures), and changing configurations of uses with different land use functions (Kamusoko et al.,

2013). Land use changes are also influenced by several other factors, including economic growth, inequality, and conversion of agricultural land to urban land uses (Wei & Ye, 2014). The urban systems presented in Figure 3 depict the way land use dynamics in the urban areas are modified by the existing activities on a piece of land to accommodate new ones.

According to Wegener (1994) each of the changes has its own dynamic; the processes of land use change typically takes, three to five years and more to affect the physical structure of the city. The predominant form of urban land use change in developing countries has been outward spatial growth of settlements (Bhat et al., 2017; Brueckner & Fansler, 1983). This lateral growth occurs when the geographical coverage of urban land areas expands toward the periphery. This may lead to a change from low to medium and high densities within an urban area (Oluseyi, 2006).

Wei & Ye (2014) note that the pattern of land use change is a response to demand for land in urban areas. Settlement development can therefore be determined by assessing the rate of change of land use, which is also a function of economic growth, interactions and demographic changes. Rural land areas can be largely grouped together while urban land uses rely on the urban size, with socio-economic activities providing the economic foundations for the town. The change from one use of land to another depends on factors such as socio-economic activities, policies and the location of facilities in the town.

2.3.1 Administrative Transition and its Implication for SSA

Among the legacies of the colonial regime in most developing countries was the way towns were located, grew, and connected. The location of the towns, the socio-economic activities taking place, and interactions with surrounding regions and rural areas affect the growth of small urban centres (Rondinelli, 1983; Tacoli, 2004). The colonial regime located cities in coastal areas to facilitate transportation of goods abroad, and this continues hence affected the urbanisation rate of the coastal regions (Beall & Fox, 2009).

Global economic integration, while playing a significant role in the growth of cities (Cohen, 2004). Various countries recognise hierarchies of settlements, defined using different criteria, including economic and demographic criteria, and others relating to density, connectivity, and the international significance of the centre (Wenban-Smith, 2014). However,

in most Sub-Saharan African countries, population growth is the main determinant for urban classification and recognition.

2.4 Factors affecting the spatial growth of settlements

No town is ever static. The spatial growth of small urban centres is much affected by the landforms, economics, planning approaches, infra-structure development, and population dynamics (Linard et al., 2013; Li et al., 2003). Urbanisation is a driver of growth and socio-economic transformation (Li et al., 2013; Tan et al., 2014). Each of the factors varies according to the context and the planning techniques applied, which are both social as well as economic.

In many Sub-Saharan African countries the drivers of urban expansion are unregulated by formal planning processes (URT, 2014b). The approach to land development affects a town's spatial growth. Urban growth or expansion occurs in two general ways; either systematically, where land is developed as part of a planned process or through random development characterised by abrupt processes (Braithwaite, 2006). There is a positive relationship between the spatial expansion and socio-economic development of an area; socio-economic data, such as population and GDP data, are shown to be positively correlated with urban expansion in various studies (Wu & Zhang, 2012; Li et al., 2003).

As towns expand, they also undergo land use changes. A series of land use conversions occur within the existing development and beyond. The urban expansion is an outcome of changes in land use, mostly from agriculture to urban use. The changes are temporal in nature and their growth patterns vary over time and with economic change (Li et al., 2013).

The communities who reside in these developing areas play a role in the ways the expansion occurs. In areas where agriculture dominates community activities, the pace of change may create difficulties for spatial planning, for example when deciding on suitable locations for new activities; more so than in areas where commercial activities already predominate. Because land prices are low in these peripheral areas, land speculators grab land for future profit, negatively affecting socio-economic activities and pushing residents away from these areas. Since planners are not interested to such locations, because they are not yet part of the urban

development plans, informal activities and land uses emerge (Bhan, 2013) peripheral land areas as people adapt to the changes.

2.4.1 Physical factors for settlement spatial growth

Varied factors influence physical spatial expansion of urban areas including the nature of physical environment. Physical factors include topography (slope and elevation) and proximity to crucial basic services (i.e., water, rivers, and flood-free areas) (Tan et al., 2014). The nature of the land-form and the level of physical accessibility significantly contribute to the structure of settlement growth and development characteristics.

Difficult areas for construction, such as hills, valleys, low-lying areas, and along water courses incur high development costs. Locations where settlement development is constrained by physical land-form can only be developed using advanced technology and when the financial capacity of developers is sufficient. In developing countries, where settlement development is carried out by individual households, these areas where construction is difficult or costly are normally avoided.

Advances in technology and economic development modify the use of land and the development structure when demand for land is higher than the supply (Tan et al., 2014). Catchment areas for services such as water also determine the pattern and pace of urban growth. Physical factors, which include road patterns and environmentally fragile areas, play roles in determining the spatial arrangement of settlements in a determined area, affecting patterns of spatial growth, structure types, and housing density.

Settlement development in most of developing countries, as discussed in the previous sections, takes the form of horizontal growth. This form of growth depends on land-form and accessibility. Physical factors are therefore crucial for settlement development in most developing countries.

2.4.2 Socio-economic factors for spatial settlement growth

Socio-economic factors play an important role in determining the characteristics of settlement growth. The economic capacity and income of residents dictates how settlements develop. Studies indicate that socio-economic factors are an important driver of spatial urban expansion and affect the structural organisation of growing settlements (Linard et al., 2012; Tan et al., 2016).

Socio-economic factors include population size, distance to facilities, distance to roads and their accessibility, and gross domestic product. These factors influence socio-economic activities and the overall pattern of settlement growth. The spatial expansion of a settlement is determined by the ability of people to reach services, get access to their homes, population pressure, and availability of important facilities.

A population increase in an area influences socio-economic activities stimulating the development of small urban centres or neighbourhood centres in various localities. Li et al. (2003) argue that population growth and economic development are the main two drivers of spatial urban expansion. They add that population growth increases demand for space, hence driving expansion, while economic growth promotes actual urban growth. In other words, economic growth is the engine that enables a settlement to accommodate the existing population, while creating opportunities for outward expansion by increasing access to important social services.

2.4.3 Development control factor for spatial settlement growth

Development control as a measure to manage spatial growth is important in limiting haphazard development. Li et al. (2013) discuss policies and planning practice as tools to manage spatial expansion. They claim that zoning, masterplans and conservation areas have the potential to limit and determine the form of spatial growth in urban areas.

Most small urban centres face challenges such as mixed land uses (farming and settlements), uncontrolled inward migration and low financial capacity to manage spatial development (Satterthwaite & Tacoli, 2003). In majority of towns in developing countries, settlements grow sporadically because of the lack of regulatory frameworks such as masterplans and strategic plans (URT, 2014b). Unregulated development is caused by the lack of a guiding planning framework, or mismanagement of the planning instruments in place during settlement growth (URT, 2014b). But even within areas where masterplans exist, informal settlement development still takes place, influenced by economic interests of developers and economic illiteracy in land matters.

Pato et al. (2016) discuss the relevance of physical factors for land use change and planning processes and argue that masterplans must consider physical parameters such as landform and accessibility that affect settlement development. These instruments thereby acquire potential for understanding

the dynamics of growth and land uses changes. Two of the essential preconditions for urban spatial expansion are land availability and accessibility (Li et al., 2003). These factors, in addition to enabling spatial urban expansion, also influence the development of socio-economic activities and economic growth, and shape relations between the centre and adjacent areas (Li et al., 2013).

The conversion of non-urban to urban land increases the intensity of land use in the surroundings areas, altering the structure of socio-economic activities and population composition. These changes mostly affect non-urban land at the edge of the city and areas where there is mixed use of urban and non-urban uses of land within small urban centres (Li et al., 2003). Mechanisms to manage land use and control development are important for regulating the use of land and settlement characteristics in a developing area.

2.5 Institutional frameworks governing growth of small urban centres

Planning frameworks for urban centres identify potentials for growth and support their physical development. Because socio-economic activities and land uses in urban areas are continually changing, plans are needed to regulate land use (URT, 2007). Urban functions and land use develop dynamic and, therefore, require regular appraisals and control to manage the growth of settlements and socio-economic activities (Sridhar, 2010). The governance of land use development requires regulations, policies, laws, financial and human resources, technical competence and appropriate institutional frameworks (URT, 2007).

Issues which influence urban land development, such as rapid population increase, the condition of infrastructure (accessibility and ease of movement) and exploitation of natural resources, cannot be managed with inappropriate institutional frameworks for land governance (Palmer et al., 2009). The majority of small towns in Tanzania are characterised by extensive unplanned settlement development with little control over the functions and organisation of different land uses, despite the existence of laws (URT, 2014b).

The dominance of major towns and cities in most developing countries of Sub-Saharan Africa means that small urban centres are neglected by planners and agencies responsible for resource allocation (Peter & Yang,

2019). Small urban centres are neglected as being neither rural nor urban: Rural geographers and sociologists tend to focus on villages in their settlement studies, while urban studies predominantly consider cities and metropolises (Servillo et al., 2017; Steinführer et al., 2016). The two disciplines (i.e. geography and sociology) ignore small urban centres. Small urban centres are the setting for both rural and urban activities. However, planning laws focus mainly on urban issues; this creates challenges in the implementation of these laws when applied to settlement development in small urban centres.

Numerous policies and laws effect land use development by regulating the growth of settlements in Tanzania. Policies and laws governing land development in Tanzania are numerous. Policies include, the Land Policy of 1995; the Human Settlements Development Policy of 2000; the Environmental Policy of 1997; the Land Act No. 4 of 1999; the Urban Planning Act No. 8 of 2007; and the Environmental Act No. 20 of 2004. The National Land Policy of 1995 section 6.1.2 requires the respective government authority to adhere to vertical settlement development rather than the horizontal growth, as a means for protecting surrounding agricultural lands (URT, 1995). Vertical development is inter alia aimed at controlling sprawl of settlements; this is necessary to protect surrounding environmental resources from encroachment.

Policies, laws, and other instruments should help to guide development of settlements and other land uses to check haphazard settlement growth. Without this, unregulated settlement development results in informal settlements, land grabbing, and conflicts over land use (Palmer et al., 2009). Ineffective control, urban sprawl, and weak institutions, especially those in charge of land use planning and management, are some of the problems of urbanisation experienced by the majority of developing countries (UN-HABITAT, 2012).

The towns in these countries also have limited financial capacity; this affects their ability to plan and control land use development (Wisner et al., 2015). Therefore, despite the existence of laws various laws and regulations, small urban centres need concrete political support to guide their development. Uncontrolled land use development together with incremental development of settlements has led to the predominance of informal settlements in most urban areas. This kind of development undermines the socio-economic and spatial development of small urban centres, as well as their institutional capacity to manage urban growth (Guevara, 2014a).

Many small urban centres are unable to cope with the rate of their expansion; there is therefore a need for alternative strategies to manage their territory (OECD, 2011). Increased demand for serviced land for residential and investment purposes arising from the influx of people from rural and other urban areas creates challenges for the management of land uses in small urban centres. Issues pertaining to land administration become too difficult to be handled by existing technical approaches; hence planning agencies cannot cope with the growing challenges (Palmer et al., 2009).

Apart from the laws and regulations, there are other organisational structures governing the growth of towns and cities (Scott, 1995), Institutions such as the local government authorities, *Mtaa* (Sub-ward) and Ward authorities may determine the ways settlements or small urban centres are managed and organised. Particularly in relation to matters that concern land transaction and development, these grass-roots actors exert an influence both directly and/or indirectly. The roles they play include administration of land transactions, reporting actions that contravene planning regulations; and overseeing day-to-day development activities in their areas (Nuhu, 2019; Pedersen, 2012).

The institutional framework should provide guidelines for the growth of urban areas and regulate land use changes. However, rapid growth of urban areas, combined with inefficient management of land use and urban growth, result in spontaneous settlement development. Planning laws and policies provide guidelines for addressing development challenges, but uncontrolled urban growth continues, as a result of pressures arising from rapid urbanisation, combined with weak management strategies.

2.6 The role of small urban centres in urbanisation

Small urban centres are important for urbanisation many ways. The debate on how small urban centres foster development started during the 1960s when these areas were considered important for enhancing development of their surroundings (Baker et al., 1992). At this time, these locations were considered important for the supply of services and marketing of rural products. In subsequent decades, attitudes towards urban growth changed in many countries. In the 1970s small urban centres were considered non-beneficial (Baker & Pedersen, 1992).

The contemporary understanding of urbanisation and urban growth recognises has shown that small urban centres are crucial for development of a country. The small urban centres host a majority of urban population; provide environmental resources such as food, water, and clean air; and act as market for rural commodities (Steinführer et al., 2016; Caplan & Harvey, 2010; Satterthwaite, 2017; Mugabi & Njiru, 2006; Tacoli, 1998, 2017). Recent data show that small urban centres host about 54 per cent of the total urban population (United Nations, 2015). According to this United Nations report, the urban population in the small urban centres is projected to continue to increase rapidly in the developing countries of the Sub-Saharan Africa.

The majority of rural migrants end up in towns close to their original dwelling places (Christiaensen et al., 2018). Since most small urban centres are located in areas between cities and villages, these growing centres are the destinations for a large percentage of migrants from rural areas. At the same time, these migrants support the rural areas financially through remittances sent back to the villages (Christiaensen et al., 2018; Bah et al., 2003). In this regard, small urban centres are crucial units for understanding urban problems. The change from agricultural activities to urban-based activity in a small urban centre helps to alleviate poverty by substantially increasing incomes, to a greater extent than when someone effects a similar change in a large city. Small urban centres also have potential as a learning environment for unskilled labour (Christiaensen et al., 2018).

Small urban centres, as stated in the previous paragraphs, are the source of remittances to rural areas while benefitting from the supply of food from the surrounding rural villages. The sharing of resources between the small urban centres and rural areas creates strong interactions that facilitate solving problems (Lawi, 2013). Hence both employment opportunities and innovative capacities of small urban centres benefit surrounding rural areas.

The growth of small urban centres is diverse because of the diversity of factors stimulating their growth. Since small urban centres have long ignored in research and policies guiding urban development, little is known about how they develop and grow (Hugo & Chapman, 2004; Visvaldis et al., 2013). Hence contextual studies are needed to understand their growth dynamics (Denis & Zérah, 2017). Forms of growth of small urban centres vary among countries, and regions and over time. (Pedersen, 1997). Although the forces stimulating attracting the growth of towns and cities

may be the same as those driving the growth of small urban centres, other factors need to be considered; for example, the same factors driving the growth of cities might be causing the decline of small urban centres (Owusu, 2005).

As towns grow, their management become challenging, especially when population growth exceeds economic growth (Cohen, 2006). If researchers and policy makers neglect the growth dynamics of small urban centres, which are future cities and home to the majority of the urban population, the problems of haphazard settlement development will persist and aspirations for sustainable urban development will fail to materialise. There is a need to explore research areas that develop understanding of different development challenges, to provide inputs for land use planning that prioritises the allocation and use of resources used for sustainable urban development.

The most important components for the growth of small urban centres, especially in an African context, include growing rural cash incomes, decentralisation of public power, service provision and private sector development to satisfy local demand (Pedersen, 1997; Rondinelli, 1983). The small urban centres are important areas for the study of urban growth dynamics and land use changes. Moreover, since they comprise both urban and rural features, such studies can contribute more generally to the understanding of both urban and rural development.

2.7 Chapter summary

The chapter has covered definitions of terms, characteristics of urban growth and urbanisation in the context of developing countries of Sub-Saharan Africa, and factors affecting formation, growth and interactions of small urban centres.

The chapter describes how the lack of development control, poverty, and economic challenges result to sporadic settlement growth in Sub-Saharan Africa. Despite their small size, small urban centres hold the majority of urban population; hence more attention should be given to them in urban discourse and resource allocation. However, the literature indicates that in most countries, small urban centres are neglected by policy makers, reflecting a lack of understanding of their role and significance for urban development and regional growth.

Despite the existence of policies and development projects intended to support the growth of less affluent areas including emerging small urban centres, these centres grow without adequate controls on land use change and spatial growth. The crucial factors affecting the emergence and growth of an urban centre include political interests, historical significance of place, resource availability, location relative to other areas, and local government capacity to control. The literature review in this chapter provides the foundation for discussion of theoretical and conceptual issues related to urban development in the following chapter.

The discussion in this chapter highlights that small urban centres in Sub-Saharan Africa are characterised by unguided growth and rapid population increase. The centres are the setting for informal activities which are not regulated by the authorities, leading to a settlement pattern aligned with major roads. This growth pattern, and other characteristics of small urban centres explored in this chapter raise the question of whether the nature of urban growth in cities is the same as those experienced in the small urban centres. Further, how does infrastructure development determine growth patterns of settlements and land use organisation in specific context? These questions and others will be addressed in the theoretical discussions and analysis of empirical findings in the following chapters.

3. Theoretical and Conceptual Frameworks

This chapter presents the theoretical and conceptual framework underpinning this study of land use change and urban growth dynamics. The two theories (central place and urban land use) are used to explain the emergence and growth dynamics of small urban centres. Despite the diversities of towns in terms of contexts and levels of development, the theories provide the basis for understanding the factors affecting their development and growth. However, current theories of urban development and land use change, don't necessarily fit all contexts (Angel et al., 2005; Bourne & Simmons, 2017; Djurfeldt, 2021).

3.1 Land use and urban development

The theoretical framework used in this study describes the emergence, growth and development of settlements in urban areas, taking account of contextual characteristics. Urban areas in developed countries differ from those in developing countries in terms of densities of development, with higher densities found in developing countries (Angel et al., 2005). This thesis draws on theories, concepts and models to understand land use change and spatial growth in small urban centres. The theories and literature reviewed provide concepts for the analysis of land use change and spatial urban growth. The theories represent different ways of seeing the world; hence, as analytical tools, they are incompatible with each other (Reese & Overton, 1970).

Land use is the main concept in the theoretical framework; discussions here refer to land use in urban built-up areas while adjacent rural areas are ignored. Planners use the concepts of land use as a tool, and as a lens to understand the structure and organisation of towns by examining functions

of spaces (Blomley, 2017). When land use is unregulated, this affects private properties because the value of land and its use are determined by individual properties during the planning process; unplanned land attracts wasteful uses of land and resources (Blomley, 2017; Wideman, 2019). Urban planners analyse uses of individual pieces of land to visualize the structure and growth of urban areas; and land use planning to guide, regulate and control land use on properties in the towns. Land use planning on the other hand, comprises the allocation and alteration of property uses (Jacobs, 2009). Land use therefore encompasses planned uses and actual uses of land on properties which occupy the land in question (Blomley, 2017). Together, planned land use and actual land uses on individual properties determine the usefulness of land and productivity of urban.

Municipal and quasi-municipal laws govern people and properties through the concept of use. When assigning a use to a piece of land or a space and regulating access to the land, the government is indirectly governing the people's activities on the land and hence also governing people indirectly (Valverde, 2005). In order to control the rights to own properties and access to land, the government places restrictions on land use and assigns classes to land, which allows legal uses of land to be distinguished from illegal uses. Bhan (2013) uses the case of India to show how government regulations and the classification of land lead to formation of what is called illegal land use or, in other words, the development of informal settlements. This development of legitimised land areas, rather than unrecognised ones, is what differentiates formal from informal development in an urban area (Bhan, 2013; Blomley, 2017).

Regulation of land use and economic development are managed differently in different contexts. For example different regulations governing housing development apply in the developing compared to the developed world (Porter et al., 2011). Because of these differences, the way land use is understood and analysed should also take account of contextual characteristics. In most European countries, mass public housing development in the post war period influenced the regulation of land use and urban development (Roy, 2005; Valverde, 2011). By contrast, in most developing countries, urban development has largely remained in the hands of individuals. The planning and regulation of land use has created a division between areas of formal and informal land use (Bhan, 2013). Conventional models of urban development and land use describes the

situation in the developing countries better than the developed areas. In the developed countries (i.e. Europe and America) planners think about economic growth while fighting to eliminate poverty in urban spaces; whereas poverty is a feature of the dominant modes of land use in most developing countries (Porter et al., 2011).

This study focuses on land use and land function in built-up urban areas. Central place theory and urban land use theory are selected to examine land use change and urban growth in the growing urban centres. Central place theory explains the factors driving the formation of urban areas and their interaction with surrounding areas. On the other hand, urban land use theory describes the characteristics of growth and land use changes in an urban area in the preliminary stages of development. Neither central place nor urban land use theories fully capture the changes that occur in urban development and the factors driving these changes; hence they complement each other.

3.2 Central place theory and emergence of towns

Central place theory considers the emergence, location, number and size of settlements (Getis & Getis, 1966). The theory was developed in 1933 by the German geographer Walter Christaller and first translated into English in 1966 by Losch (Getis & Getis, 1966). The theory is applicable to the socio-economic and spatial development of urban land uses, wherever there is confluence of infrastructure networks, agglomeration of services, and/or exploitation of natural resources such as minerals, land and water (Openshaw & Veneris, 2003). In this model, the most important factors in the growth and development of urban centres are socio-economic development, population growth and land use change (Openshaw & Veneris, 2003; Wilson, 1978).

Despite the increasing complexity of networks of cities (Boix, 2003), central place theory remains relevant for understanding the spatial arrangement and hierarchical order of urban settlements (Getis & Getis, 1966). The theory uses two concepts, 'range of goods' and 'population threshold' to explain services provision the interaction of people and activities in an urban centre (Smith, 1986).

In the previous chapter (see figure 2) urban growth processes are depicted as mechanisms by which different factors influence, guide and control urban development. Planning, socio-economic activities, and ecological and environmental conditions are important for the formation,

growth and development of a small urban centre. These mechanisms, interacting with socio-economic activities within and outside the settlements impact on urban growth (see section 2.1.4).

In central place theory, two important elements, population threshold and the range of goods, determine urban growth and the provision of services.

- Population Threshold

Central place theory defines the population threshold as the minimum size of population required for the provision of a certain level of services in an area (Openshaw & Veneris, 2003; Smith, 1986). In this theory, the population threshold is an important element that is used to differentiate urban and rural centres, and for differentiating higher order and lower order centres (Batisani & Yarnal, 2009; Seto et al., 2011). The categorisation of centres in terms of population size and the level of service provision reveal how each one of these aspects depends on the other.

Population size and population growth are essential for the initial and subsequent development of various socio-economic activities and the provision of services, and hence influence the spatial extent of the town. Population change drives changes in land use and its organisation (Dubovyk et al., 2011). Since the central area has a larger population and more developed services than its surroundings, residents in the surrounding areas depend on the core for most of their basic services. This dependence motivates people in peripheral areas to commute to the urban core, leading to the interaction of people and activities.

- Range of goods

According to central place theory, range of goods refers to the average maximum distance a person is ready and able to move in order to access certain services (Wilson, 1978; Smith, 1986). The characteristics, value and availability of certain services influences travelling behavior, and determine how far a person has to travel to access them (Johnston, 1966). Distance to the major road network, central facilities, and neighbourhood centres are some of the factors influencing the choice of residential location (Hughes, 1972). The closer an area is to the central facilities, the higher the housing density, while less time and money are spent on commuting (Vermeiren et al., 2012; Batisani & Yarnal, 2009; Müller et al., 2010).

The population threshold influences the interaction of people and activities between the lower and higher order centres through the range of goods, i.e. the distance people are prepared to travel to the nearest service available at a reasonable price. The cost of commuting and availability of services are crucial factors influencing commuting behaviour.

A schematic representation of interactions within and among urban centres is provided in Figure 3. In the diagram, centers are numbered in descending order from the highest rank to the lowest. The central centre in the figure (not numbered) is the highest level (core) urban centre while surrounding centres of the next lower order are labelled A1, A2, A3 and A4. Each of these, which are at the same level, is similarly linked to groups of lower order centres. This pattern is replicated down to the lowest level in the urban hierarchy.

This centre periphery relationship is exemplified by the urban governance system in Tanzania. The urban governance hierarchy comprises the City level at the apex of the diagram with municipalities (A1) at the next level down, followed by Town Councils (A11) and, at the bottom, urban authorities. The same pattern exists in the regional context, with a District Authority at the apex, followed by Trading Centres and villages at the bottom.

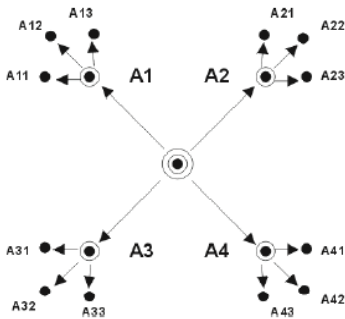


Figure 3. The relationship between centres in the central place theory hierarchy
Source: (Boix, 2003)

The higher the order of a centre the higher the level and number of services and greater the population size. More services attract businesses, leading to the development of socio-economic activities and higher land values. The use of land in a higher order centre and the socio-economic status of its

inhabitants reflect the availability of services and diversification of socio-economic activities in the area.

The spatial relationship between different centres determines the interactions of people and activities: between urban and rural, urban and urban and rural and rural areas (Boix, 2003). The settlement hierarchy is also a functional hierarchy: functional capacity decreases as one moves from the urban core to the surrounding settlements such as district and village centres.

Central place theory is built on the following assumptions:

- Settlements develop on a uniform land surface where spatial development and relationships between levels are feasible.
- There is equal distribution of population and resources in an area.
- People have the same purchasing power and there is uniform availability of products.
- Factors such as culture, leadership and politics do not influence settlement growth.
- The cost of transportation is equal for all modes of transport and proportional to distance.

Based on these assumptions, the theory sees the growth of urban activities and land use changes as being influenced by internal and external factors. Central place theory highlights the value of place and the importance of service provision within an area and in the surrounding settlements.

Central place theory is underpinned by three principles, namely: the market principle, transport principle and administrative principle. These principles are described in the following sections.

3.2.1 The market principle

Central place theory sees markets as centres of activities where the functional services of the higher order centre is three times its subsequent lower order centre (Wilson, 1978; Openshaw & Veneris, 2003). The relationships between centres and services at different levels in the hierarchy create interactions between different centres. Investment in higher order centres, influences the growth of lower order settlement; for example, investment in small urban centre affects growth in surrounding rural areas, and the lives of their residents (Rondinelli, 1983). The functional relationship between

different centres in the hierarchy and the central core location drives the spatial growth of settlements (Openshaw & Veneris, 2003; Wilson, 1978).

The market regulates the relationships between centres: for example, the distribution of rural products to urban centre. The interdependence of centres in the hierarchy drives the diversification of non-rural socio-economic activities (Christiaensen et al., 2018). Markets create opportunities for the growth of other sectors and for networking outside the local area. The theory assumes that the number of jobs in an area is proportional to the diversity of socio-economic activities; moreover the number of functions of an urban centre is proportional to its size (Christaller, 1966).

Market relationships between the lower order centres and higher order ones reflect the size of markets at different levels of the hierarchy (Akkoyunlu, 2015). In addition to population size, market relationships reflect the presence of infrastructure links and agglomerations of activities (Tacoli, 2008, 2017). As discussed in the previous chapter, there is a strong interdependence between small urban centres and the surrounding rural centres (hinterlands), and between higher and lower order urban centres.

3.2.2 The transport principle

Connectivity between different centres is a crucial element for socio-economic development (Smith, 1986). Transportation corridors enable movement of people and goods between higher and lower order urban centres and between places with different levels of service provision (Wilson, 1978). Central place theory sees transport as determining the range of goods available and creating markets for products. The theory states that important economic functions are aligned with major transportation routes, while less important functions are pushed towards the periphery (Openshaw & Veneris, 2003). While recognising the importance of connectivity within a centre, the theory highlights the importance of spatial relationships between different functional centres and, therefore, the importance of improved infrastructure facilities for urban growth. The confluence of infrastructures and of activities are crucial factors for the emergence and growth of a centre (Wilson, 1978).

The urban centre forms a transport node allowing activities to agglomerate and people to engage in different activities. Connectivity by means of roads and other forms of transport influences the growth of centres. The more highly developed the transport function, the higher the

rate of urban growth. The means of transport available determine the range of activities and functions of in an urban centre.

The connectivity principle highlights the importance of small urban centres in the settlement hierarchy, and their role in providing surrounding centres with access to services and markets. The theory also highlights the importance of improved transportation systems in the small urban centres for reducing the problem of distance. As stated by Jordaan *et al.* (2004), distance is a function of time and cost. Ease of movement for communities within and outside the urban centres attracts more activities and residents, hence increasing settlement growth. The distance that a person is willing to travel to access services is largely determined by the range of the goods available and, the cost of travel. The growth of a centre is therefore a function of physical accessibility (presence of modes and means of transport).

3.2.3 Administrative principle

Central place theory identifies administration as one of the principal elements driving the growth of urban centres. The theory states that when the higher order centre is overworked in terms of activities and population, other smaller centres emerge to takeover or superimpose the functions of the bigger centres (Smith, 1986).

Several lower order centres are subordinate to a single common higher order centre, which has administrative power over them. The rules, regulations, laws and bylaws affecting land use changes in small urban centres and their development are dependent on the way services are distributed. This principle brings to the fore the importance of the relationships between centres (Openshaw & Veneris, 2003).

Small urban centres are to some extent autonomous, i.e., have their own administrations. As one moves from a lower order hierarchy to the next, the level of services changes (Hughes, 1972; King, 1985). Through their functional and spatial relationships, centres at different levels in the hierarchy have shared responsibility for important administrative functions.

The location of the population of an urban centre is determined by the distance to services and cost of accessing them (Vermeiren et al., 2012). The economic activities of rural people and markets for their products depend on the adjacent urban centres. These activities also benefit urban areas by reducing development costs for urban residents. Construction

materials and manpower can be obtained from rural areas, creating a rural-urban link, whereby both rural and urban areas depend on each other for socio-economic development (Djurfeldt, 2012).

From central place theory, it is evident that centres will emerge and grow in areas where there is a confluence of features like roads, railways, and water sources, which attract activities such as trade or services provision. The size of an urban centre and its capacity to provide services to adjacent areas also affect how it is influenced by these areas.

Central place theory focuses on the spatial organisation of centres and their relative distance from each other. The question remains as to whether this theoretical framework fits the contexts of developing countries. The nature of growth of small towns in most developing countries of the Global South and their classification in terms of status, population size and availability of services cannot necessarily be determined by the same theoretical framework used for cities (Bell & Jayne, 2009). Furthermore, researchers of small urban centres in developing countries have under-theorised and failed to develop a full critical vision of the towns they are studying (*ibid*). This lacuna in the theorisation of small urban centres suggests the need for a rethinking of the possible ways of understanding their growth dynamics.

The following section discusses the theory of urban land use and its application to the study of the growth dynamics of the small urban centres.

3.3 The theory of urban land use and growth changes of small urban centres

The theory of urban land use has been developed in phases by different scholars in the USA since 1923 (McDonagh, 2007), as a way of understanding the land use structure of cities and land use organisation over time. The theory of urban land use focuses on the relationship between land use; extent and condition of housing development and manufacturing areas; and recreational areas; infrastructure links, and other physical properties and functions.

The theory is important for the developing country context since the urban development in these countries, particularly of emerging small urban centres, has adopted plans and strategies from conventional planning

guiding urban growth. The majority of the small urban centres in developing countries are characterised by a single central business area, low volumes vehicles (especially in centres located away from the influence of trunk roads), and concentration of buildings at the centre, but with few high-rise buildings which, in developed countries help reduce the outward spread of settlements.

The theory of urban land use has been applied in different contexts for instance in Christchurch by McDonagh (2007), to explain patterns of land use, road infrastructures, the built environment, and the growth of urban settlements. Although developed for application in American cities (Beauregard, 2007), the urban land use model, has been used to guide urban planning in developing countries (Keeton & Nijhuis, 2019; Roy, 2005). The growth and development of urban areas in developing countries has largely drawn on the model to organise land use, although the model itself has a wider focus, examining connections between land use, population change, and road connectivity.

Poverty affects the development of urban areas, especially in combination with ineffective land use planning, allowing the development of informal settlements (Roy, 2005). Urban land use is largely determined by the actions of individuals, with governments having limited control over settlement development. As argued by Roy (2005), small urban centres are at the bottom of urban economy and grow in a dispersed manner.

The theory of urban land use states that changes in land use are affected by changes in physical accessibility, land regulations, rent control and spatial distance from socio-economic facilities and services (Meyer & Turner, 1996; Schwirian, 2007). The organisation of land use in an urban centre affects other adjacent land uses and facilitates socio-economic development and spatial growth of the town (Briassoulis, 2019). Growth dynamics and changes in land use are affected by the socio-economic development and decision about land use.

The theory comprises three overarching conceptual models, namely: the concentric zone model, sector model, and multi-nuclei model. The first two models correspond to an urban area which develops around a single central business district (CBD). In addition to the centralisation of functions, these two models have in common a focus on the existence of highly developed infrastructure networks. These link the CBD to residential areas of different social-economic status, with different demographic characteristics, and

located at different distances from the centre (Meyer & Esposito, 2015). The model focuses on these elements to explain changes in the location, size and functions of urban areas. The two models (concentric and sector) are relevant for the discussion of land use in small urban centres in developing countries because they correspond to the characteristics of these centres. The multi-nuclei model seems irrelevant to the small urban centres in developing countries because these rarely contain multiple CBDs.

3.3.1 The concentric ring model

The concentric ring model represents an initial attempt to understand the land use structure of towns. The concentric model is referred to both as a model and a theory in this research. It was developed by the sociologist Ernest Burgess in 1923 in America to assess the growth of American cities (Guest, 1971; McDonagh, 2007).

The model was developed and tested in cities at a time when there were few cars. Difficulties are encountered when applying the model to current car-dependent cities. Although geographers now question its applicability to modern cities, where advances in technology have given rise to different patterns of urban growth (Meyer & Esposito, 2015), the model still accurately depicts the structure of urban land use and spatial organisation of many towns in developing countries (McDonagh, 2007; Schwirian, 2007). Unlike most developed countries, majority of developing countries are characterised by monocentric development; here small urban centres are crucial for development, services and employment, whose provision hence dictates urban forms (Cervero, 2013).

The growth of activities within the central business districts and their outward spatial expansion affect land use in other areas (Balakrishnan & Jarvis, 1991; McDonagh, 2007). As the central activities grow outwards, they replace existing activities in the adjacent areas. The pattern of land use change is explained by the theory as being linked to the development of road networks, which influences the structure of settlements as they develop. The theory also generates hypotheses relating to change in land use in urban areas in accordance with the fundamental principles of economics, including changes in population, income and transportation costs (Deng et al., 2008; Guest, 1971).

Towns and cities in most developing countries were founded during colonial times, and the planning principles adopted reflect concepts

prevalent in these countries at that time. These concepts included the centralization of functions, separation of different land uses, and the relative location of services (Schwirian, 2007). Despite the changes in schools of thought in the developed world on urban growth and land use development, developing countries are still using the same monocentric concept of development (Cervero, 2013). The concentric ring model is still relevant to small urban centres in the developing world, where the rate of land use change is low and there are few cars.

In small urban centres, most services are located in central areas, consolidating the primacy of these areas. The (monocentric) CBD continues to be the focus of land use planning, which creates competition for space use in many urban areas (McDonagh, 2007; Cervero, 2013). Most small urban centres in developing countries exhibit monocentric development, whereby the CBD is the main focus for urban activities, functions as administrative centre and transport node, and commands the highest land values (Pred, 2017).

The model explains land use organisation in an urban centre at its early stages of development. This model is configured to fit young urban areas where space exists for different land uses (Schwirian, 2007). The structure and composition of urban activities in rings, as explained in the next section, affects land uses, land values, and patterns of development. The central areas of the town have higher land values and more intensive use than the surrounding rings. The value of land decreases toward the periphery.

The next section discusses the relationship between settlement growth and infrastructure development.

Settlement and infrastructure growth in concentric ring model

The growth of urban settlements is influenced by factors such as infrastructure development, population growth, and socio-economic activity (Besussi et al., 2010). The presence of a road network linking different areas of the town makes commuting a viable option for urban residents. The transport infrastructure connects transport nodes and the surrounding settlements located in different rings (*ibid*). The theory depicts an idealized town as consisting of settlements in the form of concentric rings advancing outward from the urban core, with each settlement ring displaying different growth characteristics (Longley et al., 1991). The outward spatial growth of urban settlements is a result of built-up areas expanding to absorb the growing population (Besussi et al., 2010).

The theory explains that the growth of settlements in the form of concentric rings as a function of rent-paying capacity, which also determines location of different urban functions and the minimum density or space availability required for the growth of settlements in each ring. The growth of a settlement is a function of accessibility which is linked to presence of infrastructure lines.

The organisation of land use in the town gives rise to different land uses in the form of rings around the CBD as shown in Figure 4. The central zone (zone 1) is typically a commercial area with both old structures and new ones built during periods of redevelopment to accommodate commercial use. The commercial zone is densely built up and occupied by office buildings, theatres, hotels and commercial activities. High land values in this zone mean that it is dominated by activities that generate high return on investments. The majority of plots in this zone are of medium and small sizes, and mainly used for commercial purposes (McDonagh, 2007).

The zone adjacent to the commercial zone is the transition zone (zone 2). This zone is characterised by the presence of dilapidated housing structures, factories and abandoned buildings. The land in this zone is not intensively utilized; large portions are used for industrial purposes and there are few residents. The zone starts where central activities end and ends where the innermost residential zone begins. This is zone 3, which is characterised by the presence of high density housing (tenements) constructed on small residential plots. The zone also is characterised by criminal activities and informality that affect the quality of life of its residents (Besussi et al., 2010).

Immediate next to zone 3 is a residential zone occupied by single-family homes, with yards and garages. This zone 4 accommodates majority of the population employed in the town area. The outermost zone, zone 5, on the periphery of the town, is the commuter zone. This zone is inhabited by affluent families who commute to the town centre to work and access the services located there. The cost of living in this zone is quite high due to travel costs. The presence of a road network makes commuting possible.

The changing pattern of land use during the growth of a town is affected by changing income levels and the location of basic social services. The growth of income levels of individuals affects their capabilities and aspirations, leading them to relocate. As people's income grows they opt to change their residential, away locations from the central area (CBD), leaving more space there for commercial use, and resettle in the periphery. Here there is plenty of land available for residential use, as well as for diverse socio-economic activities, including agriculture. Middle-income and high-income choose to reside at the periphery, in areas characterised by low-density housing, greenery, and ease of waste management. Low-income families find themselves forced to locate near to the CBD in the transition zone, as they lack the resources needed to commute to the town centre to access the resources located there (Black & Henderson, 1999).

Burgess model

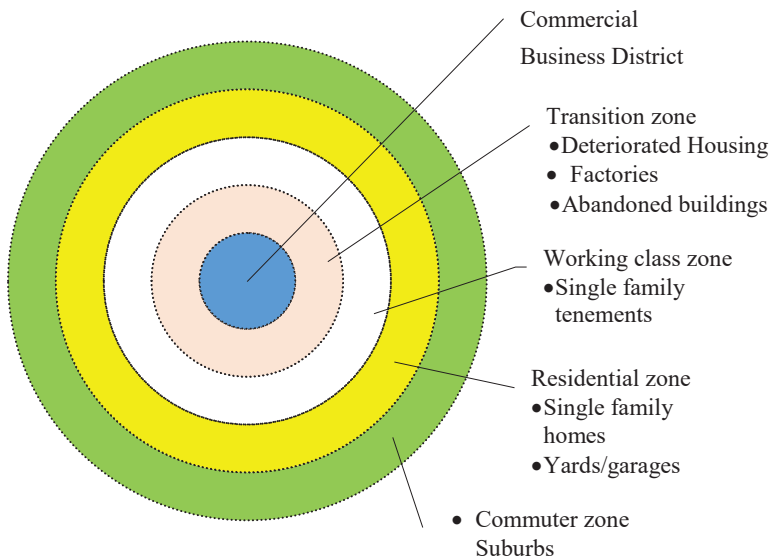


Figure 4. Concentric ring model
Source: (McDonagh, 2007)

Assumptions and criticisms of the concentric ring model

The model builds on 4-four bold assumptions all of which have been widely criticised.

The first assumption is that land is flat and allows development of the settlement in all directions. Critics assert that the assumption overlooks the differences in socio-economic status, social ties, preferences, land-forms, connectivity, and cultural factors, which are sometimes a hindrance to land use. The pioneer of this theory later on developed another concentric theory which considers the effects of terrain on the spatial growth of urban area (Meyer, 2000; McDonagh, 2007).

The second assumption is that the process of succession leads to changing spatial patterns of residential development in the area. This assumption has been challenged on the basis that it relies on low-rise housing, and is inapplicable to contexts where housing development is undertaken by the public sector. In this case, in most European countries during the post-war period, spatial development of urban areas becomes under control. Furthermore, towns with vertical development and/or low population growth might not necessarily experience the growth pattern depicted by the concentric ring model. Therefore, the spatial pattern of development depends on factors beyond the process of succession depicted in this model. However, in most developing countries, where low-rise housing dominates, urban growth is likely to occur through spatial outgrowth as depicted by the model.

The third assumption is that there is no competition between different modes of transport that might affect or alter the pattern of growth (McDonagh, 2007). Critics of this assumption point out that the model was developed during the time when towns had low volume of transport, and roads and railways determined their spatial growth. Location preferences by urban residents are also affected by the quality of a neighbourhood and its urban spaces. (Balakrishnan & Jarvis, 1991).

Finally, the fourth assumption is that socio-economic status and distance from the city centre determine the class composition of residents in the town. Most low-income residents choose to stay closer to the town centre in order to access the services there and reduce commuting costs. The assumption overlooks the fact that low land prices at the periphery also attract low-income households. The public ownership of land and housing invalidates the notion that income differentials are the principal determinant

of land use. Changes in education status and the introduction of the new modes of transport, such as motorcycles, in many urban areas, call into question the assumptions of the theory regarding proximity of settlements to the CBD.

Implication of concentric ring model for the growth of towns and land use changes in developing countries.

The concentric ring model of urban growth has several implications for urban development, including, among others:

- a) The outward spatial urban expansion causes difficulties in the provision of basic infrastructure services such as water and electricity because of the long distances between peripheral areas and the central zone. This distance increases the cost of providing basic social services. The rings of settlements extend outward while crucial services remain concentrated in the CBD.
- b) Since settlement growth is the result of actions by individuals in most developing countries, existing land uses will be replaced by new ones to accommodate services needed in the town. This replacement will alter the initial plan and hence affect the level of services provided.
- c) The theory clearly separates different land uses and thus facilitates the management of land uses changes.

