

**Exploring Emerging Human Settlement Forms
and Urban Dilemmas Nexus:
Challenges and Insights from Hopley Farm, Harare,
Zimbabwe**

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DECLARATION

I, **Rajab Abraham Matamanda**, declare that the thesis that I herewith submit for the doctoral degree Doctor of Philosophy at the University of the Free State, is my independent work, and that I have not previously submitted it for a qualification at another institution of higher education.



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LIST OF ACRONYMS AND ABBREVIATIONS

ASA	Applied systems analysis
CBD	Central business district
COZ	Constitution of Zimbabwe
DPP	Department of Physical Planning
ESAP	Economic Structural Adjustment Programme
GHK	Garikai/Hlalani Kuhle
GIS	Geographic Information System
GNU	Government of National Unity
HCMP	Harare Combination Master Plan
LDP	Local Development Plan
MDC	Movement for Democratic Change
MLGPWNH	Ministry of Local Government, Public Works and National Housing
MP	Member of Parliament
NGOs	Non-governmental organisations
NHP	National Housing Policy
NTD	Neo-traditional Development
NUA	New Urban Agenda
OECD-CDRF	Organisation for Economic Co-operation and Development/China Development Research Foundation
PHA	Public Health Act
QUAL	Qualitative
quan	Quantitative
QGIS	Quantum Geographic Information Systems
RSA	Republic of South Africa
RTCPA	Regional Town and Country Planning Act

RTPI	Royal Town Planning Institute
SDGs	Sustainable Development Goals
TSP	Transitional Stabilisation Programme
UCA	Urban Council's Act
UCAZ	Urban Council's Association of Zimbabwe
UDCA	Urban Development Corporation Act
UDCORP	Urban Development Corporation
UNICEF	United Nations International Children's Emergency Fund
USA	United States of America
USAID	United States Agency for International Development
ZANU-PF	Zimbabwe African National Union – Patriotic Front
ZimAsset	Zimbabwe Agenda for Sustained Socio-Economic Transformation
ZimCodd	Zimbabwe Coalition on Debt and Development
ZimStat	Zimbabwe National Statistics Agency

ABSTRACT

With the proliferation of emerging settlements that lack basic services, especially in the developing world, there is increasing global commitment to the planning and development of sustainable human settlements over the last decades as espoused in the Sustainable Development Goals (SDGs). Using Hopley Settlement in Harare as a point of departure, this study explored emerging human settlement forms and urban dilemmas nexus with regard to the challenges and insights in accessing water, sanitation, public transport and safety. Classical theories on settlement forms, normative theories which include the theory of good city form, and functional theories which include the machine model, as well as the city as an arena of conflict, were used to inform the theoretical framing of the study. Consequently, the sequential mixed method design was used through which survey design informed the quantitative component, while a phenomenological design informed the qualitative component of the study. A total of 450 questionnaires were administered to the household heads in Hopley, while 20 in-depth interviews were conducted with selected residents. Twenty key informants were interviewed, comprising of 10 informants from both the private and public sector. Remote sensing techniques and the Geographical Information System enabled the mapping and classification of Hopley's emerging settlement. The applied systems analysis methodology helped in developing the causal loop diagrams which showed the causal relationships between the emerging settlement form and dilemmas experienced by the residents.

The study found that the sprawling settlement form characterised Hopley which was in contrast to the envisaged compact form. It emerged that this contrast negatively impacted on the citizens' access to basic services. First, uncoordinated development of human settlements where there is no connection between social, physical and economic issues was identified as a cause of this mismatch. Second, the use of archaic planning approaches and ideologies, undermines the planning process and consequently produces unintended settlement forms. Third, there is too much reactive planning and land use development without it being monitored, hence the emerging settlements do not relate to the envisaged plans. Fourth, political interference greatly compromises urban planning. Fifth, poor governance and planning result from institutional incapacity to address human settlement planning issues which pave the way for political dominance in planning processes. Sixth, these urban dilemmas

experienced by the citizens in accessing basic services are somewhat induced challenges so as to marginalise the poor. Seventh, the collapse of the economy has greatly undermined service delivery and effective planning in the country, hence disconnects between the intended plans and the extant settlement forms.

The study recommended the adoption of alternative technologies to improve on the provision of other basic services such as sanitation and public transportation. The City of Harare should determine the level of contamination of the groundwater in Hopley Settlement to establish the level of contamination of the groundwater in Hopley. Local authorities must be guided by local realities and formulate strategic and integrated planning approaches such as strategic and integrated development planning. The local governance landscape in Zimbabwe needs to be improved such that the issues in human settlement planning are administered in a way which helps to promote the establishment of sustainable settlements where human well-being is prioritised. The Government of Zimbabwe and the City of Harare should promote the constitutional rights of the poor with regard to accessing basic services. The study concluded that there were deeper issues which explained the disconnect between the emerging human settlement forms and urban dilemmas nexus and that the applied systems analysis methodology assisted in identifying the causal relationships between these disconnects which eventually assisted in policy formulation directed at diagnosing the appropriate issues.

Key terms: *Human settlement, emerging settlement, settlement form, urban planning, basic services*

PART I
SETTING THE SCENE TO THE HUMAN SETTLEMENT
AND SERVICE PROVISION LANDSCAPE
IN ZIMBABWE

This thesis is divided into two parts. Part I sets the scene by introducing the study which explores emerging human settlement forms and urban dilemmas nexus in Hopley, Harare.

The introduction chapter provides an overview of the study as it outlines the problem statement, aims and objectives and guiding the study. The literature review and related concepts and theories on emerging human settlement forms and urban dilemmas are presented and analysed in Chapters 2 and 3. Chapter 4 presents and justifies the methodology and methods used to inform this study. Lastly, the socio-economic, political and legislative context in Zimbabwe is examined in Chapter 5.

Chapter 1

INTRODUCTION AND OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Human settlements emerging in Zimbabwe are associated with a myriad of urban dilemmas depicting “*The city of the dreadful night*” that characterised European cities during the Industrial Revolution¹ (Hall 1996:13). Urban dilemmas are urban problems associated with governmental planning and are especially rooted in social or policy planning, relying on elusive political judgement for resolution (Rittel & Webber 1973:160). These urban dilemmas are complex, have no definite and ultimate solutions and overall, they are inherently social. They include, but are not limited to, urban insecurity, lack of access to adequate water and sanitation, poverty, unemployment, gender inequality and disease epidemics such as cholera, Ebola and typhoid. For this study, these urban dilemmas will refer to challenges experienced by citizens in Hopley Farm (hereafter referred to as Hopley), Harare, Zimbabwe, in accessing basic services. The focus will be on citizens’ access to water, sanitation, public transportation and safety.

The complexity of human settlements makes it difficult for urban planning to understand the extent, nature, causes and consequences of urban dilemmas concomitant with emerging human settlements. The challenge emanates from the fact that, when conceived as systems, most proponents argue that human settlements are constituted of a mosaic of multiple subsystems which are intricately connected and enmeshed (Bai, Surveyer, Elmqvist, Gatzweiler, Guneralp et al. 2016:69; Batty 2008; Beck, Das, Thompson, Chirisa, Eromobor et al. 2018; Chadwick 1971; Dalberg 2016).

From the perspective of Yiftachel (2009:241), emerging human settlements are characterised as gray spaces which are a result of indefinitely positioning populations between the ‘lightness’ of legality, safety and full membership, and the ‘darkness’ of eviction, destruction and death. Such gray spaces emerge as settlement forms which are best understood through an articulation

¹ The Industrial Revolution refers to the transition from an agricultural-based economy to one that was anchored on industry and manufacturing. The revolution was birthed in Britain in the eighteenth century from where it spread to other parts of the world. It was associated with development in technology, energy – electricity, transport and communication – airplanes, automobiles and radio and the invention of new machines.

of not only what appears at the surface, that is, the physical form of the settlement. Rather, there is a need to explore a number of issues such as the socio-economic system, political system, governance system, as well as the urban planning ideologies and systems which may be a result of the perpetuation of the dilemmas experienced by the inhabitants of such spaces. Therefore, for long urban planning has had a fetish towards the physical form of settlements with little regard for the integration of the socio-economic issues. Yet, the international agenda on human settlement planning and development is advancing ideologies on creating settlements which promote human well-being. This is evident from the Sustainable Development Goal (SDG) (specifically SDG 11) which envisage the creation of settlements which are inclusive, sustainable, resilient and safe (Parnell 2016).

Considering the centrality of human settlements in addressing challenges facing sustainable development, this study thus sought to explore the emerging human settlement forms in Hopley, Harare, and the urban dilemmas nexus. The study adopts an applied systems analysis (ASA) methodology in exploring this nexus. An understanding of the connections and relationship between the emerging settlement form and urban dilemmas may be a positive step towards the creation of liveable, sustainable and just cities as espoused in the country's legislative and institutional framework and agenda. The dawn of independence in Zimbabwe in 1980 resulted in various reforms by the government to address the socio-economic and spatial injustices inherited from the colonial past. The initiatives by the government have been towards promoting citizens' access to basic services through the development of sustainable human settlements. These reforms have negatively and positively transformed the form and function of human settlements. This study thus makes the following three claims in relation to the emerging human settlement forms and urban dilemmas nexus in Harare:

1. The absence of institutional and legislative capability to address issues in human settlement planning and provision of basic services such as water, sanitation, public transport and security in cities of the Global South is pervasive.
2. This institutional and legislative incapability has been stagnated by modernist urban planning rooted in colonial systems that subsequently produce unintended settlement forms.
3. Political tensions and power struggles present in the city of Harare also have multifaceted implications on the emerging human settlement forms and urban dilemmas nexus.

Ultimately, the lived experiences of citizens are compromised since they are forced to improvise on accessing basic services.

1.2 PROBLEM STATEMENT

Several policies and legislative instruments inform and guide the planning and development of human settlements in urban Zimbabwe. These policies and legislation (discussed in Chapter 5, section 5.4) are aligned with regional and international conventions and protocols on settlement planning which envisage the creation of human settlement forms that are compact, sustainable, resilient and safe (United Nations 2016a: Online). The ideal human settlement forms are identified as facilitating citizens' access to basic services and, above all, support human well-being (Gumbo 2014; United Nations 2016b:4). Albeit such pronouncements, there is an increase in the emergence of both formal and informal settlements in the city of Harare characterised by a sprawling settlement form (Chipungu 2011; Gumbo 2015; Matamanda 2019; Muzulu 2013). These emerging settlements are often characterised by a lack of social services and amenities which contradicts the envisaged human settlement forms and service delivery landscape (Adarkwa 2014:358; Chirisa & Matamanda 2019; Kadi, Halingali & Ravishankar 2012; Matamanda 2019; Muggah 2012; Nuhu & Mpambije 2016). Consequently, an increasing number of citizens are forced to reside in emerging human settlements that are disconnected from the formal and constrained urban service delivery system.