Despite all the criticisms of the model, small urban centres in countries have features which support its analytical framework. The small urban centres considered in this study are mainly dominated by low-value buildings, exhibit broadly uniform levels of economic development, and offer a limited choice of modes of transport. However, unlike cities where the periphery and the CBD are two distinct places, in small urban centres the CBD and periphery are located adjacent to each other.

3.3.2 Sector theory

The sector theory (or model) provides a supplementary framework for analysing the land use structure of towns. The sector model was developed by Hoyt in 1930 as further development of the concentric ring theory (Meyer & Esposito, 2015; McDonagh, 2007). Like the concentric ring

model this model was developed in the USA. This theory depicts the pattern of land uses as clusters, whose formation is affected not only by socio-economic factors, but also racial segregation, an added element which is not considered in the concentric ring model (Meyer & Esposito, 2015). Like the concentric ring model, the sector model depicts an idealised town as consisting of a core CBD, with zones dominated by different land use categories growing outward to the periphery.

Sector theory states that, if land-forms do not limit spatial growth, sectors grow outwards, forming wedges of different land uses, from the central zone towards to the periphery. People similar to each other cluster together in sectors, which grow toward the periphery without encroaching on one another. The network of roads separates different clusters of land uses, connecting the periphery to the urban core (McDonagh, 2007; Ayeni, 2017).

As a town grows, sectors where related activities take place start to shift and form clusters of sectors with related functions (Schwirian, 2007). As in the concentric ring model, the sectors spread out along the main transport links that connect the central zone to the outlying areas. The sectors join up to create clusters of diversified activities. People and areas that have a competitive advantage over the others, and hence have higher incomes become isolated. Sectors located along the main transport route that are dependent on transportation remain in the same location for ease of commuting (Beauregard, 2007). Commercial development occupies all accessible locations adjoining related activities.

In the model, the clustering of different functions goes hand in hand with spatial growth. Some functions are pushed outwards towards the agricultural land on the periphery, as farming activities are pushed away from these locations. The old structures and functions in the central area start to spread to the other zones and occupy available spaces within the town as shown in Figure 5. The figure shows an example of the spatial distribution of economic sectors in relation to the CBD. Each cluster is identified by the type of socio-economic activities and population characteristics.

New towns in developing counties, particularly small centres, do not have all the necessary services; they acquire these services as the town grows. These services occupy the available spaces left unoccupied during earlier stages of growth (McDonagh, 2007). In the model, areas where

construction is difficult are avoided during the early stages of urban growth. Later, when more affluent people with the capacity to do so begin to construct in these locations, this stimulates the development of other sectors of the economy and provision of related services, such as electricity and water supply. This affects existing housing and land use, as rental houses are forced away from these high-cost development areas.

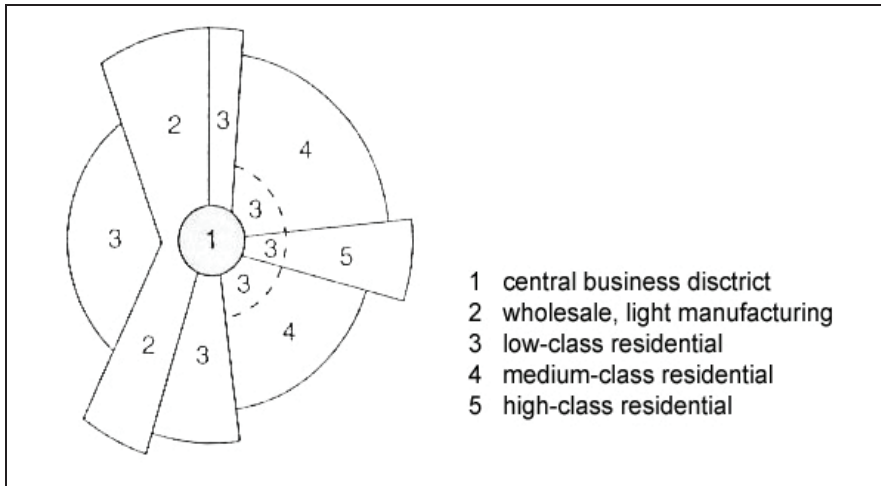


Figure 5. Sector model
 Source: (McDonagh, 2007)

The sector model shows the relationship between clusters of land uses and compatible activities adjacent to the cluster. Compatible land uses will cluster together while incompatible ones will disperse (McDonagh, 2007). Infrastructure development also determines the pattern of growth and distribution of different land uses in the town: As roads linking different parts of the town spread outwards and are improved, they attract socio-economic activities that spread out alongside them. The growth of the town hence takes the form of expansion of sectors of related economic activities, with different demographic characteristics.

Like with the concentric ring model, the sector model incorporates assumptions, three of which in particular have been widely criticised.

The first assumption is that public transport is the principal mode of transport. The assumption has been criticised on the grounds that economic growth and globalisation have increased access to private means of

transportation. Public transport operates differently from a transport system dominated by the private sector. The main difference lies in the fact that the private sector is profit oriented, hence selects routes which are profitable regardless of where they go to, unlike public which is service oriented. This gives rise to different patterns of land use change.

The second assumption is that the clusters are supported and separated from each other by railways and major roads. This assumption has been criticised because railways are not a feature of every urban area. The majority of small urban areas in poor countries do not have railways or even adequate roads. The circulation of road transport in towns in developing countries is inefficient (Ayeni, 2017).

The model also assumes that specialisation occurs, bringing together different land use clusters for specific purposes. This assumption has been criticised for failing to consider land-form and physical features as possible constraints on the spatial development of sectors. Therefore, this assumption may not be valid in some areas outside America (Ayeni, 2017).

Sectors with similar demographic and socio-economic characteristics are located adjacent to each other (Schwirian, 2007). The cost of housing determines people's residential location, giving rise to a pie shaped distribution of wedge-shaped sectors, as shown in the diagram. The sectors grow outward from the CBD with no mixes of different socio-economic activities in the same area (Ayeni, 2017). According to the authors, the areas with high housing costs (zone 4 in Figure 5 and zone 5 in Figure 6) are occupied by higher ranking socio-economic groups. The location of this group of people impacts strongly on the options available to other economic sectors in adjacent areas (Schwirian, 2007). In contrast, less affluent social groups live in areas close to the CBD, and in risk-prone areas such as flood plains, as they are pushed out of other areas by the competition for space and rising land values, which spread outwards from the central area of the town. Socio-economic status, similarities between activities, and the economic potential of prime locations in the urban centre strongly impact on the structure and organisation of land uses and spatial growth of the town.

According to the theory of urban land use, features determining growth of small urban centres include:

- a) Existence of a central point which functions as the source of different services provided to the town. This core area is the main

- location for socio-economic activity, with higher land values than surrounding areas.
- b) Settlements of low-income families are concentrated around the urban core, for ease of access to employment and livelihood opportunities.
 - c) Growth of the town centre is a function of transport activities and interaction between the centre and its periphery.
 - d) Distance to facilities effects the location of residential areas in the town

The sector model has implications for the growth of towns and land use changes in developing countries. The model suggests an organisation of land uses around the CBD and extending along infrastructure routes to the periphery. The arrangement of land uses is problematic for a number of reasons:

- i. The high cost of social services provision due to the distance from the centre to settlements at the periphery
- ii. The model provides unclear guidance for land use planning, as each land use sector extends to adjacent sectors following the lines of roads towards the periphery, with little control over land use changes.
- iii. The organisation of land use in the model restricts land use replacement, and hence limits both the expansion of settlements and growth of the urban centre

3.4 Conceptualisation of land use change and urban growth dynamics

A conceptual framework is used to provide a logical structure of interrelated concepts that when put together offer show how ideas relate to one another in theoretical terms (Osanloo & Grant, 2016). It also provides an opportunity to define and stipulate concepts in relation to a problem (Luse et al., 2012).

This section presents a conceptual framework for analysing land use change and urban growth dynamics (Figure 6), which draws on the preceding discussion of the challenges of theorising the growth of small urban centres. This conceptual framework is a contextualised representation

of the growth of small urban centres, in interaction with people and activities from the surroundings areas.

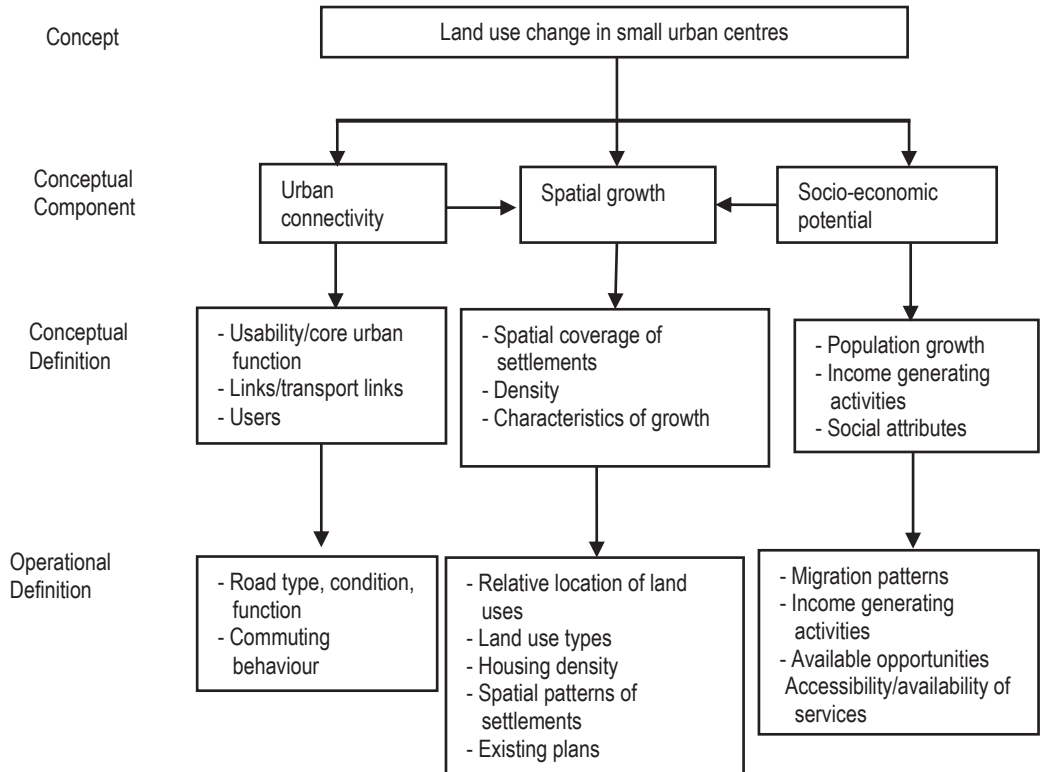


Figure 6. Framework for the analysis of land use change and spatial urban growth.
Source: *Author's own elaboration (2023)*

Out of many variables which affect land use change and spatial urban growth, the study has selected those which are easy to map and apply for analysis of land use change. The variables can also be used to formulate policy and planning guidelines and hence shape the urban landscape of small urban centres, even though land use in these areas is informally developed.

The organisation of concepts in Figure 6 highlights the key features of land use changes in small urban centres identified in this thesis. Land use change in small urban centres is greatly affected by urban connectivity, spatial growth and socio-economic potential, as discussed in the next section.

3.4.1 Conceptual components

This section discusses the key concepts that inform an understanding urban growth and land use change. The focus is on concepts identified as being most relevant to the discussion of urban growth and land use change in the emerging small urban centres, based on a literature review, theoretical analysis, and the author's own fieldwork experience (Osanloo & Grant, 2016). The list of factors that affect land use change, including political and policy environments, infrastructure development, immigration, spatial change, cultural values, social well-being and economic development is long; of these, the three factors most relevant to emerging small urban centres changes were selected: i.e. urban connectivity, spatial growth and socio-economic potential. The following sections discuss each of these concepts in turn, focusing on their relevance for the analysis, in the following chapters, of land use change and spatial growth in the case study area.

- Urban connectivity

Urban connectivity, in the form of transport networks, is one of the key drivers of land use change in urban areas. Urban connectivity is a fundamental factor, offering access to land for development and increasing interactions among people and activities (Cervero, 2013). The presence of links or networks of roads connecting different areas or services, opens up opportunities for the growth of activities (Litman, 2017; Sietchiping et al., 2012).

The more easily people can move from one point to another to reach services, the higher the rate of interactions and thus growth of activities. Physical accessibility is critical for the availability of goods, activities and services (Litman, 2017). The flexibility of movement within and outside a town creates a sense of security, and of living in a developed area, for people living in these areas.

A well-coordinated transportation system, combined with land use development, results in environmental quality, societal development, and economic prosperity for individuals (Cervero, 2013; Litman, 2017).

Increased incomes and economic development lead to an increased rate of car ownership, which influences commuting behaviour and thereby the spatial growth of small urban centres, as more people can access the core zones of these monocentric urban areas.

Road infrastructure development is one potential use of land in urban areas. According to Cervero (2013) less than ten per cent (10%) of urban land is allocated for roads infrastructures in developing countries, compared to 25 to 35 per cent of land in developed countries. The small proportion of land area allocated for roads in the Sub-Saharan African towns limits connectivity among different areas, which could perhaps affect development.

Planning for land use should consider urban connectivity, since the accessibility of services within built-up areas and in surrounding settlements is a crucial factor affecting interaction of all kinds (Cervero, 2013). Often areas close to access roads undergo more rapid changes in land uses and greater development of agglomerations than areas further away from these roads. Pressure of population change and demand for land in urban areas may affect the level and speed of change of land uses in an area and hence connectivity to other parts of a town.

Settlement growth is influenced by the existence and condition of the road network in the area (Cervero, 2013; Litman, 2017), since proximity in terms of distance and spatial relationship influences residents' decisions on where to live (Duranton & Puga, 2014). Interactions in a town are determined by spatial distance, cost of travel, and the presence of a functional network of roads. Accessibility may be measured using activity-based and utility-based variables (Geurs & van Eck, 2003). The following discussion focuses on the assessment of the level of service provision, in terms of congestion and traveling speed on the road.

Accessibility is assessed using activity-based measures, at two micro levels: firstly, the number of activities within reach of the starting location; and secondly, an individual's possibility of reaching the activity within a given time. The utility-based measure assesses the level of accessibility to spatially distributed activities. These measures provide information on the reachability of every part of the town and how reachability influences spatial urban growth.

- Spatial growth

The spatial coverage of urban areas reflects changes in land use and population growth. Spatial growth takes different forms, but always entails the physical extension of built-up areas (Besussi et al., 2010; Frenkel & Ashkenazi, 2008). Spatial growth is assessed by measuring changes in density, the outward spread of settlements, and land use change (Frenkel & Ashkenazi, 2008).

The spatial growth of settlements is not driven by specific socio-economic groups but is a result of population growth, which is sometimes uncoordinated (Besussi et al., 2010). The extent of growth and changes to activities and settlements determine changes in the spatial coverage and density of built-up areas. The categories of land uses are organised in different levels, encompassing both urban and rural land uses. Categories of urban land use include residential, commercial, institutional, and industrial uses, as well as land set aside for infrastructure development, and environmental conservation.

Several studies consider the conversion of rural to urban land use and the implications of a reduction in the area of agricultural land (Angel et al., 2005; Pato et al., 2016; Admasu, 2015). Land use characteristics influence the kind of activities undertaken, including socio-economic as well as spatial development (Admasu, 2015).

The spatial development of settlements is influenced by various factors, including control mechanisms in place, the kind of settlement development, patterns of infrastructure development, and the rate of urban growth.

- Socio-economic development

The concept of socio-economic development encompasses a range of issues, including income generating potential, population characteristics, cultural activities, and interactions and relationships among activities with different areas (Kundu & Sarangi, 2007). As previously discussed in section of urban land use theory, socio-economic development strongly influences the organisation of land use in urban areas. Demographic characteristics include age, gender, education level, marital status, residential location, and race (Ahmad & Juhdi, 2010; Huff & Tingley, 2015). Economic activity, household size, and education level significantly influence choice of residential location. These characters are useful for analysing drivers for land use change in the case study area.

More affluent families tend to stay away from central areas while poor people are concentrated around the CBD. This organisation affects the structure, condition and density of housing across the urban area (Cervero, 2013; Schwirian, 2007; Guest, 1971). Agglomerations of activities also cluster around the CBD. Peripheral areas are characterised by single-family houses, large plot sizes, limited socio-economic activities and high-ranking communities (Beauregard, 2007). Settlement development, building density, growth pattern, and plot characteristics all inform the analysis of the land use characteristics in the study area.

Household characteristics include occupations, migration status, educational attainment, household size, and ages of household members. These factors largely determine poverty status and a household's capacity to solve challenges. Further, the ability to cope in urban areas affects residential location and status of residents in a town. This is related to education level, which in turn is related to poverty status, and tends to be higher in cities and major towns than in the small urban centres (Kundu & Sarangi, 2007). The status of households and their economic capacity determine the level of employment in an area. According to Kundu & Sarangi (2007), small urban centres attract less well educated individuals, who are often migrants from the rural areas. The authors further suggest that more educated people prefer cities and major towns, where opportunities are greater than in the small urban centres. These characteristics influence the socio-economic development of small urban centres and their patterns of land use.

The movement of rural people to small urban centres stimulates socio-economic activity in different ways, leading the development of towns with different structural characteristics. When migrants move to towns, they engage in different livelihood activities, which help them to escape poverty. As a corollary, employment in rural areas continues to decline causing a reduction of production capacity (Kundu & Sarangi, 2007; Christiaensen et al., 2018).

Despite their low level of education, the young, energetic and ambitious people who move to small urban centres, invest in income generating enterprises, which diversify the economy and stimulate urban growth (Christiaensen et al., 2018). As the incomes of individuals rise, they build new settlements, and different urban functions are redistributed to accommodate their growing needs (Ighile & Shirakawa, 2020). Socio-

economic characteristics such as occupation, migration patterns and households' ability to access land, and their impacts on settlement growth and land use change, are used to analyse of the case study area.

3.5 Chapter summary

This chapter has examined the theory, concepts and literature that inform the discussion of growth and land use change in emerging small urban centres. The theories considered include central place theory and urban land use theory, which both analyse changes in land use and urban growth over time. Changes in urban land use result from the development of various sectors of economy, including through investments in socio-economic activities and expansion of basic social services. Guidelines for land use and infrastructure development were identified as important factors for urban growth because their existence attracts investments.

From the discussion of theories, concepts and literature, the following propositions are suggested to orient analysis and inform debates on land use change and spatial growth in emerging small urban centres.

- If land development is not properly regulated, informal settlements will occupy areas surrounding the CBD.
- Outward expansion of the road network will ease congestion in the CBD by dispersing land use function outwards, thereby increasing levels of activity and land values in other areas.
- The value of land is directly proportional to the distance to services and is affected by how land is bought and sold.
- Greater investment in basic social services in the higher order centres increases interaction with lower order centres.

The above propositions relating to land use and spatial growth, drawing on the theories, models and concepts discussed in this chapter, inform the discussion and analysis of urban land use change in emerging small urban centres. The discussion of theories and concepts in this chapter provides crucial inputs for the selection of methodologies and techniques for data collection and analysis of the case study areas.

4. Research Methodology

This chapter presents approaches and methods used to collect, organise, and analyse the data for this thesis. The research takes the form of a case study, providing rich empirical data on the changes in urban growth and land use. The quantitative data was analysed using the Statistical Package for Social Sciences (SPSS), spatial data was analysed using Geographical Information Systems (GIS) software, and coding and labelling of themes was undertaken for analysis of qualitative data. All these data inform the discussion of land use change and spatial growth in the case study area.

4.1 Case study research strategy and process

This study analyses urban growth dynamics, focusing on land use and spatial growth in emerging small urban centres. The case study research strategy which was applied guided the research design, how it was conducted, and informed development of methods for data collection (Thornhill et al., 2009; Bryman, 2016). As highlighted in Chapter 3, land use change is dependent on the interaction of various elements that enhance settlement growth, including land use types, and socio-economic and infrastructure development. The study of land use dynamics and urban spatial growth is complex because it is affected by diverse factors, many of which are context-dependent.

The complex characteristics and dynamics of growth of small urban centres demand context specific studies. The multiple methods, flexibility and dynamism of the case study strategy for data collection and the in-depth investigation of phenomena (Yin, 2014) is ideal for this study. The case study strategy relies on triangulation for validation of data from

different sources (Denscombe, 2010; Yin, 2009), which is appropriate when limited documentary evidence is available.

The case study strategy allows integration of both qualitative and quantitative approaches, which is important for the study of less well documented phenomena (Johansson, 2003). Combining both qualitative and quantitative approaches in data collection as shown in Figure 9 allows a wide range of methods and multiple tools for data gathering to be drawn on. Mixed method approaches enable flexibility in collecting a wide range of data, adapting the method to suit the research questions and the complexity of the context. Mixed methods also enhance robustness of the research through triangulation of data. The approach is flexible in the sense that when data is missed by qualitative approaches, this raises questions that can be answered by qualitative means (Bryman, 2016). Mixed method approaches incorporate multiple qualitative and quantitative tools for data collection and hence can integrate a wide array of information (Figure 7).

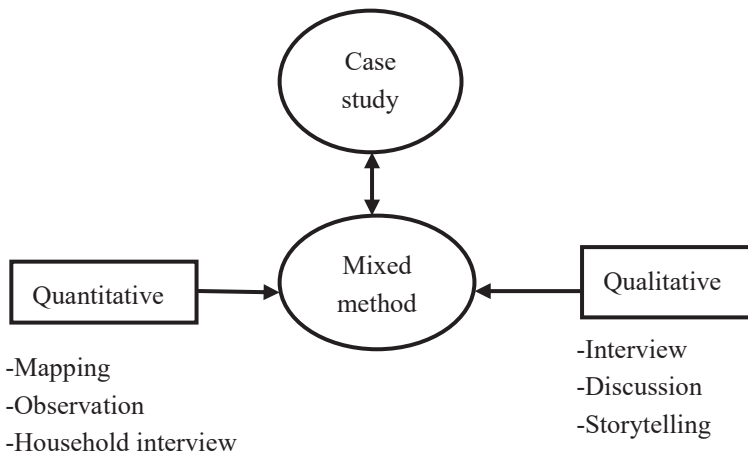


Figure 7. Research strategy
Source: *Own elaboration (2023)*

The research strategy helps frame the research question and the focus of the study; the research questions determine the control an investigator has over the variables and the degree of focus (Thornhill et al., 2009; Yin, 2014). The study of land use dynamics within a vibrant growing small urban centre, where interaction with surrounding rural areas determines its survival, requires a research strategy and research questions that allow the

researcher to explore the changes in detail. Questions relating to land use, socio-economic changes and the well-being of communities are best captured through the use of multiple data collection methods (Kopec et al., 2011; Yin, 2014).

In this study, the research questions, theoretical frameworks, and data collection methods were constantly reframed through an iterative process (Yin, 2009, 1994; Denscombe, 2010). The significance of selecting the case study as a research strategy is explained in the following section.

Significance of selecting case study as a research strategy for this study

A case study is an empirical inquiry that investigates a real life situation (Yin, 2009; Bryman, 2016), such as activities affecting land use dynamics within a contemporary setting. The multiplicity of activities and the diverse factors affecting the growth of towns highlights the relevance of adopting a case study strategy. With a case study, the researcher cannot change the natural environment as experimental conditions are changed in a laboratory experiment. The lack of control over the natural environment makes the case study an appropriate strategy for researching land use change (Yin, 2014).

This research focuses on the real-life situation of communities, where the context and the phenomenon are inseparable. This makes the case study an appropriate way to undertake a detailed examination of the variables of interest (Yin, 2009, 2014). A combination of research methods enables a deeper and a more nuanced understanding of the case. Analysis of the effect of land use changes on socio-economic well-being of communities also demands a combination of techniques.

In this study, as highlighted in Figure 8, the concepts discussed in Chapter 3 are linked to research questions that are specific to the case of small urban centres in developing countries of Sub-Saharan Africa, which inform the methods selected for data collection. Thus as shown in figure 8, each research question is linked to corresponding methods for data collection.

Concept

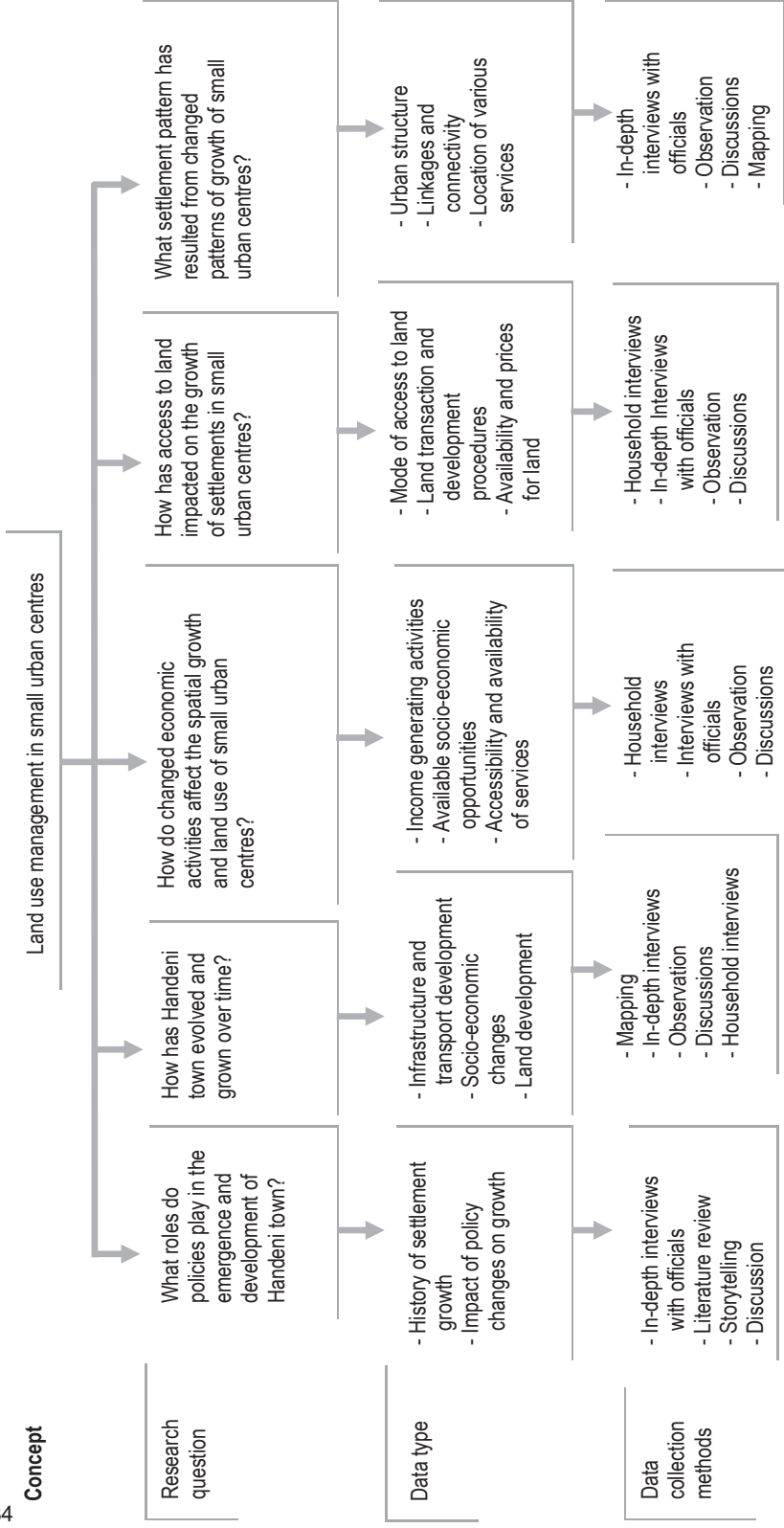


Figure 8. Linkages between the concepts and research questions

Source: *Own elaboration (2023)*

Through a literature reviewed, and in consultation with supervisors, the research questions were refined, and the focus of the study was adjusted as new research topics arose. The majority of studies examining urban growth focus on land cover change (Lei et al., 2004; Li et al., 2003; Tan et al., 2014; Mboup, 2019), employing statistical analysis of measures of magnitude of spatial expansion and other related quantities. My study of urban growth dynamics and land use change in growing small urban centres differs from most previous studies in two main ways: Firstly, it focuses on spatial growth and change over time of different land uses, socio-economic activities, and interactions with surrounding centres. Secondly, it focuses on the emerging small urban centres in developing countries.

The qualitative approach applied in this study is a way to expand the understanding of land use change and urban growth dynamics and their influence on surrounding areas. The iterative processes used to develop this research and designs are shown in Figure 9. The process started by developing a research concept note (a minor research proposal), in order to identify the research area and methods to undertake the study.

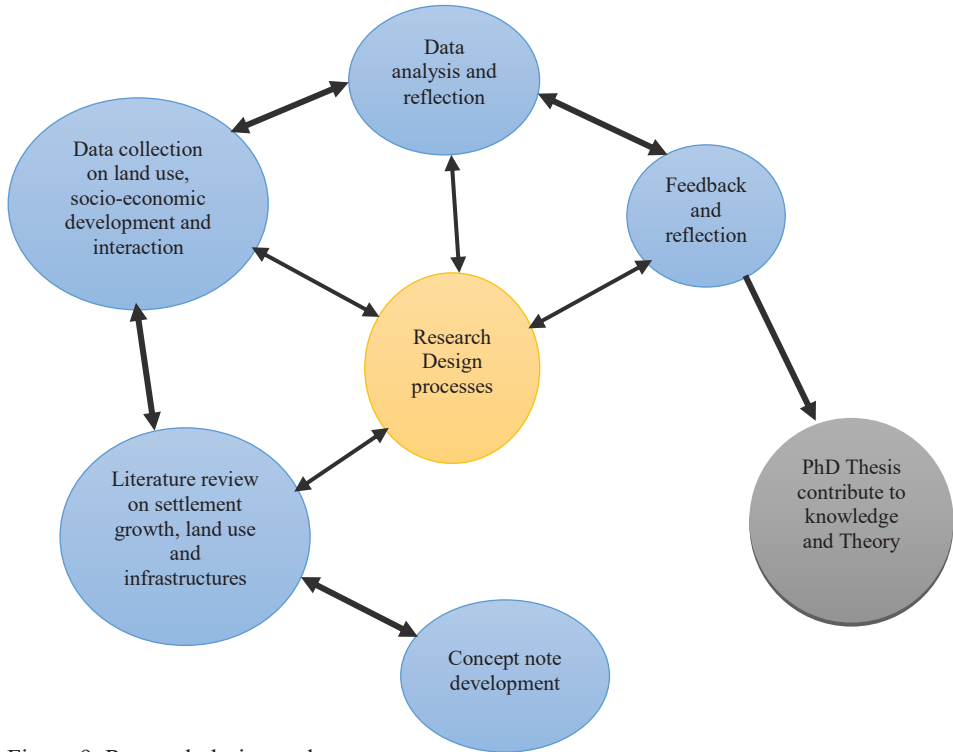


Figure 9. Research design and process
 Source: *Own elaboration (2023)*

The research results will ultimately contribute to the body of knowledge on patterns and changes of settlement growth as a result of different factors influencing the growth of small urban centres in developing countries, particularly in SSA, and national and regional policies. The study will provide inputs for the development of theories and policies relating to land use.

4.1.1 Selection of small urban centres as a case

An important step in selection of the case study area for this thesis was the analysis of small urban centre in terms of spatial size, population and socio-economic development that provides flexibility in data collection. This study purposely focused on emerging small urban centres to facilitate an understanding of spatial growth dynamics and land use changes. As

explained in Chapter 3, small urban centres have been ignored in research, policy and urban discourse, hence little is known about their growth dynamics (Djurfeldt, 2021). The lack of information relating to the growth of small urban centres, particularly in developing countries, demands a detailed analysis the growth processes involved.

The coastal towns of Tanzania were the focal interest of this study due to their long history of development which provided an extended temporal dimension. These towns, situated along the Indian Ocean coast, were sites of extensive colonial activities (Brennan et al., 2007; Mboup, 2019).

The coastal zone of Tanzania consists of five regional administrative centres: Tanga, Pwani, Dar es Salaam, Lindi and Mtwara. Due to its unique characteristics as the largest city in the country and its rapid urbanisation rate (hosting 10 percent of the country’s urban population) (National Bureau of Statistics, 2012), Dar es Salaam was excluded from this study. The remaining coastal regions, Mtwara, Lindi, Pwani and Tanga were therefore included in the shortlist for selection as the study area. This study dealt with urbanisation, urban growth and land use; hence population growth rate was a crucial factor for consideration. Population growth rate were analysed to select one of these four coastal regions as the study area. Population growth rate was considered important as it affects the rate of movement of people to towns, hence influencing urban growth. Data on population growth shows that population growth rate in Tanga region are increasing, unlike in the other regions (Table 2).

Table 2. Population growth rates for coastal regions

SN	Population Growth Rate Between 1988 and 2002	Population Growth Rate Between 2002 and 2012	Remarks
Tanga region	1.8	2.2	Rate increased
Pwani region	2.4	2.2	Rate decreased
Lindi region	1.4	0.9	Rate decreased
Mtwara region	1.7	1.2	Rate decreased

Source: (National Bureau of Statistics, 2012)

Information on the population growth rate justifies the selection of Tanga region for this study of land use change and urban spatial growth dynamics. The following factors add to the information presented in Table 2 to show the reasons for selecting Tanga region.

- Tanga region was one of the nine regions in Tanzania to implement growth pole strategy (see Chapter 2) in the 1980s aimed at developing core areas, with the expectation that this would positively affect the surrounding less affluent areas.
- Tanga region was an important strategic area for the colonial administration. The Tanga town attained municipal status soon after independence in 1961, becoming one of the fastest growing urban areas in the country. Because of its importance, the surrounding region was provided with basic infrastructure services, which influenced growth of the surrounding urban centres.
- Tanga region contains extensive sisal plantations, established by settlers during the colonial period, hosts a range of industrial activities and is linked to road and railway infrastructures (Gough et al., 2013).
- The region has a high population growth rate, compared to other coastal regions (National Bureau of Statistics, 2012).
- The Tanga region is familiar to researcher, which as Bryman (2016) notes is an important deciding factor.

These criteria were important because they influence growth and interaction of people and activities. For instance, the implementation of growth pole strategy supported industrialisation in Tanga city, which led to increased inward migration for employment opportunities. At the same time goods and services produced as the result of industrialisation led to the growth of commercial activities in the surrounding regions.

Since the study focuses on small urban centres the selection of a small urban centre to answer the research questions was crucial for the study. This study of urban land use dynamics only considers urban centres with administrative autonomy, to allow consideration of management approaches and strategies for land use and approaches to urban development. Tanga region has three urban centres; Tanga city, Handeni town and Korogwe town; the remaining centres are district authorities covering urban as well as rural settlements (Figure 10). Tanga city does not fit the research focus for this study because it is a major town (a city). Having eliminated Tanga city, the two remaining urban centres, Korogwe and Handeni, remained on the list (Table 3).

Table 3. Case study selection process

Town	Criteria	Input	Remark
Korogwe Town	Land size	225.3 km ²	Average land size area
	Population annual growth rate	2.4%	Average growth population rate
	Road network	Crossed by major trunk road	Influenced by outside activities
	Interaction with rural activities	More urban activities	Limited interaction with rural areas
Handeni Town	Land size	837.4km ²	Extensive land area for spatial growth
	Population annual growth rate	4.9%	Rapid growth
	Road network	Crossed by district road	Centrally located
	Interaction with rural activities	Presence of market for crops and livestock	Presence of market for rural products allows interaction with rural areas

Source; Socio-economic profile of 2008, Census Data, Fieldwork in 2018

Since the study focuses on small urban centres with rapid urbanisation and increasing interactions with the surrounding centres, Handeni town was selected for this study. The research focused on land use change and spatial growth dynamics in the urban built-up area of the town.

4.1.2 Characteristics of Handeni town case study area

Geographically, Handeni town is found within Tanga Region, which is located in the northeast side of the Tanzanian mainland between latitudes 4° and 6° south longitudes 37° and 39° east (URT, 2008).

Tanga region is bordered by Kilimanjaro Region to the northwest and the Republic of Kenya in the north, Manyara, and Morogoro regions to the west, and Pwani Region to the south. The eastern boundary is the coast of the Indian Ocean, where the port of Tanga facilitates connectivity to other areas, including outside the country (Figure 10). Handeni town is located at the dry plane zone of the region at altitudes ranging from 200 m to 600 m above mean sea level. Annual average rainfall is between 500 mm to 800 mm and daily mean temperatures range between 21° and 24° C annually (URT, 2008).

Administratively, Handeni Town is one of the local government authorities in Tanga region. It is located between Handeni and Kilindi district councils.

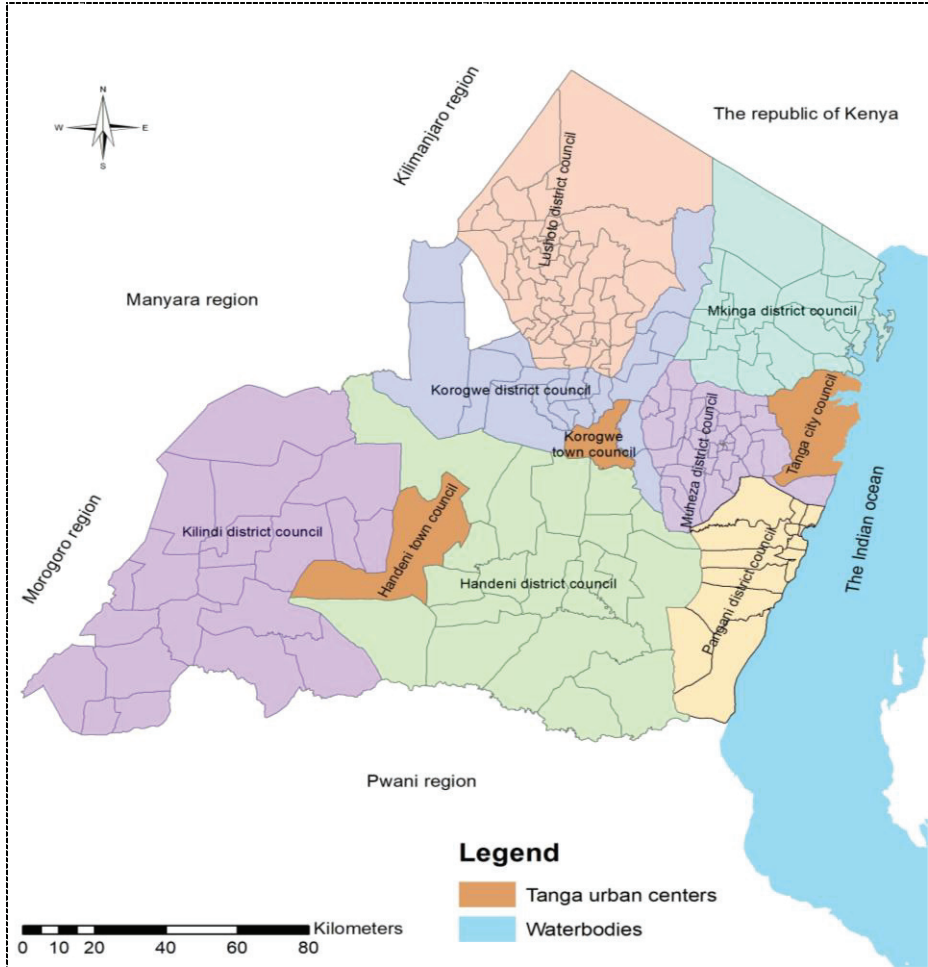


Figure 10. Local government authorities in Tanga Region
 Source: *National Bureau of Statistics (2012)*

The town is linked to the surrounding districts and town centres by district roads. Handeni was awarded town status in 2011 but the autonomous administration was not inaugurated until July 2015. Before acquiring town status, Handeni town was the headquarters of Handeni District Council, which was categorised by the local government Act No. 7 of 1982 as a rural authority. On acquiring town status, Handeni recognised as an urban, rather than a rural authority.

Socio-economic activities

The town's socio-economic development is mainly influenced by the commercial development and trade of products within the region and the surrounding rural and urban areas. Economic activities in the town include trade in agricultural products and industrial manufactured goods, and transportation of products to neighbouring areas.

The town has 12 wards and 60 sub-wards; thus, each administrative ward has 5 sub-wards. Nine of the twelve wards are rural wards dominated by primary socio-economic activities such as farming and animal husbandry. The urban built-up areas of the town cover three wards namely, Chanika, Mdoe and Vibaoni, which together comprise the urban built-up area of the town (Figure 11). The urban wards are dominated by urban functions and the majority of their population is engaged in secondary and tertiary activities such as trade and services, with only a limited number engaged in farming activities outside the urban areas.

The town helps sustain various socio-economic activities in the region, due its transport infrastructure (district roads linking the town to other areas), commercial activities such as markets, and socio-spatial linkages with the surrounding rural areas and nearby urban centres (Mkata 54 km, Korogwe Town 50 km, Misima Village 25 km, Kilindi Town 60 km and Negelo Village 24km).

According to the Housing and Population Census Report, by 2012, Handeni town had a total population of 79,056 people and covered 838 square kilometres of land (National Bureau of Statistics, 2012). The population growth rate of the town stood at 4.9 per cent, compared to the national population growth rate of 2.7 per cent and regional rate of 2.2 per cent (National Bureau of Statistics, 2012). The urbanised area of the town selected for the analysis of land use change had a total population of 26,613 people and 5,322 households by 2012 (National Bureau of Statistics, 2012).

The town is composed of a mix of different social strata originating from neighbouring regions and districts. Originally native residents of the area kept livestock and practiced small-scale agriculture.

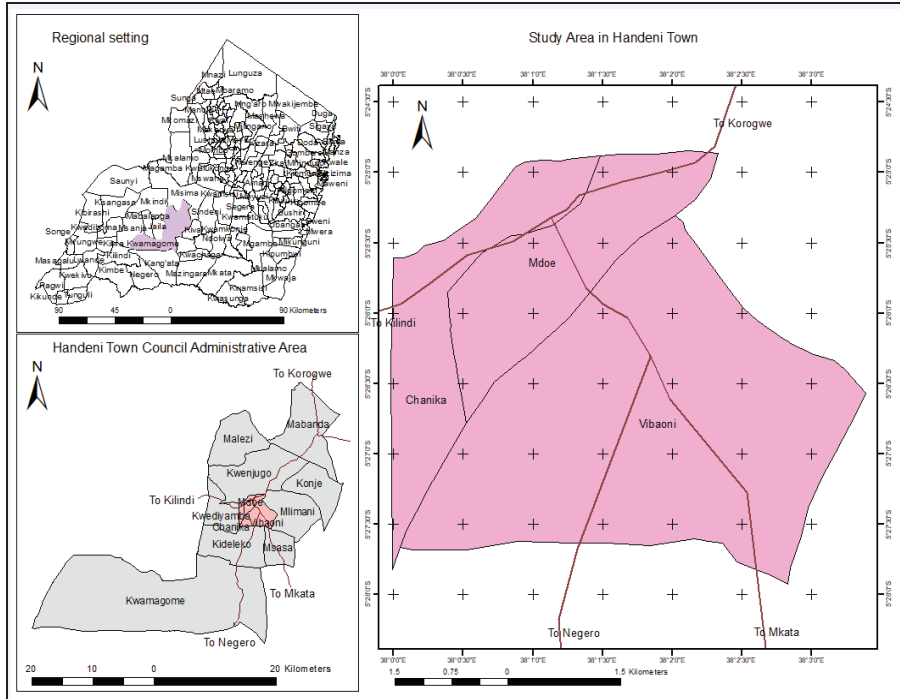


Figure 11. Location of the case study area
 Source: *National Bureau of Statistics (2012) and digitised by the author*

Connectivity

The Town is connected to the surrounding urban and rural centres with all-weather roads (i.e. tarmac) and gravel roads. The main roads emanating or crossing the Town include Handeni-Korogwe, Handeni-Mkata; Handeni-Negero and Handeni-Kilindi roads. Two roads (Handeni-Korogwe and Handeni-Mkata) are tarmacked while the rest are gravel roads which are repaired after every rainy season.

The location of Handeni relative to the surrounding centres, makes it the focal point for transportation links supporting a range of activities based in these centres. The average distance between these centres and Handeni Town is 60 kilometres. Connectivity is facilitated by the availability of transport routes to and from these centres, making interactions of people and activities possible.

4.2 Data collection approaches

The data collection process was preceded by a pre-study conducted at Mkata Town. The aims of the pre-study were to test the tools for data collection, and to orient and train two research assistants in data collection. Mkata is a trading centre in Handeni District, close to Handeni Town and with many features in common, including roads linking the town centres, interaction of socio-economic activities, and shared services. Economic activities in Mkata largely resemble those in Handeni Town. Therefore, Mkata considered as an appropriate site for testing the field research methods.

Research tools used during the pre-study included household questionnaires, document review, in-depth interview, direct non-participant observation, storytelling and participatory mapping. Some information on urban growth could not be collected through household questionnaires as the majority of respondents did not have such knowledge; this was elicited from elders and long-term residents in the town through storytelling and discussions.

There is a lack of data records in Handeni town relating to land use changes, changes in socio-economic activities, and urban spatial growth. Consequently, in-depth interviews, observations and storytelling were required to address this knowledge gap; together with mapping and household surveys, which were crucial for collecting quantitative data.

Each method or tool was appropriate for collecting certain data types. For instance, missing documentary information on historical urban growth, was captured through either in-depth interviews and/or storytelling². These methods for retrieving missing data complement each other. The relevant questions and techniques for each data type are presented in Table 4. The table further indicates the knowledge gap, data sources and tools used for collecting data. The methods and techniques of data collection will be explained in the next sections.

² Storytelling refers to a narration about a place or situation, by a person (elder or long lived person) who is familiar with the phenomenon. Advantages of this method include that it provides the narrator with the opportunity and sufficient time to communicate what they know without any interruption.

Table 4. Data collection Matrix Table

SN	Research question	Data Needed	Source of data	Data collection tools and methods
1	What roles do policies play in the emergence and development of the selected small urban centre?	-Urban development policy -Effects of policy on resource distribution	- Various reports (documentation) -Elders	-Reviews -Interviews with officials Story telling
2	How did the selected small urban centre evolved and grow over time?	-Core urban function Links/transport links -Users	- Elders -Local leaders -Site visit	Story telling Interviews Household questionnaire Observation
3	How do changes in economic activities impact on land use changes in small urban centres?	Change in settlement coverage Change in housing density -Settlement growth characteristics	-Local people -Elders -Local leaders - Site visit	GPS, Interview guide Drawing tools Questionnaire guide Storytelling
4	How do land access procedures impact on the growth of settlements in the small urban centres?	-Population growth -Migration pattern -Available opportunities -Income generating sources	-Local people -Elders -Local leaders - Site visit	Interview guide Questionnaire guide Photography
5	What settlement pattern has resulted from the growth dynamics of the small urban centres?	-Spatial change -Land use modification -Land use replacement	-Local people -Elderly -Local leaders -Site visit	Mapping -Storytelling -Observations -Interview guide

Source: Own elaboration (2023) from fieldwork study

Sampling frame

In determining sample size, the researcher has to differentiate between the sampling types. This is because the sample size depends on the sampling types, and whether probability or non-probability sampling is employed. Both types have been applied in case study research, but non probability sampling is the method of choice in qualitative case studies (Merriam, 1991). The sample frame for this study included 5,322 households in the three studied wards, i.e. Mdoe, Chanika and Vibaoni. This study is based on replies to 100 questionnaires administered to 100 households. The minimum sample size for the research that adopts a mixed method approach is 30 to 50 questionnaires (Malugu, 2007). The sample size for this research was chosen taking into consideration that it met the minimum

size requirement recommended by Malugu and other methods of data collection would be used to supplement data collected from the questionnaires. The triangulation of data obtained using different methods does not necessarily require a wider data collection coverage, as missing data are collected using different tools and techniques.

4.2.1 Interviews

This study employed two types of interviews for data collection. The first type was a household interview, where selected households were interviewed using questionnaires, while the second method was an in-depth interview. The household questionnaire was a crucial source of information for this research as decisions on land use are mainly taken at household level. The household questionnaires were formulated to include both open and closed questions to ensure questions could be easily understood by the respondents and to make them easy to answer. The questionnaires were administered by the researcher with the help of two research assistants by visiting the respondents' homes.

The questionnaires were administered to households distributed across the town's built-up urban area. The process was made possible by the help of sub-ward leaders, who introduced the researcher to the selected households. The research assistants were trained through prior testing of the questionnaires in Mkata town and a thorough discussion of the findings obtained in the test with the researcher.

Selection of households for interview employed cluster and random non-probability sampling (Palinkas et al., 2015) because of wide variety of household characteristics. Houses for interview were chosen randomly using satellite images. The process involved identifying wards boundaries, to ensure each ward was represented in the interviewed sample. From each ward, a selection of households to be interviewed was identified. Clustering was undertaken to identify households with a range of characteristics, including length of stay in the town, knowledge about the town and its history, stakes in land matters, economic activity and interest on participating in the research.

Buildings chosen in random selection that were found to be non-residential or uninhabited were replaced by selecting a neighbouring building. The selection of a household for interview was confirmed when the householder agree to participate in the process (Gibbs et al., 2007).

The questionnaire included questions on household size, economic activity, location of activity, literacy level, and preferred residential location. Further questions covered interaction with surrounding urban and rural centres; engagement in trade in the town and the surrounding areas; migration characteristics (refer appendix I).

The questionnaire aimed to answer the research question 3 focusing on access to land, and land use changes. The information collected from the household survey provided the basis for identifying the kind of information to be collected using other methods, by identifying gaps in the data and new, previously overlooked avenues of investigation.

In-depth interviews

In-depth interviews were held with the key individuals in the study area to gather information on land use change and urban spatial growth over time. In-depth interviews were important because information on historical development and social changes over time could not be captured by the household interviews. In-depth interviews functioned as an extension the household interviews, providing depth and a more nuanced understanding of the data (Appendix II).

The interviewees were identified through purposive snow-ball sampling (Palinkas et al., 2015; Gibbs et al., 2007). The interviewees provided information on various aspects of land use and urban spatial growth as shown in Table 5. The in-depth interviews were conducted after a prior appointment had been made, and took an average of one hour per session. For qualitative data, the saturation point (where no new information was forthcoming) was used as a cut-off point for data collection (Palinkas et al., 2015; Curry et al., 2009; Marshall et al., 2013). The saturation point was reached after 20 interviews.

Selection of in-depth interviewees

For the in-depth interviews, respondents were selected from across the town, including business-people, officials, local leaders, elders, local residents and politicians. Inclusion of this wider array of respondents aimed to gather information about diverse and varied phenomena affecting urban growth and land use change.

Specifically, interviewees were selected who could provide information on factors influencing urban growth and land use changes, such land use, socio-economic activity, history of urban development, trade activities and

management of urban development. From the town council, the town planner, town director, transport officer and the economic planning officer were selected because they have information about urban growth and changes in urban activities and land use. To understand the impact of commercial activities, market traders and the transport operators were interviewed.

Other interviewees included sub-ward leaders (ten cell, *mtaa* leaders), and elders and well-known local residents involved in range of activities, in order to understand socio-economic and land use changes, interactions with the surrounding centres, and settlement development. Land brokers were also interviewed to gain an understanding of land transaction and settlement development procedures (see Table 5).

Table 5. Interviewee selection in Handeni Town

SN	Interviewee position	No. of Interviewee	Type of information needed
1	Town planner	1	Land-related issues, urban growth and planning strategies adopted for the development of settlements in Handeni town.
2	Town council surveyor	1	Plot development, plans for development and strategic areas under survey
3	Councillor	1	Plans and strategies for development, challenges, and institutional development programs
4	Land broker	1	Land-use changes, development, transactions, needs and perceptions of land-owners
5	Business people	3	Network of business, interactions, sources of products, opportunities for growth and challenges
6	Transport operators	2	Commuting behaviour by people, interactions, challenges and opportunities for growth
7	Elders	3	Growth changes, social, cultural and economic development spatial settlement growth
8	Local residents	6	Growth changes, challenges in access to opportunities, inter-actions, activities and, their locations, effects of growth.
9	Grassroots leaders	2	Growth, challenges in access to land, population immigration, opportunities for growth
Total		20	

Source: Fieldwork 2018

During the interview process, group interviews emerged as an additional research method when respondents asked colleagues to answer or elaborate

on the discussion. The respondents sometimes discussed among themselves while responding to questions. This was important as it added to or corrected information from the interviewees especially regarding the timing of events, such changes in land uses, or the closing down of particular activity within the town. The interviews were either structured or semi-structured, depending on what the interviewees' felt comfortable with, to encourage them to respond and narrate.

4.2.2 Observation

In order to understand the activities and interactions underpinning the growth dynamics of Handeni town, the researcher took several transect walks through the town. The walks involved crossing parts of the town through busy developed areas and observing how the activities taking place there were performed and organised in space. Photos were taken to record and illustrate the findings. Activities observed included those on continually occupied spaces, such as brick making, garages and land clearance for development; as well as temporary uses of space such as street trading and vehicle parking.

Sometimes observation involved hiring a motorbike and travelling across the potential development areas along both the major roads and internal access roads, observing development, land use changes and socio-economic activities within the settlement. Participatory observation was also conducted in market-places, especially in the market auctions that took place both within the town and at the surrounding centres. Observation as method for data collection was undertaken to comprehend the interaction of activities, patterns movements of people, exchange of goods and services within Handeni town and between the town and the surrounding areas, as well as to validate some of the information collected through other methods.

4.2.3 Recording of Data

Data was captured through photographs, taking notes of discussions and drawing data sketches and maps during the data collection process. Photographs were taken to support data collected using other methods. Notes on changes in land use were illustrated by drawing sketch maps. All these together were used to supplement written information and develop questions on aspects which were observed to be unavailable.

During this process the researcher travelled to some rural areas surrounding the town, such as Misima, Sua, and Kwachaga, as well as other urban areas including Korogwe and Mkata. The aim was to observe passengers, businesspeople, and transport operators, and to get the opportunity to engage them in discussion about various issues, such as product sources, commuting behaviour, and the reasons for their travel to and from Handeni Town. This information from this activity was crucial as it allowed corroboration of information obtained from other sources.

4.2.4 Mapping

Together with observations and photo taking, spatial data was collected from satellite images in order to track land use change and spatial settlement growth around the town. The spatial data acquired was supplemented by site visits to update the baseline information. The satellite images for this work were downloaded from Google earth pro covering 10 year period from 2008 to 2018. The images were improved in the field in discussions with the residents.

The land use maps needed to show historical changes in land use, but Google earth images for the study area were only available online from 2006 and no other maps were available. Therefore a baseline map was prepared using information obtained from people in the area. local residents have great knowledge about the changes in their land and the surroundings, hence they are good sources of information (Nayak & Singh, 2015). This knowledge was drawn on during spatial data collection in Handeni town.

Mapping process

The process of mapping (spatial data collection) in this thesis involved satellite images analysed through land use ground mapping. Methods of data collection, and analysis were selected mainly based on the amount of information they provided to answer the research questions. Factors such as historical data availability, quality of data, cost of the data, and distribution of the data throughout the area were also important considerations (Deng et al., 2009; Dutta, 2012).

Spatial information on Handeni town was limited due to the absence of maps showing development of settlements and land uses. This hindered access to reliable images at affordable prices and of the required quality.

This study was the first research on urban land development of Handeni Town. Satellite images from Google Earth and ground truthing (Ali & Varshney, 2012) were employed to capture existing land uses. The mapped output was integrated with information collected through interviews and discussions with the local community members.

Changes in land use are mapped throughout the town, with a more detailed analysis of land use in the central business district. Data on land use were collected through interviews and observations but these did not provide information on land cover. Instead, data on land function was collected; this refers to the actual use of land regardless of the pre-assigned use. This study combined data on land use and land function to understand land use change over time (see Figure 12).

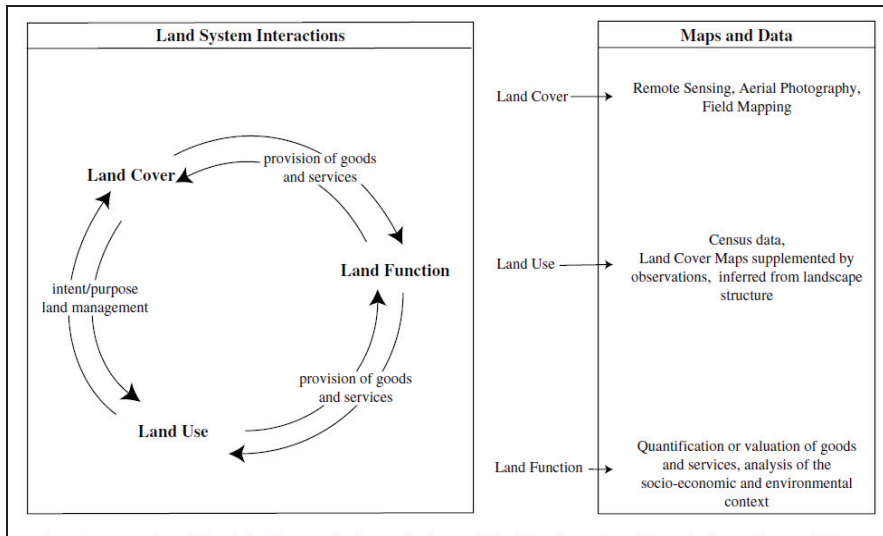


Figure 12. Approaches of tackling land-related studies
Source: Verburg et al. (2009)

The availability of data dictated the time intervals between datasets used for the study. Intervals of up to 20 years were required to capture the slow population growth in small urban centres and its effects on land use urban spatial growth. The first dataset considered was for the period immediately after independence in 1961, to capture possible changes following the abandonment of migration law in the same year. The other years studied were 1961, 1988, 2008 and 2018.

To produce maps of land use for each of these years, two sets of maps were used: Topographical maps at 1:50,000 scale published in 1961 and 1988 were used for these years, and satellite images from Google Earth images were used for 2008 and 2018. The Google Earth images had a pixel size resolution of 30m, processed and georeferenced with ArcMap 10.3.1. The two images set were printed on A1 map paper size at 1:2500 scale for ease of interpretations and handling during field research.

The four maps represented four important epochs in the history of Handeni Town. The 1961 map presents the time immediately after the national independence, depicting a situation where changes from the colonial regime were minimal. The 1988 map represents a stage when the Town was growing during a period of recovery from crisis (i.e. war and abolition of LGAs), as people moved to urban areas looking for employment opportunities. The 2008 map presents the situation when a new district authority (Kilindi) was formed by splitting it away from Handeni District. This division of the district divided the population that relied on services from Handeni town. The 2018 map shows the situation three years after Handeni had become an autonomous town council authority, with its own administration and a limited, mainly urban spatial extension.

Participatory mapping with people familiar with the town produced maps with features that were different from each other; subsequent discussion enabled harmonisation of the data. The individuals involved in mapping activities included local residents, sub-ward leaders, town officials and ordinary residents. Data collection was done from December 2018 to April 2019.

4.2.5 Document review

The review of documents was undertaken in order to answer research questions relating to land regulation and socio-economic development. The documents reviewed included policies, laws, bylaws, national census reports, regional strategic plans, district profiles, online publications, scholarly publications, town budget estimates and detailed layout plans.

The document review established the basis for understanding changes in activities, land uses and spatial development of the town over time. The documents also corroborated data gathered through interviews, household questionnaires, observations and storytelling.

Although the town did not exist as an autonomous administrative unit during most of the period considered in the study, data gathered from the regional and district-level documents provided a general picture of the town and its surrounding centres. The regional and district profile documents relating to urban growth were important for understanding growth dynamics of Handeni town and its surroundings and provided an overall picture of development in the case study area. At the same time the study was carried out, many of the layout plans for new areas and regularisation projects in Handeni town were still in a preparatory stage of development.

4.2.6 Story-telling

Storytelling was used to gain insights into historical aspects of urban development of Handeni town and provide a more nuanced understanding the town. Age, length of residency in the town and readiness to participate in the study were the criteria used to select the participants. Grassroots leaders guided the selection by identifying potential storytellers.

The activity was conducted in various locations depending on respondent's availability. These locations included residences of elders (Plate 1), as well as places where they met up in the evening and places of work. The story-telling process took an average of one hour with each individual.



Plate 1. Storytelling with an elder.
Source: Fieldwork 2018

The storytelling approach provided information about shifting locations for activities, historical urban development and land transaction. Information on urban growth, and changes in the ethnic composition of the town and family ownership of land was also collected using this method. Due in part to low life expectancy in area, it was only possible to obtain the stories of four elders. However, this experience was a valuable opportunity for the researcher to gain an in-depth understanding of changes in the area over time, as well as to corroborate or question information obtained from other sources.

4.3 Data triangulation

Data collected through the different methods were triangulated to validate and complement each other. Triangulation of data involved comparing data and information provided to answer the research questions. Gaps in data identified using one method were filled as far possible using data from a

different source. For instance, data on interactions with surrounding centres from household questionnaires were triangulated with data collected through storytelling and discussions.

Data collected through observation, for instance, those missed the temporal trends of activities and changing patterns of development, were integrated with data obtained through mapping. Data represented on the maps of land uses were analysed together with data from observation, discussions and interviews. The use of multiple methods enabled data missing in results from one method to be captured by formulating of new questions to be answered using another method. For instance, maps provided a general picture of the extent and growth the town. These were complemented by more detailed information provided by in-depth interviews and storytelling on, the forces and mechanisms triggering the growth of the town.

The results of mapping were used to identify appropriate interviewees by examining their experiences and areas of interest. Viewing information collected from different angles and identification of data gaps enabled selection of different tools and methods to capture the missing data (Figure 13).

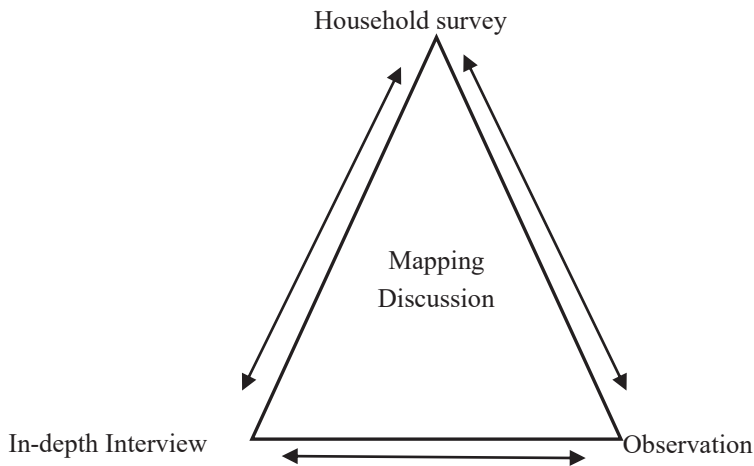


Figure 13. Schematic design of data collection and triangulation process
Source: Own elaboration (2023)

Triangulation helped in locating missing information and validating information found using different methods. For example, mapping shows things

as they were at a particular time, while interviews provide information on the reasons why the changes took place.

Triangulation, therefore helped enhance validity and reliability of the data collected. For instance, data on spatial urban growth obtained through the mapping process was triangulated with data from household surveys on residential location preferences. Spatial data was also triangulated with information on demand for land, land prices and access to land provided by actors with an interest in these topics (land brokers, sellers and buyers of land, grassroots leaders and officials). Further, data on socio-economic activities collected through observation was triangulated with data from in-depth interviews with business-people in various market areas, interviews with local leaders, and review of relevant documents. The process of data triangulation was crucial to develop a coherent pattern of information and for understanding of the dynamics of urban change.

Information from different data collection methods helped understand residential location preferences of the town's inhabitants and the forces driving land use change and spatial urban growth. Responses to household questionnaires revealed that roads and service areas were crucial in attracting settlement growth. Mapping revealed the spatial pattern of settlement growth. These sources of information were verified by interviews with land brokers and grassroots leaders. Observations the researcher made during detail data collection as part of the mapping process provided inputs for framing of questions for the in-depth interviews. For instance, the observation of changes in land use during spatial data collection enabled framing of questions to elucidate what happened and how it happened, who were the actors in the process, and how the changes influenced the surroundings. Analysis of the data from in-depth interviews provided a wider understanding of the context; this motivated the researcher to review the observational data.

4.4 Data cleaning and analysis

Prior to data analysis, a sorting and cleaning exercise was undertaken to filter out unanswered questions and contradictory information. All household questionnaires were cross-checked and sorted to check if all questions were filled in. From the 100 questionnaires, 86 were found to have filled in all the questions. The 14 remaining questionnaires were discarded due to missing

information, inconsistencies and misunderstanding in the responses. Therefore, survey information presented in this thesis is based on the analysis of 86 household questionnaires.

Analysis of data collected for this study was undertaken in three ways. Firstly, statistical data analysis of the data collected through household questionnaires. Information on household size, socio-economic activity and incomes, land-related issues and interactions was fed in the Statistical Package for Social Sciences software (version 16) for analysis. Descriptive analysis was used to analyse tab data, and the results were presented in tables, figures and charts. The statistical information generated by quantitative analysis was considered together with the results of qualitative data collection to answer the research questions.

Secondly, qualitative data was analysed using content analysis (CA). Qualitative data on land access, prices, location, interactions and activities supporting life in the town were coded, using repeated words and phrases to identify related information. Data with the same meaning, or implying it, were clustered in groups. Patterns of information were identified relating to the research questions and the theoretical framework adopted by the study to shed light on the phenomena corresponding to the data clusters (Liamputtong, 2019). This qualitative data analysis was applied to transcripts of 20 in-depth interviews.

Thirdly, spatial data analysis of cartographical data was implemented in two stages: i.e. pre-field and post-field analysis of spatial elements. The satellite images were analysed using Google Earth KML features, which were applied to two series maps. The 2018 satellite image was discussed with local residents and used in combination with an assessment on the ground to reveal changes and update the 2018 map. The process of updating involved omitting and adding features on the map. Geographical information system (GIS) software (10.3.1) was used to analyse spatial data. The software was used to analyse spatial growth of settlements, changes in spatial density, and extensions of road infrastructure; and to produce a series of maps showing different information. The mapping analysis was integrated with data collected and analysed using other methods. The integration of information produced using different methods helped to identify patterns of information during this analysis and was especially useful for dealing with qualitative data (Bernard, 2011).

4.5 Data collection challenges

The change of status of Handeni to a Town Council in 2015 resulted in the growth and modification of various socio-economic activities which impacted on land use. This transition brought about numerous challenges for the project includes the following.

Most of the documentary data are aggregated to district level. This limited the usefulness of secondary data. This is because most data held by the District Council was generalised data covering the entire district. Detailed information on sources of income, population and land use was not available for specific areas.

Challenges were also encountered in accessing images/maps for spatial analysis. The case studies area was undertaken in previously unstudied, and therefore there were no existing maps and/or spatial analyses of land uses in the town. The inadequacy of information due to lack of research on land related issues was tackled using mixed methods, including flexible qualitative approaches where individuals were encouraged to provide information through storytelling and normal conversation. With respect to images, the spatial resolution of those acquired from Google (i.e. pixel size of 30m), was sufficient to indicate the location of structures. The data were verified through ground truthing.

Another challenge related to the scarcity of long-serving staff on the town council. Most of the staff assigned to the newly created Handeni Town Council in 2015 were reallocated from other regions and districts. Therefore, their understanding and experience of historical development of the town was limited. This problem was overcome to an extent by also discussing with staff members with knowledge of the town working at the District Council.

4.6 Chapter summary

This chapter summarises the strategy, approaches and techniques used to collect, sort and analyse data. It also describes criteria for selection of the study area, characteristics of the site and challenges encountered during data collection. Application of the case study research strategy enabled use of multiple data collection methods and triangulation of data from different sources. The strategy was selected as suitable for providing a detailed account of changes in the land use in under-researched study area. The

inadequacy of land-related data due to lack of previous studies determined the research strategy.

A wide range of tools, including mapping, in-depth interviews, observations, household survey and storytelling were applied, and the resulting data were integrated to enhance reliability. Because of the diverse ways that data was collected, multiple methods of analysis were also applied, including content analysis of qualitative data and statistical analysis of quantitative methods (using various tools in the Statistical Package for Social Sciences), as well as the use of Geographical Information System software to analyse satellite imagery. The chapter ends by discussing the challenges encountered during research process, mostly relating to data accessibility.

This chapter provides the foundation for the presentation and discussion of empirical data in the forthcoming chapters, which will also draw on the review of relevant theoretical frameworks in Chapter 2 and 3.

5. The Impact of Policies on Urban Centres Development in Tanzania

The literatures reviewed in Chapter 2 shows that the emergence and development of small urban centres in various locations are influenced by natural as well as man-made factors. Among these factors, country and regional policies are factors influencing change. This chapter discusses the influence of policies on the growth of small urban centres in Tanzania over time. The chapter begins by looking at population growth trends and classification of urban centres.

5.1 Population growth and urban development

The population of Tanzania, like many other developing countries of Sub-Saharan Africa, has grown fast over recent years. The sharp increase of population in the country presented in Figure 14 reflects the growth of urban centres in the country. The data indicate an average 6 percent increase of population between each census period. The consistent population growth rate in the country has driven the growth of urban centres and the increasing rate of urbanisation.

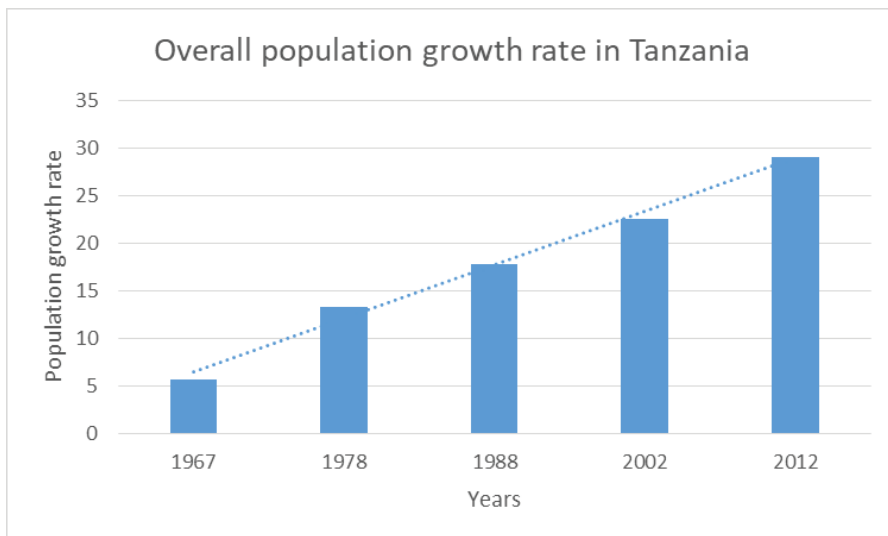


Figure 14. The overall trend in population growth in Tanzania
Source:(Wenban-Smith, 2014)

The government report on urban growth (National Bureau of Statistics, 2012) supported by the United Nations (2014), indicates that small urban centres in the country experience unprecedented rates of growth, due to high fertility rates and higher immigration rates than those experienced in cities and major towns. The rapid rate of rural-urban migration experienced in the Sub-Saharan Africa and Tanzania in particular is related to its largely rural character at present (Muzzini & Lindeboom, 2008; Giraut, 1997).

The increased population of small urban centres influences urban spatial growth by increasing demand for residential land, as well as leading to their reclassification in accordance with size criteria. Increasing population size is the main bench-mark for recognition of urban status by the state (URT, 2007). Also, the increased urban population supports diversification of livelihood opportunities, such as in trade and social services provision, due to widening gap between demand and supply (Christiaensen et al., 2018). These opportunities attract migration of people to nearby urban centres, hence influencing transformation of rural areas to urban areas (Lazaro et al., 2017).

5.2 Land use and urban centres classification

In Tanzania land is classified into three categories (general land, village land and reserved land) (URT, 1999), and only general land falls within this discussion of urban growth dynamics because it comprises all lands use types except village and reserved lands. Despite being regulated by the Land Act (1999) and Urban Planning Act (2007), land use change and urban development in Handeni town largely occur through informal processes, which are the drivers of growth of the town.

Tanzania, like many other developing countries of Sub-Saharan Africa, uses population sizes, as the main criterion for urban classification, with little consideration of economic performance (Muzzini & Lindeboom, 2008; Wenban-Smith, 2015). The existing population criteria for urban classification not only deny small urban centres access to important facilities but also constrain land use development in these growing centres.

The presence of unclear categorisation of urban centres put towns of different characteristics in the same group and those of the same characteristics fall in separate groups. The impact of diverse grouping results in unfocused prioritization in development including land use planning.

For instance, Tanzania has urban and rural/district authorities. However, the classification of centres is mostly based on the single variable population, while ignoring the important element of density. Using population as the main determinant of urban classification, as in Tanzania (Figure 15), does not reflect the reality on the ground in some contexts. For instance, the upgrade of some urban centres that qualify for urban status may be blocked due to political influence while others, equally qualified, are granted enhanced urban status. Therefore, urban status on the ground may not directly reflect population size and other criteria, but rather existing government priorities.

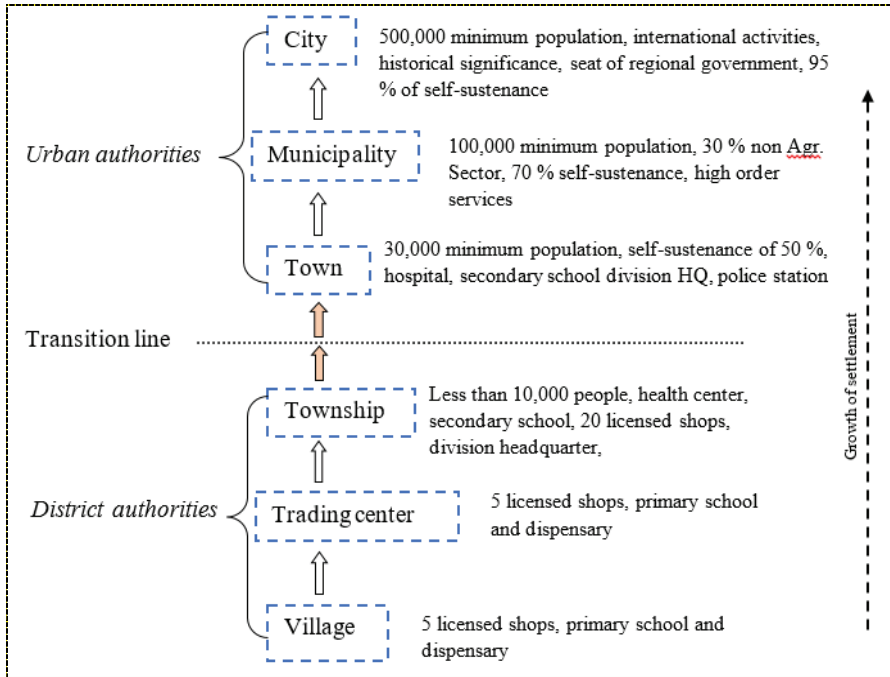


Figure 15. The hierarchical structure of settlements transition in Tanzania as per the legal framework

Source: Developed by author based on HSDP 2000 and UPA 2007

Reflection on criteria for urban classification in Tanzania

The main benchmarks for the classification of settlements in Tanzania are set by laws and policies dealing with development of human settlements, such as the Urban Planning Act, Urban Authorities Act and Human Settlement Development Policy, and regulations issued by the Prime Minister's Office (URT, 2000, 2007, 2014a). Some of these laws and regulations contradict each other, for example regarding the number of people, level of services and economic base to merit designation as a certain class of settlement. These contradictions constitute an impediment to the systematic categorisation and recognition of urban centres. The current approaches to settlement classification fail to consider some important elements such as density and level of connectivity in urban classification.

Spatial coverage is another important element in urban growth. However, both policies and laws are silent regarding spatial coverage, except for the guideline from Prime Minister's Office that, among other things, sets lower

limits to the spatial extent of an urban area. This categorically hinders settlements from qualifying for a certain level, despite meeting the other conditions.

The issue of housing and spatial density is particularly critical. The use of density criteria enables consideration of construction growth and population dynamics in a town (Lin, 2012), which are especially important in developing countries where settlement development is largely characterised by horizontal rather than vertical growth. Density criteria are considered neither by the laws nor by the regulations issued by the Prime Minister's Office.

The growth in population size is sometimes affected by factors such as the existence of refugee camps, water resources and natural resource exploitation in nearby areas such as mining and lumbering. The failure to consider such factors has caused some towns to be classified inconsistently. For instance, a centre like Kahama in Tanzania, which is economically viable due to nearby mining activities, is considered a lower-level urban centre than a town like Lindi, which is a municipality despite its low population size. This misclassification is sometimes done purposely by the government to allow even distribution of administrative responsibilities to different geographical areas in the country. Some of the growing centres which qualify for an urban status may be left with their former status due to limited financial capacity to support long list of urban centres. Political interests, socio-cultural and administrative roles, and economic development are sometimes trigger changes of urban status.

Analysis of the status of settlement planning in urban areas in Tanzania indicates that in 2014 more than 80 per cent of the urban areas were being developed without plans, while 65 per cent of plans in the remaining 20 per cent of settlements had expired (URT, 2014b). The extent of planned areas in the country is low since the rate of settlement emergence and growth is beyond the capacity of most of the planning authorities to plan. A good example is Handeni town, where over 85 percent of the built-up areas are unplanned settlements as a result of the failure of planning schemes to meet the need for housing (Bhan, 2013; Roy, 2005).

The level of services provided for in policies, laws and guidelines overlooks the diversity of urban growth under the influence of globalisation (Pedersen, 1997). The rates at which activities are growing, especially in Handeni town, are overwhelming the capacity for the service provision.

Criteria such as number of licensed shops do not tell the whole story of small urban centres in Tanzania. For instance, the growth of private sector, which is influenced by the business environment and competition varies according to political conditions at a given time.

The discrepancies are sometimes crucial for an understanding of the urban development challenges and their experiences growth over time. This inconsistency in urban classification and recognition affects planning for small urban centres, resource allocation from the central government, prioritisation in development projects by donors, political will for project implementation, and ultimately approval of the new town status.

5.3 Policies on the emergence and growth of small urban centres in Tanzania

Tanzania, like many other developing countries of Sub-Saharan Africa, has undergone several development strategies and initiatives for growth of its urban areas. The growth and location of towns and cities in the country is a result of many factors, including policies aimed at balancing growth, colonial footprints, natural resource endowments, and regional development strategies. These factors affected not only urban growth but also development of the socio-economic activities that allow life in the communities to thrive.

Since independence, Tanzania has experienced various policy changes and urban development initiatives. Worrall et al. (2017) citing Lorgen (1999), provide a stage-by-stage analysis of the path of urbanisation and policy implementation in Tanzania since 1961, as follows:

Pre-Arusha declaration (1961-1967). During this period there was a big policy reversal when restrictions on migration movement were removed. Independent Tanzania inherited a so-called movement restriction Act from the colonial regime limiting the right of people to migrate to towns (Brennan et al., 2007). Prior to the annulment of the Act, one had to seek permission from local leaders and provide a plausible reason to be allowed to move to an urban centre. The removal of this Act by the post-independence government increased the flow of people into urban areas, including small urban centres. Towns such as Handeni received people from the surrounding rural villages. The movement restrictions had negatively affected both cities, large towns and small urban centres as few people were permitted to migrate to towns.

The villagisation era (1974-1978). The Ujamaa villagisation programme was implemented in Tanzania in order to relocate scattered rural settlements into clustered settlements, or villages. This was done to facilitate basic social services provision and enhance governance (Ergas, 1980). People from scattered homesteads were resettled regardless of the potential of the areas where they had formerly lived. The new areas where people were forced to live had services such as functioning road networks, health facilities and water. These facilities promoted the development of permanent settlements with urban characteristics.

Crisis and early reform (1979-1988). During this period there was a decline in per capita income, a slowing down of urbanisation and decline in agriculture. During this period Tanzania was at war with neighbouring Uganda. Local Government Authorities (LGAs) that previously had power to plan for and decide on their own development were abolished. This impacted significantly on the economic development of both the countryside and settlements, including small urban centres. At a national level, policy shifted towards structural adjustment and liberalisation, leading to privatisation of services and an open market economy, making locally produced goods less competitive.

Consolidation period (1989-2002). This period was marked by the movement of people away from the rural areas and small urban centres to the regional capitals. Concurrently, the discovery or development of resource extraction through mining increased the pace of urban growth. This followed economic liberalization, which allowed exploitation of minerals by private foreign investors, and many people moved to the mining towns, attracted by the possibility of earning an income there.

New dawn era (2003-2012). During this period, there was a rapid movement of people from rural areas to major cities, such as Dar es Salaam, Tanga, Mbeya Mwanza, and Arusha, as well as to small urban centres. Globalisation and technological advancements in urban areas played a key role in attracting people to the regional capitals. Some of the regional capitals were more attractive to migrants than others (Worrall et al., 2017).

Since 1961, policies have aimed to stimulate regional growth and distribute economic gains across different kinds of urban centres as well as rural areas. The policies which affected the growth of urban centres in the country included: Ujamaa villagisation policy, the secondary cities development strategy, and centralisation of local government authorities.

Each of these policies, which had different impacts on urban growth and rural development, is further examined in the following sections.

5.3.1 Ujamaa policy: villagisation

The Ujamaa policy was implemented in Tanzania between 1974 and 1978 as a national initiative to relocate communities scattered across remote areas into nucleated villages (Lorgen, 1999; Boesen et al., 1977; Hirst, 1978). People were moved out of their places of residence to new settlements, mainly sited close to lines of services and inaccessible areas. They were resettled with the intention of ensuring access to better basic services and to promote living in communities (Hirst, 1978). The aim was to facilitate provision of public services, such as education, health, water and markets, by locating villages in accessible areas along road infrastructures linking major urban centres (Boesen et al., 1977; Hirst, 1978). One of the main motivations for relocation of communities by the government was to improve access to basic services.

The Ujamaa villagisation policy made a notable contribution to urban development and urbanisation (Raikes, 1975; Lorgen, 1999). Handeni town received people from the surrounding ujamaa villages, which contributed to the growth of socio-economic activity. Some communities in Handeni town are said to have originated in the surrounding rural villages, from where people moved to the town in search of opportunities. Villagisation policy influenced the current location and characteristics of most small urban centres in the country. Some present-day urban centres grew out of centres established during Ujamaa villagisation programme (Lorgen, 1999). Tanzania has experienced rapid growth of small urban centres due to the transformation of rural areas under the villagisation programme.

Despite good will and much effort, the policy fell short of its aims, due to poor selection and lack of basic amenities in the new settlements (Lorgen, 1999; Giblin, 2018). The implementation of the Ujamaa policy also led to loss of community assets, such as farms and domestic properties (Boesen et al., 1977; Raikes, 1975; Hirst, 1978). The location of the new centres affected their subsequent development. Some of the villages were located in unproductive agricultural lands which limited agricultural productivity, leading to the onward movement of people either to other villages or nearby town centres.

This policy affected urban transformation and growth in many ways. One was the change in population distribution, with dispersed homesteads being replaced by planned nucleated village settlements. These settlements grew over time to become small urban centres. Since people were resettled together their capacity to produce goods and services, change depended on access to land, availability of services and weather conditions for agriculture (Giblin, 2018). Eventually the policy failed to achieve its aims due to mainly high levels of illiteracy, the unbalanced social division of labour, and low benefits accruing from agricultural production due to the unreliability of markets for products (Ergas, 1980; Kleemeier, 1983).

People in the resettled communities who couldn't cope with the environment of their new villages migrated to nearby small urban centres. The movement of these people to small urban centres led to the growth of populations in the towns. The diversification of activities in growing urban centres led to more migration to towns from nearby rural villages (Lorgen, 1999). Moreover, some villages were located in areas with potential for economic and social development, which allowed diverse economic activities to flourish and the economy to grow; hence these settlements grew into towns (Giblin, 2018). New opportunities arose, leading to the transformation of the settlements from villages into small towns and gradually into towns.

The reliability of road transport infrastructure connecting the villages promoted growth, transformation of villages into towns and commuting from villages to nearby towns. Road alignments also influenced the pattern of settlement growth. Accessibility, which was a key consideration of the rural transformation programme, made villages important centres along the main transportation axes as connecting points for the exchange of goods and services between towns, districts, regions and even countries (Hirst, 1978; Giblin, 2018). This highlights the importance of the villagisation programme for urban transformation in Tanzania.