The persistence of this situation has various consequences which include health problems as evident from the recurring cholera outbreaks in Harare (Ahmad, Musa, Wei & Jin 2019; Chigudu 2019); spatial injustice, social instability and chaos will increase owing to protests from disgruntled citizens (Matamanda 2019; Tagarirofa & Tobias 2019); the City of Harare will continue to lose enormous amounts of potential revenue from the citizens (Chipungu & Adebayo 2013), while realising the country's envisaged vision 2030 and Habitat III agenda on sustainable urban development, and making the country middle-income will remain utopia (Chirisa & Matamanda 2019). This study, therefore, adopted a multi-disciplinary approach through which key priorities and issues in human settlement planning are explored using the Applied Systems Analysis methodology. The key priority areas include urban studies, governance, spatial justice and access to basic services. This approach extends beyond the typical planning focus and brings together interdisciplinary bodies that include urban and regional planning, sociology and development studies.

1.3 RESEARCH QUESTIONS

The following research questions guided the study:

1. What are the extant human settlement forms and associated dilemmas in Hopley, Harare?
2. To what extent do emergent human settlement forms align with the official land use scheme in Hopley, Harare?
3. What are the dilemmas experienced by Hopley's residents in accessing basic services such as water, sanitation, public transportation and safety?
4. What are the implications of the emergent human settlement forms and dilemmas nexus for effective planning?

1.4 OBJECTIVES OF THE STUDY

The main objective of the study was to explore emerging human settlement forms and urban dilemmas nexus in Hopley, Harare.

The specific objectives of the study were as follows:

1. To characterise the extant human settlement forms in Hopley, Harare.
2. To analyse the official land use scheme in Hopley, Harare in relation to the emergent human settlement forms of the area.
3. To explore the dilemmas experienced by Hopley's residents in accessing basic services such as water, sanitation, public transportation and safety.
4. To draw out the implications of the emergent human settlement forms and dilemmas nexus for effective planning.

1.5 JUSTIFICATION OF THE STUDY

This study explores the emerging human settlement forms and urban dilemmas nexus in Hopley, Harare. In this exploration, I focused on the conceptual and theoretical issues which have helped to understand the seemingly complex human settlement systems. In this regard, I paid attention to theories on settlement form which included normative and functionalist theories. These theories helped in the mapping and classification of Hopley's morphology and extant settlement form. Emphasis was also on the theories and concepts which relate to urban

dilemmas. The integration of these different bodies of theories was meant to facilitate the conceptualisation of the human settlement forms and the urban dilemmas which exist. This approach resonated with the trans-disciplinary approach to the study which focused on urban planning, sociology and development studies. The systems theory is also included within the conceptual scope of the study as it helped in exploring the nexus of Hopley's settlement form and the dilemmas experienced by citizens in accessing basic services.

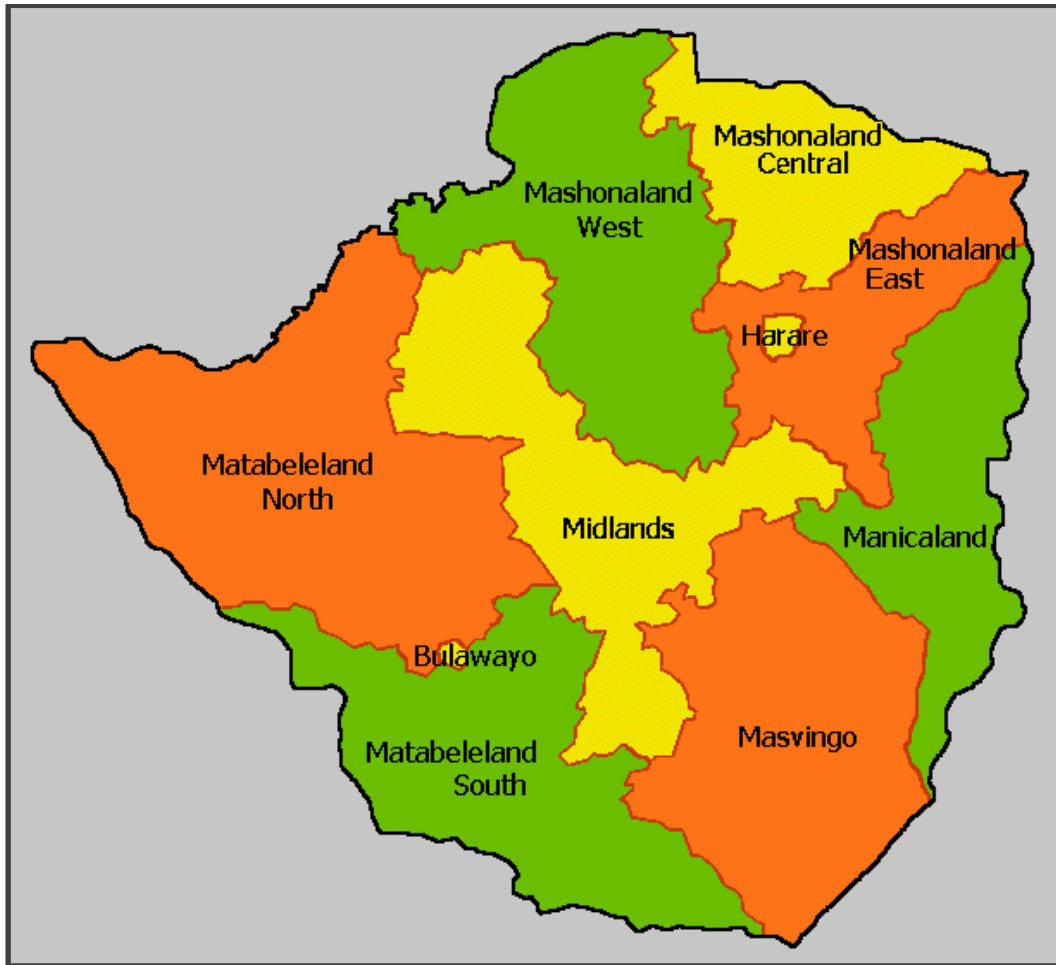
The spatial scope considered the spatial extent of the study. The study was limited to the city of Harare which is the largest city in Zimbabwe. The study focused on Harare because it is the largest urban centre in Zimbabwe, and from the last national census of 2012, Harare accommodated at least 16% of Zimbabwe's population (ZimStat 2013). The increasing population in the city of Harare, therefore, calls for an exploration of the human settlement planning issues and citizens' access to basic services so that lessons can be drawn for the other urban centres across the country. The focus in Harare was on Hopley Settlement which is an emerging settlement in the city. Hopley was selected as it is a case of a settlement which was birthed by a government initiative in 2005. The settlement has many paradoxes as it is home to at least 7 000 households. Additionally, Hopley has become a politically sensitive environment which is 'informally' controlled by the ruling Zimbabwe African National Union – Patriotic Front (Zanu-PF). The focus of the study in Hopley has been on the settlement form as well as service delivery focusing on water, sanitation, public transport and security.

1.6 DESCRIPTION OF STUDY AREA

This section provides a description of the study area. The description entails a brief outline of the socio-economic, geographic and demographic characterisation of Harare. The focus was on Hopley Settlement which is discussed based on the same parameters.

1.6.1 Harare's settlement development and basic service delivery landscape

Harare (previously Salisbury) is the capital and most populous city of Zimbabwe. Harare is located in the north-eastern part of the country in the Mashonaland region (Figure 1.1).



Source: Mudzamiri (2018)

Figure 1.1 Map of Zimbabwe showing Harare

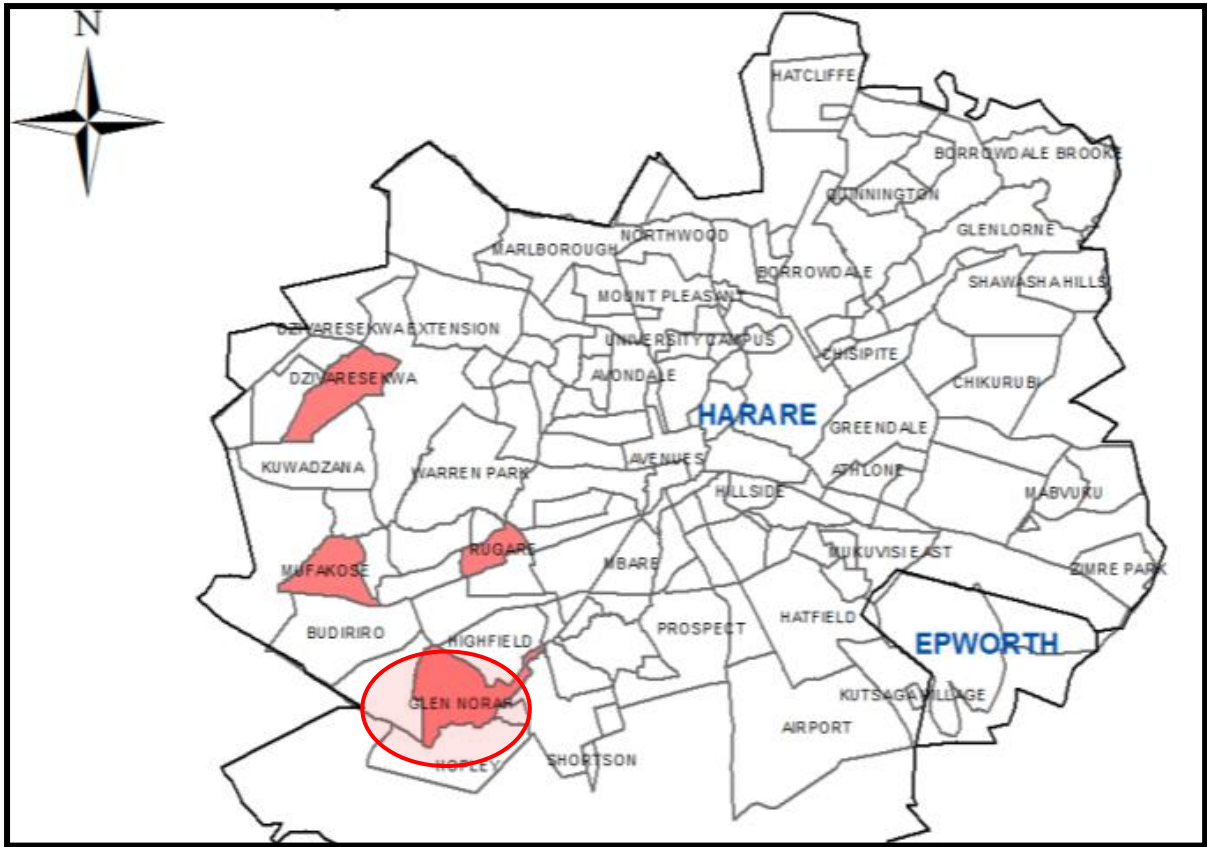
The latitude coordinates of Harare are 17° 49' 39.79" S and longitude 31° 03' 12.12" E. The city was established in 1890 by the British Pioneer Column as an administrative centre for the colonial government, as well as acting as the country's industrial and commercial hub (Zinyama 1993). Being the primate capital city and existing as the industrial and commercial hub of the country, Harare attracted most of the migrants. In 1969 the population of Harare stood at 385 000 people, but the 1982 census showed a staggering 610 000 people residing in the city (Davies 1987; ZimStat 2013). Over the years, in addition to natural population increase, Harare's population continued to grow. The population of the city is currently estimated around 1 592 368 people (ZimStat 2018).

From the time it was established in the 1890s, Harare was only characterised by a few buildings which were constructed using mud and thatch. The settlement was more of a village as the buildings were scattered. The investment made in infrastructure development for Harare,

mainly road and railway links such as the Beira–Salisbury and Botswana–Salisbury railway links in the late 1980s became significant in the growth of Harare (Mlambo 2003). In 1897, Harare attained municipal status and was declared the capital city of the colonial government in 1935. In 1953 the city became the capital of the Federation of Rhodesia and Nyasaland.

The colonial government developed Harare based on the philosophy and practice of separate development (Davison 2002:187; Toriro 2008). The British planning and ideology of zoning and grid-iron roads informed the spatial form of the city to the effect that it appeared as if Harare could be in Europe as European influences by the settlers formed the city, as highlighted by Brown (2001:321) and Rakodi (1995:274). In a nutshell, the city was well planned, pleasant and orderly and was meant to accommodate a mere 300 000 citizens, mainly whites (City of Harare 2012). This orderliness was attributed to strict control over illegal development and urban informality which was backed by a highly functional and well-maintained basic infrastructure and services system (Mbiba 2017a). Urban development and population in the city were closely monitored by the colonial government who used restrictive migration laws to keep Africans in the rural areas.

The few Africans living in Harare were only accommodated if they were working as domestic and factory workers. Otherwise, they had to be residing in the rural areas. The first suburb to be developed for Africans was Mbare, which was the residence of the male factory workers who resided in bachelor flats which they rented from the municipal council. With time, as the industries grew and intensified, there was a need for more labour, and more suburbs, called locations, were developed for the Africans. Interestingly, these settlements for the Africans were always concentrated on the periphery of the city, for example, Highfield (Figure 1.2). According to Brown (2001:321), African housing was exported beyond the city limits mainly on the western and southern part of the city. Davison (2002) explained that a least-cost philosophy was adopted in designing such settlements in which there was no mixing of plot sizes and housing density was high.



Source: Surveyor General

Figure 1.2 Map of Harare showing the position of Hopley which lies at the fringe of the city

The continued growth of the city's population has resulted in a demand for more space for the city's inhabitants. The result has been the proliferation of human settlements in and around Harare. Amid all the transformations currently underway in Harare, settlement development and management continues to be guided by colonial planning which is still hinged on separate development. Chirisa, Matamanda and Mukarwi (2018) highlighted that the development of Harare has not been concomitant with the population increase; hence the proliferation of various socio-economic challenges in the city.

The Fast Track Land Reform Programme in the early 2000s has also influenced the development of settlements in Harare, and subsequently, service delivery (Mbiba 2017b). Marongwe (2003:20-21) narrated:

[T]he urban 'land-less' took advantage of the opportunity created by fast track to present their own land demands. A common characteristic was that they formed housing cooperatives as a strategy of spearheading their land demands ... The haphazard manner in which farms were occupied or settled under fast track led to a serious deviation from the planning procedures

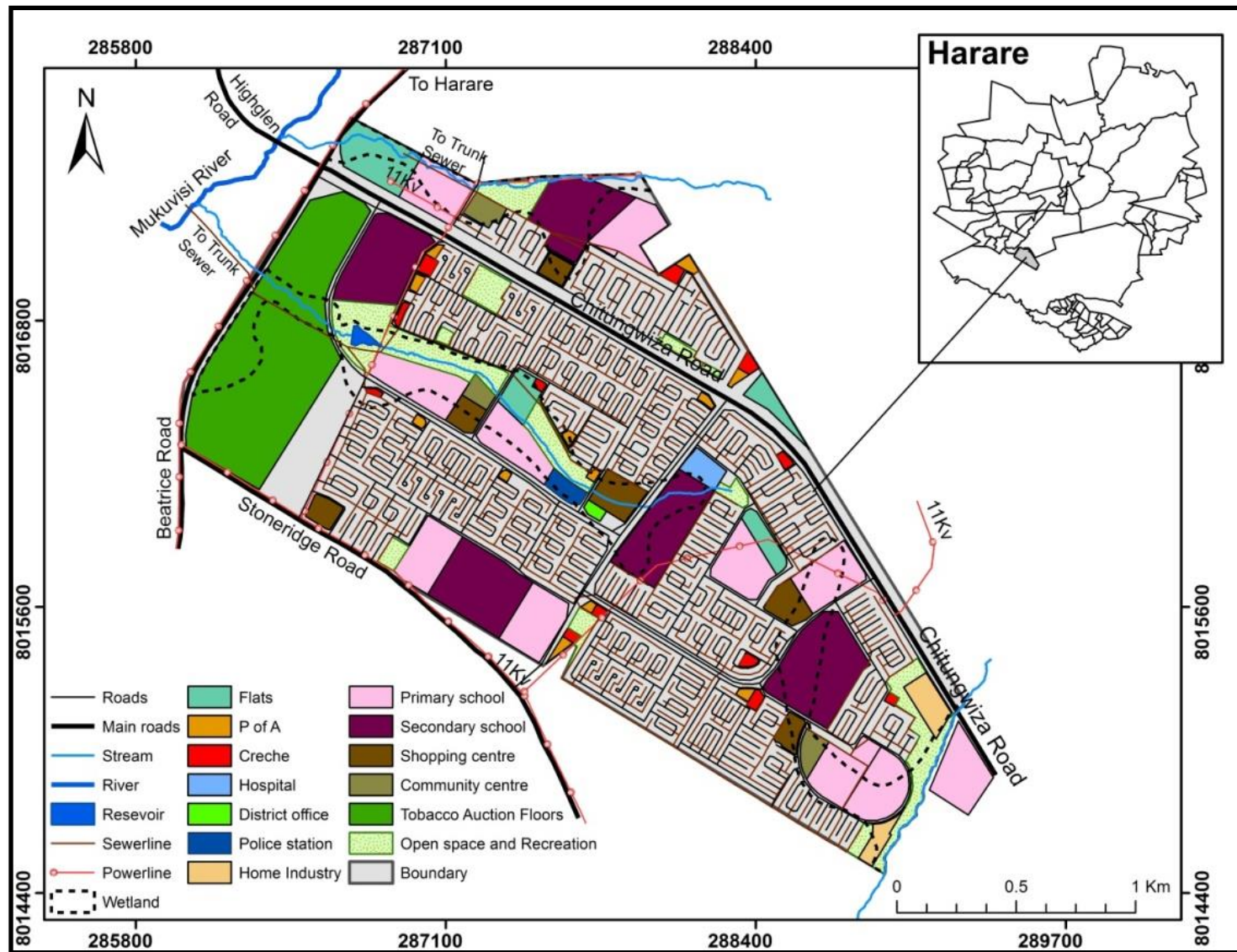
and also created a huge demand for the servicing of the 'demarcated' stands by the City of Harare. In a number of cases, such land occupations contradicted with the planned use for the area.

The quotation shows that large tracts of farmland around Harare were converted from agricultural land use to urban residential land use. The result was a mushrooming of settlements in and around the city. In most instances, the settlements developed in areas where there were no reticulated sewer systems, access roads or water supply.

Informality has been the major challenge overwhelming urban planning in Harare and the situation went out of hand in the early 2000s which compelled the government to initiate Operation Murambatsvina (also known as Operation Restore Order or Remove Filth) in 2005 (Hammar 2017:87-88). Operation Murambatsvina resulted in the demolition of illegal structures in urban areas across the country and Harare was worst affected as it had the highest number of informal settlements (Kamete 2007; Tibaijuka 2005). The outcry from the international world with regard to the violation of human rights which came with Operation Murambatsvina resulted in government introducing Operation Garikai which saw the establishment of various settlements in and around Harare (Chipungu and Adebayo 2013: 387; Tibaijuka 2005).

1.6.2 Hopley Farm Settlement

Hopley Settlement (also known as Hopley Farm) is located about 16 km from the central business district (CBD) of Harare and to the south-west of the Grobbie Park and Waterfalls suburbs along the Masvingo/Simon Mazorodze Road. The settlement is bound by Simon Mazorodze Road to the west, Waterfalls suburb to the north and north-east and Stone Ridge Road to the south. The greater portion of Hopley Settlement falls to the east of Simon Mazorodze and south of Chitungwiza Road, while a small portion falls to the north of Chitungwiza Road. The topography of Hopley Settlement is mostly gently sloping and flat, with deep sandy brown soils, well drained and good enough for residential development (City of Harare 1999:6).



Source: Adapted from City of Harare (1999)

Figure 1.3: Layout plan for Hopley Settlement

Hopley is made up of six zones which were originally defined by the areas of origin of the residents. Zone 1–4 accommodates residents who came from the Caledonia Holding Camp after being evicted from Porta Farm. Zone 5 is home to residents who were relocated from Tsigia in Mbare. The City of Harare also allocated land to some individuals who were on the council’s waiting list and these residents constitute zone 6 in Hopley (Zimbabwe Homeless People’s Federation 2014:13). The planned area demarcated by the City of Harare for the establishment of Hopley Settlement is approximately 443,7 ha of which 117 ha were set aside for the development of 7 800 residential stands ranging from 150 m² to 300 m² (City of Harare, 1999).

The settlement was established in 2005 by the government of Zimbabwe, under Operation Garikai/Hlalani Kuhle² (Restore Order) (Amnesty International 2010:2). Hopley Settlement victims were from Hatcliffe Extension, Porta Farm and Mbare (Chitekwe-Biti 2009).

1.7 SIGNIFICANCE OF THE STUDY

Urban planners traditionally focus more on physical planning and spatial configurations in human settlements (Batty 2008; Tonkiss 2013). Such a consideration at times does not adequately integrate the social component which mainly focuses on the human factors that relate to human settlements. This study represents a unique methodological approach to the exploration and understanding of the nexus of the physical and social elements in human settlements. In this regard, the applied systems analysis methodology is used to develop causal loop diagrams which highlight the complexities of issues emerging in citizens’ access to basic services in politically sensitive environments. Exploring the challenges experienced by citizens in accessing basic services is very important, as this sheds light on the issues which need to be addressed to make the human settlements resilient, sustainable and safe. The analytical framework developed for the study will possibly contribute to the analytical approaches by urban planners and decision-making in relation to efforts to meet the SDGs, the New Urban Agenda (NUA) and other set targets. Furthermore, Talen and Ellis (2002) and Zenghelis and Stern (2016) warned that if planners remain tentative about good city form, their contribution will be insignificant in the development of cities and ultimately human settlement forms.

² Operation Garikai is a government initiated programme which was a direct response to Operation Murambatsvina. Through Operation Garikai, the victims of Operation Murambatsvina were to be housed and various settlements were therefore established throughout the country, with plans to construct 15 000 housing units and also factory shells and market stalls. Approximately US\$300 million was budgeted for this operation (Chipungu and Adebayo 2013:388).

While the recent scholarship has made great strides in exploring the state of basic services in the country as well as the deficiencies which are prevalent in this regard (Mumvuma 2016; Sifile, Madzorera & Chavunduka 2015), issues in planning, service delivery and emerging human settlements seem to have received little attention as evident from the dearth of studies in this regard. For example, the focus of some of the studies has been on the political dimensions to human settlements and service delivery (Kamete & Lindell 2010; Muchadenyika & Waiswa 2018; Muchadenyika & Williams 2018), institutional dynamics, governance issues and incompetency (Jonga & Chirisa 2009; Makunde, Chirisa, Mazorode, Matamanda & Pfukwa 2018:2), urban planning systems, and financial constraints (Cirolia & Berrisford 2017). Other studies focused on service delivery in peri-urban areas.