The Ujamaa policy played a major role in locating urban centres, enhancing growth of activities in urban and rural areas, and provision of basic social services. The policy also created new links between populations and activities in urban and rural areas through road infrastructure development. These interlinkages, in terms of roads and increased sharing of resources between rural villages and nearby small urban centres, stimulated socio-economic development.

5.3.2 Secondary city development strategy

Soon after national independence, the country initiated development strategies that aimed to stimulate growth of the economy. The failure of the economic growth policies of the 1950s and 60s pointed to the need for development of other strategies for economic growth. One such strategy was the secondary cities strategy, which was initiated in the 1970s (Rondinelli, 1983; Kleemeier, 1983). This strategy aimed to reduce the flow of rural people to the largest urban areas and benefit the less affluent regions by stimulating economic development. The towns selected for implementation of the strategy were those with populations of 100,000 and above (Rondinelli, 1983).

The strategy was implemented in 1980s in nine regional towns. Spatially, the strategy covered all zones of the country (i.e. the northern, coastal, southern, central, and southern high-land areas) with the aim of distributing economic benefits in the form of trade, employment and infrastructure development in the selected towns while inducing knock-on development effects in the surrounding areas. (Sawers, 1989). The regions were connected to each other by trunk roads and to surrounding lower order urban centres by district roads. The strategy affected urban growth and urbanisation levels in the country by attracting movement of people toward these towns. The implementation of the strategy in the selected influenced the growth of towns and small urban centres close to them. Most of these towns still lead the country in terms of industrial and infrastructure development (Sawers, 1989).

The implementation of the strategy not only positively affected the development of secondary cities but also influenced interconnectedness between urban centres and the hinterlands. Industries located in the secondary cities depended on the surrounding rural areas for raw materials and as markets for their products. Many areas in the country were opened up to the secondary cities. The movement of rural population to urban areas was also influenced by this strategy as many people were attracted by the employment opportunities and services in these areas. The growth and development of towns increased the potential of secondary cities in the rest of the country (Sawers, 1989).

Despite its initial promise, the strategy ultimately failed as the expected trickle-down effects to the surrounding rural areas did not materialise, instead it increased inequality between the cities and the rural areas (Darkoh, 1993). People continued to move to the cities developed by the

strategy, using small urban centres as their stepping stations on their way to the cities. However, the other two levels of settlement growth (i.e. secondary towns and villages) continued to dominate development plans until the importance of small urban centres for regional and urban development was finally recognised by researchers and by most developing countries.

5.3.3 Centralisation of local government authorities

During national independence in 1961, Tanzania inherited local government authority systems (LGAs) from the British colonial rule. The LGAs were formed under different ordinances. The LGAs, despite being modified after independence, continued working to improve governance until 1972 when the rural authorities were abolished, followed by the abolition of the urban authorities in 1973 (Kessy & McCourt, 2010; Kleemeier, 1983).

The LGA were politically and administratively important for the growth of towns (Kessy & McCourt, 2010). For instance, urban authorities guided the development of townships and supported activities in the towns by planning for settlement growth, promoting commercial development, and providing support for less affluent areas within their jurisdiction.

At the time of abolition of LGA there were 66 district councils and 15 urban councils. Abolishing local government authorities affected the development of urban activities in the areas they had previously administered. Subsequent decentralisation, that delegated powers to the regional authorities, raised the importance of regional towns while ignoring the significance of small urban centres. This decentralisation negatively affected land use planning and control in most towns because decisions were made at regional level, hence tracking the development of urban areas became difficult (Kessy & McCourt, 2010).

District and town councils experienced shrinkage due to the declining importance of the rural population and their own inhabitants. The strategy favoured the regional towns while the small urban centres were ignored (Kleemeier, 1983). The local areas at small town level had no resources for planning and implementing development initiatives, hence relied on regional towns for their development.

The abolition of local government authorities in Tanzania marked an important step towards the neglect of urban development in the country

(Kleemeier, 1983). By the time the authorities were reformed in the 1980s land development in most towns was growing haphazardly, making it difficult to make progress toward urban land development governance.

5.4 Chapter summary

The chapter covers the influence of policies on the emergence and growth of urban centres. During the post-colonial period each change in policies and strategy for development affected different areas in different ways. For instance the abolition of local government authorities brought about the situation where all small urban centres were controlled from the regional towns.

The management of small town centres from regional administrative units affected the growth and importance of these centres, including Handeni town, where plans remained unimplemented. The centralisation of local government authority policy neglected the importance of small urban centres and growing trading centres in setting urban development priorities. The regional towns and cities got all the attention and control over other towns, which influenced patterns of migration to different destinations. Some centres stagnated while others lost their potential to stimulate development in surrounding areas.

The Ujamaa villagisation policy on the other hand, as well as contributing to growth in number of urban centres in the country, also increased the number of urban residents by motivating rural people to move to towns. Many rural residents who lost their properties during implementation of the Ujamaa policy, or who were uncomfortable in the new areas, relocated to nearby towns, including Handeni town. This movement increased the rural-urban interaction through the movement of people and exchange of commodities between towns and the resettled areas.

Urbanisation policies led to the development of towns with different characteristics, in terms of service provision, population growth, infrastructure development, and socio-economic activity. All these factors together affected the ways in which small urban centres were characterised and treated by different government units.

Handeni town was directly affected with the Ujamaa villagisation Policy and the abolition of Local Government Authorities in the country. The town acts as the node connecting surroundings centres; however, hence the

abolition of local government authorities made it largely reliant on the regional administrative centre for its development. The Ujamaa villagisation policy on the other hand attracted movement of people from the surrounding villages to Handeni town, which stimulated urban growth.

The findings from this chapter feed into the next chapter on the emergence and historical development of Handeni town. The next chapter further explains how different development paths and administrative characteristics affected the spatial growth, structure and organisation of land uses in the settlement.

6. Emergence and Historical Settlement Development of Handeni Town

The emergence and growth of urban as well as rural centres is related to various factors. The literature reviewed in Chapter 2 shows that these factors include physical, social, economic, policy and environmental elements. The theories explain the influence of these factors on the emergence and growth of centres. Drawing on historical narratives, a document review and in-depth interviews this chapter describes the historical development of Handeni town, including emergence, growth, and characteristics patterns of land use change. The chapter traces demographic and socio-economic changes in pre- to post-independence periods.

6.1 Pre-independence era and settlement growth

The settlement at what is now Handeni contained a mixture of several different ethnic groups. The Bondei ethnic group dominated the settlement area; other ethnic groups from the surrounding districts included the Zigua, Sambia and Digo. From the outset, changes in social composition and interaction with people from the surrounding areas characterised the growth of the town. As the town grew so did the number of people arriving from other areas outside Tanga region, including ethnic groups such as the Pare, Chagga, Maasai, and Sukuma. The diversification of socio-economic activities, land uses, social norms, traditions, and settlement growth affected different aspects of the growth of the town, for example trade and cultural practices.

The settlement at Handeni is located at a road junction where the road from Mkata meets the main road linking Kilindi and Korogwe. Like many other emerging centres, Handeni town had its historical origin in

agricultural activities. The original small settlement was established prior to the colonial era and later grew into a village centre. In the 17th century Handeni was described in documents as a small centre; from these origins it grew and evolved, displaying different spatial as well as structural dynamics (Brokensha, 1971). There is little documentary evidence of the early development of the town, and the documents that exist are not detailed enough to shed much light on the process.

By 1875 Handeni settlement was a small village with a small centre surrounded by scattered houses (Giblin, 1986). Agriculture was the main livelihood. In the 1950s, the central area included a few shops, auction markets, and small-scale trading companies located along the main road linking the town to Korogwe. The settlement grew over time, with urban land uses replacing agricultural ones as the town encroached on farming lands in the surroundings. These changes in the spatial structure and land use took time and evolved gradually during the pre-colonial, colonial, and post-colonial eras.

Before national independence in 1961, land in Handeni Town as in other parts of the country was under the control of the chiefs who were custodians appointed to manage land distribution and development (Brokensha, 1971). During this time land was largely held by families and clans, and agriculture continued to be the main source household income. The clan chiefs held the land under their jurisdiction on behalf of the inhabitants and made decisions on land allocation and use. The ethnic composition of the population determined the identify of ruler/chief who possessed the land. The settlement area where Digo was the dominant tribe was under one ruler, while surrounding areas dominated by the Sambaa and Zigua ethnic groups had their own rulers. This arrangement made the Digo the dominant group in large parts of the town, with the power to facilitate land transactions in some areas, while constraining transactions in areas where Digo-owned buildings were located.

Tanzania was under German colonial rule up to the end of the First World War in 1919 when British colonial rule took over and continued until Independence Day in 1961. During the German colonial era, there were investments in sisal plantation in the district but these did not affect urban areas. Handeni town was used by the German colonial power as an administration centre. During this time people were taken as slaves to the sisal plantation at Kabuku and Korogwe. The slaves were taken both from

Handeni villages and in other central areas of the country, from where Handeni was an important stopping point on the through route to the plantations.

The Germans used direct rule to govern and control activities within their colonies. Soon after the takeover, the British colonial power implemented a system of indirect rule, where chiefs were important actors in the governing process. The chiefs were used by the British colonial government to govern the areas where they sway by enforcing regulations, implementing laws and controlling socio-economic activities. The chiefs restricted movement of people from their villages to the nearby towns at the request of the colonial administration, except those working for the sisal companies or employed by the colonial administration.

The growth of Handeni Town was affected by the migration of people looking for work in the sisal plantations, which were potential sources of wage employment. People who worked for sisal farms had relatives in the nearby towns such as Handeni, Mkata and Kabuku, and remitted funds to these centres to support their families. The flow of capital to the families attracted more workers to seek employment on the farms, while stimulating socio-economic activity in the urban centre and spatial growth of the town.

6.1.1 The German colonial period

The establishment and initial growth of Handeni Town along the main road influenced the pattern of settlement growth. The land use pattern imposed by the colonial administration influenced the network of roads in the settlement. When the German colonialists arrived in what is now Handeni Town in 1886, they found a native settlement called *Mdoe* consisting of a narrow strip of development, a few meters wide, following the line of the Korogwe-Kilindi road. This was the location for important socio-economic activities, including markets for agricultural products, offices and social welfare facilities. The German colonial authority chose an area away from the existing native settlement to establish their administrative authority. The area was named *Boma* by the natives, indicating that its main role was as an administrative centre. The *Boma* area was divided into a residential district and administrative area, and was occupied exclusively by German settlers. One of the elders in the town commented:

...when colonial masters came to this area they found our settlement close to the road in the town (the Korogwe-Kilindi road), they chose an area at Boma with no link to the road except by small paths. They later opened up the area by constructing the road to their area (Boma)...

The location of the colonial settlement required construction of a new road linking *Boma* to the native area (*Mdoe*), and attracted the growth of settlements along this line. This administrative area, like other colonial towns, was named *Boma* by the natives, meaning an area where functions of the government were located. This separation of the town into two different areas, i.e. the existing native area (*Mdoe*) and the new administrative centre established by the colonialists (*Boma*) gave rise to specific patterns of growth and land use change in the two areas.

Native area in Handeni town

The native area in Handeni town was the original town centre established in the pre-colonial period. The area housed the native people and was where they conducted their socio-economic activities and maintained their social ties. The area was named *Mdoe* by the natives, which was the name of the famous elder. The settlement at *Mdoe* largely consisted of buildings constructed using temporary building materials along the main road, with a few internal access roads to buildings sited away from this road. The main income generating activity at *Mdoe* was farming on plots attached to residential houses, while a few families also kept animals.

Over time, as the population grew as the result of natural increase and rural-urban migration, the central area of the town grew outward. As the town expanded, outward spatial growth of the settlement encroached into surrounding areas, including farming land and unused lands. The central areas were consolidated, and permanent buildings were constructed in what became the new town centre.

With changes in land use policies and increased interaction over time with surrounding areas, some natives sold land to new-comers. Land transfer agreements were reached between sellers, grassroots leaders and buyers, without necessarily involving local government leaders. These informal land transactions however did not include setting aside land for basic social services; the development of informal settlements around the CBD gave rise to incoherent patterns of urban growth.

The new owners adopted approaches to land management different from those of the original native owners. The areas under new ownership surrounding the original settlement underwent rapid land use change from mixed farming residential to typical residential settlements along the main roads. Scarcity of land in the downtown area, as the land use there changed to commercial, opened up the periphery for settlement development. Scattered settlement development continued in outlying areas, while buildings clustered around the town centre to accommodate the growth of facilities such as health and education. Over time service areas expanded to covering the original native settlement. The outward expansion of the settlement was accompanied by clustering of services in the central areas as shown in Figure 16.

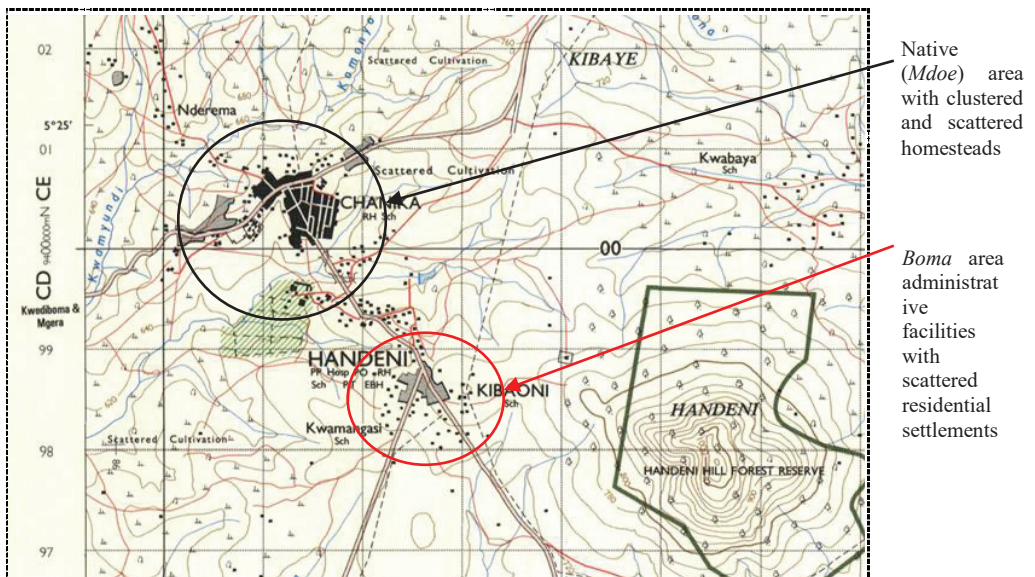


Figure 16. Handeni town: post-colonial expansion
 Source: Topographical Map sheet of 1956; scale 1:50,000, and field work (March 2018-April 2019)

The native area at Mdoe grew over time, accommodating various services and residential. It expanded in both directions along the main road linking to Korogwe and Kilindi while the road to Mkata linked the urban centre to villages at Sua and Kwachaga, where some settlements were established within the existing farm land at the periphery of the town.

Administrative area (Boma)

Boma was situated to the southeast of the native settlements located at a higher elevation than the rest of the town, a located designed to enhance security for colonial rulers. A stream runs between these two areas (*Boma* and *Mdoe*), separating them and restricting interactions with the natives.

Since interaction with natives was forbidden, rapid settlement growth took place in the native areas only. The *Boma* area remained stagnant for a long time as most this area was allocated for offices and houses for the few white residents. The offices built at this *Boma* area included administrative buildings, the court, District Commissioner's office, a police station and a health centre. Undeveloped land was left for future use and expansion of services. The area was planned and surveyed and settlement by natives was forbidden hence unplanned settlement did not occur.

6.1.2 The British colonial period

The British colonial rulers inherited the colonial settlement from the previous German rulers. The new approach of the British colonialists of using indirect rule modified settlement growth and land use development in Handeni. During the British colonial period the system of indirect rule placed the local chiefs in control of their tribal areas.

By this time, the settlement was dominated by Swahili buildings interspersed with the native houses. The Swahili structures housed residents with high incomes including Arab traders. These Arab traders built warehouses to store commodities brought in from the regional capital and from other towns. Traditional Swahili houses were constructed using temporary building materials, while houses of high-income families employed a mixture of temporary and permanent building materials, including iron sheets. In general, the African majority at the time had little impact on urban development, since Africans mostly engaged in farming in the surrounding rural areas, and few lived in urban areas. As one of the elders commented:

...during the British period things were different, trucks to transport goods and people to different areas were there. Despite the condition of roads people moved and farming activities grew because of the growing market for crops. During this time, there was also transportation of people to sisal cultivation areas at Kabuku and Mkata...

During British times, increasing interaction with central Tanganyika through the extension of roads to Kilindi and Kiteto brought more people from the central areas through Handeni town on the way to the coastal areas. Many people travelled through Handeni town, which became an important node for exchange of goods. The central parts of the settlement at Handeni town grew to occupy more services. The surroundings were occupied by scattered farms and small houses constructed on the urban fringe. Farming was the main economic activity in the surrounding areas and neighbouring villages, with maize, sunflower and groundnuts being the main crops.

Elders interviewed for this study commented that the dominance of the indigenous population at the time restricted interactions and growth of economic activity. People could move to other areas for socio-economic activities despite limited opportunities, information and mechanisms to do so due to poor condition of most roads.

...during that time it was so difficult to move around, when going to other areas you would need someone to accompany you. People had to rely on farming activities in the surrounding areas, while few could move to urban areas...

As a security measure, people clustered in one location at the town centre close to the roads (Figure 17), while a few structures also existed in the agricultural farming areas to accommodate farmers when working on the land, and for storing the harvest. The growth of the settlement occurred only through growth of families, as people were born or relatives arrived to settle in the urban area. During this period, the settlement grew slowly.

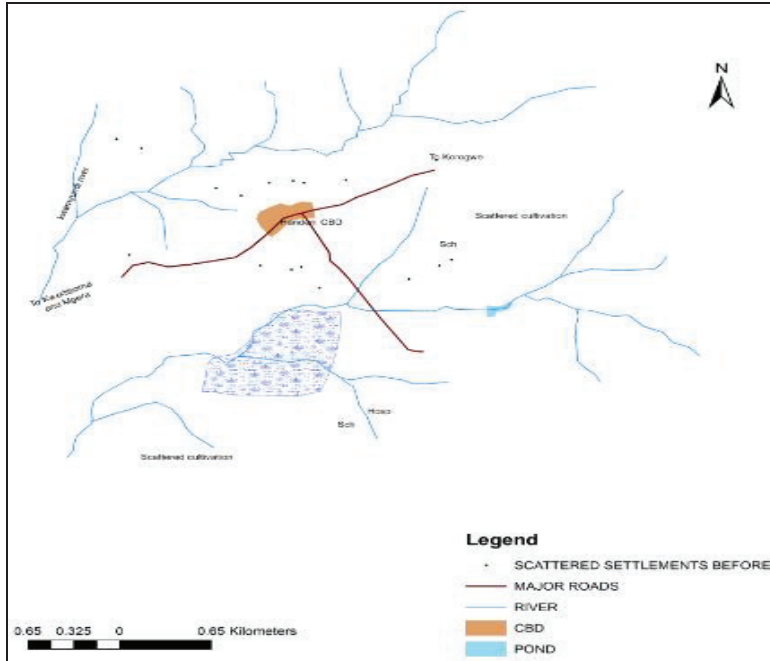


Figure 17. Handeni town immediately after independence in 1961
 Source: Topographical map sheet (1947) at the scale of 1:50,000 and sketch by residents.

In the 1950s the rate of immigration was low because of the restrictions on movement imposed by the colonial administration. At this time the rural areas were secure places for people as they could survive on rural activities and earn a living from agriculture. Lack of relatives in towns also constrained the movement of people to the urban centres, as one would need someone to live with while in the urban area. As one of the elders in Handeni town, who moved there from a nearby village, commented:

...one could not think about going to town because most people were living in villages, hence many had no relatives in urban areas. During this time, town areas were not as good as they are today, one needed to have education to settle in the urban areas...

Social ties were crucial for mobility. People could not just flee to towns without having relatives there or financial capacity to settle. Lack of

relatives or employment in the major towns stopped most people from moving to these areas. Access to Handeni town was possible from the surrounding villages, while access to major towns was more difficult as most roads were poor and public transport services were few and far between. The difficulty of moving and living in major urban centres meant that most people migrating out of rural areas went to nearby towns. The limited movement of people to major urban areas led to growth of small urban centres close to rural villages where those who could move ended up. An elder who had experienced the growth of Handeni town recalled that:

...it was not easy for someone during the time to go to major towns due to limited opportunities and means of transport. Coming to Handeni was easy because of its closeness to the rural villages surrounding it and means [of transport] were available to get there...

In summary, prior to 1961, Handeni town experienced different levels of growth, with residential and commercial development concentrated in areas along the major roads. In the central area, roads of different sizes connected commercial and residential areas to facilities such as schools and health centres. The main road (Kilindi-Korogwe) acted as the spine of the town orienting the growth of the settlement. Settlement was clustered around two main areas: the administrative area (*Boma*) and the original native settlement (*Mdoe*). A large part of the settlement was located along the main road to Korogwe, where most facilities were located, including shops, the bus stand, the market and local government offices, as well as native residential areas.

6.2 Post-independence settlement growth in Handeni town

Handeni town exhibited a different settlement growth pattern and land use organisation during the post-independence era. The changes in settlement growth were influenced by different factors including growth in services and the road infrastructure linking the town to other areas. The following discussion traces the history of the settlement across the different post-independence periods outlined in Chapter 5. Each period had different

influences and impacts on urban development, hence in the following account each epoch is discussed separately.

6.2.1 Handeni town between 1961 and 1988

The period between 1961 and 1988 saw significant changes in land uses and spatial urban expansion in Handeni town, with sporadic periods of growth. During this period, Handeni town had a monocentric structure where all services were located centrally in a single central business district (CBD). The spatial growth of the town emanated from the central urban area following the network of roads toward Korogwe, Kilindi and Mkata, with the location of facilities also influencing the outward settlement development.

Data collected from field observations show that most of the buildings in the town centre old buildings that had been revamped to improve their condition, often during a change of use, most from residential to commercial use or a mix of commercial and residential uses. Discussion with people in the town confirmed this impression. One resident noted that for many years all urban functions were located in the central area.

...the buildings you see at the central town were built many years ago in the 60s, when this was all there was of Handeni town, and where all urban activities took place. The houses are too old, that's why they are demolishing them and constructing new ones. Settlements were only along this major road...

The period also saw policy changes, including the abolition of local government authorities in 1972 and the introduction of Ujamaa villagisation policy in 1974, which both affected the growth and development of urban areas. The Ujamaa villagisation policy led to rapid urban growth expansion, as many people resettled in surrounding areas fled to Handeni town. Development of Ujamaa villages went hand in hand with provision of public services such as health and education, as well as other infrastructures such as roads to the villages. The linkages provided between the villages to the towns facilitated movement and those who were not content with their new settlement fled to the nearby towns. A resident whose parents moved to Handeni during this period said.

...my parents moved from Misima village to Handeni during villagisation program. Their movement isolated us from the rest of our family, we often visit them...

By 1976, the native area in Handeni town covered an extensive area of the town, and contained the majority of services, including colleges, offices, industries and financial institutions. The outward expansion of the central area and infill development of undeveloped plots were the main two processes involved in settlement growth in Handeni town. This development process encompassed the establishment of separated nucleated settlements in nearby areas along the major roads toward Korogwe and Kilindi, in contrast to the situation before 1961 (see Figure 18). The number of scattered dwelling surrounding the town central business area increased. During this time, the built-up areas expanded along the major roads and along the inner roads linking the town centre to the Boma area as shown in Figure 18. The growth of infrastructures within the town and of those linking the town with other nearby centres increased interaction between the town and surrounding areas, ultimately leading to increased population and socio-economic activity in the town.

Despite this growth, the rate of settlement development in Handeni town was affected by the problems affecting the country. The challenges included the Tanzania-Uganda war (which affected the economy), abolition of local government authorities in 1972 (which negatively affected small urban centres), the villagisation program in 1974 (which affected urban growth by pushing some rural people to nearby towns), and the economic crisis of 1978-79 (which slowed urbanization and the rate of economic development). These events all influenced, in some way, urban growth and settlement expansion during the studied period. Despite the challenges, overall the immediate post-war period was one of substantial urban growth, especially in terms of economic activity and settlement development.

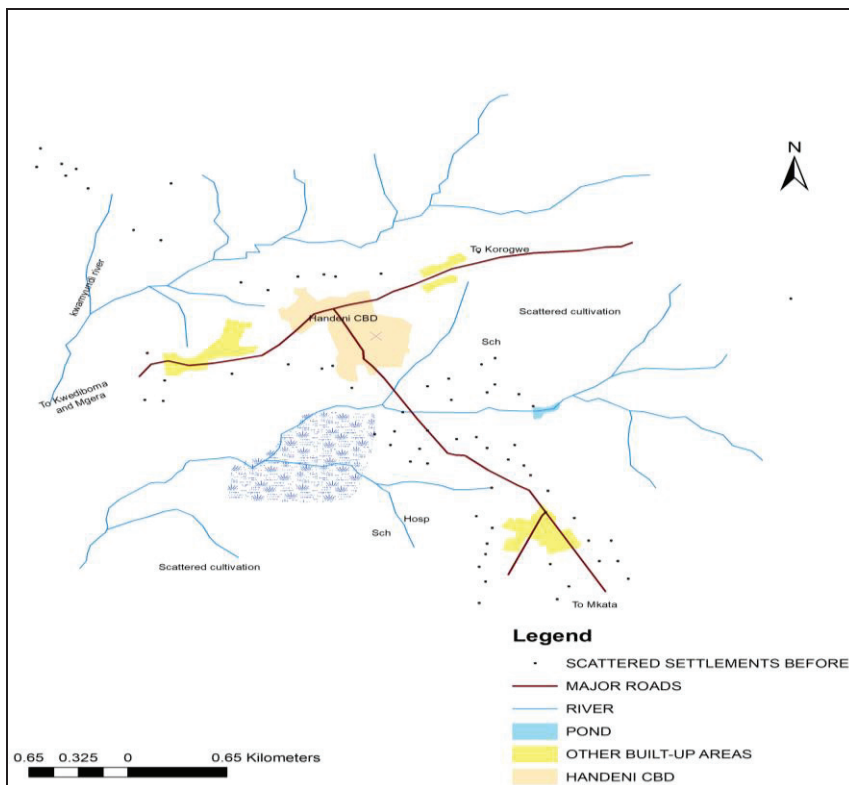


Figure 18. Built-up areas in Handeni town in 1988
 Source: Topographical map of 1986 at 1:50,000 scale

Roads and other linear infrastructures played an important role in stimulating spatial urban expansion and orienting settlement development. Changes also occurred in service provision and patterns of land use development. The plans for residential plots and location of facilities, such as market areas, health centres, schools and colleges followed the lines of existing roads, with clustering around the commercial areas.

The period was also characterized by formal planning processes, which produced layout schemes to guide development of urban areas. One of notable outcome of planning processes at this time were area plans for Mji mpya whose implementation was, however, delayed due to the slow growth of the town at the time. This time around, planning was carried out by the regional planning authority as local level planning had been abolished. This

new situation affected selection of the sites and limited the town's financial capacity for urban expansion, as explained by the town planner:

...the 1970s was the time when small urban centres had difficulties in development. During this time, planning was undertaken at regional level and selection of potential areas for development were done at regional level without local consideration of areas and this constrained development...

Within this period the town was affected by the reduced attention paid to local and small urban centres in favour of regional towns, following the abolition of local government authorities in 1972. When the local governments were abolished all authorities and development projects were managed from the regional level.

The period also covers a period of recovery from economic crisis. During this time, Handeni town was the focal point for the surrounding rural people in the region due to its connections with rural and other small urban centres. The movement of people from the rural areas to the town was partly the result of investments in social services such as the hospital, schools, courts, and road infrastructure; the latter was important as it made commuting easier. A retired resident in Handeni town noted that:

...the introduction of services in this town made people to come here frequently. Attracted by the services, some of them relocated permanently, while those who came for education stayed for a long time before moving either back to the villages or to cities...

Discussions with local residents and Town officials revealed that the opening up of fallow land for agricultural activities diversified income sources for urban residents, attracting migrants from rural areas to Handeni Town. Previously people from the town cultivated crops in the surrounding rural areas, but during this period rural activities such as animal keeping and farming were carried out within the town. Cultivation of crops in the town is reported to have covered most of the undeveloped areas, including areas earmarked for settlements. The increase of farming activities in the urban area was seen by residents as a mechanism to cope with difficulties experienced during the crisis in the 1970s.

These activities affected growth and expansion of settlements, as many areas were under agriculture. The pressure from agriculture activities at the periphery constrained further outward expansion; hence full use was made of available space in the town. This led to the growth of informal settlements on available spaces, as a result of the limited access to planned and serviced plots in the town. The growth of informal settlements in the town disturbed the formerly coherent urban growth pattern. Some of the unplanned development was close to the town in the areas such as Chogo and Azimio. The disorganised spatial growth impacted upon the structural organisation of settlements and land uses in the town. Steady outward urban expansion was replaced by growth of scattered settlements on the periphery of the town, leaving spots of undeveloped land in between.

The rate of urban development in Handeni in 1988 was high compared to the 1960s because of growing interactions with surrounding areas and a change in status of the settlement. The abolition of laws restricting movement attracted many people to towns including Handeni town. The Ujamaa villagisation programme prioritised villages rather than urban areas. People were encouraged to stay in communal villages; however, some people could not manage in the villages they had been sent to and relocated to nearby towns.

Even after the restoration of local government authorities in 1982, people could not move to major towns, as hardships experienced there pushed them back to the rural areas. The challenges in big cities included shortage of employment, crime, and the high cost of living. Those who couldn't afford to stay in urban areas moved back to the villages and small urban centres.

This period also saw the implementation of the growth pole strategy, which focused on industrial development of a few selected regions, in the hope that this would later stimulate the economy of surrounding areas. Tanga and Moshi, which had links to Handeni town, were among nine administrative regions in the country selected for implementation of this strategy. The implementation of this policy stimulated trade between the small centres and regional towns and hence socio-economic activity in the small town. An elder in Handeni town commented:

...during the 1980s opportunities grew in towns. It was also time of increased movement of people and goods between Handeni and Tanga city. There was movement of people to major towns and of [rural] immigrants to Handeni...

The importance of regional towns grew as a result of the growth pole strategy, even though it's central aim was to support the growth of less affluent areas. This increased interaction of people between rural areas, small urban centres and regional towns. The presence of transport companies such as Hajees Bus Company, which operated between Handeni town and Moshi, Tanga and Arusha, was important in facilitating movement of people between these urban centres.

Between 1961 and 1988, Handeni Town experienced varying rates of urban growth. The rate of growth was high in the years following national independence in 1961, because of the lifting of the movement restriction Act. The growth slowed during the period of economic crisis in the 1970s and 80s. The introduction of new policies (i.e. growth pole strategy, (Ujamaa) villagisation, and structural adjustment) and their failures, as discussed in Chapter 2, affected the growth dynamics of the Town during this period.

6.2.2 Handeni town between 1988 and 2008

Handeni town grew rapidly in the period between 1988 and 2008. This was a period when the country was recovering from economic shocks experienced during the 1970s and 80s and from the adoption of economic liberalisation policies in the 1990s that aimed to stimulate socio-economic development.

Analysis of data indicates that as people increased in Handeni town are more changes observed. The information presented in Table 6 shows the respondents understanding of migration in Handeni town.

Table 6. Percentage of interviewed households who came to Handeni town in different times

SN4	Duration	Percentage of migrants	Policy implication that contributed to population growth
1	Before 1990	2.32	Pre-trade liberalisation era with slow growth of the private sector and trade
2	Between 1991 and 2000	9.3	Trade liberalisation era, with increased private sector investment and trade
3	Between 2001 and 2010	34.88	Splitting of the former Handeni District into Kilindi and Handeni districts, leading to increased provision of services to the new district.

N=86

Source: fieldwork 2018

According to Town officials, immigration rates increased in line with the increasing availability of social services such as health and education, as well as the growth of trade, as well as the growth of trade, which influenced the town's development. The increased interaction of people and diversification of activities (Table 7) influenced urban growth.

Table 7. Economic motivations for moving to the town

Time	Key economic activities that attracted migration to the town					Per cent of respondents
	Business	Farming	Government employment	Others activities		
Period	Before 1990	0	2	0	0	3.17
	Between 1990 and 2000	4	1	3	0	12.67
	Between 2001 and 2010	13	4	9	4	47.6
Total		17	7	12	4	
Per cent of respondents		26.9	11.1	19	6.3	
N=63						

Source: Fieldwork 2018

Growth of the town during this period was characterised by land use replacement and infrastructure expansion. Construction and redevelopment densified settlement in the CBD. In addition to the existing commercial centre in the town centre (in Chanika), a new smaller commercial centre was developed at Chogo, incorporating the relocated up-country bus stand on Korogwe Road, a new market area, and new shopping and parking areas, as well as a weekly auction market. These changes in location of commercial activities and services in the town centre diversified socio-economic activity and stimulated settlement growth. As one resident explained:

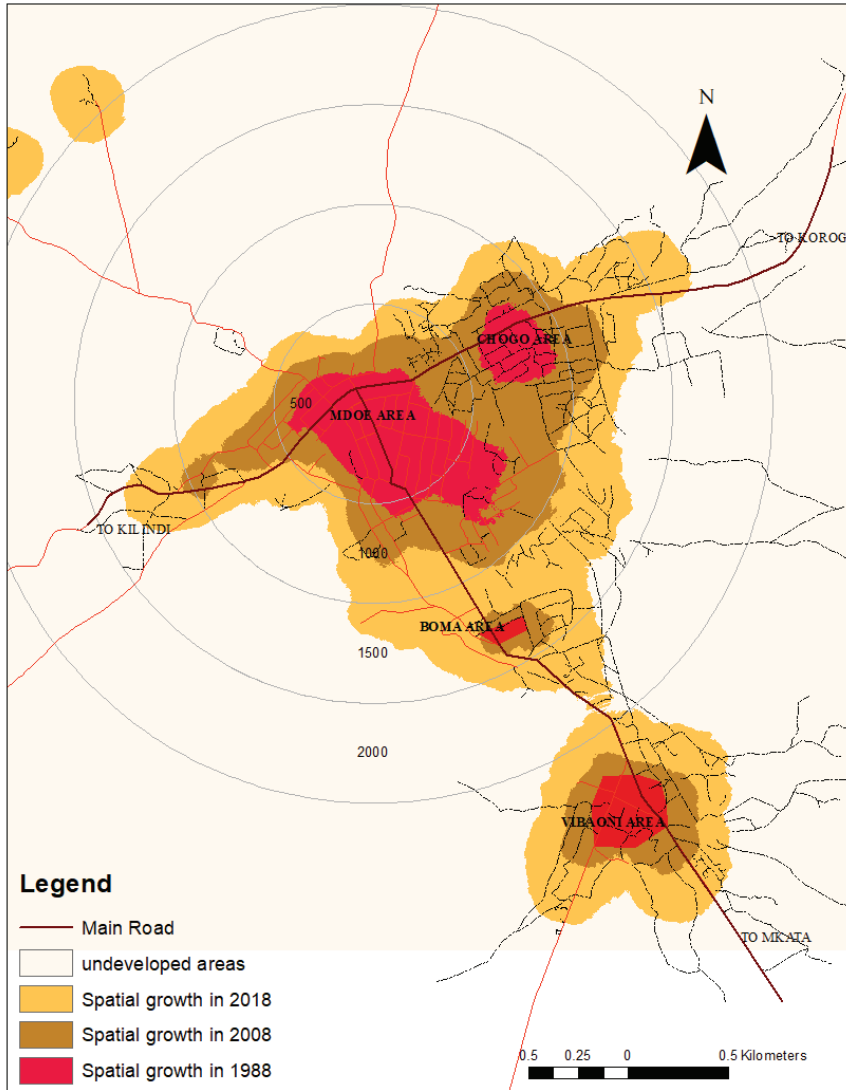
...the new bus stand at Chogo has expanded services close to our area. We were forced to go to the old central town area for every item but now most of the commercial activities have been brought closer to this area (Chogo). The town is growing along this way...

The growth in business activity and construction of new centres (monocentric to multi-centric) in the town stimulated the growth of many activities as more people engaged in business activities. The improvement of roads linking areas within the town, from earth to tarmac, and construction of a new road to Mkata opened up the town, stimulating economic activity in the town and trade with surrounding areas.

The recovery from economic shocks allowed greater interaction of activities and people between towns and cities and surrounding rural areas. The 1996 local government reforms also played role in transforming and stimulating the development of small urban centres in the country. The aim of the reform was to make local government authorities more effective and efficient, and to give them responsibility for local development. This was the period when local government authorities rematerialising following their abolition in 1972.

Outward urban expansion, as shown in Map 5, extended the settlement, engulfing land uses in the surrounding areas, and occupying vacant land. The sprawling development of settlements on town periphery was accompanied by the relocation of some land use functions away from the urban centre. Housing density increased toward the town centre and decreased toward the periphery (Figure 19). Development was still concentrated around the existing major roads, while a network of smaller roads evolved within the settlement. The period was one of the growth in the road network, within the

periphery and linking the periphery to the central area, as well as roads linking Handeni town to other urban centres.



Year	1988	2008	2018
Spatial coverage of built-up areas (Ha)	139.32	423.75	959.87

Figure 19. Spatial coverages of settlement areas in Handeni town
Source: Fieldwork 2018

The new settlement at Chogo, and new investments in facilities such as petrol stations, hotels and bars, accelerated the outward spatial growth of Handeni Town. The emergence of additional nucleated settlements around the old CBD and the outward spatial growth into the surroundings made the town visible. This outward growth, and the town's rapid socio-economic development, led to demands for a change in urban status, to attract more investment. As noted by the town planner:

...the town reached a point where it needed more investments as pressure of activities grew. There was increased need for means of transport and products from outside as many people were coming to the town and socio-economic activity was increasing...

Competition over land for different socio-economic activities including trade and residential development created demand for land use planning. Some areas were converted from residential to commercial use or to combined commercial and residential use while the central areas became largely commercial. Investment in commercial areas increased demand for land; hence prices rose and made it difficult to access land for residential use. The rise in land prices made periphery areas attractive for settlement development, and people also settled in high-risk areas such as along water course and in marsh-lands (where land was cheap), as well as in more far-flung peripheral areas. In the CBD, the size of buildings grew, with increased use of modern building materials and renovation of existing structures to accommodate commercial uses. The increase in commercial activities led to the amalgamation of plots to accommodate more urban activities.

The improvement of major roads through gravel surfacing in 2008 and an expansion of the internal road network opened up more areas for housing development, as well as attracting investments to meet socio-economic needs, such as health, education, and markets.

The outward spatial growth of the settlement led to the conversion of agricultural land to urban uses, and a reduction of farming activities that had developed within the town prior to 1988. The changes in spatial growth patterns of the town were influenced by competition for land use arising from the growth of the settlement. The dark brown area in Figure 19 is the

original CBD at Chanika, which accommodated most of town commercial activities at the time.

During this time (1988 to 2008) farming activities were adversely affected by poor harvests due to unreliable rains. The decline in harvests accompanied by free market policies and low prices of agricultural products made farmers to resort to other activities, as noted by farmers in the area.

...the unreliability of rain which affected production in the period made farmers less motivated to continue farming. Some farmers opted for other economic activities like trade and animal keeping as a coping mechanism to make up for farming losses...

Meanwhile, during this period, the availability of social services in Handeni Town continued to attract people from the surrounding districts of Kilindi, Mvomero, Bagamoyo, and Korogwe. According to the medical officer in charge at the Handeni District Hospital, for a long time (an estimated 20 years) people from the surrounding districts had depended on Handeni District Hospital for medical services. The immigration of people to the town for health services stimulated the growth of the other sectors of the economy including businesses. Some of those who visited the town for health services bought products from the town while others settled there permanently.

The availability of services and good accessibility facilitated growth of activities and investments in Handeni Town. Hotels, bars, markets, a wholesale market for products from the cities, and a long-distance bus service, all developed during this period. These new facilities and the availability of services in the town encouraged interaction with the neighbouring districts and towns such as Kilindi, Mvomero, Bagamoyo, Handeni district, and Korogwe.

Between 1988 and 2008, socio-economic activities in the town changed rapidly, impacted by the growth of technology and increased trading activity, including the import of industrial manufactured goods and export of agricultural goods to cities. These interactions reduced markets for crops in the surrounding rural areas due to price competition. Handeni town became an important focal point for businesses activity in surrounding rural areas.

6.2.3 Handeni town settlement growth between 2008 and 2018

This period covers the recent development of Handeni town, marked by accelerated spatial growth of the Town and land use change. The rate of immigration increased, according to residents, as a result of increased interaction with surrounding areas, as infrastructure improvements facilitated access to services in the town.

Demographic characteristics of Handeni town

Between 2008 and 2018, rates of demographic and socio-economic change in Handeni town increased compared to previous periods. These changes were related to the development of facilities, economic activity, population migration and the impact of globalisation.

i. Population composition

The size of population determines demand for services and growth of income generating activities, as markets depend on the existence of a threshold population. The household size of Handeni Town, as documented in the socio-economic profile of Handeni, is five people compared to the national average of 4.8 and the regional average of 4.7 (National Bureau of Statistics, 2012). The findings from the household survey in Handeni Town indicate that 53 per cent (46 out of 86 households surveyed) have 5 or fewer household members (Table 8).

Table 8. Size of household surveyed in Handeni town

SN	Household size	Percentage	Remarks
1	1-5 people	53.4	Represent large population share including immigrants
2	6-10 people	44.1	Found across the town areas
3	11-15 people	2.3	Few located outside the town CBD

N=86

Source: fieldwork 2018

The findings on household size in Handeni Town suggest two main conclusions. Firstly, population growth will continue to be a critical driver of urban growth and spatial expansion in the future, because population numbers can be expected to increase rapidly, leading to increased demand for land and services. Secondly, market for products will expand rapidly

because of the growth in population size, thus driving rapid socio-spatial and economic change in the town. As the town grows and develops, more people from the nearby areas will be attracted to the town.

ii. Age, gender and marital status

The household survey indicated that there are more young people in urban wards than in the rural wards. The average age of heads of household interviewed was 50 years. The majority of the interviewed heads of households (68 per cent) were married. Of this group, 8 per cent of household heads were separated from their families, because they had moved to the town from rural areas without their families. Male outnumbered females in the immigrant population (Figure 20). Interviews with residents indicated that this is due to the fact that men have more flexibility and the widely acknowledged tendency among young men to move and search for new livelihood opportunities once they are grown up.