Todes (2011) referred to the research gap in this area, where studies tend to focus on a single phenomenon; yet studying planning in Africa requires a multi-scale investigation, a description of what lies ‘outside the frame’. Basically, the interplay between society and the physical shaping of cities call for more attention since human settlements are complex systems which need to be explored in a holistic way (Batty 2008; Chadwick 1971; Tonkiss 2013). This study will therefore address these gaps by adopting a multidisciplinary approach by extending the typical planning focus and bringing together different disciplinary bodies of work: urban planning and morphology, development studies and sociology. This approach will add to the existing theoretical knowledge relating to urban and regional planning.

The results of the study are especially important to central and local government and other stakeholders involved in human settlement planning and basic services delivery because they may be used to formulate or improve policies, processes and plans. The phenomenological research design which allows the respondents to narrate their lived experiences helps the citizens to share their dilemmas which would otherwise remain unheard. Overall, the study is significant in that it heightens awareness in socio-spatial justice issues and promotes civil rights and work towards social equity in urban areas in the Global South. Consequently, the study is also of utmost importance to researchers and scholars who may use the results of the study, particularly the methodology approach, for further research on human settlement planning research.

1.8 KEY DEFINITIONS

- ❑ **Settlement form:** The spatial arrangement of persons doing things, the resulting spatial flows of persons, goods, and information, and the physical features, which modify space in some way significant to these actions, including enclosures, surfaces, channels, ambiances and objects. Furthermore, the description must include the cyclical and secular changes in those spatial distributions, the control of space, and the people (Lynch 1981:48).
- ❑ **Urban dilemmas:** Planning problems that are complex, unique, have no definite and ultimate solution and are interrelated (Rittel & Webber 1973).
- ❑ **System:** A system is basically a component which is connected to form something more complex. This complex is constituted with various subsystems which at any given time may be broken down or dismantled.
- ❑ **Systems analysis:** An applied scientific methodology based on a diverse system of organised, structurally interconnected, and functionally interacting heuristic procedures, as well as methodological equipment, mathematical methods and algorithmic, programmatic and computing means that ensure the formation of complete interdisciplinary knowledge about an object under investigation, as the totality of various interconnected processes for subsequent decision-making with regard to its further development and behaviour, taking into account many conflicting criteria and goals, the presence of risk factors, as well as incompleteness and uncertainty of information (Zgurovsky & Pankratova 2007:33-34).

1.9 THESIS OUTLINE

The thesis is developed and organised in relation to the following chapters:

Chapter 1: Introduction and overview of the study

Chapter 1 introduces and sets the tone of the study by outlining the problem, research objectives and questions, significance of the study, scope, limitations and definitions.

Chapter 2: Human settlements in planning

The focus of this chapter is on human settlements in the context of planning, drawing from selected lessons and examples in both the developing and developed countries.

Chapter 3: Theoretical perspectives to human settlement forms and urban dilemmas

The two theoretical perspectives to human settlement forms and citizen's dilemmas in accessing basic services are analysed in this chapter. Second, the chapter analyses the applied systems analysis theory and how it helps to understand the development and management of human settlements.

Chapter 4: Research methodology and design

The chapter focuses on the processes that the researcher adopted in trying to answer the research questions and specific objectives. Overall the chapter justifies the methodology and procedures which have been undertaken by the researcher in gathering and analysing the data.

Chapter 5: The socio-economic, political and legislative landscape of Zimbabwe's human settlement development

The chapter analyses the legislative and policy framework which guide human settlement development in light of the relevant urban dilemmas.

Chapter 6: An emerging settlement: Hopley's morphology and realities

This analyses the official land use planning scheme for Hopley Settlement through the examination of documents which identify the proposed plans and ultimate form of the settlement.

Chapter 7: Services and provisional dilemmas in Hopley

The dilemmas faced by residents in Hopley in accessing water, sanitation, public transportation and safety are discussed in this chapter. The focus is mainly on the lived experiences of the residents in Hopley and how they get along their lives in Hopley in relation to accessing basic services.

Chapter 8: Summary, conclusions and recommendations

This chapter concludes the thesis and proffers policy options and recommendations relating to emerging human settlement forms and urban dilemmas nexus.

Chapter 2

HUMAN SETTLEMENTS IN PLANNING

2.1 INTRODUCTION

Chapter 1 has set the tone by introducing the scope of the study and presenting the problem statement, objectives, research questions, an overview of the methodology and a description of the study area. The focus of this chapter is on presenting a review of literature relating to human settlements in planning. The chapter commences with the conceptualisation of urban planning which is the discipline within which the study is rooted.

2.2 CONCEPTUALISING URBAN PLANNING

This section unpacks the concept of urban planning and grounds it within the research problem of this study which sought to explore emerging human settlement forms and urban dilemmas nexus in Hopley, Harare. The conceptualisation of urban planning acknowledges the scholarly articulations from the Global South and Global North.

2.2.1 Concept of planning

The word ‘planning’ has been given different definitions and meanings by planning practitioners and students. It seems that most scholars and students are always compelled to redefine and give new meaning to the concept; for this reason, it is apparent that the scope and breadth of planning have widened (Todes 2011:119). Wildavsky (1973:127) pointed out that planning ends up protruding from so many directions making it difficult for planners to comprehend and discern its shape. Proponents such as Lindblom (1959) conceptualised planning as a flexible, short-term and reactive process that involves ‘*muddling through*’ society’s challenges. For some scholars, planning is defined as a long-term, comprehensive, rational, rigid and technocratic process (Angotti 2008:11; Faludi 1973:131; Flyvberg 1998:4; Forester 1989:25). Traditionally, planning has been perceived as a state activity and apparatus that seeks to further the interests of the elite – mainly the politicians who own land and other means of production (Fainstein & Fainstein 1979; Harvey 1973; Healey 2010:15; Watson 2009a:2260; Wildavsky 1973).

Planning is basically an endeavour of making choices that seek to create liveable places; it is mainly centred on place-making and ameliorating existing and emerging challenges in human settlements. The success of such an endeavour is anchored on interactive processes among society, planners and various other stakeholders within an area. Therefore, planning is conceived by Campbell (2002:274) as an idea that is fundamentally about making choices, *with and for* others, about what makes good places. In this instance, planning seems to be top-down. Healey (1997:3) also suggested that planning is infused with the understanding of socio-spatial dynamics and becomes a governance project focused on managing the dilemmas of “co-existence in shared spaces”.

What is generally agreed among scholars is that planning is futuristic and seeks to connect forms of knowledge with forms of action by making decisions for the future now (Alexander 1981:137; Friedmann 1993:483). Planning then is the “deliberate social or organisational activity of developing an optimal strategy of future action to achieve a desired set of goals, for solving novel problems in complex contexts, and attended by the power and intention to commit resources and to act as necessary to implement” (Alexander 1981:137). For this study, I will take a narrower view of planning in which the focus will be on urban planning. The next section will therefore proffer a discussion on urban planning.

2.2.2 Urban planning

Urban planning remains vague because its purpose has always been a subject of critical debate, and planning issues are contested and inherently situated (Campbell 2002:277; Healey 2010:ix). Rittel and Webber (1973) argued along the same lines that the problems confronting planners are ‘wicked’ because they are difficult to define, infinitely malleable and multifaceted. For Watson (2002:28) urban planning is defined as follows:

[T]hose intentional public actions which impact on the built and natural environment, and which are frequently accompanied by political processes of some kind. Planning is also (and not infrequently) initiated by groups other than formal governments, such as non-governmental and community-based organizations, and sometimes business.

From the first part of the definition by Watson (2002:28), planning is conceived as those ‘intentional public actions’ which shows that somehow it is a state apparatus through which a few influential people determine what must be done, how and for who. In such situations, urban planning becomes a tool to incentivise or sanction certain groups of people in society. It is used

as a form of power. For example, Castells (1977:29) illustrated how urban planning was used in a French city to advance the interests of the elite and suppress the working class. In Israeli towns, planning was used to discriminate against Palestinians, while the South African government before 1994, used planning to segregate between the whites, coloureds, Indians and blacks mainly through apartheid laws (Du Plessis & Landman 2002:1; Mphambukeli 2015:1; Yiftachel 1998). The same is also true for Zimbabwe where the colonial government ensured that there was separate development and ultimately urban services for the Europeans and Africans in the country's cities and towns, especially in Harare (Munzwa & Jonga 2010; Wekwete 1989).

Urban planning is not anything new because it has been practised since the dawn of civilisation. Mumford (1961) demonstrated how urban planning has been in existence and helped to shape ancient settlements such as those in the ancient Indus Valley and Mesopotamia. Watson (2009b:10) highlighted that from as early as 600 BC, Chinese settlements were planned to align with cosmic forces while sophisticated systems of urban planning were developed in ancient civilisations such as Latin America and the Caribbean. Pre-colonial towns and cities in Africa are no exception. The evidence is shown by the remnants of organised settlement forms, for example the Great Zimbabwe ruins in Zimbabwe and the pyramids in Egypt (Coquery-Vidrovitch 2005:33-34; Freund 2007:7).

The most significant period in the history of urban planning is the nineteenth century which was characterised by the Industrial Revolution of the late 1700s to early 1800s in Western Europe. With the Industrial Revolution came various challenges such as rapid urbanisation, chaotic, unhealthy and polluted living conditions for the poor, environmental degradation and ultimately political unrest (Hall 1996:16-17; Healey 2010:10; Watson 2009c:165). At the time, urban planning was perceived as a panacea to decongest the industrial cities and recreate societies with a focus on promoting place aesthetics and order. The focus was on constraining urbanisation, recreating societies, bringing back the greenery into cities and towns as well as creating aesthetically pleasing places.

Urban planning ideas by proponents such as Ebenezer Howard, Patrick Geddes and Le Corbusier confirm the physical nature of urban planning at the time. Ebenezer Howard envisioned and conceptualised the Garden City which he distilled in his book *Garden Cities of Tomorrow* (1902). Such a vision was premised on greening initiatives, population control and

zoning where the industry was to be located on the periphery of the built-up areas which was to be circled by a green belt (Howard 1902).

Le Corbusier³ suggested that cities had to be developed on the basis of strict adherence to geometric form, regulatory and standardisation principles (Le Corbusier 1987). This was termed the Radiant City in which emphasis was also on single use and strict separation of functions. Therefore, urban planning was largely dominated by a conception which, in essence, was more inclined to physical design. Taylor (2009) explained that this design-based view of urban planning existed since the planning profession was somehow embedded in architecture.

Although urban planning was advanced as an attempt to decongest cities and bring back order and sanity during the industrial revolution, this remained a pipeline dream as other problems such as sprawling emerged. Cities and towns became complex systems and the problems they were meant to address have always been evolving beyond the capacity of the urban planning systems. Consequently, in the twentieth century, there was a paradigm shift from physical design to rationality and systems in urban planning (Taylor 2009). Rationality (comprehensive or synoptic) type of planning was in the form of master planning. Master planning is a top-down and technocratic approach to urban planning. Through the twentieth century, urban planning has been the responsibility of experts, the elite and politicians who articulated policies on behalf of the citizens (Healey 2010:10). The systems approach in urban planning also gained prominence as a result of the complexity of cities and towns as well and the problems experienced therein (which will be discussed in detail in Chapter 3).

The obsession with rationality planning was mainly based on the production of fixed end-state plans (Lane 2005:288). The planners were influential and played a dominant role in the survey–analysis–plan sequence of planning which was guided by codes achieving a predetermined set of objectives. Hall (1996:61) described the planner in this situation as “an omniscient ruler, who should create new settlement form ... without interference or question”. Likewise, Faludi (1973:131) conceptualised this form of planning as an approach where a planning agency operates a programme to attain its objectives with certainty.

It is clear that urban planning thus existed as the work of planners who were presumed to know it all; hence what they envisioned became the ends to which all societal efforts were directed

³ Le Corbusier was a trained architect and self-proclaimed planner; hence most of his urban planning ideas were heavily inclined towards the field of architecture.

and sought to achieve. Furthermore, urban planners seem to be concerned with the content of the plans rather than the process of planning and physical artefacts, rather than with the qualities of human judgement. The settlement form that would emerge would also be informed by the plans and visions of these planners, with little input from the other stakeholders, especially the communities to be affected by the plans. This type of planning has been identified as blueprint or master planning.

Master planning has been heavily criticised because it tends to be too comprehensive and sidelines the citizens in making decisions that concern them (Lane 2005:288). Watson (2014:217) explained how master planning in African cities such as Kigali the capital city of Rwanda is akin to urban fantasies because the plans remain utopian and seem to disregard the local realities. Urban planning through master planning ends up being an activity concerned mainly with single-zoning of land uses and comprehensiveness which shows little understanding of, or regard for, the delicate social and economic fabric and vitality of contemporary urban spaces (Taylor 2009:103). Furthermore, the emerging settlements birthed through master planning often fail to satisfy the needs and demands of the locals, considering the volatile nature of urban spaces. A key example is the rapid rate of urbanisation, which was not anticipated by these plans, as well as the growing levels of urban informality in cities such as Harare in Zimbabwe, Abuja in Nigeria and Nairobi in Kenya, make it very difficult to operationalise the master plans (Chirisa et al. 2018:94-95).

The twenty-first century has been marked by the evolution of urban planning, from master planning to various other approaches. Various concepts have thus emerged which explain this bottom-up type of planning, for example, collaborative planning, transactive planning, communicative planning (Fainstein 1995:36; Healey 2010; Todes 2011:117). Social planning is thus an umbrella term which may be used to understand this type of planning which focuses on the needs and aspirations of the communities and not only on the ends set by planners.

2.2.3 Social planning

Social planning, although complex and diverse, thus seeks to address the social problems confronting society. There are proponents who argue that social planning is simply coterminous with planning; hence there is no difference between social planning and urban planning which seek to achieve urban sustainability (Faludi 1973:viii). Bromley (2003:821-823) argued that social planning is a participatory process which seeks to remodel and transform society,

especially when inequalities prevail in the social sectors where the disadvantaged cannot afford to pay for basic services which are essential in supporting human well-being. From his viewpoint, Park (1935) argued that social planning is inherently grounded in the urban context because it originates in the city and in problems of civilised and sophisticated existence. Civilisation or modernisation is what characterise cities as people congregate and adopt a modernised way of life (Lushaba 2009).

Cities, especially in the Global South, are characterised by multiplicities of social problems beyond the capacity of the households or local authorities. This is especially true as evident from the burgeoning urban populations in African cities such as Lagos in Nigeria and Kinshasa in the Democratic Republic of the Congo, which both have populations of at least 10 million people (UN-Habitat 2014). The urbanisation in most of such African cities is conceptualised as urbanisation of poverty and is evident in the proliferation of informal settlements which lack access to basic services (Wall 2018:30). These cities have come to be referred to as poor megacities owing to their inability to support the urbanites, particularly the poor (Barofsky, Siba & Grabinsky 2016). As employment opportunities remain constrained, spatial inequalities seem to be on the rise and poverty levels are way too high, for example, the slums of Kibera in Nairobi, Kenya, where close to one million people live in nightmarish conditions without access to basic services such as water, sanitation and decent housing (Onyango & Tostensen 2015:1). These citizens are thus subjected to urban poverty, crime and public safety.

It can be said that social planning is necessary when land use plans fail, or when urban development results in unexpected occurrences, or when there are issues bedevilling society (Rothman 1996). Lane (2005) suggested that social planners thus take it to task to gather facts about the problem, to analyse the emerging data and to make logical decisions with regard to the best alternative courses of action. Most importantly, citizen participation has to be central to the process, as outlined by Bromley (2003:822). It is in this regard that socialist and welfarist states come into perspective as they focus on the redistribution of means of production, as well as ensuring that all citizens have access to basic services. Such types of planning have been prevalent in most post-colonial African cities as governments sought to redress the colonial inequalities (Freund 2007:146).

Examples include the socialist planning ideology adopted in 1980 in Zimbabwe following its independence (Nattrass 2014:56; Nyarota 2018:32). In South Africa, the Reconstruction and

Development Programme houses constructed by the democratic government post-1994 shows how the government may make strides towards social planning and addressing the plight of the poor and disadvantaged citizens (African National Congress 1994). It can be concluded that social planning facilitates the provision of social services to marginalised citizens and communities.

However, there are limitations associated with social planning. In instances where social planning initiatives are spearheaded by the central government, power may be misused by the politicians and the elite. Instead of advancing the plight of the disadvantaged, the elite (politicians, planners and bureaucrats) may decide to advance their interests at the expense of the society. An example is presented of how corruption in Cairo in Egypt, through dubious sales of desert land by public officials has negatively affected service provision in other parts of the city as services were diverted to some areas with few inhabitants (Williams & Dupuy 2018:2). The inclusion of the entire community through citizen participation may compromise the success of the plans as the communities at times lack technical skills to develop practical schemes.

2.3 URBAN PLANNING IN HUMAN SETTLEMENTS

Urban planning in human settlements assumes a number of roles and functions. As discussed in the preceding sections, urban planning takes on different approaches which determine the final outcome of the plans. On the contrary, some scholars stated that urban planning is not a panacea for all urban ills (Rydin 2011:8; Wallin 2013:23). Rather for some, there are instances where urban planning has exacerbated or fuelled the emergence of certain urban challenges (Kamete 2007; Watson 2009c). Therefore, there remains much debate as to what urban planning is expected to do, which will be addressed in the next section. It highlights that urban planning plays three broad roles which include being futuristic, as tool for management and governance of cities and towns, and the spatial orientation.

2.3.1 Urban planning shaping ‘future settlements’

Every profession has a niche. For planners, the future is at the centre of their daily work. This may explain the increasing attention being paid by various proponents to the notion of future cities (Moir, Moonen & Clark 2014:10; Snieskaa & Zykieneb 2014:248). From this perspective of future cities, urban planning focuses on future aspects of human settlements and reimagines

the future history as evident from the seminal work of Blowers, Hamnett, Sarre (1974) – *The Future of Cities*. It follows that the main focus of urban planning is not only to predict but also to create better futures. Therefore, the future is one distinct characteristic of urban planning. What is sought is to make decisions now that will help to guide future activities designed to make improvements to benefit present and future generations (Myers & Kitsuse 2000:221; Van Dijk 2011:121).

Regardless of how *present* decisions may seem to be, the final products of the urban planning process remain engraved with the future. This is usually the case with master planning, which comprises a detailed land use plan depicting the desired future of an urban area being twenty years (Watson 2009a:2261). It is clear that the main objective here will be achieving a particular settlement form at a specific time. An example to note is the segregation settlement form that was designed in South Africa during the apartheid government, yet it is still distinctive to this day (Todes, Karam, Klug & Malaza 2010:416). It shows how the apartheid government focused on the future and left their footprints in the human settlements they planned across South Africa.

There are a lot of other examples which indicates how urban planning in the context of human settlements has been future-oriented. First, at the international level, SDG 11 has indicators and targets set for 2030 through which countries strive to achieve and factor in when envisaging human settlement by implementing SDG 11 (United Nations 2016a). In the United Kingdom, the Foresight Future of Cities Project was launched in 2013 and focuses on how various issues such as urban form, infrastructure provision and economic opportunities will be developed and evolved towards 2065 (Wilson 2016:2). The aspirations of the country are towards having sustainable human settlements and a particular form of cities across the country by 2065. A similar case to note is the city of Detroit in Michigan which, since 2010, has been guided by the future city strategic plan through a reimagination of a better future for the city (City of Detroit 2013:3).

Although the future appears to be at the forefront of urban planning, it seems as if planning professionals forget about this futuristic endeavour which they end up taking it for granted (Dalton, Wandersman & Elias 2001:401). The result is usually misplaced priorities where planners end up focusing just on the present, or rather to advance the interests of the politicians and the elite in a fire fighting approach. Freestone (2012) thus provided a set of ethical

questions that may assist in guiding future urban planning judgements. These are summarised in Table 2.1.

Table 2.1 Ethical questions guiding future urban planning judgements

Ethical parameters	Questions
Well-being	Is this a good place to live? Are socio-economic opportunities such as safety and aesthetics adequate?
Justice	Who gets to benefit from this place? And who does not? Are the benefits distributed equitably by socio-economic status, race, family status and physical ability? The public realm?
Sustainability	How long can this take place in terms of its social, economic and environmental fabric?
Legitimacy	Who is mandated to make decisions about the settlement? How are decisions made ethically, inclusively, transparently and collaboratively?

Source: Adapted from Freestone (2012:26)

2.3.2 Urban planning as a tool for urban management and governance

Urban planning is also centred on the management and governance of human settlements. Rydin (2011:10) explained that urban planning is not wholly about building visions for the future because it also involves aspects of land regulation and management, directs provision of developments and focuses on socio-spatial processes. Human settlements are complex entities that are a constituent of various interacting systems. Moreover, human settlements are associated with multiple challenges which are dynamic and seem to be always mutating. Thus, there is a need to manage urban systems to make them liveable and sustainable.

Urban planning thus contributes to the management and governance of cities and towns. Sandercock (2004:134) commented as follows:

Urban planning is an unfinished social project whose task is to manage our coexistence in the shared spaces of cities and neighbourhoods in such a way as to enrich human life and to work for social, cultural and environmental justice.

Van Dijk (2007) observed that urban management is the effort to coordinate and integrate actions to address critical problems facing residents of a city in an integrated way to create more competitive, equitable and sustainable cities.

Watson (2009a:2261) stated that “urban forms [are] shaped by a concern for aesthetics (order, harmony, formality and symmetry); efficiency (functional specialisation of areas and movement, and the free flow of traffic); and modernisation (slum removal, vertical or tower buildings, connectivity, plentiful open space)”. Thus, urban planning facilitates the management of cities and towns through land use management which has to conform to the plans prepared by planning authorities. Moreover, other instruments such as development control, permits, enforcement orders and land use plans all seek to assist in managing urban areas. In Zimbabwe, urban planning has been used to manage cities and towns where planners have adhered to various planning statutes and legislation (Matamanda & Chirisa 2014; Tibaijuka 2005; Wekwete 1990).