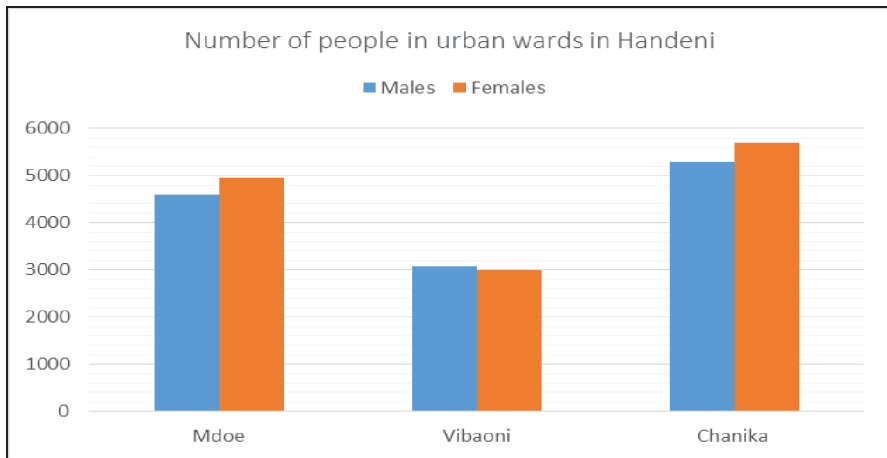


Figure 20. Population composition by sex of built-up areas in Handeni town
Source: Fieldwork 2018

However, it was noted in the discussions with the local residents that the culture of polygamy among men increased the proportion of men to women in some households. The national population census report indicates the same pattern for urban ward population in Handeni town (National Bureau of Statistics, 2012).

The change and growth of economic activities in the town over the study period shown in Table 9 was driven by increased demand for different products due to the population growth. Additionally, the change in administrative status of the settlement increased its importance in the supply chain for goods.

Table 9. The influence of services on urban growth

SN	Epoch	Key social and commercial facilities	Remarks on town development	No of people migrated as interviewed
1	1980-1990	1 health centre, 1 secondary school, and 1 CBD, 1market place, 1 bus stand at the CBD, local shops, clustered houses surrounding the CBD, main road crossing the settlement and the CBD.	The centre was small and depended on the regional capital for most of its needs while agriculture was the main income source	2
2	1991-2000	1 district hospital, 1 health centre, 1 dispensary, 1 community college, 2 secondary schools, 1 bus stand, 2 market places, new business centre in the CBD, development of the periphery.	New facilities emerged due to rising demand. The settlement started to expand outward, while farming decreased	8
3	2001-2010	1 district hospital, 2 health centres, 5 dispensaries, 3 secondary schools, 1 community college 2 CBDs, 2 bus stands, 3 markets places, network of internal roads, bitumen main road, dispersed settlements.	Business activities and settlements grew, replacing agriculture in the town areas, settlement restructuring started.	30
4	2011-2018	1 district hospital, 3 health centres, 8 dispensaries, 1 community college, 4 secondary schools, 2 CBDs, 2 bus stands, 4 market places, 2 local government authorities, ring road, main roads tarmacked, settlement sprawl.	New life styles, central town dominated by commercial development. Settlement growth at the periphery in response to raising demand for land	23

Sources: Fieldwork 2018

As shown in Table 9, the growth and improvement of key services, such as market places the roads network led to increased immigration, reflected in large number of respondents (30) from 2001 to 2010 compared to the number (8) from 1991 to 2000. During 1991 to 2000, the infrastructure network grew to cover most areas in the town.

The immigration of people from outside the area led to the mixed ethnic composition of the town's population. People from different ethnic groups

specialized in different activities such as trade (i.e. in crops and animals) and construction activities. The mixed socio-economic composition also opened up opportunities for the native population to interact with other areas through intermarriage and cooperation in trade.

According to a town official, the increase in population size from 9,444 in 1978 to 48,277 in 2002 and to 79,056 in 2012, (URT, 2017, 2012) was driving socio-economic development in the town. This increase in population influenced the growth of commercial sector activities and interaction of Handeni town with the surrounding centres.

The influx of population to Handeni town from surrounding areas is one of the strengths of Handeni Town, as the ratio of working population (i.e. age 15 to 64 years) in the Town was 51 per cent of the entire urban population (i.e. 40,207 people) (URT, 2017). This high proportion of the population of working age produces income and improves the economic status of individuals and the town in general, thus attracting more investment, such as for storm-water management, crop processing and the wholesale trade. Handeni Town is one of the most rapidly growing and urbanising urban centres in Tanga Region, with growing interactions between people within and outside the area.

iii. Livelihoods opportunities of residents in the town

Both formal and informal business activities take place across the town. Despite the existence of registered markets such as Chanika, Nderema, Chogo and Seuta for commercial activities, unplanned commercial activities also take place in some areas, such as along the major roads and in open spaces. Formal trade in registered markets is licensed and under government control, while the informal trade dominates in unregistered areas.

Inadequate financial capacity to compete in the registered areas and tax avoidance opportunities are incentives for people to engage in the informal business activities. According to local leaders and the district socio-economic profile, the majority of residents in the built-up areas currently engage in urban commercial activities while the rest of the population of the town and in the surrounding wards engage in agricultural activities (URT, 2017). The growth in the proportion of people engaged in commercial activities has also increased competition for space; hence more people engage in informal business activities in the informal trading areas.

The composition of actors and commercial activities changed with the change of urban status. Actors in the informal areas stated that competition for spaces in the market rose when the authority became a town council. They also maintained that when the new town authority imposed stricter rules and strengthened measures to enforce them:

...We used to work close to the market area, but soon as this new administration started they wanted us to pay for space, I decided to move to this area along the road to avoid them...

Currently, the majority of the urban services and commercial activities are located at the commercial business district (CBD) which covers part of Mdoe and Chanika wards. The executive officer from Chanika ward noted that:

...my area is dominated by business people; you can see the area at the market is full because people are engaged in business activities. This (Chanika) and Mdoe are the leading commercial wards in the town with more business people than the rest...

The town provides a range of employment in the service sector, such as in education, health, administration and religion; most of the employees in these sectors come from within the town and from the surrounding centres. The private sector also contributes to salaried employment in Handeni town. From the household survey and the observations, it is evident that the majority of the residents make a living from business activities, employments and self-employment. The small number of the government employees also engages in commercial activities to supplement their salaries.

Handeni town also accommodates individuals who work outside the town such as those engaged in mining, agriculture and business activities in other areas. A resident at Handeni Town who works outside the town stated:

...I am living in Handeni town but I am doing farming in Kwachaga village and business activities in Misima. My family is located here thus I cannot live away given the services I access in this town...

The growth of the town and diversification of activities has contributed greatly to the socio-cultural and economic development of Handeni town and its population. As the town grows more activities are started up; advances in technology open the town up to major towns and cities because majority of technological products are brought from cities (Dar es Salaam and Tanga) to Handeni town.

iv. Migration trends

The movement of people to Handeni Town was motivated by various factors including availability of cheap land (for agriculture in the villages), pressure on land use in the neighbouring areas including other regions, increasing accessibility to and from various destinations as roads were improved, and the growth of trade due to the presence of markets (Figure 21). Land use conflicts (i.e. possession and boundary conflicts) amplified by the limited plot size due to high population density in the neighbouring regions such as Kilimanjaro and urban areas such as Moshi, Manyara, Bagamoyo and Pare contributed to increased migration to Handeni Town.

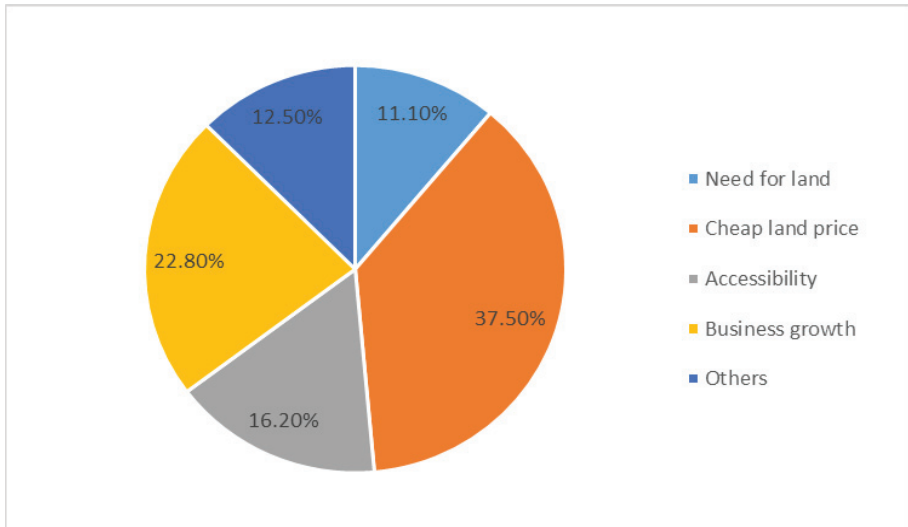


Figure 21. Respondents' perceptions as to why migrants moved to Handeni town
Sources: Fieldwork 2018

Improved accessibility not only increased the availability of means of transport but also shortened the time taken to reach different areas. The

location of Handeni Town in relation to the neighbouring regions was highlighted by respondents as making the area attractive as a place to live, while the availability of land spearheaded the process of immigration. The ward officer for Chanika commented:

...Handeni has been growing differently, when roads were improved in the 2008 to tarmac level, the number of buses to different areas increased, leading to increased interaction with people from different areas who came to the town for various reasons including business...

It was also noted by respondents that improvement of roads network to different areas benefited the agricultural sector. The improvement of roads made it easier for farmers to reach their farmlands in the surrounding villages. The majority of those with land for agriculture in the villages reside in the town, while continuing to work in the villages. As a livelihood strategy, while in the Town they engage in other income generating activities such as trade, services and wage labour to supplement the income from farming.

The increased population looking after agricultural lands while engaging in other economic activities was pointed to by respondents as having influenced the growth of other socio-economic activities in the town. It was noted that farmers engage in seasonal work on the farm, and the rest of the year they engage in business activities in Handeni town. One resident who resides at Handeni town while engaging in farming activities outside the town commented:

...I stay in the town because going to the villages is easy due to availability of means of transport. During farming season I go to the village to farm and the rest of the time I work in the town. Since the roads to the villages were improved, cars have increased, and the fare is reasonable...

Most of the rural population in nearby areas depends on the town for their trading activities mainly at weekends, which is when commercial activities are conducted. During weekends, Handeni town holds two markets: a livestock market every Saturday at Nderema and a chicken market every Sunday at Chogo centre.

On market days Handeni Town economic turnover increases as noted by a town council official:

...weekends are when most Handeni town residents make a living because this is when they engage in trading activities. It is the time when economic activities are conducted all over the town...

Weekends were thus seen as being crucial moments as Handeni Town receives many visitors looking for commercial opportunities in the markets. During this time (2008 and 2018), there was a rapid diversification of transport services between the surrounding centres and Handeni town, and travel costs fell, according to town officials and bus operators. Modes of transport included motorcycles, tricycles, Bajaj and private cars.

Also at this time, Handeni town made great strides in commercial development and intensified interactions with surrounding centres, such as Korogwe, Kilindi and Lushoto, especially for supply of farming products. Health and education services also got more attention from central government, whereby the number of schools and health facilities increased. There was also an increase in the presence of financial institutions such as banks in the town. All these changes and development of facilities led to the alteration and growth of settlements in the town. These changes were threefold: reconstruction and changes of land use in the old CBD; infill land development in the old CBD; and outward urban expansion along the main arterial roads. The three processes, which occurred concurrently, involved rearrangement, replacement, and change in building densities in the central part of the town, and land use change from non-urban to urban at the periphery. Each of the changes is discussed in detail in the following sections.

Buildings reconstruction and land use replacement at the old CBD

Handeni town centre (old CBD at Chanika) underwent rapid changes both in types of buildings and their uses. Most of the buildings in the town centre initially were for residential use, alongside a small number of commercial facilities such as shops and restaurants.

The processes of change in this area involved demolition of existing buildings and construction of new ones and change of land use from residential to commercial. Up to the year 2000, the town had a monocentric

structure, where the majority of services were located in single CBD at Chanika. Later around 2008 another centre was constructed at Chogo, reducing dependence on the old central area at Chanika. For instance, the bus stand was relocated from Chanika to Chogo, with the addition of another market at the new commercial centre. The old CBD also expanded outward, with the relocation of some services and residents to the periphery.

In the CBD at Chanika, the redevelopment of existing buildings was accompanied by changes of use, and infill of undeveloped plots to create new commercial areas (Table 10). Due to its prime location, the CBD at Chanika attracted commercial development, which entailed reconstruction of undeveloped plots and redevelopment of existed structures to accommodate the new uses. The dilapidated old buildings in the area were ripe for redevelopment to meet new demand. This, and the amalgamation of plots to create bigger spaces for commercial development contributed to the expansion of the CBD area, as summarised in Table 10.

Table 10. Redevelopment activities in Handeni town CBD

SN	Activity in the CBD	Quantity	Remarks
1	Redevelopment of residential buildings to commercial	32	Effected by commercial growth
2	Amalgamation of plots to suit commercial use	3	Done at the outer zone of the CBD
3	Commercial structures modified for commercial use	13	Improvement of commercial structures to make them more suitable for commercial use
4	Low rise to high rise structures	4	New high-rise building were mainly located in the town centre and used for hotels and other commercial uses

Source: Fieldwork 2018

The undeveloped plots within the old CBD and partially developed plots were rejuvenated (Plate 2) as the town centre was expanded and modified to accommodate more commercial functions. The newly developed structures within the town central area accommodated mainly commercial and mixed commercial and residential functions, as noted by a developer:

...most of these areas at the town centre are prime areas for commercial use especially those located along the major roads. The importance and prices of plots are affected by their location away from the central area and major roads within the CBD...

Filling the vacant plots also took place in all actively developing areas, including in areas close to education, health, and market facilities and along the major roads. The plots in prime areas such as those close to or within the commercial zone, were developed more rapidly than areas away from the centre.



Plate 2. Infill development of plots in Handeni town
Source: Fieldwork 2018

The reconstruction of buildings in Handeni town CBD was another change influenced by the growth of commercial activities and urban interactions. The redevelopment involved the demolition and the reconstruction of buildings (Plate 3). Changes in the condition, uses and density of buildings in Handeni town CBD stimulated economic growth by providing amenities and increasing the attractiveness of the area for commercial development. The new buildings were observed to accommodate commercial premises such as large stores, shops, bars and restaurants.



Plate 3. Building reconstruction in Handeni town
Source: Fieldwork 2018

The redevelopment of the buildings modified both the use of land and its ownership, because new developers were required by the local government authority to formally register their plots and submit proposals for planning approval. The redevelopment process of land in the town also modified the sizes of plots and urban structural forms as plots were combined to increase the size of land in order to accommodate more functions (Figure 22). The process also introduced a mixed land use pattern, combining residential and commercial structures, which was not common in the town centre before.

Large parts of the Town were dominated by the single story dwelling units that typify rapid outward growth of settlements, but multi-storey buildings were also constructed in the CBD (Plate 4). These multi-storey structures were mostly for commercial uses, such as hotels, restaurants and bars. Most of these multi-storey buildings have an average of two to three floors with ground floor being used for commercial purposes.



Plate 4. A multi-storey building at Handeni town CBD
Source: Fieldwork 2018

Sometimes total demolition of existing structures and/or modification of old structures was needed to suit the demand for new land uses. For instance, some plots were combined to accommodate functions which require more extensive spaces (Figure 22). The plots were combined, and the existed residential structures demolished or renovated and repurposed for commercial activities. The total demolition of structures was followed by construction of new buildings, or conversion of spaces to support commercial activities, like parking lots. As noted earlier in this section, the alteration of building uses in the CBD generated a mixed use of spaces and land use, thereby changing the pattern and organisation of land use in the town. The CBD also accommodates lodges and restaurants, retail shops and wholesale business, as well as offices.



Figure 22. Combined plots in the central area of Handeni town
Source: Fieldwork 2018

Some households in the central area were forced by land market forces to dispose of their properties and relocate in the periphery or outside the Town. The relocation enabled the households to find new sources of income and widen their employment opportunities in the periphery.

6.3 Chapter summary

This chapter covered the emergence and historical settlement development of Handeni town. The data presented shows that Handeni town emerged and grew along the major road linking Kilindi and Korogwe towns. The growth was influenced by the interaction of activities performed within the town with those in the surrounding centres. Policy changes and changed administrative boundaries led to the agglomeration of activities in Handeni town, attracting movement of people to the town.

Economic activities by the colonial regime also played a role in the growth of Handeni, which at this time was on the through route for workers coming to the coastal regions from the interior. The town centre was an

administrative centre for the colonial powers, and as such benefited from the provision of facilities such as education and health services. Population growth and the expansion of the town facilitated upgrading of the available facilities to serve more people, leading to increased interaction with the neighbouring centres.

With time, the settlement expanded and grew, as infrastructure improvement in the post-independence period attracted movement of people to Handeni town. The town expanded outwards along the major roads and the location of service areas also influenced growth patterns and land use changes. Pre- and post-independence growth made Handeni town a significant location relative to the surrounding centres, and a core node for service provision. The effect of the growth of the settlement and improved services on economic growth in Handeni town is the subject of the next chapter of this thesis.

7. The Influence of Economic Change on Spatial Urban Development of Handeni Town

The previous chapter looked at the historical urban settlement development in pre- and post-independence eras of Handeni town. It covered the emergence, growth and settlement development of the town. Studies indicate that market activities affect the growth and development of settlement centres in various locations. According to the literature, the theories state that market location influences the growth and development of different settlements, in ways that vary with sizes and degree of control. Drawing on in-depth interviews and household surveys, this chapter examines the influence of economic change on the growth of Handeni town and the surrounding centres.

7.1 Handeni town economic base changes

As discussed in Chapter 6, the growth of Handeni town was influenced by the growth of interaction with the surrounding settlements which attracted migration of people from neighbouring rural as well as small urban centres. The growth of interactions led to the decline of traditional socio-economic activities such as farming and animal keeping. Socio-economic change impacted on the growth of individuals as well as community income and hence affected settlement patterns.

The town's economic output expanded from 1.185 billion Tanzanian shillings (equivalent to 564,285 USD)³ in the financial year 2018/2019 to 1.873 billion shillings (equivalent to 891,748 USD) in the 2022/2023

³ 1USD is equivalent to 2100 TSHs.

financial year, as documented by the town economic office. Economic growth also affected the provision of socio-economic facilities, such as state secondary schools which grew in number from 8 in 2018/2019 to 11 in 2021/2022, and state and private health facilities which grew in number from 5 to 15 and 2 to 5, respectively in the same period.

During its initial growth, various activities in neighbouring centres such as sisal plantations at Kabuku, Mkata, and Korogwe, contributed to the income of the town inhabitants, in the form of remittances received from their relatives and family members who worked in these areas. The remittances were used by individuals and families in Handeni town to support their families and for construction of houses. People who lived in Handeni town also worked in the sisal plantations on seasonal basis as noted by an elder:

...despite the farming activities I did, I used to work in the sisal plantation at Kabuku when farming season activities stopped. Some of my relatives used to work there full time and joined their families during weekend. Earnings from sisal farming activities enabled most of us to pay for various needs and support our farms...

With time sisal lost its value as the price in the world market dropped, hence lowering the return on investment. The drop in prices discouraged the government and private investors from sisal farming, leading to a reduction in number of workers in the plantations. Most people who worked in the plantations relocated to their former areas, while only a few remained on the farm estates. Some of the sisal farms continued in production; however, farm sizes were reduced. The remittances from sisal farming activities enabled family members to cover some family expenses such as for education and health.

Previously communities in Handeni town depended on farming activities conducted on the town periphery. With time and growth of the town, and provision of more government facilities such as colleges, health centres, and schools, as well as the growing presence of financial institutions, more people came to work in Handeni town. The increase in the number of white collar jobs in the town, as more facilities and activities started up, attracted the development of the commercial activities and services, whereby more

agricultural lands were turned to settlements. An elder in the town commented:

...the construction of government facilities brought more people to the town as workers, their increase caused growth of business activities while reducing farming land as more areas were sold to new comers...

The growth of commercial activities impacted on the growth of settlements and land use. More land areas were devoted to residential and commercial development. Existing agricultural markets, such as Chanika and Azimio, and the livestock market at Nderema, stimulated the interaction of socio-economic activities between Handeni town and surrounding centres. Because of the growth of socio-economic activity and related infrastructure improvement, it influenced growth of income of individuals and occupation. An elderly worker in Handeni town commented:

...we experienced a growth of activities when the number of people increased in the town. People started engaging in various activities such as trade and housing development. They earned money from the growth of activities of the town, such as wage labour and business...

In the 80s before the road link to Korogwe was improved, Handeni town depended on Kilindi as the main source of agricultural products. After the improvement of the road to Korogwe, the dependence of Handeni on Kilindi declined and the town became reliant on other centres such as Korogwe, Hale and Lushoto with road links to Handeni town. The improvement of major roads such as Handeni-Korogwe, Handeni-Kilindi, Handeni-Mkata and Handeni-Negero as shown in Figure 23 created a network of roads locating Handeni town, at the core, to various surrounding centres.

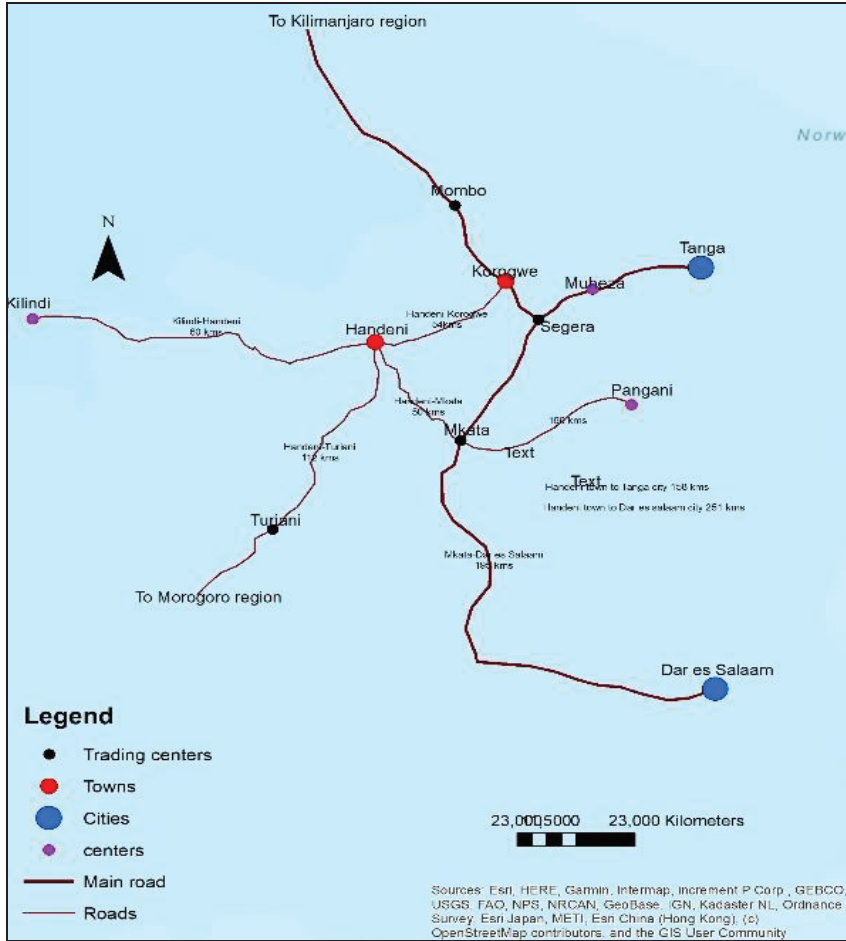


Figure 23. Spatial links between Handeni town and the surrounding centres
 Source: Fieldwork 2018

The proximity of Handeni town to neighbouring small and major town centres attracts people to locate in Handeni town. Despite other factors affecting decisions on location, proximity between centres and good transportation links were identified by the respondents as most significant for the spatial growth of Handeni Town as noted by a business-person who migrated to Handeni town and lived there for long time while doing business:

...Handeni town's connectivity and socio-economic activities has made it preferred location, because of its easy commuting, in terms of time and cost, to the surrounding major cities as well as to small urban and rural centres...

The good transportation links allowed interaction of people, activities and hence trade, thereby diversifying socio-economic activities. Similar observations regarding business growth were made by the Chanika market manager. The businesses in the market have grown and contributed to incomes of individuals and the town in general. The most important business activities and their changes are discussed in the next sections.

7.1.1 Production of crops and livestock

As discussed in the previous chapters, the immediate post-independence era saw population growth over successive census periods, resulting in an increase of economic activity in Handeni Town. As explained in the previous section, these activities provided opportunities for the exchange of goods between different areas with Handeni town. The main goods exchanged were rural commodities (i.e. agricultural products) and industrial manufactured goods.

Markets in Handeni town are divided into three groups: crops markets in the town; weekly livestock and crops markets in Nderema within the town boundaries; and a rotational market that serves the town and the surrounding settlements. Each of these markets is described in detail in the following sections.

Weekly livestock market at Nderema

Nderema is one of the most famous livestock markets in the region. The market started in the 1980s close to the town's central business area and shifted to its current location in the 90s. Nderema market is the site of most of the livestock business activities in the region, including in the surrounding administrative regions such as Arusha, Kilimanjaro, Dodoma, and in neighbouring countries.

The livestock market at Nderema is one of the main business centres in Handeni Town, contributing to individual and town revenues. The livestock business has positively influenced growth of other activities such as agriculture, employment, petty trading (including hawkers) and the transportation sector (Plate 5). Other products sold at the market include

crops, chickens, food and textiles. People in Nderema market work as porters, caring for livestock, and managing small businesses. The market provides incomes to individuals who are employed there, as noted by porter in Nderema market:

...Nderema is so important to majority of us here. I work every week to earn my living at this market. Carrying goods and supporting other activities in the market make my income grow. I get a pay of up to 50,000 TSHs (23 USD) a day depending on activities I get to perform...

The ways for individuals to earn cash from activities in Nderema market are so varied because they also involve other activities outside the market area. Some people work in the town to provide services to the market, such as accommodation, transportation and brokerage.

The transportation of goods and people in Nderema takes many forms, including commuting to the market for business and transporting products bought from the markets to their new destinations. Business activities in the market influence trade in locations outside the country including the Seychelles and Kenya. The interactions and commercial activities at the market provide income to the town and individuals who work in the market-places.



Plate 5. Business activities at Nderema market
Source Fieldwork 2018

Nderema market has become an important economic hub in the town and region as many people from different areas come to Handeni for the livestock business. When business-people come to the market, their activities influence

other businesses, such as trade in industrial produce, crops and services, as revealed by a small businessperson interviewed at Nderema:

...Nderema market is the main purchasing point for most of us from the villages. Here we sell our animals and get money to buy other products. I come to Nderema market almost every week for most of my purchases...

Further, Nderema market acts as a backbone which links rural and urban populations as they interact in business. Most businesspeople coming to Nderema from outside the town depend on Handeni town for their accommodation. Increasing demand has created the need for more lodgings, which has stimulated guest house development in the town. The contributions of Nderema market to the town’s economic growth, including investments, are revealed by the estimated annual budget of the town (Figure 24).

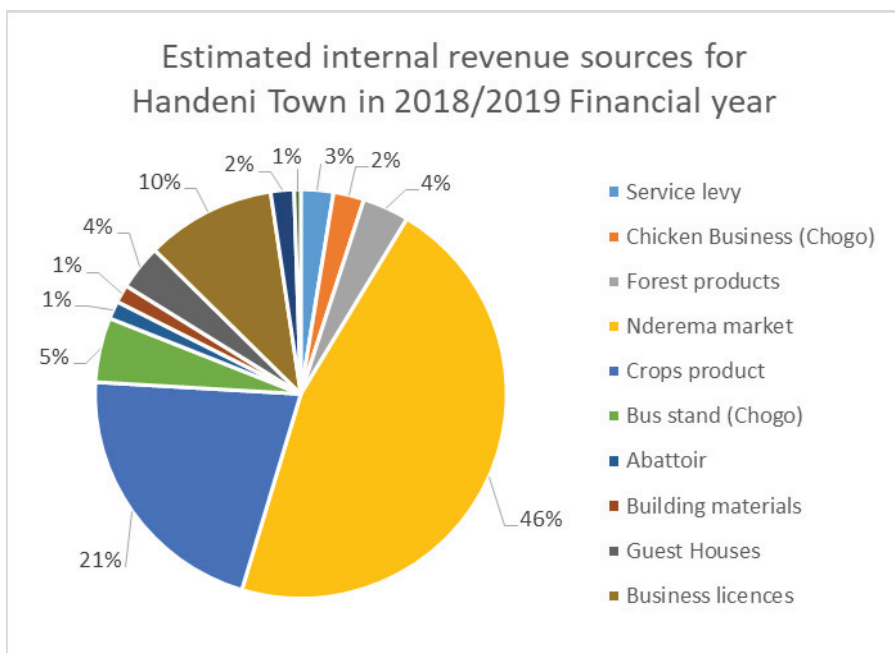


Figure 24. Estimated sources of Handeni town revenue Source; Economic Planning Department (2018)

The livestock market contributes the bulk of local government revenues, accounting for about 46 per cent of the total; this is followed by sale of crops which contributes 21 per cent of the total annual internal revenue of Handeni Town. Apart from the sources shown in Figure 23, the remainder of the town's revenue to support development activities comes from the central government through development funds and as aid from development partners.

Because of its impact on interactions and growth, Nderema market has influenced the development of real estate in the town. The demand for accommodation for businesspeople from Nderema market has influenced development of housing in the town as noted by a real estate investor:

...people in Handeni town normally increase during weekend because of market activities. The real estate business has grown due to growing demand for accommodation, especially lodges and hotels. This has influenced my decision to deal with lodgings more than rented houses. I get more customers during weekend because many people come to Handeni for business...

The redevelopment of the town areas, including provision of space for guest houses and restaurant areas, is pushing residential areas out of the prime commercial areas of the CBD. New residential developments add to the housing stock in the town and drive spatial expansion as the central urban area redevelops.

Crops markets in Handeni town

Handeni town has emerged as a hub for economic activity in the surrounding areas. It serves various areas. For example, the town provides administrative services to Kilindi and support for agricultural businesses in the surrounding villages and part of Morogoro region. Handeni town acts as the main centre for the exchange of goods. As discussed in the previous chapter, Handeni town is located along the main road linking Handeni to Kilindi and Korogwe towns. In the central business area of Handeni town there is commercial centre which holds the central market called Chanika.

With time the town grew and expanded to incorporate more market centres. From a single market at Chanika in the town centre, the town now has three, with the opening of two more markets at Seuta and Chogo (Figure 25).

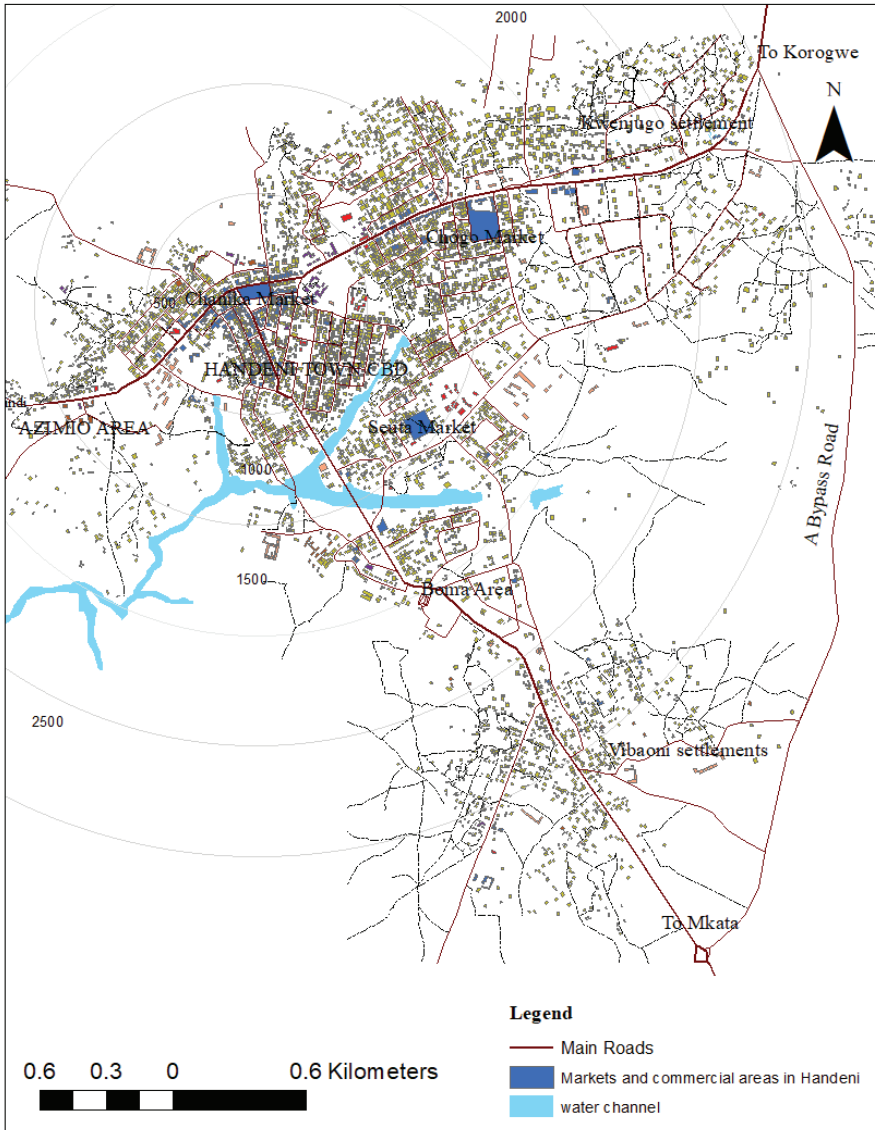


Figure 25. Location of the formal markets in Handeni town in 2018
 Source: Digitised by the author

Chanika market is located in the old part of the town along the Kilindi-Handeni-Korogwe road. The spatial growth and increased commercial activities of the Town necessitated the development of a second market at Chogo, also located along the Kilindi-Handeni-Korogwe road

approximately 1.5 kilometres from Chanika market. A discussion with the manager of Chanika market manager revealed that Chogo market was developed to reduce concentration of commercial activities at Chanika market and provide more space for businesses to operate in the town. The market provides access and commercial services to people located outside the town centre.

The growth of marketplaces improved the livelihood opportunities of people in Handeni town. Businesspeople at the town crops markets stated that increased interaction with the surrounding areas, has induced more people moved to the town, raising demand for produce, and hence increasing incomes. The surrounding settlements use Handeni town as their main sources of household products, which benefits the retail trade as noted by a businesswoman in Chanika market:

...my income has grown from an average of 15,000 TSHs (about 6.8 USD) total sales per day in 2010 to 80,000TSHs (36 USD) a day today (in 2018). The increase in sales was caused by the growth in number of customers with the availability of products and growing number of urban centres buying products from Handeni town...

Seuta Market was established in 2006 by relocating the informal Azimio Market from its original location in Azimio sub-ward and being recognising it as a formal market at its new location, bringing the number of recognised markets in Handeni town to three. The growth in the number of marketplaces in the town indicates the increased need for products, linked to an increase in the number of consumers. Seuta market provides access to market services for people located far from the existing main roads, where majority of services were located, as shown in Figure 25. Former customers of Azimio market were forced to use Chanika market, located some distance away from their residences.

Despite the existence of three markets in Handeni Town, their spatial distribution does not provide an even spread matching the present spatial distribution of settlements. For instance, some residents from southeast and northeast areas of Handeni town have to travel between one and two kilometres to reach the nearest market. Since the town is growing largely spontaneously, the existing market areas will still be far away from the new developing areas, attracting the development of informal markets.

The number of markets in town and those in the surrounding centres make Handeni one of the most significant urban areas in the region, with large volumes of interactions of people and activities with its neighbouring centres. Tarmac, and the passable gravel road network and the availability of several modes of transport make transportation to and from the town fairly good.

The growth of business activities in the town, enhanced by the presence of various market areas, has spearheaded the growth of settlements and diversification of socio-economic activities. As opportunities emerge in the town due to diversification of activities, so too does the capacity of the town to construct new urban areas. A small businessman at Chogo confirmed this:

...this business has enabled me to build my own house and support my family. Through it I have helped my relatives get employment in the market as porters...

The growth of trade in the markets and wholesale businesses in the town centre contributed to the growth of other sectors of the economy such as the manufacture of building materials (i.e. bricks, sand, and other industrial manufactured goods), and the real estate market, which is essential for settlement growth. These business activities attract settlement growth, hence supply of land and building materials become crucial. The growth of business activities is one of the forces driving spatial urban growth, in response to growing demand for housing and reflecting the growth of incomes of individuals and the town authorities.

Rotational market in Handeni town and the surrounding centres

The rotational market moves from one settlement to another on different days of the week. The market serves settlements surrounding Handeni on a rotational basis, supplying various commodities from different areas including industrial manufactured goods from major towns and cities. Handeni town is among the centres served by the rotational market which comes to the town on Sunday of every week.

In addition to the weekly Nderema market and daily markets in Handeni town (i.e. Seuta, Chanika and Chogo) there are also crop and chicken markets, held regularly on a rotational basis in Handeni Town. The

surrounding centres visited by the rotational market are on average of 50 kilometres away from Handeni Town, with asphalt roads making commuting between them easy and reliable. Specifically, the rotational market serves, in addition to Handeni town, the surrounding centres, at Misima (36 km); Mkata (53 km), Korogwe (65 km) and Negero (56 km), visiting each centre on the same day every week (Handeni Town on Sunday, Misima on Wednesday, and Negero on Thursday). These rotational markets not only provide a market for produce but also offer the opportunity for people from different areas to interact. A businessperson at the rotational market in Misima commented that:

...I do business almost every day, I participate in every rotational market by attending all the market days at all locations within the area...

...the rotational markets have made my life. I have been participating in these market for years and they have made my business grow. My capital has grown through participating in these market places...

...I do business with cities and small centres, from these markets I have managed to establish myself in business. I buy chickens from these market places and transport them to Dar es Salaam to be sold. I have managed to create a network of businesses...

The existence of a crops market at Misima located approximately 25 kilometres from Handeni town and other markets in the surroundings centres provide opportunities to Handeni town residents to transact goods both within and outside the Town. Some of products such as coconut, pineapples and watermelon at Misima market are brought in from different parts of the region, including neighbouring districts such as Lushoto, Korogwe and Bagamoyo.

The rotational markets in the surroundings centres are used by business people in Handeni town to purchase products to sell in the town. The rotational markets therefore act as sources of products for Handeni town and the surrounding centres. Most of the crops sold, like potatoes, tomatoes, and vegetables, are imported from other surrounding areas, making rotational markets important sources of everyday consumer products, as noted by a businesswoman in Chanika market.

...The markets at the surrounding centres have also added to the products available to us, I sometime purchase products from the rotational market for my business at Chanika market...

Most of the agricultural products in Handeni town are brought from different areas away from the town. The rotational markets allow transportation of products from different areas, either to Handeni town or to surrounding nearby centres. The rotational markets increase the availability of products in Handeni town and thereby interactions between Handeni town and the other centres.



Plate 6. Rotational market activities at Misima: (Left) Motorcycles parked ready to transport goods, (Right) businesspeople trading products at the market
Source: Fieldwork 2018

The availability of cheap modes of transport such as motorcycles, as shown in Plate 6, which are adapted to the road conditions, simplifies the transportation of goods between centres in all seasons of the year. A businessperson interviewed described how the availability of motorcycles has simplified the transportation of goods between trading centres:

...the growth in number of motorcycles has simplified our transport activities between these rotational markets. It is now easy to conduct business with the surroundings because the products can easily reach there...

Motorbikes are used by both small and big business operators in the rotational markets to transport products from the one market location to another. The market day for each centre is known and at the end of the day

traders move on to the next centre, using motorbikes to shift their goods. This also generates income for the transport operators.

Business activities conducted in the rotational markets in Handeni town and the surrounding centres provide revenues to the town authority through tax collections. The market's contribution to the tax revenue of the town amounts to 21 per cent of the total internal revenue collection. Revenue sources of Handeni Town also include revenue from livestock activities⁴. The livestock market provides additional revenue through other sources, including the provision of accommodation for the businesspeople and transportation.

7.1.2 Change in some conventional income sources

As discussed in the previous section, in the 1980s farming activities and livestock keeping were the main income sources of most families in Handeni town. The majority of people from the town and the surrounding areas relied on small-scale farming and wage labour in the sisal plantations. The growth of interactions and provision of services in the town brought new skills and economic activities to Handeni town.

With the increase in population and diversification of socio-economic activity, the native population started to engage in other economic activities such as trade and services. Farming activities on the town periphery slowly diminished due to changes in land uses. The challenges faced by farmers forced them to resort to other livelihood opportunities such as making and transporting building materials, water vending, firewood vending and retail trading, as noted by this brick maker.

...people were engaging in farming activities within the town and in the surrounding areas, but the growth of settlements and pressure of land use change from farming to settlements pushed these activities to other areas outside the town...

Farmed areas were also put under pressure by the growth of built-up areas as the growth of other socio-economic activities led to the outward expansion of the town. Areas surrounding the town were subdivided to

⁴ For instance, for every sold cattle a cost of TSHs 5,000 (2.4USD) is charged and TSHs 3,000 (1.5USD) for every goat and sheep.

create plots for residential development. As farming declined, the sales of land increased, offering livelihood opportunities for residents. Since settlement growth was increasing rapidly, building materials became scarce; hence the making and selling of building materials was an attractive option for many job seekers. Brick making increased over time in response to the growth of demand.

Brick making

The growth of Handeni settlement led to a boom in burnt brick production due to the increased demand for building materials. Bricks were produced for markets both within the town and in the surrounding rural settlements. Making and selling bricks became an alternative livelihood strategy for younger people when agriculture activities in the town came to an end.