2.3.3 Urban planning as a spatial process

Urban planning does not occur in a vacuum. It is a process which occurs mostly in space. The significance of space is emphasised in the National Human Settlement Policy of 2018 (Government of Zimbabwe 2018a:1). The emphasis on space is on the design and organisation of urban space and activities (Healey 2007:23; Segura & Pedregal 2017:2). Design has been widely used to discuss urban form in planning literature. In this regard, planners consider how they can best structure and restructure space so that it contributes to human well-being, hence spatial dynamics greatly influence and guide urban planning as regard to where to build what and at what density (Faludi 2010:3). The result of urban planning is the careful thought of accomplishing a unique spatial context containing elements such as infrastructure, urban structures, open spaces and boundaries (or edges) (Van Dijk 2011:131).

The aim is to pursue the best design that will produce a good settlement form and thwart occurrence of urban dilemmas (Van Dijk 2011:127). The essence is to promote the efficiency and justice of the settlements. Healey (2010:19) made a point that urban planning centres on promoting ways to advance the liveability and sustainability for citizens, while paying attention to the complex ways in which phenomena relate to one another in space. The evidence is shown by the planning ideas of proponents such as Le Corbusier, Howard, Clarence Stein, as well as Henry Wright and Clarence Perry, who took the time to conceptualise the spatial arrangement of cities. It is through their ideas that the significance of space is shown in the development of human settlements.

The spatial approach to urban planning is evident in most countries across the world where spatial plans guide the development of human settlements (Ma, Shen, Zhou & Wang 2012:28; Segura & Pedregal 2017:2). In South Africa, the spatial transformation initiatives envisaged by the Spatial Planning and Land Use Management Act, Act 16 of 2013, show that urban planning and development of human settlements is highly spatially oriented (Nel 2016:80). The same is true for Zimbabwe where much consideration is placed on spatial processes through heavy dependency on statutory regulations which mainly consider spatial outcomes (Munzwa & Jonga 2010; Mabaso, Shekede, Chirisa, Zanamwe, Gwitira & Bandaiko 2015:73). In Zimbabwe, the spatial considerations at times seem to have little regard for human well-being as evident from physical configurations and by-laws which are not realistic, considering the spatial givens and local contexts (Toriro 2019).

2.4 DIAGNOSING HUMAN SETTLEMENTS

A settlement basically refers to a place where humans reside on a permanent basis. Space is the basic unit of a settlement (Government of Zimbabwe 2018a:1). According to the Vancouver Declaration on Human Settlements, a human settlement is defined as the totality of human community – whether city, town or village – with all the social, material, organisational, spiritual and cultural elements that sustain it (UN-Habitat 1976:8). In this regard, a settlement may be perceived as a system as it constitutes different sub-systems which make the whole. For example, the water supply, sanitation, the economic and environment becomes the sub-systems of the settlements. Therefore, a human settlement is defined as an integrated system which constitutes various elements that are functionally interconnected (Moreno, Arimah, Otieno, Mbeche-Smith, Klen-Amin et al. 2016:3). By their nature, human settlements are unique in every aspect and the major differences in these settlements are noted in their function, hierarchy and form, which will be discussed in the following subsections.

2.4.1 Function of the settlement

The function of a settlement refers to the purpose which a particular settlement serves, based on the nature and type of activities taking place within the settlement. These include residential, industrial, administrative and tourism activities. Since most settlements contain a mosaic of activities, it may be difficult at times to identify the function of a settlement. However, there is always a predominant function which has been responsible for the development of any given

settlement. Nairobi, the capital city of Kenya, was initially established in 1899 as a campsite for the Kenya–Uganda railway constructors due to the availability of fresh water and supplies from the Dagoreti market (Mitullah 2003; Muthuma 2015).

Another example is Abuja, the capital city of Nigeria, which was established as an administrative and political hub of the country. Other examples include Mecca in Saudi Arabia which mainly serves as a religious and cultural city. Settlements, for example Chongqing in China and Chitungwiza in Zimbabwe, were developed as dormitory towns (Munzwa & Jonga 2010:130; Zhou 2018:2).

The function of the settlement is usually what determines the form⁴ of the settlement. However, there is always controversy as to what precedes the other between the function and form of a settlement (Adams 2017). For example, although Cape Town has come to be identified as a tourist and economic hub for South Africa, it was originally developed as a settlement where passing ships would get some fresh water and food along their way to Asia (Dewar, Watson, Bassios & Dewar 1990). In this regard, the function seems to have had come first but eventually the form of the city, which includes Table Mountain, the sea and climate, would eventually influence the function of Cape Town into a predominantly tourist attraction and not merely the point where ships would get fresh food and water.

The function of a settlement is supported by the presence of certain elements which makes it viable and enables it to fulfil its intended function. For example, the existence of water and sanitation infrastructure supports the residential function of a settlement (Harding 2017). It is obvious that when some components of a settlement are either exhausted or are not available, the result is usually a problem which society tries to address. In the same manner, urban dilemmas surface when certain system ceases to function.

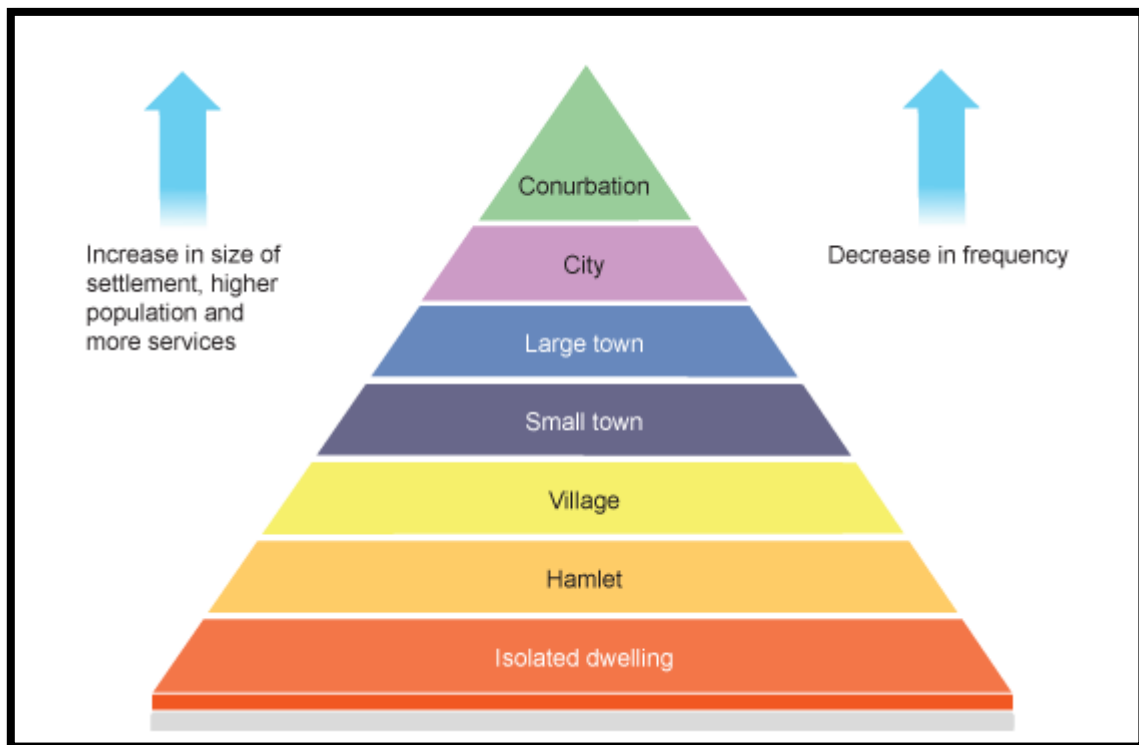
2.4.2 Settlement hierarchy

Settlement hierarchy refers to the way a settlement is arranged through focusing on the order of arrangement of the settlement's population, or a number of services and functions or its physical expanse (Poom, Ahas & Orru 2014:2370). Although the hierarchy of settlements is usually considered from a hamlet which is the lowest order, to a conurbation, which according to many proponents is the highest order, there has been no agreement on the minimum

⁴ The concepts of 'form' and subsequently 'settlement form' are explained in detail in section 2.4.3.

population, area or number of functions or services which define a particular settlement hierarchy at the global level (Owusu-Adade & Adom-Asamoah 2014:256). Rather, the ordering of settlement hierarchy thus becomes a contextual task which is mainly dependent on particular local factors. For example, population is not always the best factor to determine the hierarchy of a settlement. This is evident from two cases in Ghana, namely the Obuasi settlement which has a population of approximately 180 000 people, yet its services do not match this population, while Mampong has a higher number of services and facilities despite having a population of only 50 000 people (Owusu-Adade & Adom-Asamoah 2014:256).

Figure 2.1 shows a settlement hierarchy pyramid in which the types of settlements exist depending on their size and the number of services and functions they provide. An isolated dwelling is the most basic settlement type which usually consists of a stand-alone dwelling which may be a farmhouse on a ranch. In this instance, there are no other services which support this isolated dwelling in the form of shops or schools and the population usually ranges between 1 and 10 people. The next settlement type is a hamlet which consists of approximately 11 to 100 people living in a small cluster of houses with no defined functions, although a post box may be found in the area.



Source: Wallbanks (2013: Online)

Figure 2.1 Settlement hierarchy pyramid

A village comes next and is defined as any settlement with a population ranging between 101 and 2 000 people. The size of the village will vary depending on a number of factors, but the dwellings are not close to each other. In a village, some of the following services may be in existence, a shop (mainly groceries), church, post office, village hall and a primary school. These first three settlements are often referred to as rural settlements which mainly depend on and are supported by primary activities such as agriculture, fishing and mining (Roberts 2014:2-3).

A small town is considered to be the lowest rank of an urban settlement. By its nature, a small town is characterised with a population of between 2 001 and 10 000 people living in an area with all the services found in the village, in addition to chain stores. However, the population threshold for defining a town as small varies from one country to the other. For example, in South Africa a small town is any urban area with a population that is less than 50 000 people (Wessels 2012). In Ghana, small towns are those urban areas with populations between 5 000 and 19 999 people, while in Australia the population ranges from 1 000 to 19 999 people (Roberts 2014:4). On the other hand, a larger town has a population between 10 001 and 100 000 people. Depending on its size, a town may have a railway station, clinics and a hospital, sports centre and a couple of secondary schools.

Following a large town, is a city which is a more complex urban area with a higher population of 100 001 to 1 000 000 people. The land uses in a city tend to be mixed and diverse with an array of shopping centres and malls, theatres, industrial sites and, in some instances, an airport. For example, Cairo the capital city of Egypt, has a diversified economy which is anchored on wholesale and retail, construction, transportation, tourism, education, health services and public administration (Mahdi, El Nakeeb & Barakat 2018:255).

Lastly, conurbations are continuous urban regions which result from the outward expansion of a city so that it engulfs the smaller towns and villages to form this larger urban region (Matamanda & Chirisa 2018:245). A typical example is the Gauteng city region in South Africa which includes Johannesburg, Pretoria, Midrand and various other small towns accommodating approximately 14 717 000 people (Gauteng City-Region Observatory 2018). The pyramid shows that there tend to be more low-order settlements with fewer people and as the order of the settlements increases, their frequency tends to decrease while the population in the respective settlement types increases immensely.

2.4.2.1 Settlement hierarchy in Zimbabwe

In Zimbabwe, the settlement hierarchy is defined by a seven-tier framework. This framework consists of metropolitan regions, cities, municipalities, towns, small urban centres or growth points, district service centres and rural service centres (Government of Zimbabwe 2018a; Rambanapasi 1989:289; ZimStat 2013). There are two metropolitan regions in the country, namely the Harare Metropolitan Province and Bulawayo Metropolitan Province.