Brick making involves extraction of clay, which is then mixed with water before firing. Due to the importance of water in brick production, this activity is mainly located along water channels. Often water flow is diverted, or a depression is dug from where water can be fetched. The blocks of clay, formed from a mixture of soil and water, are formed and left to dry for burning. While the bricks are drying firewood is collected to fire the dry blocks in a furnace to produce the finished bricks. This activity involves fetching huge trees to make logs for the furnace. Logging is done in the nearby areas to facilitate transportation. Unburnt dry blocks are arranged into a pyramid so the firewood can be inserted beneath (Plate 7).

The various processes involved in brick production require large numbers of workers. The brick market is large because of high demand and the low price of bricks compared to the sand-cement blocks. One of the sites in the town visited during this study had a capacity to make between 6,000 and 8,000 bricks per week.

At this site, each burnt brick was sold at 0.09 to 0.1 USD, equating to sales of 540 to 700 USD per week. Six people worked at this site, so each worker earned approximately 90 USD per week. Because of growing market and competitive prices of bricks in the town, several areas on the town periphery were dedicated to brick making. One of the brick makers at the site I visited stated:

...the market is there and prices are good. We have challenges in accessing water and high cost of firewood collection but the activity pays well because the bricks are needed in large quantities...

Brick making also contributes to town revenues (Figure 17). People employed in brick making contribute to the welfare of their families and support other economic activities in the villages like farming and animal husbandry. As one of the workers stated:

...I pay for my children's [school] fees, supporting my family and relatives from this activity. I was able to build my house because of this activity, and I used the materials I made myself with the help of colleagues...



Plate 7. Brick making in Handeni town
(Left) Environmental destruction; (Right) pyramid of unburnt bricks ready for burning
Source: Fieldwork 2018

The process of arranging bricks for burning involves manual work. The excavation of land to get clay to make the bricks creates areas of bare land as the removal of topsoil involves clearing vegetation cover. Other problems left in the areas used for brick making include holes dug to store water, which limit the potential for housing construction.

Although brick production contributes to settlement development by supplying modern building materials and providing employment opportunities, the process is destructive to the environment. Removing the topsoil supporting vegetation growth causes deforestation and disrupts water flow in streams. The blockage of water flow for brick making also denies

other community members access to water for economic activities further downstream.

People's incomes in the town are generated by a variety of individual and community activities, developed as a means of coping with socio-economic changes caused by development of the town. The brick market has also increased trade between Handeni town and its neighbouring areas, thereby impacting on settlement development. The decline of agriculture, which was the traditional economic activity in the area, has led to the adoption of other economic activities like brick production by some community members. The brick making industry supports settlement growth and contributes to improved building standards, through use of modern construction materials.

7.1.3 Growth of interaction with the surroundings

The growth of the town directly and indirectly affects socio-economic activities. The growth of Handeni town leads to increased interaction between the town and surrounding urban and rural areas. The interaction is facilitated by the improvement of road infrastructures which simplify transportation.

Improvement of road infrastructure networks within Handeni town

Road connectivity in Handeni Town comprises two major types: roads connecting the town to other surrounding centres and the internal roads provided access to individual properties. Both types of roads play a role in urban growth and land use change and are considered in the following discussion.

As the town expands, the demand for access becomes more critical. The growth of the road network toward the periphery and widening of existing roads, especially those linking different areas of the town, stimulates the growth of various socio-economic activities along them. In addition, the road network expands as new roads are built attracting residential development and new commercial ventures. As noted, areas along the major roads are of more interest to developers than areas away from roads. A land broker commented that:

...plots along the roads have higher prices and develop faster than those away from roads. The status of development at these locations affects commercial activities as more areas are developed for commercial use...

It was also noted by the town planner that:

...most of the areas are used either for commercial and/or commercial residential purposes. The newly planned areas indicate development of building structures along most roads or corner plots...

Alteration and improvement of road network contributed to the growth and expansion of settlements in the urban area. Newly built roads opened up areas for settlement development, changing the pattern of the development as settlement sprawled out from the town centre toward the peripheries. Road networks have therefore altered the use of land and spatial settlement patterns.

Improvement of the Handeni-Korogwe road through Chogo centre and construction of a ring road to Kileleni in Handeni Town (Figure 26) were part of a redevelopment programme that also involved relocating of the old bus terminal from Chanika in the town centre to the Chogo area. The growth in the road network also facilitates the expansion of other essential services, such as markets, education, and health. The relocation of old bus terminal not only opened up peripheral areas for commercial activities, but also enhanced outward spatial growth from the central town area. Shifting commercial activities from Chanika to the new centre in Chogo and improved access to these areas spurred on further settlement development.

An elderly resident in Chogo noted:

...before improvement and shifting of the bus stand to Chogo, most people preferred to live close to Chanika centre. Shifting of the bus stand to this area and the improvement of roads have attracted commercial activities...

Since large parts of the settlements are located away from the main road, residents in these areas had no proper road link to the central town area, leading to trespassing as people crossed undeveloped land to get to the town centre. The creation of a network of roads in these areas led to the

rapid growth of settlements. Outward expansion of road networks facilitated access to different parts of town and linked up different urban and rural centres, thereby enhancing growth.

Over the study period, the growth of the road network in Handeni town went hand in hand with the emergence of different settlement patterns. In 1961 the settlement was concentrated along the main road and within the CBD, but in the 1980s the road network was expanded to cover the surrounding peripheral areas. Between 2008 and 2018 the network expanded further to include extended footpaths, access roads and new major roads. The extensive road network enables sporadic, unplanned development by providing more locations for informal settlements. The growth of the road network in Handeni town across the four study years is shown in the series of maps in Figure 26.

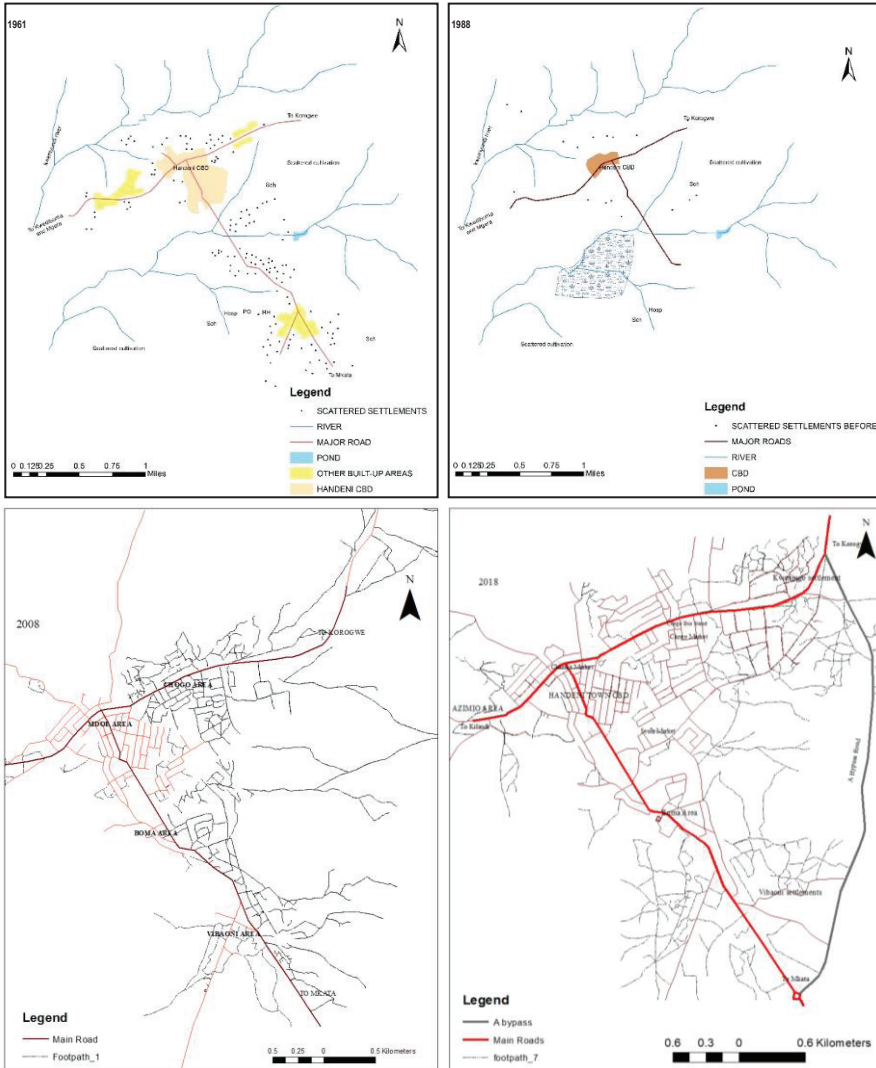


Figure 26. Road networks in Handeni town in 1961, 1988, 2008 and 2018
 Source: Google Earth images and field work in 2018

The growth the road network in the town influenced the pattern of settlements and undermined planned settlement growth. This has also led to development of settlements in road reserve areas. The development of the road network affected land uses in areas surrounding the town by facilitating the conversion the use of land from farming to settlements. As more land was

converted to settlements, more economic activities emerged in these areas on the periphery and new paths emerged to provide access to them.

As the road network grew, along with the settlements, increased socio-economic activity in the town led to expansion of the town's economic base. The expansion of built areas and roads outwards led to the relocation of some land uses, such as residential areas and open spaces toward the periphery, while economic development intensified in the central commercial area.

The growth of the internal roads network facilitated development of settlements and growth of different socio-economic activities. Trade activities that dominated the central area of the town started to spread toward the periphery. The growth of settlements also improved the market for land in the periphery due to improved accessibility which opened up the areas for growth.

In summary, improvement of the road network in Handeni town spurred the growth in socio-economic activities in the town and outward settlement expansion. The spread of commercial activities along the roads was a source of additional revenues of the town authority, raised by charges on different socio-economic activities.

Spatial linkages between Handeni town and its surrounding areas

The improved transportation infrastructures between Handeni Town and the surrounding urban and rural centres enhanced the spatial and economic growth of Handeni town, as well as leading to social changes. The socio-economic development is related to the growth in the number of commuter vehicles enhancing exchange of goods between centres.

The transportation sector in Handeni Town has grown to be one of the main sources of revenue for the Town. The transport sector contributes to the town revenues in a number of ways (i.e. bus stand revenues, levies on bus tickets and road use etc.). The newly developed bus stand at Chogo contributes about 5 per cent of the town's internal revenue collection. The importance of transportation from Handeni town was noted by a transport operator:

...the town is linked to the surroundings by the number of means of transport such as trucks, buses and cars, going to various destinations. Any nearby town

or city is easy to commute to because transportation in Handeni has been made easy...

The growth of the town as a central transportation node linking the surrounding urban centres has enabled Handeni Town to grow as an economic hub. The majority of the business people in the surrounding areas depend on Handeni Town for access to markets, stimulating further growth of economic activity in Handeni town itself. Improvements to the road infrastructures linking the town to the surrounding rural and urban centres have facilitated movement and transport of goods between centres.

The improvement of roads from Handeni town to nearby towns and rural centres has increased the efficiency of transportation to and from Handeni town. Before the improvement of the major roads in 2012, the cost of travel to various destinations from Handeni Town was higher than in 2018. For instance, in 2012, travelling by bus to Dar es Salaam cost between 7 USD⁵ to 7.2 USD, depending on the season, while in 2018 it cost only 4.5 USD all year round. Similarly, the fare for travel to the regional capital, Tanga city, ranged from 3.8 to 4 USD in 2012, while in 2018 it was only 3 USD.

According to interviews with residents in the town, easy access to Korogwe and Tanga and the growth in demand for goods, especially livestock and crops, incentivised investment in transportation. Respondents highlighted the importance of flexibility, i.e. the availability of different transport options, due to improvements in the road infrastructure between Handeni Town and the surroundings centres. A resident who works in Handeni town while her family is in Korogwe commented that:

...Handeni is a good place to live in and work, because it is located in a geographical setting where commuting between areas is easy. Easy commuting to major towns, cities and rural areas allows someone to do multiple works. This allows movement for trade and interactions...

The distance between Handeni Town and nearby district and urban centres ranges from 50 to 60 kilometres, approximately an hour's travel by public transport (Figure 27). This proximity enables commuting between the

⁵ 1 USD equals 2100 TSHs

centres, with short commuting times, leading to more traffic on the roads as more people travel between the areas.

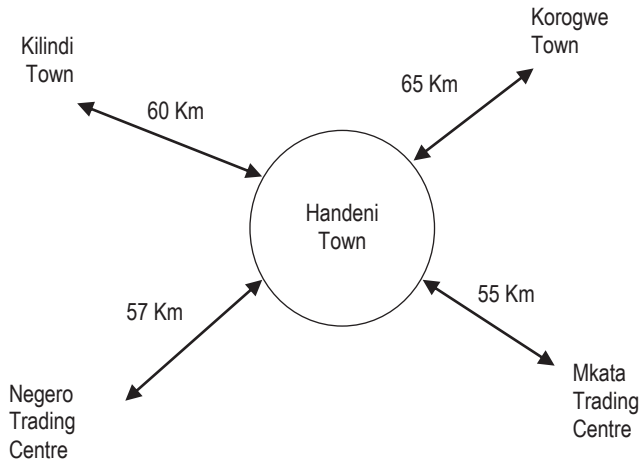


Figure 27. Distances between Handeni Town and surrounding urban centres
Source: Fieldwork 2018

Travel to Dar es Salaam (266 km) and to Tanga (158 km) from Handeni town takes an average of 3 to 5 hours, respectively, by public transport. The proximity of Handeni town to surrounding major and small urban centres provides opportunities for interaction, facilitated by good mobility and reasonable transport costs to these areas. One of the town counsellors (for Mdoe ward) said:

...Handeni town is potentially an important location because of its convenient commuting distance to several big cities and towns. Also, due to the short time needed to reach those areas. I can go to major cities and come back on the same day. This attracts many transport operators and businesspeople who wish to stay here ...

Improved road infrastructure between Handeni town and the major towns and cities incentivised the introduction of commuter bus services, reducing temporal distances and the cost of travel. One respondent who is a resident in Handeni Town stated:

...when the roads to Korogwe and Mkata were improved the time and cost of travel went down. We are now close to the major towns, which is something crucial, attracting more people to live in Handeni Town...

The proximity to the major towns, enhanced by road improvements, has increased the frequency of buses going to Dar es Salaam from 2 buses per day in 2010 to an average of 10 buses a day in 2018. The influencing factor for this was that other areas use Handeni town as a hub to reach Dar es Salaam and Tanga. Every hour a bus leaves Handeni Town to either Dar es Salaam or Tanga city. One of the bus operators observed:

...over time the number of buses and routes have increased. Previously we had few buses because of the number of passengers we served. Nowadays the number of passengers and routes has grown. We run buses from the morning to the evening commuting between Handeni town to Dar es Salaam and Tanga cities everyday...

The increased frequency of buses in the town and presence of buses waiting to leave the Town, can be seen as an indicator of the reliability of transportation and ease of commuting (Plate 8).



Plate 8. Means of transportation for people and goods in Handeni town: (Left) Trucks and (Right) buses
Source: Fieldwork 2018

Most respondents in the household interviews (45 per cent) suggested that proximity of the town to the surrounding centres was a significant factor in their decision to live in Handeni town. Other factors included employment opportunities in both private and public sectors, the presence of socio-economic facilities, and existing social and family ties within the town. Discussions with local people echoed the results of household survey, with most people saying they would prefer to live in Handeni, rather than in one of the other centres.

When the population of the town increased, demand for housing and other basic social services rose too. The increase in population and increased demand for accommodation attracted investment in real estate and the property market in Handeni town. These investments drove settlement growth and land use change in the town.

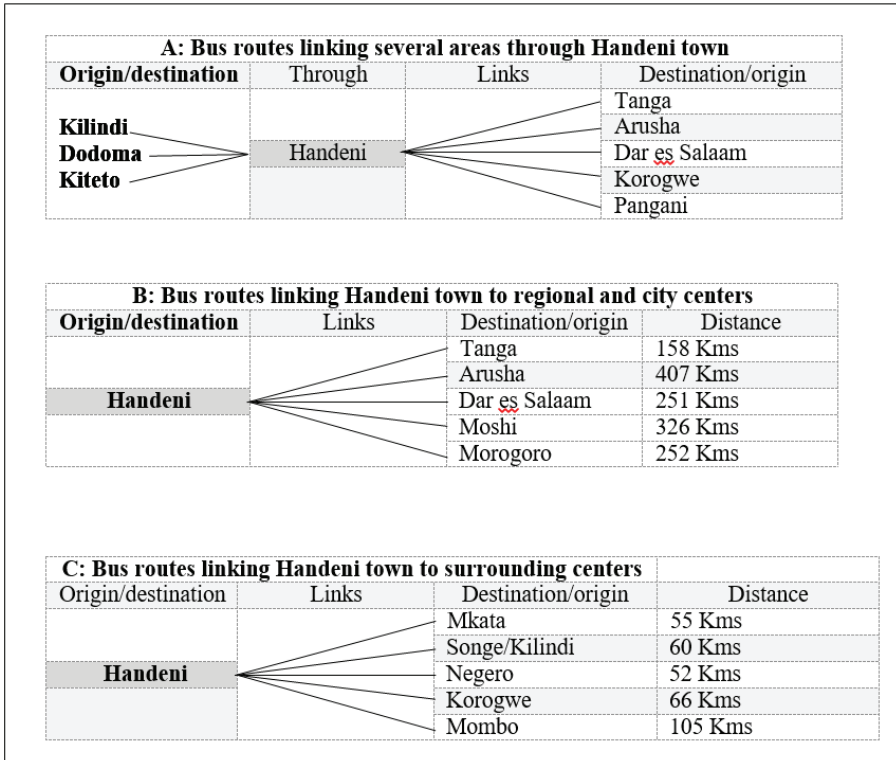


Figure 28. Transport routes and connectivity enhancing mobility in Handeni town
Source: Fieldwork 2018

Figure 28 shows the connectivity of Handeni town to the surrounding small centres and major towns which directly influence development. The figure shows the transport links between Handeni town and surrounding urban centres and illustrates its role as a transport hub between these centres and the major cities. Improvement of infrastructure stimulates transportation activity and hence sharing of resources and skills from different areas, as well as transfer of knowledge, which are important for the growth of urban centres.

7.2 Chapter summary

This chapter covered the influence of economic development on settlement growth in Handeni town and its impact to the surroundings. The growth of different market areas in Handeni town increased interactions with people

and activities from the surrounding centres. Three times a week, the town is dominated by market activities attracting people from outside the town, making it a hive of activity for most of the time.

The arrival of people from outside the town, and trading activities in the markets, increase cash incomes and provide employment opportunities for Handeni town residents. The activities provide alternative income sources to substitute for traditional economic activities like farming. The interaction and growth of economic activities attract investments particularly in real estate, stimulating growth of the town.

The decline in agriculture production and growth of commercial activities in markets and the surrounding settlements, together with improved accessibility, influenced how people earn a living in the town. The inter-action between demand, supply, and changes in livelihood opportunities in Handeni town spurred on the development of settlements and the opening up of the periphery for settlement growth. The growth of socio-economic activity in Handeni town affected spatial growth and land use change through settlement expansion, in response to demand for more spaces to accommodate emerging opportunities in the town. How people gain access to land in these changed socio-economic circumstances, and the factors stimulating and constraining further urban expansion in Handeni are covered in the next chapter.

8. Access to Land and Its Impacts on Settlement Growth in Handeni Town

Growth in urban activities influences development of other sectors of the economy. Economic development in the form of improved infrastructures and diversified socio-economic activities raises demands for improved urban facilities and land use planning for sustainable growth. The theories on urban land discussed in Chapter 3 indicate that demand for land and its organisation influence spatial growth and land use. Drawing on interviews, household surveys, storytelling and discussion, this chapter examines the influence of land access and development processes on settlement growth in Handeni town. The chapter covers the process of land accessibility, changes in land prices, actors and their roles in settlement development and land tenure security in Handeni town and its influence on settlement growth.

8.1 Land access processes

Historically, there were a variety of approaches for accessing land in Handeni. These approaches included free access as gift, inheritance, and purchase. During the period of chiefdoms before colonial era, i.e. in the 17th century, like in many other areas in Tanzania, land was largely administered and managed by chiefs. All lands in the country were under the respective chiefs who permitted use of land and transfer of rights. During this time pieces of land were allocated by chiefs to families upon request.

During this period, access to land was exclusively for men; land was not regarded as a property that could be owned by women. Women could only possess land through their husbands, relatives, and sons, as explained by an elder in Handeni:

...our land used to belong to the chiefs where families accessed land through their consent. Only men could control the use, transaction or possession of land, women had right to use land through their brothers, fathers or if they were married through their husband...

The gender bias still exists today. This is evidenced by the fact that most applications for land subdivision reviewed in Handeni town were made by men. For instance, out of 25 land subdivision applications presented between 2016 and 2018, only 2 were from women while the rest were from men.

During the German colonial time (i.e. between 1886 and 1929) land was taken for settler plantations by agreement with the chiefs and by force. The rights over land were transferred to the German Emperor. Elders recounted how the Emperor allocated large chunks of land to be used for sisal plantations surrounding the villages. The indirect rule introduced by the British colonial administration between 1919 and 1961 gave the chiefs power and control over land in their areas. The powers of chiefs over land were institutionalised by the Land Ordinance number 3 of 1923 which later withdrawn after independence in 1961.

The system of freehold grants of land was transformed when the colonial government enacted and put in place the Land Ordinance Act of 1956 to regulate land use development. The Town and Country Planning Ordinance of 1956 introduced rules, and regulations governing land use planning and development controls. Land in rural areas was put under the control of village councils, who were empowered to manage land use including allocation of land to both individuals and institutions. Undeveloped lands were largely used for grazing and farming. As demand for land increased, along with populations and economic activity in urban areas, land transaction intensified in line with the growth of settlements. In modern Tanzania, potential purchasers of land get information about land availability, size and prices through land brokers, as explained by one of the developers:

...brokers are the main links between buyers and sellers of land. Without them you will not get land in prime areas such as areas along the major roads, close to services and in areas which attract growth. Brokers make access to land easy despite the increased prices...

When land ownership changed from clan property individual property, the size, price and use of plots of land also changed. Access to land in Handeni Town is constantly changing, in line with changes in demand due to population increase, socio-economic development, distance to services, and access to socio-economic facilities.

The growth of Handeni town in the 90s ushered in changes to modes of land access. The mode of access to land shifted slowly from mainly allocation and grant as a gift to purchase and inheritance. Free acquisition or gifting of land became less common as land prices increased along with demand from developers. Four land access processes exist in Handeni Town with purchase now predominating (Table 11).

Table 11. Modes of land access in Handeni town

SN	Access type	No of Responses	Per cent	Remarks
1	Gift	2	2.4	Occasionally granted to family and relatives
2	Free allocation	7	8.1	Before 1980s i.e. before the land price skyrocketed
3	Inheritance	21	24.4	Done through customary family/clan lineage
4	Purchase	56	65	Influenced by change in settlement status from township to town council

Source: Fieldwork 2018

The change in the mode of access to land from inheritance to purchase affected land use and the market for land in Handeni town. Growth of the town resulted in increased demand for land for various activities, which made purchase the paramount means of accessing to land, as explained by a respondent:

...purchasing land in Handeni town has reduced the amount of land under the natives. The change in proportion [under native occupation] enabled introduction of different land uses such as settlements and trading...

According to the Town Planner, individuals with large pieces of land apply to the Local Government Authority (LGA) for registration of their land, and approval of development plans, in order to parcel it out for selling. During data collection, it was found that eight respondents had submitted applications for their land to be subdivided to plots. Land use planning

aims to boost supply of plots in the town. The individuals who subdivide their land become the source of additional supply, reducing the pressure caused by high demand for plots of land in Handeni town. Most purchasers prefer to buy plots from individual sellers, which is perceived as allowing greater flexibility in terms of price and the transaction process.

Normally individuals who inherit land sell without considering rights of women family members, because the traditional customs and norms give power to men to make decisions on properties belonging to families. The Land Law No. 4 of 1999 Part II Section 1.1c provides for the rights of women to own land; however, this is rarely observed in practice. A woman family respondent in an interview in Kwamngumi area commented:

...As women we do not get priority in our society when it comes to possession of family properties. Our brothers and uncles have all powers when it comes to family properties. They claim to have all the rights to possess the properties. Even when they want to sell it is difficult for us female members to stop them...

The Land Act of 1999 is clear on the right of women to access and possess land, yet most societies still maintain strong customs and traditions which suppress women rights to land. The right of women to access land is, however, increasing with literacy among women and society in general as noted by a local leader.

...nowadays things have changed, I think because the families have been exposed to education. It has now become normal to see a woman mounting challenges in court or local government offices on matters relating to family properties...

Males who possess land sometimes sell part or all of their land whenever they want to and relocate to other areas outside the Town without necessarily consulting or involving their wives or female relatives.

From the discussions it was ascertained that some family members sold their family properties including houses. The cash obtained from selling of properties enabled some of them to change and/or improve their economic activity, e.g. from farming to trade, as recounted by one person who started a business with proceeds from the sale of a family house in the town centre:

...I started this business from the capital I got as a share [of proceeds] from selling our family house. The activities I used to do (farming) are challenging due to weather changes and conflict with livestock farmers. I thought having a different job would help to maintain my family...

The selling of land has therefore resulted in two groups of landowners: the first group who are mostly native, access land through inheritance, allocation as grants or gifts; while the second group accessed land, in the first place, mainly through purchasing from the first group. Within the latter group, some individuals have created small groups of land speculators who hold on to land for future use or sell for high profit when prices are high. The practice of land speculation raises prices of land and alters the pattern of settlement development by leaving undeveloped land areas within the town. According to interview with land brokers, 4 out of 18 of the second group land owners faced social or economic hardships and were forced to sell either all or part of their land, gradually reducing the land they own. One resident, who has lived in Handeni town for long time, noted:

...the areas at the town centre and its surroundings were held by native residents, but they sold and relocated to other areas such as Mkata, Korogwe and Negero. Some of those who bought land have not developed that's why we have open areas which are undeveloped...

The price of land significantly increased around the year 2000 due to two main factors. Firstly, increased immigration in the town from the surrounding centres. This immigration was a result of improved social services provision resulting from the upgraded status of the town and improvement of road infrastructures linking Handeni town to neighbouring urban and rural centres. Second, the adoption of a new National Land Policy of 1995 and proclamation of new Land Act in 1999. A fundamental principle of these two policy instruments is the recognition of ownership and value of undeveloped land. Occupants of land are therefore entitled to compensation upon their land being appropriated for public use. This includes cases where one's land is affected by planning schemes. The former land ordinance CAP 378 of 1923 only recognised the right to compensation in the case of land taken for public use when such land was a

farm or settlements, while undeveloped land was not assigned a value; therefore, it was valueless.

Despite the recognition of the rights of women by the Land Policy (1995) section 4.2.5, and commitment to improving their social and economic situation embodied in the Land Act No. 4 of 1999 section 142, women still have little access or rights to land, especially areas where customary traditions still hold sway. Existing social norms and customs make women rights to economic and social benefits subordinate to those of men.

The right of land ownership among women has enabled some women to become land-holders and developers. Currently land brokers facilitate land transactions for women who want land for development. As land is now mainly accessed through purchase, the main determinant that influences and ensures access is the financial capacity of a person. A land broker remarked:

...your money determines the size of land and location in the town. Nowadays we get women looking for land, unlike in the past when you would find only men as prospective purchasers, owners and developers...

Access to land through inheritance remains possible for a few people; however, purchase is the predominant mode of access to land in Handeni town. Changes in the price of undeveloped land, coupled with increased demand for land for booming urban activities, have led to increased conflicts within families as family members assert their ownership over land in order to benefit from its economic value. According to an interview with an Azimio sub-ward official, conflicts emerge when distribution among family members is not fairly:

...we sometimes get cases [of disputes] among family members over distribution of the benefits from selling of properties (i.e. houses or land). The situation in Handeni has changed from free allocation to selling and purchase; because of the economic benefits families fight over property ownership and right to sell...

As the number of people in the town grew along with the activities performed there, there was an increase in both informal and formal processes of subdivision of land into small plots for sale. When demand for

plots increases, some landowners apply to the town authority for planning permission and approval for the subdivision of their land; while others especially those close to the town centre, subdivide and sell their land with the help of land brokers. Land subdivision has led to plots getting smaller, reducing the area available for public spaces and, socio-economic activities, because in the informal subdivisions the need for these spaces is not taken into account. This informal subdivision and sale of land results in the growth of informal settlements, sometimes impeding access to land in planned developments.

There are three major ways of accessing land: i) through informal land parcelling and sale to developers by individual landholders; ii) sale of formally planned and surveyed land by individual households; and iii) sale of planned land by the LGA. The informal process involves land that is unplanned, not surveyed and unregistered. Transactions take no account of planning regulations or existing planning layouts. The formal process follows government procedures for planning land, including preparation of detailed schemes, sale and registration to new owners. Informal sale of land by individuals was reported by developers to be the most flexible option, which placed fewest conditions on land purchase and development. It also allows purchase payment and building development incrementally. The three ways of accessing land are discussed in detail in the following sections.

Informal sale of land by individual households

Purchase of land from individuals was identified as the main channel through which potential purchasers of land in Handeni Town currently access plots. Out of the 56 households (Table 11) who reported accessing land through purchase in the household interviews, 44 purchased their land from individual sellers. The form of accessing land affects urban development, as the government has little control over how the land is developed. The entire process of sale and development is fast and flexible. When land is sold informally, there are no stringent development conditions attached (Kombe & Kreibich, 2006).

Most of the areas occupied by individual households and developed informally are located close to the existing built-up areas of the town. In contrast, formally planned and surveyed residential developments are found in peripheral areas where land is less developed. In these areas, there is limited access to urban facilities. The land that is sold informally provides

development opportunities which are less stringently controlled and more affordable for many low-income households.

The informal land access process involves partial land registration at sub-ward and sometimes to ward offices. Access is informal because the entire process from land identification and negotiation through to transaction and taking possession of the land, is done outside of formally stipulated procedures, laws, and regulations including registration of land titles. This is different from formal processes where building regulations demand structures to be built on registered land in accordance with approved plans and surveys, and confirmed by a building permit. The building permit stipulates what is allowed to be built and places conditions on use, whereas in the informal process these aspects are socially regulated by neighbours.

Informal land transactions facilitate the development of informal settlements in fragile areas such as along valleys and water courses. Also, informal transactions make no distinction between compatible from non-compatible land uses, accelerating the rate of land use change. Land transactions and construction of houses are controlled by individual landowners and purchases. Neither central nor local government agencies are involved in the process.

The informal land transaction pathway is illustrated in Figure 29. The different paths shown in the figure represent alternatives depending on whether the first contact made by potential purchaser is with the seller or the land broker. The dotted lines are the paths a seller and buyer can opt to take to simplify the land transaction process. The simplification involves omitting or reducing the number of actors in the process. The figure depicts two options, either the interaction between seller and buyer without participation of the land broker or the other which, must involve the land broker. The procedure is contextual in the sense that it depends on how the seller would like to sell his land or how the buyer got information about the land and how he/she would like to conduct the transaction.

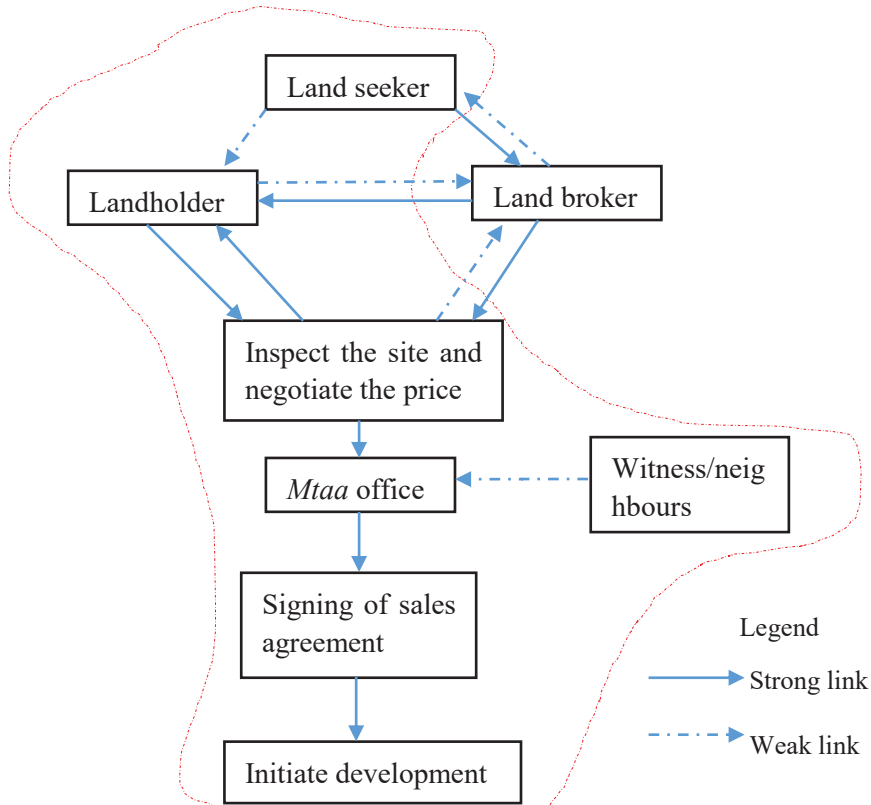


Figure 29. Informal land delivery pathway in Handeni town⁶
 Source: Fieldwork studies 2018

The process of informal land access identified in Handeni Town as presented in Figure 29 may involve one of the two paths:

- a) Path one involves would-be buyers and sellers meeting without involving the middle men or land brokers. They negotiate and prepare a contract either with or without support of sub ward (*Mtaa*) office. This process tends to involve witnesses, normally neighbours and/or close relatives. The benefits of not involving a broker are reduced expenses.

⁶ The strong link in the figure indicates that the path is the main way by which someone can go through to easily access land. The weak links are alternatives or options which are also used to access land in the town

- b) Path two involves a broker who searches for land and then brings the buyer and the settler together for negotiations, leading to a final agreement on the price and transaction process. After negotiation, they prepare a contract with or without involving *Mtaa* office (sub ward office). The land brokers facilitate this process.

The disadvantage of informal land access includes potential incompatibility of land uses (e.g. building on floor-prone land) and limited availability of basic social services. Most of land buyers who come to the town opt for informal processes because they are fast and flexible, with regard to both the transaction and subsequent development of the land. A respondent who bought land recently in one of the informal settlements in Handeni town remarked that:

...I appreciate that formally registered land is advantageous, but the procedures are difficult to abide by, and sometimes the location of plots for sale is not suitable for some activities such as business, as most [formally registered plots] are away from the developed areas...

The process of developing land in the informal settlements is mostly supervised by the developers themselves. The local leaders at grassroots level such as ten cell leaders and/or sub-ward leaders rarely visit the newly developing plots to find out about the developer's intentions and the expected use of the land, or to inquire whether they have building permit. Peripheral areas are also rarely visited by grassroots leaders because, according to one leader interviewed, development occurs very slowly there:

...we rarely visit peripheral areas because the rate of building development is low. At times you may not find a single structure in the process of construction, but when you stay for a few days you find a sudden increase in number of buildings. It is difficult to control construction...

Discussion with local leaders at Azimio and Kwamngumi sub-wards revealed that most of the time when they visit sites, the builders there don't provide adequate information about the construction process. Further discussion showed that even halting the construction is not successful

because builders carry on working at weekends or overnight, as noted by one ten cell leader.

...it is difficult to stop people from constructing houses because the owners are always absent. If you stop them, they continue even during weekends. Sometimes we contradict each other as leaders, because you may order them to stop and then they get unwritten permission from a higher authority...

Another process which is common in informal developments is the extension of existing buildings, which is done unnoticed. In addition, the builders who construct the buildings are unregistered, so it is difficult to control their activities. Moreover, since the land is unplanned and/or unregistered it is difficult to track the development process.

Development of houses in the informal settlement is largely incremental and starts when the new buyer is ready to develop; hence development often takes place unnoticed. Individual developers play a major role in the development of informal settlements in built-up areas. Their activity exceeds the capacity of government to control and manage it.

Formal sale of registered land to individual households

Since the capacity of the government to plan and survey land in most urban areas is insufficient to cope with the demand (URT, 2014b; Peter & Yang, 2019), many registered private companies now offer planning and surveying services to complement the efforts of government agencies. These private companies work to address planning issues in different areas of the country. In Handeni town, there are five private companies engaged in planning and surveying land, including the Mboka Planning Company, the Urban Services Company, the Survey Company, and the Geapam.

Handeni town, like many local government authorities, contracts these companies to plan and survey land on behalf of the local government authority within its area of jurisdiction. The companies also work for individual land-owners who have large properties that need planning and surveying; in these cases Handeni town acts custodian of the process.

Landholders who have large properties negotiate with private planning companies to plan their land. The private companies recover their planning and surveying costs by taking ownership of some of the plots from the resulting subdivision of the land. The private companies and the individual

land owners enter into an agreement, specifying the work and the cost recovery mechanisms. The process enables landowners to enhance the value of their land, which benefits from the formal registration process done by the companies through LGA. One land owner who sold land after registration with the LGA commented on the benefits of subdivision as follows:

...through the companies I have managed to sell my land at a profit. I subdivided my land and now I own plots which I can sell whenever I get a buyer...

The private companies cooperate with both the town authority and individuals to plan and survey their land. These private companies are important stakeholders in land development activities because the land use planning capacity of the LGA is low. It is unable to keep up with demand for plots in the town.

In order to cover the costs of planning and surveying, the planned plots are often shared between the landholders and the private companies. The portion of plots taken by the companies is for cost recovery. The plots are divided between the land-owner and the company at a ratio of 3:2, with the private company taking 40 per cent of plots obtained from subdivision of the land. As an alternative, the landowner pays the company an equivalent of 54 USD (120,000 TSH) for each plot surveyed and planned. The mode of payment depends on the financial capacity of the landowner and agreement between the parties. When an individual wants to plan their land, they normally contact the LGA. In turn the LGA introduces the person to the planning company.

In discussion with landholders who benefited from this planning and surveying service, they complained that, the prices charged by the companies were too high. They claimed that the distribution ratio of the plots benefits the private companies. The landowner said that they only agreed to the arrangement in order to protect their land:

...The cost recovery is unfair, they took more plots than I wished. I would have opted to pay cash but I don't have the money. The planning and surveying cost for each plot is also high, I did this to make sure that my land is safe...

Purchasing plots from individual sellers has more flexibility in terms of price, since some sellers accept prices below those set by the government. For example, the base price set by the government may be 2000 TSH (about 0.9 USD) per square meter, and an individual seller may reduce the price to 1500 TSH (0.7 USD) depending on the outcome of negotiations with the buyer. Sometimes individual sellers of plots do not calculate the price in square meters, but estimate the total land value, which usually works out less than when using square meters.

Based land prices in Handeni town, the ratio of 3:2 is too high because the current average price of plots is 2000 TSH per square meter. The ratio could be reduced to 7:3 to be fair to the land owners. The cost of 54 USD is reasonable, but many landowners are unable to pay cash. Most are forced to opt for a distribution of plots, which has resulted in the presence of a large number of undeveloped plots in the town.

Despite these less than perfect arrangements, the process of planning and surveying plots has added to number of plots in the town and the amount of land available for settlement development. The process has also opened up the urban periphery for socio-economic activities because settlement development is now underway in all areas proposed for economic activities on the layout plan.

Despite the powers given to residents to plan their own properties by the Urban Planning Act No. 8 of 2007, the Handeni town authority still needs to harmonise the planning process in the town. Development of layout plans by individuals in accordance with their needs, while reducing informality, encourages settlement sprawl on the periphery, as well as increasing the number of undeveloped plots outside the town's built-up areas, to the detriment of other socio-economic activities like farming.

- i. Sale of formally registered land by the local Government Authority (LGA)

As noted earlier, the town authority also sells land. However, because most of the town areas are already built on and the government owns limited land, land sold by the LGA is often on the periphery. The LGA draw up plans for various uses of land outside the town, mainly in undeveloped or sparsely developed areas. Such layout plans are done for areas that are either partially developed or completely undeveloped. However, the lack of

development means that these lands are often unsuitable for those who want to buy land for immediate housing needs.

The majority of developers prefer areas close to consolidated urban areas, despite constraints on planning due to the high housing densities. Consolidated urban areas were considered by most respondents to be most attractive because they have urban services such as markets, health, education and transport and greater social cohesion. One respondent stated that:

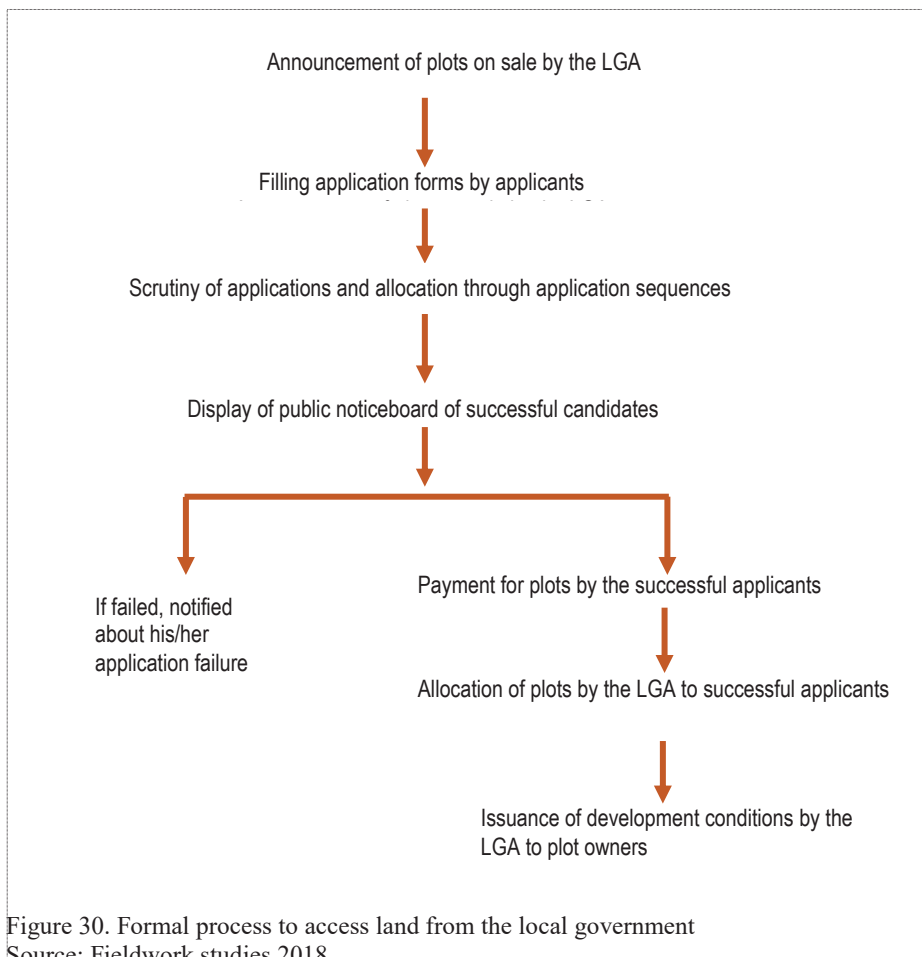
...areas close to the town have more services like shops, living close to these areas gives security because of having neighbours who lend their support when there are problems. Many people don't want to live in the peripheral areas...

The formal process of accessing land from the government starts with a public announcement listing the available plots. Potential buyers are required to apply for the land by filling out Application Form 19 from the Land Department. The applicants pay an application fee of 20,000/-TSHs (9 USD), attaching the pay slip to the application form. The application forms are then processed by the respective LGA committee and successful candidates are announced. The process takes an average of two to three months from the time application is submitted to the time the applicant gains access the plot. Once the land allocation is complete, all applicants are informed about whether their application was successful or not. Successful candidates are required to pay for their plots and accept the development conditions which are attached to each plot, specifying permissible uses.

The LGA consider a number of factors when allocating the plots to applicants: number of plots someone may be allocated in a single allocation round; payment of application fee, verified by receipt of payment attached to the application form; and a first come in first served approach when the number of applicants is greater than the number of plots. The prices for plots range from 0.9 USD to 1.8 USD per square meter (equivalent to 2000 to 4000 TSH) depending on the location of the planned areas in relation to the town; uses of plots, where commercial plots mostly have higher prices than residential ones; and value of the land in the area. These prices are fixed by the LGA when advertising the plots. Once land is allocated to the

developer, payment for the allocated land is made and permission for its development is granted.

The long procedures involved in gaining access to government land, as shown in Figure 30, discourage developers because most people are looking for plots to develop at once. The waiting time for land allocation was identified by respondents to distract their plans for building construction. Most importantly, the long procedures exclude the low-income people due to the stiff competition and stringent development conditions. This discourages many people, who eventually opt for land in unplanned areas despite weak development control. As more people become excluded from the formal access to land, informal channels expand.



As in the informal land delivery process, competition for access to land sold by the government process increases when the plots are located on prime sites, such as close to the CBD, along the major roads, near to basic services such as education, health, and markets, and in close proximity to proposed new urban development projects. The town planner remarked:

...Plots along roads, and close to the most important basic services attract more buyers than those located away from such facilities. Some of the projects initiated outside the town such as in Kileleni and Azimio....were unsuccessful

because most developers were not interested in buying the plots. Those who bought the plots could not develop them, unlike those close to the town areas...

The location of plots near to the services also increases land prices, primarily due to demand from people looking for land for speculation. Generally, plots held by speculators remain undeveloped for a long time (more than 10 years), which constrains compact settlement development.

The three land access pathways have changed with the growth of the town. The process of land supply based on the individual landowners' discretion, allows competition for land and hoarding of land to profit from future price increases. Money becomes the decisive factor determining access land, choice of location, and the size of plots. The processes of accessing land in Handeni Town have not only affected the way settlement grows but also created difficulties in managing settlement growth.

It was revealed during this study that unplanned plots were preferred by most developers because the planned plots come with rules, regulations, and requirements for time-consuming and costly processes, which discourage real-time investments. More time and resources were needed to develop a planned area and for ownership rights to be granted to the new land-owners.

Like other LGAs, the Handeni town authority, as the planning authority for the land under its jurisdiction (Urban Planning Act number 8 of 2007 section 7), is unable to manage development because the rate of settlement development far exceeds its capacity. One solution would be for LGAs such as Handeni town to authorise private land-owners to plan their own properties with LGA guidance, while coordinating the provision of basic services, to ensure a planned and coherent settlement development in the town.

8.2 Changing demand for land and price

The spatial and economic growth of Handeni town has influenced the demand for land and fluctuations in land prices. The change from a nucleated settlement around the town centre to a sprawling settlement expanding outward to the periphery affected land uses categories and administration. The growth in demand for land influenced perceptions of the value of land hence land prices.

8.2.1 Changing demand for land

Demand for land in Handeni changed in line with changing socio-economic activity. As discussed in Chapter 6, changes in the pattern of spatial growth influenced the process of land use change in Handeni town. The three ways of accessing plots in the town (Section 8.1) describes how plots are accessed.

Most people buy land from individual landowners who are selling plots on areas following the regularisation exercise undertaken by private companies in the town under license from the LGA. The current practice of the government is to set the price of plots according to their size in square meters, while individual landowners and sellers generally agree on a price by negotiation. This results in lower plot prices than those set by the government. The town planner in Handeni town stated that:

...Once we take our customers to where we have planned our land they find themselves meeting with the former land owners who also have plots [to sell] in these areas, and because of their cheap prices we end losing our customers...

Because of this challenge, the demand for government plots in the town is falling while demand for plots offered for sell by individual landowners is rising, as shown in Table 12. The town planner asserted that monthly demand for plots in the town ranges between 20 and 30 plots, but the number of building permits application reach 50 to 60 in the same period. The decision on building permit applications is done quarterly, when a meeting is held to approve the applications.

Table 12. Average quarterly sale of plots of land in Handeni town

Year	Plots bought from government	Plots bought from individual landowners	Remark
2021	70-80	79	
2020	65-80	62	
2019	100-110	25	
2018	120-130	No data	

Source: Fieldwork studies 2018

From the table, it can be seen the demand for plots from the government is falling, while demand for plots sold by individual landowners is increasing. This reflects the ease and low cost of purchasing land from individuals landowners. Both ways of getting access to land have the same validity and security since all the plots are surveyed; hence the new owner will receive a certificate of occupancy.

During discussion with town planners, it was stated that whenever the planning authority prepares the plots for sale and advertises the offer in the media, large numbers of people submit applications. However, few show up to buy the plots, as town planner explains:

...it is difficult to know why majority show up during first days when we advertise plots for sale, but few show up to buy the plots for instance, last time about 300 people applied for plots but only 35 bought the plots...

In discussions with residents two reasons were identified. First, residents claimed that government-owned plots were located away from the town's built-up areas. The second reason was that the prices of government plots were higher than those of individually owned plots.

The current average demand for plots from the government is 300 plots per annum, while 900 requests for building permits are submitted annually. This discrepancy might be affected by two factors: Firstly, applications are being submitted for plots bought from individual landowners, which most developers prefer. Secondly, the planning applications may be for plots bought by whatever means in the past and left without being developed.

Demand for plots in Handeni town is therefore affected by the way land is accessed. It should be noted that not all developers apply for building permits, therefore the number of building permits requested might be low

compared to the real rate of settlement development in the town. Further it should be noted that in unplanned areas, the majority of developers have no direct contact with the government and make no attempt to register their land or apply for building permits. Hence the government data does not give a complete picture of settlement growth in Handeni town.

8.2.2 Changing land price and size

The change in land price in Handeni Town is largely at the whim of the market. Except for land sold by the government, where prices are regulated by the LGA, land prices are determined by supply and demand, as well as the number of actors involved in the land transaction process. The price is also affected by the knowledge the seller has of demand and supply, location, and the use that is envisaged for the land. For instance, areas along the main roads, which are often used for commercial activities such as petrol stations, shops and offices, command higher prices than plots located away from the major roads, which are mostly used for residential purposes. Generally, plots along the major roads attract more competition than land in the rest of Handeni Town. As a land broker remarked regarding land prices:

...it is difficult to say what price a plot can cost. The prices are determined by location, whether along the main roads or away, demand for land (whether we have more [potential] buyers), and use of the plots. Plots for commercial activities command higher prices than those needed for residential purposes...

Until to 1990s, when the town was still classed as rural, residents held fairly large pieces of land around the town centre. These areas were mainly used as farms and for residential purposes. The change in growth of the town and the increase of urban socio-economic activities increased the demand for land. Over time, over the growth of the town led to a marked increase of land prices in the town centre.

Outward growth of the town led to land prices differentials, with the highest prices in the central area and close to social facilities, while price decreased toward the periphery. The modification of land prices took place when the majority of landholders comprised those who bought land from the native landholders [new landholders] who still live in the Town. The statement was supported by a resident interviewed, who explained that:

...the majority of lands in the central town area and close to facilities such as schools and health are owned by people who came to Handeni town. Most of native land owners are found outside the town areas and on the periphery...

The land in the CBD remains the most expensive, despite the land available in the periphery for outward settlement growth. The CBD continues to attract diverse socio-economic activities. The peripheral areas, lacking basic social services, constitute markets for products, while land prices remain low. Despite the low land prices at the periphery, consolidation there remained slow, while change of use from residential to commercial boosted land prices in the inner town areas. As the value of land in the CBD increases, activity in the area also increases, as noted by the town planner:

...in the central areas of the town prices continued to rise because commercial activities have continued to grow with increased demand for plots in this area. More construction of buildings, especially for commercial use, can be observed in the town centre area...

Some of the residential areas displaced from the CBD have moved outward to the periphery. The growth of residential areas on the periphery increased demand for various domestic products, attracting some businesses to these areas and leading to a gradual increase in land prices. Generally, areas adjacent to the CBD have grown or expanded outward. This process has forced some activities to reallocate to the outer periphery, leading to further, outward urban expansion, with land prices decreasing as one moves from the CBD to the periphery.

Over time, land prices have changed in the central town areas and areas surrounding the CBD. In the 1980s, land in the areas around the present town centre sold for an average of 50 TSH (0.02 USD per acre (4900m²)). In 1996, land in the same location sold for 80,000 TSH (36 USD) per acre. In 2010, one could not purchase an acre of land within a radius of 1 kilometre from the town centre, suggesting that most vacant land had been acquired. An acre of land in the periphery cost 700,000 TSH (318 USD) per acre in 2010, while in 2018 the price was TSH 1,500,000 (681 USD).

The spatial distribution of land prices within the town, obtained from different respondents, including land brokers, investors, sellers, private

companies and individuals, is presented in Figure 31. The map shows different price zones in the town. To prepare the map, areas were assigned to zones, from zone I to zone III, where zone I has the highest land prices and attracts more development than the others. The zoning also reflects how competitive the areas were in terms of services, accessibility, flexibility in terms of development for different uses, size of plots, opportunities, and knowledge about future uses.

From Figure 31 it can be observed that the town is undergoing transformation, leading to the emergence of land use categories through relocation, redevelopment, and alteration of the existing uses. The town areas were grouped into zones with common development characteristics and land prices. Land zone I represents the CBD, which is the old settlement area where the majority of urban activities take place. This zone continues to attract investment in new commercial developments (Plate 9). The zone commands the highest land prices and is where competition for land is most intense. It is characterised by the presence of commercial activities and multi-storey buildings alongside the older settlements.



Plate 9. Zone I: commercial development activities
Source: Fieldwork studies 2018

Zone II comprises areas adjacent to the CBD, where urban and rural activities intermingle. It also includes all areas within 1 kilometre of the major roads. This zone accommodates both urban and rural activities, and is characterised by reasonable accessibility, being located along the main transport routes. It was noted that new immigrants to the town chose to settle in this zone because of lower land prices and easy access to land through informal markets.

During its infancy, the majority of commercial activities in Handeni town developed along the major roads, hence making these area potential sites for socio-economic development. The increase in population led to rising demand for land for residential uses, accompanied by commercial development along the road. Zone II has mixed activities, and land uses in the zone have changed over time (Plate 10). The majority of development projects take place within this zone because of its proximity to the central facilities such as markets, health and education, as well as good accessibility to the town centre and areas outside the Town.



Plate 10. Zone II: Open areas along the roads
Source: Fieldwork studies 2018

Other areas not included in zones I and II were classed as zone III. This zone is found away from the major roads and central urban facilities. Zone III hosts a mix of activities, with rural economic activities such as farming and animal keeping being more common than in zone I and zone II. Land prices are low because of low demand for land in these areas, as noted by a land broker during our discussions:

...areas outside the town command low land prices because demand for plots in those areas is low. It is rare to find buyers who are interested to purchase land in those areas. Competition for land is mostly within the urban areas where activities are consolidated...

Most of the roads in this zone are unpaved, making commuting difficult during rainy seasons. Zone III constitutes the largest part of the Town, where primary economic activities including farming and brick making are predominant (Plate 11).



Plate 11. Zone III: scattered settlements and development activities (bricks making)
Source: Fieldwork studies 2018

The map of land prices in Handeni town is presented in Figure 31. The rate of settlement growth in the peripheral locations is low to influence land prices.

Some areas have not been analysed due to the fact that they fall under government use, such as the district hospital, prison, and LGA offices. These areas are not subjected to market forces as they are public lands. The analysis focused on rapidly developing areas of the Town so as to capture the forces driving growth and determining its characteristics.

One of the challenges in unplanned areas is inadequate or lack of access to basic services. The informal settlements are dominated by low-income communities; these tend to be denied access to most basic services. Those with financial muscle compete for land in the prime areas such as those close to CBD, and planned and serviced areas, while those who cannot afford to compete find themselves in the peripheral areas of the town. Market forces are the key factor pushing landholders out of the CBD to the periphery, as well as to nearby settlements.

The number of the actors involved in the land transaction process also influences the cost of land. For instance, if land brokers are involved, they normally inflate the price to pay themselves, but if the transaction does not involve them the prices are normally lower. Since the brokers are paid when land transaction is done, in most cases they get involved in searching for potential buyers.

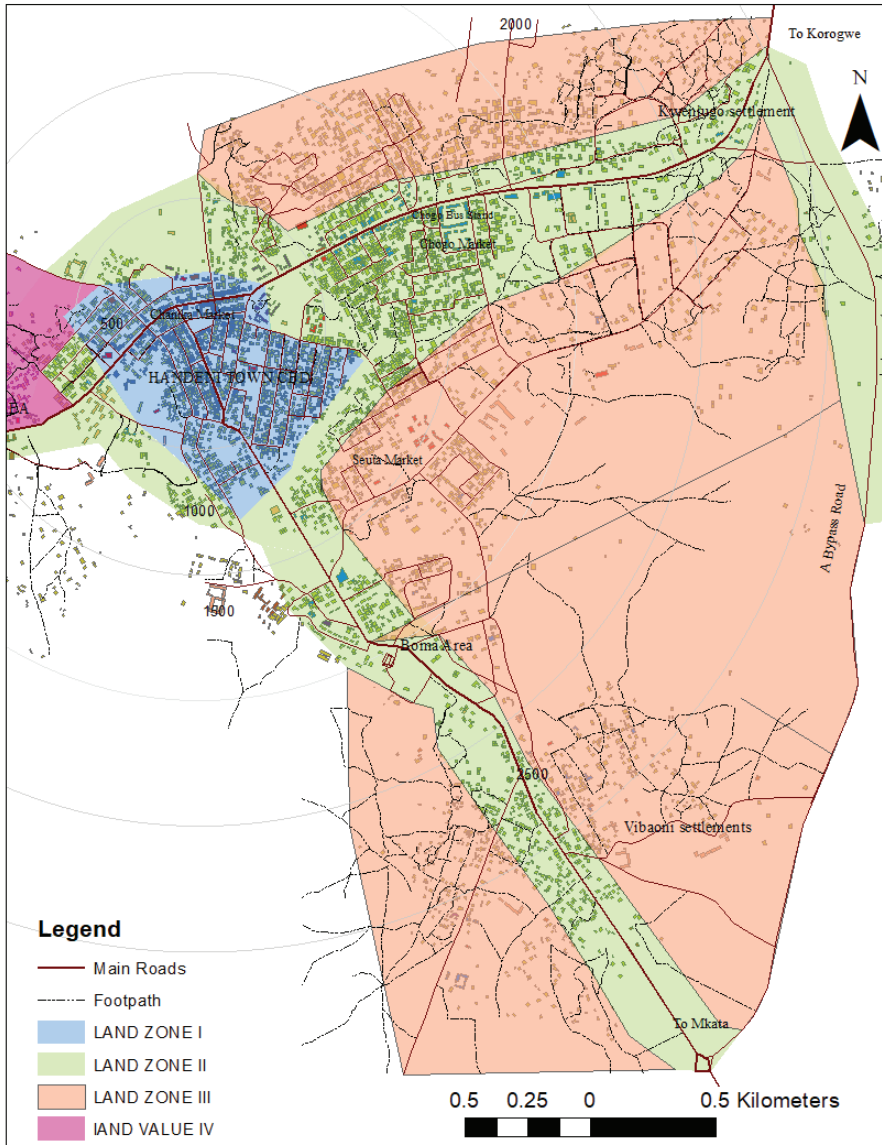


Figure 31. Land zones and prices influencing development in Handeni town in 2018
 Source: Google Earth images overlaid with the result of fieldwork

8.3 Roles of the actors in land development and the urban growth process

Both formal and informal actors are involved in land development and the urban growth process in Handeni town, as in many other areas of Tanzania. Formally recognised actors in law, regulating land development, include central government, planning authorities, grassroots leaders at *Mtaa* and ward levels, politicians such as councillors, private professional companies, land holders and developers. The informal actors on the other side include land brokers who are normally not registered. The land brokers' engage in land development activities as their livelihood strategy.

The local leaders at *Mtaa* and ward levels authenticate land rights, witness transactions, maintain the land register, monitor development, and guide use of land on a daily basis. In the informal process there is much flexibility; actors involved include both local leaders and others who are outside the formally recognised processes, including informal land brokers.

The growth of Handeni town has occurred through uncoordinated actions of various actors. In the historical development of the Town, actors in land transaction and development processes have changed. During the time when local chiefs were in control of land, they were the key actors, influencing and regulating the land development process. The creation and formation of rural villages in the 17th century and growth of settlements over time changed land allocation procedures, giving village government authorities the major role in land allocation and development processes (Brokensha, 1971).

The change in settlement growth from the village to small urban centre further the type of actors involved in land development. The identity and roles of actors involved in land development in Handeni town is determined by the process opted for by the developer, as observed by the town planner in Handeni:

...the list of actors depend on which approach land has been accessed through. Selling of land and development control is done by involving many actors such as LGA staff, land brokers, buyers, sellers and leaders at the grassroots level i.e. *Mtaa* and/or ten cell leaders, and local residents...

At the moment the actors involved in land transactions or development in Handeni Town include those at the grassroots levels (i.e. the lowest levels

of government, such as ten cell leaders), individual residents, sub-ward and ward leaders, land brokers, sellers and buyers.

The type and level of actors in land development depends on the land access process adopted. Some projects, such as utilities provision or industrial investments, often involve high-level government actors up to the ministerial level, e.g. water, electricity and communication projects, where large portion of national territory is affected. Smaller projects, such as house construction or small land transactions involve local actors at sub ward level.

In order to understand the roles played by each actor in land development in the Town (s), a summary of the actors involved in both major and small projects is provided in Table 13. The roles illustrated in the table relate to formally recognised procedures. It is recognised that in implementing these procedures, discrepancies may emerge.

Table 13. Actor’s involved in land transaction and development processes in Handeni Town, and their roles

SN	ACTOR	ROLES	Remarks (Process)
1	Ministry of Lands Housing and Human Settlements Development	Responsible for policy, laws and guidelines for urban development and land use changes in the Town. Production of general planning schemes; for urban planning and settlement development guides.	Oversees the implementation from a distance, the level of the ministry doesn't allow close supervision.
2	Handeni Town Council	Technically it is the planning authority. It is Involved in regularising and formalising land use change, transactions and services provision. Involved in land use development and changes of use in the town, as well as access to land. Give permission and guidance for land development.	Is supposed to supervise development, but the rapid growth of settlements surpasses its capacity
3	Utility agencies (i.e., electricity, telecommunication)	Use land for placement of utilities, such as water, electric poles, and communication towers. They provide life to urban areas by supplying basic services and facilities.	Mostly come in late when the settlements have occupied the spaces especially in unplanned areas
4	NEMC	Responsible for environmental protection and regulating the use of natural resources such as land, water and forest to promote sustainable environment.	Mostly works when issues emerge or when a project submitted for approval
5	Grassroots leaders at sub-ward (<i>Mtaa</i>) and ward levels	To witness and document land transaction process between sellers and buyers. Act as watchdogs, supervising daily operations.	Routine witnesses of development activities with little power to control

SN	ACTOR	ROLES	Remarks (Process)
6	TARURA	Government agency responsible for development and improvement of rural roads. They also use land to construct roads within and across the Town. Facilitates inter- and intra-town interaction and enhance land use, for instance by constructing major roads to neighbouring settlements and access roads within the town. This has enhanced settlement growth.	Wherever they work, they affect and influence settlement growth. Provides potential development areas and determines patterns of settlement growth
7	Land sellers	Deliver land for housing for many including some of the poor. Their facilitation of access to land enables settlements growth and land use changes.	Modify settlement growth by their decision to sell land
8	Land buyers	Land purchasers who acquire land for various uses or for speculation. Invest in residential, commercial, services and other uses May influence urban growth and spatial development for instance along the major roads where growth of activities drives land use changes.	Influence growth of settlement by utilizing spaces and organizing activities on land
9	Land brokers	Facilitate interaction between sellers and buyers; i.e. selling and buying, and preparation of agreements for land transactions. Search for land required by developers/buyers. Facilitate urban development and may inflate land prices depending on the commission demanded.	Simplify access to land and determine potential areas for development. They influence land prices and accessibility to land
10	Land speculators	Hold land in prime areas for future to make windfall profits. They influence spatial urban expansion by holding on to land in between the built-up areas and sometimes subdivide land and sell it.	Stagnate development in the town areas. They disturb coherent growth of settlements while providing town "breathing areas" in built-up areas.
11	Financial institutions	Institutions such as banks, (e.g. Vicoba) provide collateral to facilitate development of land and settlement growth. They issue loans and facilitate the use of land as a collateral, hence stimulating settlement and infrastructure development.	Enhance settlement growth and stimulate socio-economic development in the town.
12	Community members	Individuals key players in settlement development. They decide to sell or not sell their land.	Articulate development and secure growth of the town.
13	Private planning companies	Plan land use development activities Selling plots to individuals. They supply plots and support the government initiative to promote planned land use development	Facilitate planning and surveying of land. Allow outward growth of settlements.

Source: Fieldwork studies 2018

Despite the long list of the actors as presented in Table 12, the actual actors in the process in land development depend greatly on the nature of the transaction and characteristics of the development proposed for the land. For instance, the bigger the project for land use development, the higher the level of actors involved and the more they are involved in the process. For small projects at the community level, the level of actors is sometimes no higher than ward and/or sub-ward level. It is also important to note that in many cases, the transaction process and conversion of land use still occur through informal mechanisms, and there is little control over such processes.

Some of the actors in Table 12, i.e. grassroots leaders, land sellers, land buyers, land brokers, utility agencies, and community members are involved in both informal and formal land development processes. The actors in formal and informal process of land access and development are not separate; their participation depends on which approach is adopted.

8.4 Land tenure security and coherent spatial urban growth

The land tenure systems in Handeni town, as in other parts of Tanzania, exist in three forms. Statutory or granted land tenure is the tenure system in planned and surveyed areas, typified by the town centre and its surroundings, where certificates of ownership from the government protect land-owners' property rights.

The second form is informal tenure, referring to the rights of people living in the informal settlements which are not planned and surveyed. They include quasi-customary rights, i.e. in cases where people have bought land from customary owners. Land-owners with informal tenure do not have land titles, although they may have contracts of purchase and sale. However, their security of tenure depends mainly on recognition by local leaders and neighbours. The third form is customary tenure which refers to land held in the peri-urban areas under customary or traditional norms. This land is mainly inherited through clans and family systems. They include some quasi-customary rights i.e. where non-natives have bought land from natives or customary occupiers.

The tenure security in Handeni town, has changed over the years from purely customary tenure to mix granted and quasi-customary. The way land

is accessed and developed means that tenure of large parts of the planned areas is formally registered. The town centre has attracted investments in commercial activities.

The land tenure systems have affected the growth and development of the town in several ways. Customary tenure rights give owners' rights to access land without formal procedures authorised by the government, leading land transactions outside of the formal stipulated procedures. The prevalence of informal tenure in the undeveloped areas in the Town hinders the local government authority from fulfilling its mandate to control land development in Handeni Town. Generally, the customary and informal tenures give more freedom to land-owners to develop their land based on their own plans.

The Urban Planning Act No. 8 of 2007 provides that once a plot is allocated to developer and the building permit is granted, the developer is supposed to develop the plot within three years (36 months) from the date of approval. On failure to do so the plot owner will be charged a penalty. Despite this provision, undeveloped land still predominates in the town. Two factors undermine the operation of the law. Firstly, fines for land-holders are insignificant; secondly, they don't account for land value. These factors mean that penalties are not financially painful for defaulters; hence many urban areas remain undeveloped for years.

The enforcement of Urban Planning Act to manage settlement development is low because many plots in the town are unplanned. The low level of planning and surveying in the rapidly growing towns make development of a land database difficult, which in turn impedes the application of the law.

The existence of undeveloped pockets of land within and around the town CBD detracts from coherence of urban development and hinders revenue collection as the town cannot use these areas to generate income. Because of the non-enforcement of laws guiding urban development, these areas remain dormant and unused for years without any government intervention.

8.5 Chapter summary

This chapter covered access to land, and its impact on settlement development in Handeni town. The study has identified mainly two land access processes which are purchase of land from the government, and purchase of land from individual landowners, adopting either formal or informal procedures. The practice of purchasing land from individual land owners has created problems for the growth of the town, because this free and flexible process is unregulated, leading to haphazard land development. The informal purchase of land from individual land-owners was shown to affect settlement development, as new land-owners do not need to seek permission to develop the land from the town authority.

The formal process of purchasing land from the government also affects settlement development, due to inadequate provision of basic social services such as water, electricity and roads in areas where the land is put up for sale. The process also involves long list of actors and complicated procedures which make developers reluctant to purchase land from the government. Most of areas earmarked for development in layout plans remain dormant, and town continues to expand mainly in unplanned areas along the major roads, giving rise to a linear pattern of settlement growth.

The absence of already developed settlements in the newly planned areas due to being in the periphery was identified as a factor retarding growth. The unplanned areas located along the major roads and close to service areas are in commercial areas with good access to services, making them attractive to developers. The procedures required to gain access to land through formal processes slow down the construction of buildings, due to delays. The scarcity of developers in these peripheral areas discourages service provision, making the areas unattractive for settlement growth. Land access processes have given rise to settlement development patterns influenced mainly by proximity to facilities and accessibility. The resultant settlement pattern is discussed in the next chapter of this thesis.

9. Emerging Settlement Pattern in Handeni Town

The previous chapters covered different factors influencing characteristics of settlement growth in Handeni town. Infrastructure development, socio-economic development and access to land, as discussed in the previous chapters, all influenced settlement growth in Handeni. This chapter discusses the spatial settlement pattern that is emerging as a result of these factors influencing growth. The development of socio-economic activity and the ways people access land, affected land use management practices and settlement growth, leading to different settlement structures and patterns of land use organisation. The patterns and growth characteristics of settlements in Handeni town are covered in the following sections.

9.1 Growth of unregulated settlements

As discussed in Chapter 6, Handeni town emerged as a small village which later grew into a centre for several villages and a small urban centre. Settlement growth in the town occurred without land use planning intervention. Hence most town areas developed in an unplanned fashion, but with demarcated plots. The unplanned development of settlements in the town, especially at the periphery, made it difficult to manage land development, leading to haphazard spatial growth. During the 1970s when the planning activities were managed by regional authorities, the regional authority prepared a layout plan for the Mji Mpya area in Handeni town, which, however, remained unimplemented until 2012. According to the Town Planner, the reason for this delay was that the area was located a long distance away from the existing settlement. Regional level planning fell apart because it failed to consider contextual issues such as site location

relative to other growth areas; settlement growth trends; and socio-economic incentives affecting choice of residential location. Because the proposed area for development at Mji Mpya was so far away from the existing town centre, developers were not interested.

The increase in interaction of people and activities in Handeni town, and between the town and the surrounding settlements, led to the growth of socio-economic and accelerated settlement growth. The interactions led to growth of economic activities such as trade in industrial products and sale of food stuffs brought in from the surrounding villages. Most commercial activities were located close to the main roads and settlement development followed these activities, giving rise to a pattern of growth along the major roads. Buyers of land purchased plots from individual sellers, which avoided the long and tedious procedures involved in buying land from the government, as discussed in the previous chapter. This gave rise to unregulated settlement growth. Large parts of Handeni town developed in an unplanned way, without any local government intervention.

The analysis of aerial views of the organisation and growth pattern of settlement in Handeni town shows the CBD largely consists of demarcated plots. However, discussions with town planner and developers revealed that individual plots were demarcated and organised in order to avoid land use conflict among land-holders. An aerial view of Handeni town central areas (Plate 12) shows the arrangement of building structures that resulted from the demarcation of plots. The area marked by red boundary in the photo indicates the CBD of Handeni town.

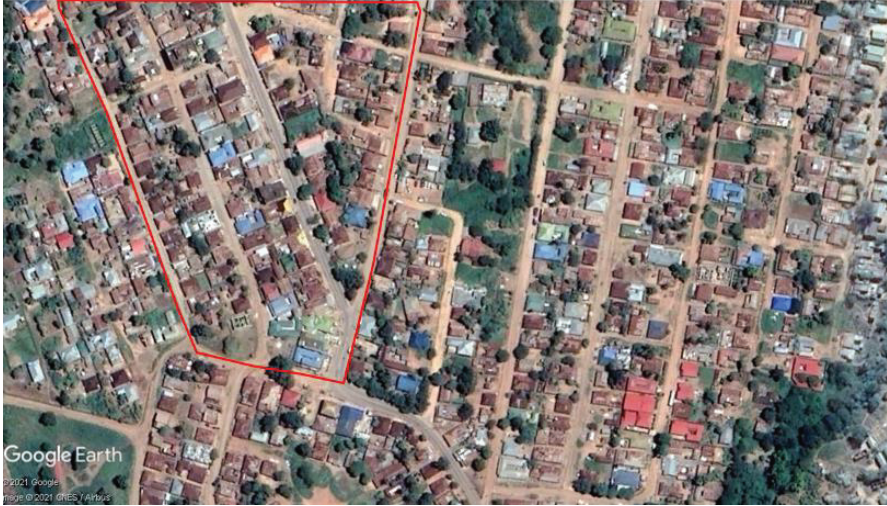


Plate 12. Aerial view of Handeni town CBD and surrounding residential areas
Source: Google Earth June 2018

Since areas were demarcated (with plans but no surveys) without registration of uses, selling of plots were on market whim i.e. the transaction process and prices remained in the market forces. The plots were therefore used for a variety of activities, which influenced settlement development in adjoining areas. This unplanned development also allowed emergence of mixed land use in the central town area, with institutions, commerce, schools, and health facilities adjacent to each other.

Unplanned development also took place in most of the surrounding areas. Few individual landowners surveyed and registered their plots to get title deeds. However, it was noted during discussions with Town Planner that the planned and surveyed plots in the town represent less than 10 per cent of the total available plots. The discussion further revealed that areas at the periphery are also unplanned. The Town Planner explained that:

...most of the areas in the central town, as in the periphery, are unplanned. Fewer than 5 per cent of residents have their plots planned and surveyed, and or have title deeds...

Most of the peripheral areas, except for plots that are planned by the private planning companies as discussed in the previous chapter, are occupied by

unplanned settlements with multiple land uses and inadequate basic social services, access roads, and public spaces, as shown in Plate 13. These zones grow depending on individual landowners' interests and their resources and capacity to develop.



Plate 13. Aerial view of the peripheral settlements of Handeni town (part of Chogo and Kwa Mngumi)

Source: Google Earth, June 2018

The planning and surveying of land facilitates land registration, and hence reduce land use disputes and conflicts. Within unplanned and unregistered settlements, disputes over land uses and boundaries conflicts arise, adversely affecting land utilisation. The informality in settlement growth blocks routes to some settlements areas as pointed out by a resident:

...these areas which are not planned create challenges when one wants to reach them by car. You find some roads are blocked or end up in places far away from where you want to go...

Despite being unplanned, the central town areas are arranged in a way that provides access and facilities in the town; these areas are the location of the majority of socio-economic activities including trade. The settlement structures more modern and commercially oriented than those at the

periphery. The organised areas, i.e. the two blocks in the town centre (mixed use zone), contrast with the unplanned (mainly residential) settlements in adjacent areas. Examining the town in general, settlements in demarcated areas close to the town centre contain a greater variety of activities than unplanned adjacent areas.

Comparing the two areas in the town (see Plate 9 in Chapter showing the CBD and Plate 10 showing surrounding areas), both areas display compact building development. Despite controls imposed on developers by the local government in the form of regulations and by-laws, the settlements continued to grow at a considerable pace. The demarcated settlements provide a clear network of roads with building structures facing the existing roads unlike in the unplanned areas where road access to buildings is often absent and the spatial structure is fuzzy.

Because of the informal nature of settlement development, the economic base and revenue sources available to the town are limited, making it difficult for the town authority to deal with the challenges inherent to urban growth. The spatial expansion of settlements between 2008 and 2018 is illustrated in Figure 32, showing how the number of unplanned built-up areas, road networks and building structures has increased in the area over time.

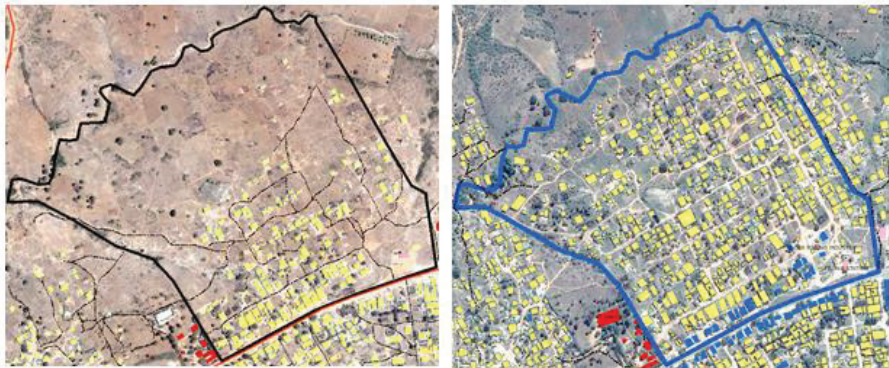


Figure 32. Land use change and settlement spatial expansion close to the town CBD (part of Chanika and Chogo) between 2008 (left) and 2018 (right).

Source: *Digitized from Google earth images and worked in the field by the researcher*

The changes in land use and spatial growth of settlements mainly took place through informal land sub-division, transactions and building construction.

Some of the areas that are most affected by informality include those located close to the town centre such as Muungano and Mdoe (areas close to the major roads shown by red and blue structures in Figure 32).

Unlike the areas located close to the CBD and along the major roads, the inner peripheral areas changed relatively little between 2008 and 2018 (Figure 33). Changes in these peripheral settlement areas are evidenced through the construction of scattered residential buildings with large plot sizes and outdoor spaces. The periphery area also has significant vegetation cover, with few access roads and limited commercial development. These features are due to unregulated expansion, since no plans exist for these settlements.



Figure 33. Land use change and spatial expansion of a settlement at the town periphery (kwa Mngumi) between 2008 (left) and 2018 (right)

Source: Digitized from Google Earth images and results of fieldwork

The locations of planned plots away from the major roads and town centres where majority of socio-economic activities are located, deter most developers from purchasing these plots, limiting settlement expansion in these areas. Discussions with the residents revealed that most of the planned areas are located far away from urban services and the consolidated built-up areas, discouraging them from purchasing land in these locations.

Competition for land in the prime commercial areas of the town, such as around the CBD and in easily accessible areas along the major roads, have forced non-commercial land uses of land out of these areas to the inner periphery. Market forces create pressure to relocate to the periphery, where

plots are developed without layout plans to guide the organisation of settlements, thereby accentuating the problem of informality in the town. This development pattern hence leads to three types of settlement development namely: i) planned and surveyed areas, ii) demarcated settlement areas and iii) unplanned settlements (Table 14).

Table 14. Characteristics of settlement development in Handeni town

SN	Characteristics	Dominant land use	Location in the town	Estimated spatial coverage (%)	Level of accessibility
1	Planned and surveyed	Residential	At the town periphery	14	Low
2	Demarcated	Commercial residential	Central town area	4	High
3	Unplanned	Residential	Central town area and periphery	82	Average

Source: Fieldwork June, 2018

The current structure of the town growth shows a linear and radial pattern of outward settlement growth. The areas occupied by commercial activities within the CBD and its surroundings also experienced notable changes of use and structural alterations through demolition of buildings and amalgamation of plots. The CBD extended towards the adjoining old residential areas, pushing settlement expansion outward toward the periphery.

The change in land uses in the CBD is not uniform but rather depends on the availability of services and commercial viability. Figure 34 shows how outward spatial growth occurred mainly along the major roads and in adjoining areas. The clustered settlement close to the CBD grew outward to a radius in 2018 that was 2 kilometres beyond the extent of the urban area 10 previously.

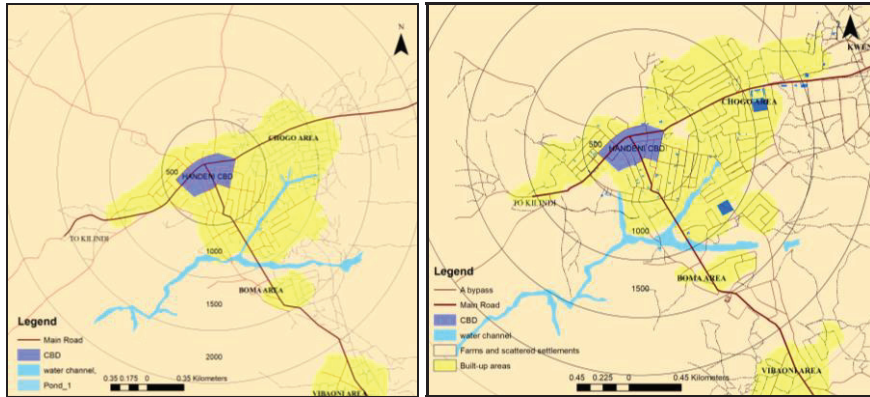


Figure 34. Extent of spatial urban growth in Handeni town in 2008 (left) and 2018 (right)

Source: Google Images and fieldwork 2018

The commercial centres in Chanika and Chogo expanded outward, influencing development in surrounding areas, leading to pressure for land use change in these areas from residential to commercial use. This outward push from the CBD not only expanded the central area but also affected the land use development and land prices in the periphery. Shifting of activities to the periphery raised demand for new residential land in these locations as well spurring on land use change to accommodate various urban functions.

The increased demand for commercial plots in the town's CBD due to growth of commercial activities, stimulated redevelopment, leading to the infill of vacant plots and amalgamation of plots. Commercial functions like restaurants need large plot size, which motivated the amalgamation of plots. This together with the redevelopment of existing structures not only changes the land where the development takes place but also affects land use in adjacent areas. Residents of the nearby plots claimed they were adversely affected by redevelopment of areas close to their residences:

...changes to built-up areas to accommodate [new] facilities cause problems for residents. For instance, development of bars and clubs exposes our children to unwanted behaviour, while the separation of land uses before this growth took place has disappeared, allowing mixture of land uses, which is challenging for parents...

The changes in uses of plots within the residential central area and redevelopment of structures there have changed the pattern of land use, from mainly residential use to mixed uses. Because of these changes, some residents decided to relocate to the periphery, by selling their properties or change the use of building. The strategy has also affected spatial outward settlement growth to the periphery areas.

The rate of settlement expansion in the town centre has been rapid, with alternating land uses over the entire study former period, as well as previously (i.e. since 1961 to 1988). The centre of the town saw development through replacement of building structures and expansion of commercial activities. Urban managers acknowledged that the changes the town underwent influenced patterns of growth in the town's built-up areas. The changes in land uses within the central town location led to demolition of new ones, as noted by one respondent:

...the town has never stopped growing but this demolition of houses and reconstructing of new ones in the CBD is a recent phenomenon. We used to see development on vacant plots, but the rate of demolition and reconstruction has grown rapidly recently...

The population density increased rapidly from 58 to 94 per square kilometre during the period of maximum growth between 2008 and 2018 (URT, 2017). The increase in population density necessitated construction of new buildings and expansion of the urban area to accommodate the increased population (areas marked with yellow in Figure 34). Analysis of satellite images reveals that areas with high housing density have grown outward from the CBD along the main road.

Discussions with the Town Planner on the management of spatial growth and provision of basic services to areas with they are currently inadequate revealed that the town authority plans to shift some activities out of the CBD, including car repairs, car washes and carpentry workshops. At the same time the authority plans to construct new markets in areas where growth is slow, such as Kilindi and Kivesa in the south and west of the town where settlement development has stagnated. The aim of this reordering of functions is to rebalance the outward growth of the town and protect the periphery areas from further encroachments. The plan also

aimed to reduce the rate of outward spatial growth of the town, to protect the surrounding environmental resources.

Informal settlement development and unregulated spatial growth has led to the establishment of settlements with inadequate basic services and land use control. This development pattern has further divided the town into potential development areas with high land prices and rapid socio-economic development and areas growing sporadically with limited services.

9.2 Pattern of settlement growth

As discussed in the previous chapters, Handeni town emerged as a small settlement on the major road between Korogwe and Kilindi. Most of the town's activities agglomerated in the central areas along this route. These became the core area of the town containing the majority of socio-economic activities.

Urban expansion and land use changes in Handeni town takes different forms. The dominant form of expansion has been growth of the settlement along the main roads, where the majority of activities locate. Analysis of land zones with different land values and degrees of attractiveness for development (Figure 31 in Chapter 8) indicates that areas along the major roads attract more development of activities than internal areas away from the roads.

The dominant linear and radial settlement patterns in the town were identified as creating problems for service provision by Town Engineer:

...In Handeni town, the settlement growth pattern, following the roads, increases the cost of providing services such as water. The settlement covers a take large land, and there is little regulation or control over the environment...