The criterion for defining a settlement as a city in Zimbabwe is not wholly based on population thresholds; there are a number of other factors which are also factored in. This is so because some cities have populations of less than 100 000 people, for example Masvingo with 94 226 people and Kadoma with 99 139 people, but they have managed to attain city status (ZimStat 2018:8). This may be explained by the significance of the settlements which has resulted in them gaining city status regardless of the population size. A good example is Masvingo which is one of the oldest cities in the country and is home to some hotels, the Great Zimbabwe University and Great Zimbabwe Monuments making it a tourist attraction and heritage site (Urban Council's Association of Zimbabwe [UCAZ] 2018a).

Municipalities and towns in Zimbabwe range from those with very small populations to some with larger populations. Again, it is mainly the function and services existing in an area which qualifies it to be a town. Major towns in the country include Chinhoyi with a population of 83 550 people, consisting of a railway station, provincial hospital, a state university and some shopping centres (UCAZ 2018b; ZimStat 2018:8). Currently, as of 2018, the local authorities were applying for city status for the town. Other examples of large towns include Bindura with 43 675 people and Marondera with 66 470 people.

Growth points were introduced in Zimbabwe during the 1980s mainly as a decentralisation strategy. They were meant to function as service centres for economic and physical development in marginalised areas (Rambanapasi 1989:287; Wekwete 1988:5). However, not much has been achieved in this regard as they remain relatively small without much economic development, hence they are mainly abstract. Examples of these growth points in Zimbabwe include Gokwe whose population stands at around 24 000 people. The lowest tiers are the district centres and rural service centres which are mainly characterised by rural limited services and functions, dispersed development and fewer populations of usually less than 2 500 people.

Basically, human settlements are considered to be either rural or urban. Rural settlements are those which are characterised by dispersed housing units, low-density development, low population and primary production, for example agriculture and mining. The focus of this study was on urban settlements; the next section therefore discusses the concept of urban settlement.

2.4.2.2 The concept of urban settlement

The concept ‘urban’ originated in the seventeenth century. Urban is derived from the Latin name *Urbanus*, which means ‘city dweller’ (Behind the Name 2017). The concept has evolved over the centuries and is intuitively defined, yet its meaning remains vague (McGranahan & Satterthwaite 2014:7). Various synonyms such as city, town, conurbation, metropolitan or localities are often used in relation to the term ‘urban’ (Organisation for Economic Co-operation and Development–China Development Research Foundation [OECD-CDRF] 2009). Urban settlements are usually defined based on the dominant land use and economic function in an area. In this regard, urban refers to settlements where the majority of the inhabitants are engaged in non-agricultural activities (Weber 1966:242)⁵. Thus, urban may be likened to modernity as Lushaba (2009:11) stated that the movement of urbanity meant the establishment of a capitalist or *industrial society*. Industrial society is usually non-agricultural and is supported by technology and infrastructure development.

The administrative criteria or the political boundaries may also be used to define urban settlements. In such instances, urban areas are bound within the jurisdiction of a municipality, metropolitan municipality, local board or town committee. This categorisation of urban spaces is best explained in the manner in which the boundaries may be used to allocate resources, for example public transport, water and sanitation. In many cases, these administrative boundaries are very blurry and difficult to delineate. The administrative boundaries somehow perpetuate some forms of spatial segregation where the poor are often placed at the periphery where they are marginalised. However, it is interesting to note that the functional area of a city/urban area often extends way beyond its administrative boundaries.

⁵There are instances of urban spaces where the populations were dependent on agriculture which is an indication that agriculture may be prevalent in cities, especially considering the Green Revolution where urban agriculture is increasingly gaining prominence in most towns and cities. Coquery-Vidrovitch (2005:19) observed that “the percentage of city dwellers who farmed was also high in the cities of medieval Europe. There are many reports of ‘garden cities’ in Africa.”

Next, physical indicators such as the built environment and population density may also be used in relation to the term ‘urban’. Weeks (2010:34) suggested that urban is a “place-based characteristic that incorporates elements of population density, social and economic organisation and the transformation of the natural environment into the built environment”. According to UNICEF (2012:10), the minimum population for an urban settlement is typically in the region of 2 000 people, although this varies globally between 200 and 50 000 people. It follows that urban areas are those characterised by higher population densities and a large expanse of the built environment. Moreover, surface streets, availability of public amenities such as piped water and electricity are also synonymous with urban settlements (Chirisa, Matamanda & Bandaiko 2014:69). Pacione (2009:19-20) provided a condensed definition where ‘urban’ refers to “a number of factors that include minimum population threshold, population density, functional definitions, the presence of infrastructure, education and health, and concentration of administrative functions”.

In most African cities the aspect of infrastructure development which helps to define an urban area may not always be in existence. This is so because urban areas develop mainly because of an increase in the population with little commensurate infrastructure development, for example water and sanitation facilities, and housing. Therefore, what is urban thus becomes context-specific depending on the local indicators which are used to define the urban space.

In relation to human settlements, space facilitates the exploration and understanding which tends to be modified in different ways to suit the needs and lifestyle of the inhabitants. Considering that the needs and demands of a community are contextual and temporal, human settlements are thus evolutionary as they are transformed to promote human well-being (Mumford 1961). However, the development and management of a human settlement is largely determined by the availability of resources which enable the design and maintenance of the desired settlement typology. This is so because any human settlement is characterised by the built environment which includes roads (for circulation), housing units, schools, clinics and other supporting infrastructure such as waterworks (Matamanda, Dzvimbo & Kadabu 2017).

The built space is meant to support human well-being by encouraging a balance in physical, social, economic and cultural dimensions of residences (Bohnet 2016; UN-Habitat 1976:8). The focus of this study was on urban settlements, considering that there has been rapid urbanisation of cities and towns in recent years.

2.4.2.3 Emerging settlement: Starting from scratch

As previously reiterated, human settlements are diverse and complex. Just like living organisms, they are birthed, and develop and grow with time. For this reason, settlements may be categorised into different typologies depending on their stages of growth. The focus of this study was on emerging human settlement forms but to understand the concept of emerging human settlements, it is best to first have an appreciation of what the word ‘emerging’ refers to. According to *The Free Dictionary*, the word ‘emerging’ refers to something that is “newly formed or just coming into prominence” (Farlex 2018: Online). In the Cambridge Dictionary, *new* is a synonym for the word ‘emerging’ and means something that is just beginning to exist or that which is “growing and developing” (Cambridge Dictionary 2018: Online).

From the foregoing, emerging is something which is still in its infancy and is still growing and developing. The same applies to human settlements which are described as emerging when they are new and still developing. Green and Hendley (2009:50) used the term ‘*starting from scratch*’ with reference to emerging human settlements. The synonym of emerging, namely ‘new’, is factored in the definition by Breheny, Gent and Lock (1993:9) who defined the emerging settlement as:

a free standing settlement, promoted by private or public sector interests, where the completed new development – of whatever size – constitutes 50% or more of the total size of the settlement, measured in terms of population or dwelling.

In characterising the emerging human settlement, Breheny et al. (1993) identified certain criteria which need to be considered. First, there are a minimum number of dwellings or plots which are supposed to be in existence. A minimum of 3 000 to 5 000 dwellings is recommended, although these can even come up to 10 000. A small settlement that is already in existence may or may not be incorporated as part of the emerging settlement. The issue of ‘freestanding’ is not exhaustive as the settlement may be connected to other settlements; the essence is that the settlement has to be independent to some extent.

2.4.3 Settlement form

The word ‘form’ has many possible meanings. These meanings include shape, configuration, structure, pattern, organisation and system of relationships (Salat, Labbé & Nowacki 2011:28). These numerous meanings to form have contributed to the definition and understanding of

settlement forms. Interestingly, the *Online Etymology Dictionary* (2016) describes form as “a word of unknown origin”. However, its roots are traced in Latin and French where the word has been used since the twelve century. Sharma (2014:8) suggested that it is this long history of the word ‘form’ which has created ambiguities in its semantics.

The conceptualisation of ‘settlement form’ was initially based on the characterisation of form based on aesthetics and overall the outward appearance of things (Salat et al. 2011; Sharma 2014). In this regard, settlement form focused on either aesthetics or lack thereof (Sutton 1971). The rationale was on establishing aesthetically pleasing spaces and this relate to the utopian urban planning visions by proponents such as Ebenezer Howard who emphasised beauty as an intricate component of his *Garden Cities of Tomorrow* (Howard 1902). However, such settlement forms tend to be subjective because beauty is abstract, as Plato described in his *Theory of Forms* which he perceived from the philosophical lenses of metaphysics. Plato argued that there is also a form of abstractions which include numbers, logic, beauty and justice. Form, in this instance, is kind of elusive, as issues such as beauty and justice are complex and variant. When the form is likened to beauty, it also links with the aesthetical conception of form that is postulated by Sharma (2014).

Aside from the focus on aesthetics, settlement form is generally defined as the physical attributes of a settlement which includes the type of buildings, boundaries, and importantly, the road network (Royal Town Planning Institute (RTPI) 2015:1; Kostof 1992:4; Sharifi 2019:171; Williams 2014). The RTPI (2015:1) thus defined settlement form as “the physical characteristics that make up the built-up areas, including the shape, size, density and configuration of settlements”. The main emphasis from this definition is on the physical attributes of the settlement. However, settlement form encompasses both physical and nonphysical characteristics of a settlement which include size, shape, scale, density, land uses, building types, urban block layout and distribution of green space (Dempsey, Brown, Raman, Porta, Jenks, Jones, Bramley 2010:22; Morris 1994). These conceptions of a settlement of the city based on the physical form are largely rooted in cartographic designs and heavily incline towards master planning where the emphasis is on the built environment and the look of the city.

From the foregoing, it can be argued that form is much more than just the shape and appearance of objects as most proponents contend. Aside from the physical attributes of a settlement, settlement form is defined by Salat et al. (2011:28) as follows:

constituted by the spatial and social patterns that compose it and that allows us to describe its networks, its built spaces, and its empty spaces in geometric, topological and hierarchical terms in two, three and even four dimensions, incorporating the temporal depth that every city contains.

Salat et al. (2011:28) highlighted the inclusion of the social components as well as providing a description of the settlement which not only focuses on the cartographic elements. The rationale is that the form of a settlement is much more than the shape, structure, configuration or patterns which are only the external attributes which are easily observed. Rather, it is best conceived and understood as the manifestation of the invisible structural laws of the urban system. Sutton (1971) stated that settlement form focuses on the economic determinants of spatial structure and distribution of forms, with a view to understanding the urban development process. Likewise, Salat et al. (2011:28) argued that form needs to be studied not as a static entity but rather as part of the dynamics of systems of which it is a manifestation. Therefore, Sharifi (2019:171) highlighted that settlement form is the physical and spatial representation of human activities in cities that involve complex interactions between various socio-economic, technological and environmental factors.

In light of the diverging views presented in the foregoing paragraphs, it is beyond doubt that the settlement form is first a historical process which is forever evolving, based on planning ideologies, economic determinants and power dynamics (Morris 1994). Settlement form is therefore best understood through an examination of the historical account of the settlement together with several factors which have influenced its morphology. The definition of settlement form presented by Lynch (1981:48) considers this complex interaction:

Settlement form is the spatial arrangement of people doing things, the resulting spatial flows of persons, goods, and information, and the physical features, which modify space in some way significant to these actions, including enclosures, surfaces, channels, ambiances and objects ... the description must include the cyclical and secular changes in those spatial distributions, the control of space, and the people.