The patterns of growth have also affected development of settlements in areas away from these main roads. Some of the areas planned by the LGA in an attempt to reorganise the settlement pattern remained undeveloped as most of those who bought plots found they were too far from basic urban facilities, as noted by the town planner:

...this growth pattern is challenging for the development of the new areas. Most of the plots prepared [for sale by the LGA] with the aim of reorganising the settlement, away from the major roads, have not been developed. Most of the developers prefer plots along the major roads for commercial development and easy of transport...

The linear and radial settlement patterns in Handeni town are largely influenced by the existing road network, as the settlements grew from the CBD outward. Most of the areas along the major roads, despite the distance from the central town facilities, command high land value prices and attract much development.

Areas along the roads attract development of commercial activities, leading to rapid growth. The price of plots in these areas reflects competition for land for both residential and commercial uses. Since commercial activities influence interactions of people, settlements in these areas grow faster than those on the periphery of the settlement. The growth of settlements along the roads and where services are available therefore gives rise to a linear and radial urban form.

9.3 Chapter summary

This chapter has described the pattern of settlement growth in Handeni town. The pattern of settlement growth has been influenced by the alignment of roads infrastructure and land use changes. The inadequacy of land use control and existing planning mechanisms has led to the predominance of informal settlements located along the major roads. The growth of informal settlements affects the pattern of growth of the settlement as individuals' decisions determine how the town develops.

The growth of the settlements in a linear form along the major roads has affected the location of activities and residential developments in the town. The linearity of settlements raises the cost of providing services. The redevelopment of areas within the town centre has led to increased land prices associated with changes in land use. Socio-economic activities and land development processes have influenced the growth characteristics of Handeni town.

10. Discussion of Findings

This chapter discusses the findings of this study in relation to the literature and presents my own reflections on the subject matter. The study was guided by two theories, urban land use theory and central place theory, and explored the relevance of these theories in relation to the case of Handeni town. Theories from the Global North do not reflect the context of developing countries, and cannot be applied directly to small urban centres with unregulated land development. In this chapter I return to questions related to land use changes over time, access to land and their implications for urban spatial growth.

10.1 Policies and development of small urban centres in Tanzania

The development of small urban centres in most developing countries of Sub-Saharan Africa was influenced by policy and programme implementation (Pedersen, 2003). Tanzania had different laws and policies in place over the studied period, which affected the growth and emergence of urban as well as rural centres in different ways.

Implementation of policies such as villagisation, as discussed in Chapter 5, favoured the growth of centres like Handeni, while other policies such as abolition of local government authorities and growth pole strategy retarded the growth and development of small centres. These policies aimed to promote growth at regional and national levels by stimulating socio-economic development; their failures adversely affected the development of small urban centres. All these policies were an important influence on the location, growth characteristics and size of urban centres in the country.

Most of the policies and programmes implemented were intended to improve the life of communities, despite their dubious results (Hirst, 1978). For instance, villagisation policy, which aimed to cluster scattered rural communities into village units accelerated the growth and development of some urban centres, including Handeni, as people who had been resettled fled from their new vilages looking for somewhere else to live. Policy makers failed analyse the potential of the existing scattered settlements before relocating people to the new villages. Moreover, the focus on accessibility ignored crucial factors for economic development such as soil fertility and weather conditions. The process of relocation caused the loss of potential agriculture land and community ties (Hirst, 1978). The presence of facilities and growth of socio-economic activity in town centres close to new relocated villages stimulated rural-urban interactions.

The high-order [administrative] status of Handeni town as compared to the surrounding centres encouraged the movement of people between the town and their surrounding areas (Getis & Getis, 1966). The role of Handeni town in administering and servicing the surrounding centres, as discussed in the previous chapters, opened up opportunities for the village communities and town dwellers to interact. The surrounding rural communities commuted to the town centres to access various household needs such as industrial manufactured goods, which mostly originate from the cities, in exchange for agricultural products from the villages. The interaction of people and goods influences growth of settlements, activities, and opportunities, as well as advances in technology.

While the villagisation policy strengthened the relationship between the local areas, the implementation of the growth pole strategy (Darwent, 1969), which aimed to stimulate industrial development of specific regions, enhanced the relationship between small urban centres and the regional administrative centres. The strategy created activities and employment opportunities in the regional centres, and people from the small centres commuted to these centres to access jobs, education and services. The growth pole strategy, despite its intension to strengthen the relationship between centres, ended up by creating strong giant centres surrounded by weak and less well serviced small ones. The strategy also resulted in the movement of people to regional centres from the small centres, hence decreased the importance of small urban centres for development. The growth pole strategy adopted a top-down approach, which can be

detrimental to the development of small centres, since opportunities don't always trickle down to reach the bottom level. A bottom-up approach could benefit both areas, as the growth of small centres depends on facilities in the major centres, hence such an approach would facilitate interactions and the flow of opportunities.

The centralisation of local government in 1972, adversely affected the growth of small urban centres (Kessy & McCourt, 2010). The implementation of this policy, which concentrated power in the regional centres, impacted negatively on the movement of activities and people from the surrounding villages to nearby small towns. Most people commuted to regional centres for their socio-economic needs, reducing the social and economic importance of many small urban centres. This period saw the growth of private transportation companies, which facilitated the movement of people from surrounding areas to the regional centres. Thus, the impact of the policy on the growth of urban cities is context specific.

The implementation of the different policies was separated by intervals of several years. For instance, the villagisation policy was implemented in the 1974, the abolition of local government authorities took place in the 1972, and the growth pole strategy was launched in the 1970s. Each of these policies had different effects on development. Therefore, the impacts of each individual policy on development can be hard to discern as they all had significant effects on development of small urban centres and their activities. Generally, while conclusions about the effects of policies on development can capture overall trends over a time period, effects of individual policies on settlement development are harder to discern. However, policy implementation in one way or another created challenges and opportunities for development, which influenced growth and affected existing development plans. The conclusion of this study state is that policies impacted settlement development and growth.

10.2 Emergence and growth of centres

The emergence and growth of urban centres, as conceptualised in central place theory (Getis & Getis, 1966), takes place at a confluence of services and/or natural features. The availability of various opportunities agglomerates people and activities and increases their interactions. For instance the improvement of transportation networks, facilitates personal

mobility and transport of goods between places, thereby enhancing development of the other sectors of the economy (Wilson, 1978).

The existence of main road linking Korogwe settlement and then central Tanganyika caused the existing small, scattered settlement at Handeni to agglomerate and form a centre. The form, structure and pattern of development of the settlement at Handeni was determined by land use activities and the location of different socio-economic facilities, which were dictated by successive regimes from the colonial era onwards. The growth of the settlement and changes in land use were affected by various factors, including the legal framework, urban planning processes, and natural resources available in the area.

Previous studies (Worrall et al., 2017; Christiaensen et al., 2018) on small urban centres, show that these centres act as stepping stones for rural communities moving to major towns and cities. The emerging small urban centres have different characteristics, and people are attracted to them for different reasons. As they compete for pre-eminence, those winning the race become the focus of growth, in interaction with their surroundings. For example, the widespread availability of services in Handeni attracted residents of surrounding areas to the town to fulfil most of their needs. Handeni's central location made it easy for residents in neighbouring areas to commute to and from the town. The implementation of different programme in the country, with different development priorities, influenced the growth of urban centres and their patterns of development.

The well-developed services in Handeni town, including courts, health centres, schools, and markets for agricultural products and livestock, plus good transport connections to the major urban centres such as Tanga and Dar es Salaam, encouraged people to move to the town, which became a hub for business opportunities. This affected development of the settlement, which was characterised by relocation, redevelopment and infill of undeveloped plots in the growing commercial centres. Development of the settlement as a result of economic growth increased the need for services and led the replacement of traditional socio-economic activities such as agriculture by urban economic activities, including those specialising in services. This specialisation enhanced opportunities for economic activity and stimulated settlement growth.

The growth of settlements along the main roads and close to services was noted by Brennan et al. (2007), who described the various stages of

urban growth, through different phases, forms, structural arrangements and time frames, giving rise to towns with different morphologies (Vermeiren et al., 2012).

The sector model of urban growth suggests that road networks and land use categories in the urban centres lead to segregation according to socio-economic status and clustering of urban sectors with different levels of economic well-being (Ayeni, 2017; Meyer & Esposito, 2015). This phenomenon was not observed in Handeni town as land uses in the town are determined by market-driven development rather than land use planning. The phenomenon is at odds with the theory. As the roads in the town provide intra- and inter-urban links without separating communities based on socio-economic status.

The emergence and growth of small urban centres are mainly influenced by land administration processes, the location of urban facilities, and government investment priorities. Areas close to services are more attractive for settlement development than those located far away from these facilities.

The growth of interactions due the presence of trade in products, and connectivity with both small and major cities, made Handeni town the core of trade with surrounding centres. The economic development of the small urban centres in the region reduced the distance between them, with distance understood following Jordaan et al. (2004) as a function of cost and time required to move between centres. Handeni town's location and the improvement of connectivity to other centres increased potential for growth of a range of urban functions.

Well-developed level services compared to the surrounding centres attracted the movement of people to Handeni town. The administrative principle states that improved service provision in lower order centres allows the superimposition of functions of higher order centres, which stimulates the emergence and growth of new activities in the surrounding areas (Smith, 1986). The emergence and growth of Handeni town therefore promoted the development of neighbouring areas through trading activities. As a source of materials for a range of activities, Handeni, as a high-level centre in the lower-level hierarchy, assumed the role played by major town at a regional level in servicing surrounding urban as well as rural centres.

10.3 Access to land and spatial settlement growth

Settlement development in the case study area was tied to forms of access to land in the town. The study found that mechanisms to regulate the development of settlements and land use changes in Handeni were ineffective in managing development. Socio-economic status and financial capacity of the residents determines where they chose to reside, with more affluent residential developments located close to the town centre. Constraints on access to land included lack of knowledge of potentially available areas, providing land brokers with the opportunity to step in and support the process.

In emerging towns with loosely regulated land development, management and control of land depends on the capacity of individuals, access to land is fairly flexible (Magigi & Drescher, 2010). This was the case in Handeni Town because most plots were available from individual sellers. Individual delivery of land facilitates urban growth while enhancing the growth of unplanned and unregulated settlements in the town (Roy, 2005). Inadequate regulation of land use development in Handeni town led to the development of informal settlements, which the planning authority (i.e. LGA) and its instruments were unable to control. The formal government-led process of land delivery was overshadowed by informal processes, which were the major force transforming the urban structure and land use development in Handeni Town.

Changes in spatial growth and land use are related to the socio-economic development of communities (Serageldin, 2016). When people advance economically they opt for different ways of developing their land, which affects both built structures and spaces used for different activities (Admasu, 2015). Important factors influencing the dynamics of urban land use include urban economy and stakeholder behaviour (Admasu, 2015). The growth of Handeni town is affected by decisions of individual landowners on land transactions and developments within the town. Despite differences in land values and access to land across the town, the CBD in Handeni town is populated by both low and middle-income groups. This goes against the theoretical assumption that there will be a clear separation of people according to income level (McDonagh, 2007).

The idea that characteristics of different urban areas are determined by their spatial distance from the CBD, as propounded by the central place theory (McDonagh, 2007), is not borne out by land use organisation in

Handeni town because most development has taken place spontaneously with limited provision of basic urban services. Unregulated private actors are the key drivers of urban land development in Handeni town; these actors take no account of the need for public services such as open spaces, health and education facilities and market areas. These actors are mainly focused on increasing the number of plots for sale, which allows more people to be accommodated while reducing plot sizes.

Small urban centres grew out of rural centres and continue to accommodate a mixture of rural- and urban activities (Christiaensen et al., 2018). The growth personal incomes and changing preferences regarding the use of spaces, mean that more spaces are needed to accommodate the growing urban population and their socio-economic activities. This affects land uses in peripheral areas. Economic development impacts positively on use of space and urban spatial expansion (Admasu, 2015). The growth of activities in Handeni town influenced patterns of land use and hence impacted on settlement spatial growth.

The central town areas underwent a process of land use replacement, while urban developments in the periphery pushed agricultural activities out of urban built-up areas to areas outside the town. As argued by Serageldin (2016) urban centres have complex internal and external dynamics, making their growth difficult to predict. Different forms of land use access, land use development contribute to the complexity and dynamism of urban growth in Handeni town. Physical access further contributes to the complexity of changes in land use and settlement growth. Interactions, enhanced by rural-urban linkages, alter the growth of various sectors of the economy, such as trade, services, and transportation leading to changes in the town's economic base. Existing interactions provide the basis for growth of extended social ties with the surroundings (Djurfeldt, 2012).

Uncoordinated access to land leads to haphazard spatial settlement growth (Mosha, 2013), where formal procedures are often ignored, limiting government capacity to control urban growth and outward spatial expansion. The failure to deliver planned and serviced land by the local authority further weakens control over settlement expansion (Serageldin, 2016; Mosha, 2013). Handeni town exhibits dichotomous settlement development, whereby, planned and unplanned areas grow together. Urban spatial development is incoherent, due to ineffective regulatory

mechanisms coupled with limited capital investment especially for basic infrastructure services.

Despite heterogeneity of growth characteristics of small urban centres (Thrift, 2000), as a general rule, lack of planning frameworks like master plans and/or strategic plans is a key factor weakening control over their spatial expansion and land use development, as is the case in Handeni town. It is important to note that access to planned and serviced land is an integral component of government strategies to ensure sustainable settlement development, and therefore is one that ought to be taken seriously. Weak land use development control in Handeni not only engenders chaos and land use conflicts in the town, but also discourages investments hence threatening growth.

Access to land is an important factor affecting settlement growth and socio-economic development in most developing countries, although in different ways (Mosha, 2013). Individual preferences for specific locations and plot sizes are determined by a number of factors which need to be considered by urban development policies.

The Sustainable Development Goal number 11 focuses on sustainable urban growth, which depends inter alia on proper land use planning and development. This goal cannot be achieved without effective land use planning and regulation of urban growth to sustain f urban life.

10.4 Patterns of land use change and settlement growth

Urban land use theory contends that, land uses are organised and structured along the available transport routes (McDonagh, 2007; Ayeni, 2017). The growth of the settlements entails the replacement of land uses in each new urban area.

The increase in population size and growth of socio-economic activity, including interactions with surrounding centres influence changes in land use and the structural organisation of a settlement. In Handeni town, the change from a nucleated settlement with development concentrated in the town centre to a sprawling settlement expanding toward the periphery was triggered by the change in the administrative status of the town. The reorganisation of land uses in Handeni town followed a similar pattern to cases studies analysed by Lazaro et al. (2017) and Steel & van Lindert (2017). The study by Ibrahim et al. (2018) of the transformation of a village

to a small urban centre in Sudan highlights that the process involve transformation of both building structures and infrastructures; similar pattern of changes was observed in Handeni town.

Diverse factors influence changes in urban structure and activities in urban centres (Beall & Fox, 2009). However, the alteration in land use and spatial urban growth in Handeni has largely been a result of population growth, failure to regulate land uses in the town, and external forces such as development of roads to surrounding centres. Population growth increased demand for residential land. The study found that rapid population growth in the study area stimulated rural-urban interactions and the growth of socio-economic activity.

Population growth in small urban centres leads to settlements growth and the conversion of agricultural land to settlements (United Nations, 2014). This had a negative effect on agricultural productivity in Handeni town because the low-technology agriculture in the area requires extensive areas for production. Physical accessibility is a critical factor for accessing activities, destinations and services; the more extensive the transport network, the more impact it has on growth (Litman, 2017). The opening up of peripheral areas through road construction attracted development of settlements in these areas.

Extensive commercial and services-oriented activities in consolidated areas in Handeni town, especially around the CBD, stimulated settlement growth; while the lack of commerce and services in peripheral areas held back implementation of plans for their development. This supports the theory that the peripheral areas are mainly dedicated to horticulture and other primary economic activities (Fujita, 1989; Meyer & Esposito, 2015). The case of Handeni reveals that discussion on growth characteristics of small urban centres needs to take account of their rural components, especially in Sub-Saharan Africa where urban and rural life are interconnected.

Well-developed urban services in Handeni town compared to its surrounding settlements attracted people from the surrounding centres to move to the town to access these services. As discussed in literature on central place theory (Getis & Getis, 1966; Hughes, 1972), high-level centres in the urban hierarchy affect activities of the lower centres by influencing interactions. In the case study, this was manifested by the movement of people from the lower-level centres to Handeni to engage in

various socio-economic activities. The development of services at Handeni Town not only enhances regional growth through increased interactions but allows sharing of resources with the surrounding areas. Surrounding settlements use Handeni town to source most of their household supplies and also as a source of employment and income. As socio-economic activity changes and grows, so land use changes and the town expands.

Unregulated settlement growth results on informality and piece-meal development (Yamungu, 2019). The majority of urban areas in most developing countries, particularly small urban centres, developed without land use regulation or planning (URT, 2014b; Sonter et al., 2015; Verburg et al., 2009). Since unregulated development starts at the earliest stages of development of a town, as was the case in Handeni town, management of land uses in emerging town centres needs to begin immediately, before they become established.

The growth of Handeni town involved the replacement of land uses in the central areas and expansion of the peripheral areas, in conformity with urban land use theory, that links settlement expansion to the growth of socio-economic activity (Schwirian, 2007). This is evident both in the central town area, where residential uses are replaced by commercial ones, and at the periphery where agricultural land is replaced by settlements.

Changes in land use in the Handeni are driven more by individual decisions rather than by plans for urban growth. Unplanned settlements in Handeni town reflect the limited financial, technological and human resources capacity of the Local Government Authority to promote planned settlement development. Other studies have also concluded that land use changes in growing small urban centres are influenced by both internal management of land uses and external forces (Hinderink & Titus, 2002; Kundu & Sarangi, 2007). Internal management includes the way that laws, policies, regulations and skills are applied during the development process. Since Handeni town grew largely through unregulated land use development, growth of large parts of the settlement has occurred outside the law.

10.5 Theoretical contribution by the study

The study has employed two theories, namely, central place theory and urban land use theory to explore land use change dynamics in the emerging small urban centres.

Despite the capacity of theories to explain general characteristics of urban growth, contexture considerations raise important issues that challenge their ideas on patterns of settlement growth. The theory of urban land use, for instance, relates urban land uses to population growth and socio-economic development, and suggests that urban sectors expand along infrastructure routes, with separation of populations with different levels of socio-economic well-being. In Handeni town, people of different income groups settled in different sections of the town based on their occupation. Since most urban areas in developing countries (including Handeni town) have deficient land use control and management mechanisms, separating individuals according to socio-economic characteristics doesn't occur, which is at odds with these theoretical ideas.

The idea that urban growth takes the form of outward expansion from a central core did not correspond to the pattern of urban growth observed in the case study area. Peripheral areas greatly influence changes in land use in the small urban centres. Markets for crops from rural areas and access to services in the nearby town stimulate socio-economic activity. Moreover, the spatial growth of settlements in emerging urban centres such as Handeni Town is affected by climatic features, such as shortage of precipitation and scarcity of water resources. These forces compel people to vacate rural areas and abandon their economic activities there. The effects are widely felt because most residents in these locations depend on primary socio-economic activities, which are sensitive to environmental change.

Central place theory on the other hand focuses on the relation between the core areas and the periphery, while underestimating the importance of socio-economic development trajectories of poor communities. For instance, as seen in Handeni, poor people will opt for cheap and affordable land far away from services in the core area. The theory also generalises the transport of goods and people within a region, without considering the importance of specific modes of transport, routes, and their physical condition. The theory focuses on the existence roads and other infrastructures without looking at their functionality and how this can constrain the development process. People's residential location in developing countries may reflect individual choice, but family and social relations also play a great role. Some features of the central place theory are therefore irrelevant in small urban centres like Handeni town. This is perhaps

because of its immature land use organization, which is a typical growing urban centre in developing countries.

Thus, the economic development of small urban centres in developing countries exhibits features that are different from developed world. These include the importance of political motives, which can affect the social, economic and administrative development of urban centres. Urban centres emerging within the context of regional development in developing countries have to go through various stages and changes before they can attain town status. As they grow, changes in socio-economic activity over time differ with location, and the degree of infrastructure development. A theory of emerging small urban centres should therefore consider area-specific, socio-cultural and economic activities, institutional frameworks such as laws and policies guiding growth, and level of technology used to manage and control development.

Consideration of the surrounding centres is crucial for understanding urban growth in developing countries. Before a small urban centre becomes independent it is dependent on other surrounding small and bigger centres for the majority of socio-economic resources. The above reflections on both theories considered in this study of land use change and urban growth process in the Global South are summarised in Table 15. Each theory has strengths and weaknesses when applied to describe urban development in developing countries.

Table 15. Reflections on theory and fieldwork findings

SN	Theory	Key Ideas	Handeni Town	Remarks
1.	Concentric model	Land development grows outward from the town centre with low-income families located at the centre. Rent paying capacity determines location of socio-economic groups. Urban land use expands in rings emanating from the central area.	Land development started from the town centre with a mix of different socio-economic groups. Low-income households locate along the roads leading to the periphery areas. Land development takes place close to services and along the roads.	Management of land and ownership status affects the growth of the town and land access. This contradicts the assumptions of the model, which rely on natural scenarios.

SN	Theory	Key Ideas	Handeni Town	Remarks
2.	Sector model	Urban land use develops in sectors emanating from the town centre in the socio-economic clusters. Roads infrastructures separate different sectors of economy	There are mixed socio-economic clusters dominated by unregulated land use. There is limited development of the road network within built-up areas of the town.	There is no clear separation of clusters by socio-economic status as the theory proposes. People of different statuses cluster together in the same locations, close to infrastructure and services.
3.	Central place	High order centres dominate the activities of the surrounding lower order centres. There is constant movement of people and activities between higher and lower centres in the hierarchy. The line of command moves from the higher to the lower order centres.	Handeni town is the high order centre in the district/area, attracting activities and people from surrounding centres. Movement of people between Handeni town and the surrounding centres accompanied by movement of goods and services. Handeni Town has command over activities and services in the lower order centres.	The situation in the ground largely supports the theory. From a wider perspective, Handeni town is also a lower-order centre in relation to the other major towns. A town's status depends on what level of the hierarchy it is being examined.

The discussion on theory and findings has highlighted the correspondence between the findings and the two theories with respect to how growth of small urban centres is driven by their interactions with surrounding areas, allowing the flow of goods and people between them.

11. Conclusion and Recommendations

11.1 Study conclusion

This study examined the process of change in land use and spatial urban growth in Handeni town, one among the many small urban centres in the developing countries of Sub-Saharan Africa. The motive for study was the fact that, for a long time, discussions on urban issues and characteristics of urban centres have focused on secondary towns and cities while ignoring small urban centres (Roberts, 2014; Hugo & Chapman, 2004; Bell & Jayne, 2006; Erickcek & McKinney, 2006). The policies and laws guiding urban development normally disregard the differences between small urban centres, secondary towns and cities. As argued by various authors, little attention is given to the development of land use in small urban centres' over time, hence there is limited research about their growth characteristics to inform policy development. This study aimed to contribute to the body of knowledge on the processes of growth and land use transformation in a typical small urban centre and to the theoretical understanding of urban growth in developing countries.

The thesis draws on and contributes to national and international policies such as the Tanzania development vision 2025, which advocates for high quality livelihoods and adaptation to climate change (URT, 1996), the UN Sustainable Development Goals (Goal 11), and the UN Habitat programme aimed at making cities and human settlements inclusive, safe, resilient and sustainable (Diaz-Sarachaga et al., 2018). The discussion in the thesis on how these policies impacted on the growth and location of urban centres responded to the research question on the contribution of policy to the growth of urban centres. The thesis also argued that cities

should use land resources and surrounding natural resources sustainably, to mitigate climate change impacts, while paying attention to patterns of growth and interactions with surrounding settlements. The direction and focus of these policies will spearhead the sustainability of urban centres' growth.

In the discussion of how the settlement evolved and grew over time, the thesis revealed that the settlement started out as a small rural centre provided with basic socio-economic services. Its growth was influenced by its interactions with the surrounding rural as well as urban centres. However, the spatial growth and land use organisation of Handeni town was contrary to urban land use theory in some ways. This includes the theory of clustering of people based on socio-economic strata. Contrary to the proposition that low-income families are located away from affluent ones in areas with different land uses, growth in Handeni town was characterised by mixed socio-economic development.

On the question of how land access procedures influenced growth of the small urban centre, the thesis found that changes in land use and spatial urban expansion in the case study area were mainly influenced by forms of access to land and simplified development processes in which individuals play a central role. The study further revealed that urban growth characteristics in the study area were affected by the mismanagement of land transactions. The predominance of informality in land transactions and urban development, horizontal settlement expansion aligned with the road infrastructure, and lack of basic social services in some potential urban areas, undermined coherent settlement development, and adversely affect the sustainability of the town and its environment.

The analysis of growth patterns found that the case study area exhibited both linear and radial settlement patterns of growth. These two forms of settlement growth reflect patterns of service provision, whereby most services were located in the CBD. Developers are interested in places with easy accessibility along the major roads. This was also tied up with the growth of socio-economic activity, which increases land values and motivates the provision of basic social services. The predominance of horizontal growth makes it more difficult to organise spaces to incorporate basic social service, open areas for communities, waste management, and environmental protection. Unless the development of small urban centres is pre-planned and adequately resourced, with measures to protect sensitive

areas, the future of cities emerging from existing small urban centres will be in jeopardy.

These considerations call for the planning of regional networks, including the identification of potentials for growth in emerging urban centres. Effective land use planning and development control should take account of local contexts and available resources. As revealed out by Cohen (2015), the structure and organisation of urban governance has undergone changes over time, and there is now a recognition that solutions to problems should consider local context rather than being applied at national level. Also authorities responsible for land use development in the emerging small centres should consider mobilising their own internal resources as this is more sustainable than relying on central government support.

The settings of different urban areas/centres provide for varying governance processes and strategies for land use development. Small urban centre should be considered as separate category rather than being mixed up with other settlement categories, i.e. cities (capital or regional cities) and rural (regions and villages). This is because the small urban centres have different features, and are subject to different forces leading to varying rates of development. Their context-specific characteristics can limit and/or promote growth. The assumption that all urban areas growth will take the same form and occur at the same pace risks overlooking important internal factors promoting or hindering urban development. The current framework for classification of the small urban centres i.e. as either urban (cities/regional towns) or rural (regional centres/villages), fails to recognise the specific contexts and needs of small urban centres. These relate, among other things, to socio-economic activity, infrastructure investment, budget allocations and their role in national development.

Therefore, the study recommends that planning of land uses in emerging small urban centres should be done when they are in their infancy, i.e. before the land use development reaches consolidation or saturation stages, to ensure sustainability and protection of the environment. Such land use plans (structure plans) should not necessarily be detailed like masterplans for cities, but rather provide a broad-brush vision of the structure or zoning major land uses, by developing general planning schemes and guidelines for land use development. The enforcement of such regulatory instrument has to build upon existing grass-roots structures at *Mtaa* and ward level and ensure they play active role. To improve land governance in small urban

centres, broad-brush generalised zoning plans should be co-produced with active involvement of these grass-roots community leaders as well as local non-government actors. This will enable control of settlement expansion and roads infrastructure development, thereby protecting the surrounding environmental resources from encroachments.

Land use development in such small urban centres can also be led by *Mtaa* and ward/sub ward leaders. The leaders at this government level will require basic training in land use and development planning, including dos, and don'ts before taking on this role. The training local leaders at this level of government in land development skills is crucial since they are routinely involved in development and land use matters and have direct experience and challenges involved. At this level of land development governance, the involvement of grassroots leaders makes it easier to provide appropriate guidance for the development of local areas. At present, grass roots leaders' lack of knowledge of land use matters leads them to unknowingly support inappropriate development proposals, hence their actions amplify existing problems.

11.2 Generalisation of the study findings

While Handeni town displays context-specific growth dynamics, some findings of the case study can be generalised to similar cases. Generalisation is possible despite the diversity of small urban centres with respect to aspects such as infrastructure development, make-up of socio-economic activities, political and administrative status and other local characteristics.

Given the findings on growth dynamics and land use changes of small urban areas, based on the case of Handeni town, it is evident that three factors, namely, context, the role of individuals and infrastructure improvement, play crucial roles in the development of small urban centres. Context is important for an understanding of growth characteristics of small urban centres. Individual actors with knowledge of local contexts are able to provide the required information and guidance on development, as discussed. Improved infrastructure is also crucial for the development of the small urban centres in developing countries. The identification of these three fundamental factors affecting land use change and urban growth dynamics, allows the finding of this study to be generalised to other small

urban centres in developing countries with similar socio-economic and political contexts.

11.3 Policy recommendations

This study has explored the growth dynamics of emerging small urban centres and resulting land use changes. From the findings, the study revealed that the small urban centres grow from the interaction of people and activities in the urban centre with those in surrounding rural areas, as well as in other small urban centres. The movements of people and goods between these areas are influenced by trade and exchange of services. The study further found that land use change and hence urban expansion is the outcome of mismanagement and inadequate control of land development process. Based on these findings and the subsequent discussion, the following policy measures are recommended:

- Small urban centres are neither typically rural nor urban because activities from both areas sustain their growth. Policies focusing on urban or rural development should not overlook the specificities of small urban centres in the areas concerned. Policies targeting urban and rural centres as set out in the Tanzania Development Vision 2025 should be implemented in ways that take account of contextual characteristics of the kind revealed by the case study. Blanket generalisation of land development approaches applied in the cities and their transfer to emerging centres impose stringent regulation on small urban centres which they cannot cope with or implement.
- The categorisation of towns is confusing and at times contradictory. The President's Office and the ministry responsible for human settlements development have contradictory criteria determining the status of urban centres; hence they have different definitions and procedures for classifying them. Harmonisation is required regarding factors like density of buildings, in order to establish common criteria for the classification and recognition of urban centres. Policies should identify and prioritise small urban centres by establishing a special section/department to deal with their development.

- The land uses in the small urban centres have both rural and urban characteristics. Policy should aim to protect the surrounding environmental resources so as to make human settlements inclusive, safe, resilient and sustainable, as advocated by the UN Habitat Goals. Also the National Land Policy section 6 (URT, 1995) recommends vertical development of urban settlement for the protection of the surrounding environmental resources. This recommendation should be taken on board and implemented, to replace current, largely horizontal development, which adversely affects surrounding natural resources including water resources, and thereby also the quality of life of urban residents.
- Finally, climate change is one the main environmental phenomena affecting socio-economic activity. Small urban centres, as discussed in earlier sections are located at the transition point between villages and major town or cities. Most of these towns have both urban and rural characteristics and are hence affected by challenges emanating from both sides. Environmental destruction is a threat to these towns, hence policy should and provide support for socio-economic activities which contribute to environmental conservation and protection of the natural land-scape. Allowing uncontrolled growth of unregulated settlements not only destroys their urban character but also threatens the livelihoods and life of urban communities. Implementation of policies and laws on environmental protection are of critical importance for these areas.

11.4 Areas for further research

This research has explored land use change and spatial growth of small urban centres in developing countries. The research covers the urban growth dynamics and socio-economic development of urban settlements. Areas which need further exploration include:

- i. Analysis of the land cover changes resulting from spatial urban growth and the effects of land use changes in small urban centres on the surrounding environmental resources. This study analysed patterns of change of settlements, land uses, interactions and socio-economic development. Land cover change was not analysed in

detail. The study of cover change will enable a deeper understanding of spatial (horizontal) growth and its effects on surrounding environmental resources, as well as the implications for action on climate change.

- ii. The growth of small urban centres as revealed by this study is the outcome of interactions with surrounding urban and rural centres. The findings reveal that the rural-urban interactions played an important role and impacted on the growth of the case study urban centre. Further research is needed to explore the impacts of these interactions on the surrounding rural settlements. What effects do growing interactions with their adjacent small urban centres have on the surrounding rural?

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Popular Science Summary

Managing growth of urban centres forming urban regions is important in addressing urban challenges and regional development. Sharing of socio-economic activities and land use development mechanisms with the adjacent centres provides for the economic and social sustainability and welfare of the communities.

The study recommends on the land use development approaches at grass root level to guide the initial urban growth processes. The development of various land use and access mechanism to land for settlement development will enable the location of facilities and distribution of various land uses at their economic value and growth characteristics. Land development at the emerging centres should therefore be planned and organised with the consideration of local context and growth characteristics in its development stages for land use organization and services provision.

Populärvetenskaplig sammanfattning

Att hantera tillväxten av stadscentra inom urbana regioner är viktigt för att tackla utmaningarna med både stads- och regionalutveckling. Delning av socioekonomiska aktiviteter och metoder för markanvändning med intilliggande centra främjar ekonomisk och social hållbarhet samt välfärd för samhällena.

Studien föreslår att vi låter invånarna vara med och påverka hur marken används i de tidiga stadierna av stadens tillväxt. Genom att skapa sätt att styra användningen av marken och tillgången till områden för bostadsbyggande, så kan vi förbättra var faciliteterna placeras och fördela olika typer av markanvändning utifrån deras ekonomiska värde och potential för tillväxt. Därför bör utvecklingen av markanvändningen i de växande områdena planeras och anpassas efter lokala förhållanden och stadens specifika tillväxtnönster i de tidiga skedena av utvecklingen. Det ger oss möjlighet till en mer effektiv markanvändning och bättre service för invånarna.

Appendix I Household questionnaire

Section I: Demographic and socio-economic information

1. Age.....
2. Gender.....
3. Household.....
4. Marital status.....
5. Total number of family members (M)..... (F).....
6. Time lived in the area/town.....
7. Education level of H/Head.....

Instructions; circle the correct answer (s)

8. What is your main economic activity which makes your survival in this town?
 - a) Business activities
 - b) Agriculture (animal keeping or farming or both)
 - c) Employment
 - d) Mining
 - e) Others (mention).....

9. Where do you conduct your economic activities?
 - a) In Handeni town
 - b) Outside the town but in the surrounding villages (mention)
 - c) In other districts/towns (mention)
 - d) Others (mention).....

Section II: Interaction to the surrounding areas

10. Are you native to this town?
 - a) Yes (if yes jump to question 5, if no continue)
 - b) No

11. If no, where were you living before coming to this area?
 - a) Within the district but outside the town
 - b) Within the region but outside the district
 - c) Within the country but outside the region
 - d) Others (specify).....

12. What motivated you to come and live in this area?
- a) Business reasons
 - b) Seek employment opportunities
 - c) Join relatives/spouse
 - d) Education purposes
 - e) Enjoy urban life
 - f) Destination is easily reached
 - g) Others, (explain).....
13. What made you leave the place you were living before?
- a) Poverty at the place
 - b) Conflict over resource use
 - c) Transfer
 - d) Poor farms yielding
 - e) Inadequate services provision
 - f) Calamities and disasters
 - g) Others, (specify).....
14. For how long have you been living in this town?
- a) Less than five years
 - b) Five to ten years
 - c) Ten to fifteen years
 - d) More than fifteen years
 - e) Others, (explain).....

Section III: Land and settlement development issues

15. Do you own a house/plot in this town?
- a) Yes
 - b) No..... (If no jump to question no. 10)
- 16) How did you acquire your plot?
- a) Buy through local government procedures
 - b) Buy from owners though land brokers
 - c) Buy from owners without land brokers
 - d) Got as resettlement process by the government
 - e) Inherit from relative
 - f) Others, (specify).....
17. Are land brokers crucial in land transaction process in this town?
- a) Yes (why)

b) No

18. Which process did you follow during house construction
- a) Constructing without getting building permit
 - b) Pass through government procedure where I was given building permit
 - c) I just bought a house
 - d) Others, (specify).....

19. Is your plot surveyed?

- a) Yes
- b) No

If yes do you have a certificate of ownership?

If no, why are you plot not surveyed? (Give reasons)

20. What are the other supplementary economic activities performed by household members?
- a) Registered formal business
 - b) Informal business activity
 - c) Farming
 - d) Animal keeping
 - e) Others, (specify).....

21. Where do you conduct these economic activities apart from the main activity?
- a) Within the town areas
 - b) Outside the town areas
 - c) Outside the town with partners in other locations
 - d) Within and outside the town
 - e) Others, (explain).....

22. For how long have you been doing the kind of activities you are performing?
- a) Less than five years
 - b) Five to ten years
 - c) Ten to twenty years
 - d) More than twenty years
 - e) Others, (specify).....

23. How often did you change your economic activities in this area?
Why?
- a) Once (reason)
 - b) frequently (reason)
 - c) Never changed

Section IV: History of town development

24. Do you know the history of growth of this town?
- a) Yes (explain)
 - b) No
25. How did you know this town?
- a) I was born here
 - b) I was living closer to it
 - c) Story from my relatives/friends
 - d) Through traveling
 - e) No answer
26. What was your primary goal of coming to this town?
- a) Business activities
 - b) Farming
 - c) Visiting relatives/friends
 - d) Employment transfer
 - e) Others, (specify).....
27. What challenges do you encounter in doing your activities in this town?
- a) Lack of market
 - b) Difficult in transporting products
 - c) Unfriendly regulations
 - d) Low infrastructure facilities
 - e) Others, (specify).....
28. How do you manage the challenges?
- a) Using nearby towns/areas
 - b) Using the challenge as opportunity
 - c) Changing activities
 - d) Others (specify).....

29. Are there changes in land access and transaction process over time in this town?
- a) Yes
 - b) No
30. What are the changes in land access and transaction process in this town?
- a) Addition in number of stakeholders
 - b) Reduction in number of stakeholders
 - c) Too long process
 - d) Size of land area transacted
 - e) Others
31. How do you see the location of this town relative to your economic activities?
- a) Strategically located because it has a lot of opportunities
 - b) Poorly located because it does not favor my livelihood activities
 - c) I don't see if this town's location has any influence to my economic activities
 - d) Others (explain).....

Section V: Basic social services provision

32. In your opinion which services are lacking/inadequate in this town?
- a) Healthy services
 - b) Education facilities
 - c) Safe and reliable water
 - d) Transportation facilities
 - e) Market services
 - f) Others, (specify).....
33. Does the inadequacy of services and facilities affect your stay in the settlement?
- a) Yes
 - b) No

If yes, how?

- a) It compels my movement to other areas often

- b) It increases shifting of people to other areas
 - c) I don't know
 - d) Others, (specify).....
34. Where do you normally go to access services which are not available in this area?
- a) Within the district but outside the town (name the place)
 - b) Outside the district but within the region (name the place)
 - c) Outside the region but within the country (name the place)
 - d) Others, (specify)
35. Which kind of services do you normally go to access in other areas/towns?
- a) Healthy services
 - b) Markets
 - c) Education
 - d) Reliable and safe drinking water
 - e) Others, (specify).....
36. What is the common type of transport you normally use when moving within the town?
- a) Public transport (dala dala)
 - b) Private car
 - c) Motorcycle
 - d) Bicycles
 - e) Others (specify)...
37. What are the main types of transport you use to get outside the town?
- a) Public transport
 - b) Private car
 - c) Motorcycle
 - d) Bicycles
 - e) Others, (specify).....
38. Which economic activities are mostly effected by the growth of urban activities in this area?
- a) Farming
 - b) Animal keeping

- c) Forests
- d) Reserved land

39. What is your estimated monthly income?
- a) Below 100,000 per month
 - b) Between 100,001 and 200,000 per month
 - c) Between 200,001 and 300, 000 per month
 - d) Between 300,001 and 400,000 per month
 - e) Between 400,001 and 500,000 per month
 - f) Above 500,0001 per month
40. What opportunities do you see within this town/area?
- a) More people coming in (available market)
 - b) Reliable transportation
 - c) Availability of services
 - d) Political interest

Appendix II Interview Guide

Interview guide to local leaders (ten cell, sub ward and ward leaders)

- 1) How can you describe Handeni town for the time you have lived here?
- 2) What can you say about the changes in land use and its transaction process over time?
- 3) What can you comment on the general urban growth of Handeni town over time?
- 4) Which mode of land access is so common in the town and why do you think it dominates?
- 5) Are there changes in the way settlement has been developing over time? What changes, how does it change? Why do you think it change?
- 6) What factors do you think influence settlement development in Handeni town?
- 7) Are people interacting with the surrounding settlements? Which settlements? Why do they interact? How do they interact?
- 8) Building structure in the town is seen to change, what changes can we notice? Why do you think the changes happen? Where do you access building materials?
- 9) What changes can you notice in the environment, which areas were not developed before 2000 but now settlement has grown? Why do you think it is possible for the development now?
- 10) Can you say more on urban changes in terms of roads and transport you think is important to be known?
- 11) Do you know history of Handeni town growth? Can you narrate?

Interview guide to local residents

- 1) For how long have you lived in this settlement?
- 2) What motivated your stay at this area?

- 3) What comments do you have on the growth changes of this town?
- 4) How did you acquire your plot? Is it planned? Do you have Title deed?
- 5) What do you consider when buying a piece of land/plot?
- 6) Do you have any story about land use, activities, urban growth which you heard from your forefathers?
- 7) Town characteristics, economic activities and change in land uses?
- 8) What is the roughly composition of people in Handeni town?
- 9) Do you know the emergence or growth characteristics of Handeni settlement?

Interview guide to local government staffs

- 1) The number of years worked in the area, experience of growth changes in Handeni town.
- 2) Challenges of land development and settlement growth in Handeni town
- 3) Interaction of activities, land use organization and growth of settlements in the town
- 4) Plans for settlement planning and ongoing projects if any.
- 5) Is the Handeni settlement planned? What percentage of settlement is planned and unplanned? Why do you think lead to this growth characteristic?

Interview guide to land brokers

- 1) Main mode of land access in Handeni town
- 2) Who affects land development and access?
- 3) What trend of development in land use has affected settlement growth?
- 4) Which areas in Handeni town attracting development and why?
- 5) Where do people who buy land in Handeni town come from? Why do they come to the town?
- 6) What changes in settlement development in Handeni town can you comment?
- 7) Do you know any historical development of Handeni town?

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This thesis explores the growth dynamics of small urban centres in developing countries of Sub-Saharan Africa (SSA), which for a long time have been neglected by urban analysts. The thesis contributes to knowledge on settlement evolution, growth dynamics, changing settlement patterns, and land use reorganisation. The study lifts the importance of the context specific roles of individuals, and Infrastructures for guiding settlement growth.

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