2.4.4 Human settlements and provision of basic services

The development of human settlements is supposed by the provision of basic services. These basic services to some extent have a bearing on the function of a settlement as well as the settlements' form.

2.4.4.1 Water supply

Water supply is considered as a basic human right which confirms the adage 'water is life' (Mehta 2014:59). As a result, there has been much global commitment in trying to ensure that there is improved access among the world population to this valuable resource. Improved sources of water are described as piped water, boreholes or tube wells, protected dug wells, protected springs and packaged or delivered water (WHO and UNICEF 2017:8). It is further highlighted that if a water source is to be defined as being safely managed, it must be accessible on premises, available when needed, should take at most 30 minutes for a round trip to collect the water which should be free from contaminations (WHO and UNICEF 2017:8). In addition to the time spent fetching water, ZimStat (2018) indicate that a person should not travel more than 500 metres to access water, otherwise the water supply will be considered as being compromised. This shows that individuals have to spend the least possible time in accessing water hence Mudzingwa (2017:10) noted that water facilities must be placed in the immediate vicinity with the household level being preferable.

Satterthwaite (2016a:100) argues that there is need to ensure that such water is of good quality because, inasmuch as it may be accessible, the quality of the water may pose some health challenges on the consumers. Mudzingwa (2017:10) state that the legal content of the human right to water includes availability, accessibility, affordability and quality. He adds that availability of water requires that water supply must be sufficient and continuous for personal and domestic uses, which ordinarily include drinking, personal sanitation, washing clothes, food preparation and personal and household hygiene.

Lack of water in a settlement is thus considered to be a violation of human rights. Global commitment to citizens' access to water is shown through the SDG 6 which commits that by 2030 there will be universal and equitable access to safe and affordable drinking water for the global population. The utility of water in human settlements dates back to the earliest civilisation, where water was the major factor that influenced the establishment and sustenance

of human settlements (Driaux 2016; Mumford 1961). For this reason, most of the early settlements were established in close proximity to water sources such as rivers, lakes or natural springs. For example, the Euphrates and Tigris are associated with the development of Mesopotamia; Nile River in Egypt; Yellow River in China and Indus River in India (Guo 2012:23-24; Kolars & Mitchell 1991:4).

With regard to water supply in human settlements, an adequate water supply system is one that ensures takes into consideration issues such as quality, acceptability, affordability, reliability and appropriateness of the water source (Satterthwaite 2016a:100; WHO and UNICEF 2017:7). In urban areas, reticulated water systems are often recommended yet the costs associated with installing such a system are very high and often beyond the reach of most central and local governments in the Global South (Adams & Zulu 2015:112). To ensure that residents have access to water in emerging human settlements, it is critical to adopt the notions of water-wise settlements where there is the provision of a diversity of water sources through the use of centralised and decentralised infrastructure (Carden, Fisher-Jeffes, Coulson & Armitage 2013). Other alternative sources such as groundwater are increasingly being explored by local authorities, for example, Johannesburg, Durban and Cape Town have introduced underground water supply as sources of water although use of such water remains unregulated (Armitage, Fisher-Jeffes, Carden, Winter, Naidoo et al. 2015).

Considering the financial burdens associated with the establishment of off-site and on-site water infrastructure, it is usually recommended to make every effort possible to connect to the existing water supply system with the view to reduce development costs (see section 2.5.3). Even though such an issue is categorised under the realm of social planning, there are many instances when the governments fail to undertake this social responsibility in human settlements. As a result, the provision of water supply in most cities and towns remains a challenge which local authorities grapple with.

Mehta (2014) highlights that inasmuch as policy rhetoric focuses on rights and equity; the reality is that utility and efficiency are largely dominant which in most cases side-line the interests of the marginalised communities. The result is what Harvey (2018) refers to an alienation which occurs where the private sector sees no incentive in investing in water supply in areas where the poor reside. Such areas are thus referred to as unprofitable markets (Marson & Savin 2015:27). In the end, they remain unserved, and residents normally resort to the use

of alternative water sources which include rain harvesting, shallow wells or water vendors (Matamanda et al. 2017:96). As a result, there is increasing water scarcity in emerging settlements where citizens end up using alternative water sources which are usually unsafe and compromise their health in different ways. Often citizens end up accessing water from various sources which may include water-vendors, walking long distances and waiting in queues at public sources as well (Khan & Javed 2007; Kwizera 2014).

2.4.4.2 Sanitation

Sanitation is a fundamental human right that is essential for promoting human health in human settlements. Sanitation has to be adequate such that it improves the quality of life of the individuals in an area as well as contribute to social development. Adequate sanitation is characterised by the safe disposal of excreta, solid waste and other liquid waste and the prevention of disease vectors to ensure a hygiene environment (Musingafi, Musingafi & Kaseke 2015:3). The WHO and UNICEF (2017:8) indicates that there is a need to improved sanitation facilities in human settlements. Such sanitation facilities and systems must not be shared with other households; excreta produced should be treated and disposed of in situ, stored temporarily and then emptied, transported and treated off-site, or transported through a sewer with wastewater and then treated off-site (WHO and UNICEF 2017:8).

The provision of sanitation facilities in urban settlements is also largely determined by the stand sizes, funding as well as political will. With regard to stand size, most urban areas assume a compact development form (see section 2.5.4) which makes it difficult to have on-site treatment of excreta hence wet systems are highly recommended. Satterthwaite (2016a:100) explains that:

Pit latrines in each household can work ell where there are low densities, small population concentrations and sufficiently large plot sizes. But urban areas typically have large and dense concentrations of people, many of whom have small house plots with little or no space for pit latrines.

Another challenge with decentralised sanitation systems in settlements where stands are dense and close to each other relates to the road systems which may make it impossible to facilitate the emptying of the septic tanks. In this way, it becomes difficult to empty the faecal matter from the septic tanks thereby exposing humans to contact with faecal matter (Satterthwaite, Mitlin & Bartlett 2015). It is thus for this reason why centralised sanitation are encouraged in

urban areas despite their costs which in most instances, especially in the Global South is beyond the reach of central governments (Banana, Chikoti, Harawa, Mcgranahan, Mitlin et al. 2015; Chirisa, Bandauko, Matamanda & Mandisvika 2016). In this regard, some proponents have advocated for decentralised sanitation facilities but their acceptance remains low and this remains an area to be explored with regard to human settlements.

The other issue with regard to the provision of sanitation services in urban settlements is the tension which confronts local authorities regarding funding and ultimately the need to uphold certain standards. It is argued that these standards usually exacerbate the provision of services such as sanitation in urban areas (Banana et al. 2015).

2.4.4.3 Public transportation

Public transport is a major determinant contributing to the development of settlements. This is so because public transport enables the accessibility of residents within a particular settlement to numerous services such as jobs, schools and shopping centres (Kenworthy 2006). The forms of public transport used within a particular area have a strong bearing on the form of the settlement. Dumba (2018:273) noted that a public transportation system comprises of three key components, namely vehicle or rolling stock, guideway and operations plan. The rolling stock refers to the items which are used to move objects. This may be trains, for example the Gautrain in Gauteng province of South Africa, commuter omnibuses in most parts of Zimbabwe, rickshaws in Indian cities, motorcycles in West African countries as well as walking (Beukes & Vanderschuren 2011; Ehebrecht, Heinrichs & Lenz 2018; Gadepalli 2016; Tichagwa 2016; Tiwari, Jain & Rao 2016:278). The diversity of the rolling stock clearly shows how the public transport system may have an influence on the settlement form. This is so because the transportation system may facilitate or restrict the movement of people such that people may end up being concentrated in particular areas.

Each of the preceding rolling stock examples is supported by a certain type of guideway which may be a railway line, road infrastructure, cycle lane or sidewalks (Dumba 2018). The guideway is that infrastructure which consists of roads, railway and freeways. The significance of this infrastructure is that it enables the community to be connected to services. However, there are instances when the guideway acts as a barrier through which individuals may find it difficult to walk or cycle due to safety reasons. On the whole, most studies undertaken have shown that transport infrastructure is very instrumental in enabling human life in urban areas

(Merlin, Levine & Grengs 2018; Sola, Vilhelmson & Larsson 2018). Challenges are largely faced in emerging settlements where residents have to walk the first mile/last mile due to the poor state of the guideway (Meng, Koh & Wong 2016; Mo, Shen & Zhao 2018). Walking the first mile/last mile usually places individuals at risk of attacks, especially if they leave for work early in the morning and come back late at night.

The operations plan refers to the set of procedures which guide how traffic and vehicles are moved over the guideway (Dumba 2018:273). The plans are more effective when the public transportation system is formal such that there is scheduled time for bus travels as well as designated pick and drop points within the settlement. The absence of an operational plan is associated with challenges which commuters have to bear. For example, waiting time tend to be longer as well as inconveniencing the commuters.

2.4.4.4 Safety

Human settlements are meant to be environments where residents feel comfortable and safe to go about and engage in their daily businesses. In this regard, the SDGs goal eleven seeks to make cities and human settlements inclusive, safe, resilient and sustainable by 2030. This SDG acknowledges that safety is a critical issue that has to be considered in the development and management of human settlements. With the evolving of human settlements, especially in African cities characterised by poverty, crime and violence threaten urban safety where citizens are at risk from such. In ameliorating these dilemmas associated with crime and violence it is indicated that the built environment may be designed in such a way that it either perpetuates or prevents the occurrence of crime (Chirisa, Bobo & Matamanda 2016; Nyabvedzi & Chirisa 2012). Safe neighbourhoods can therefore be made from the efforts of the planners or the settlement forms may simply exacerbate insecurity. In addition to crime and violence safety also extends to focus on road accidents and how safe the roads tend to be for the residents of a particular settlement or area.

The failure to factor in urban safety and insecurity in human settlement planning and management proves to be disastrous because the impact of crime and insecurity restricts social and economic development which ultimately compromises opportunities and pro-poor policies (Brennan 1999; Kunkeler & Peters 2011; Muggah 2012). However, achieving such human settlements which are safe is contingent on the urban planning approaches which should

address safety and security issues. The *Integrated Urban Development Framework* of South Africa also clearly demonstrates the significance of safety in urban areas when it states that:

Prosperous and liveable cities are urban spaces where citizens feel safe from violence and crime, and can take full advantage of the economic, social and cultural opportunities offered by cities (RSA 2016:33).

From the foregoing paragraph, it is clear that safety issues constitute a key aspect of human settlements and the lack of translates into an urban dilemma. Jane Jacobs (1961) identified the significance of safety and security in supporting the functioning of a settlement. She argued that ‘the bedrock attribute of a successful city district is that a person must feel personally safe and secure on the street’ (Jacobs 1961:30). In elaborating on the safety of the streets, Jacobs (1961:35) highlighted that a safe street in a settlement is characterised by three main qualities:

- Presence of a clear boundary separating public and private space;
- Eyes must be present upon the street; and
- There must be users who continuously use sidewalk, so as to add to the number of effective eyes on the street and to encourage residents in houses along the street to watch the sidewalks in sufficient numbers.

The ideals of Jacobs (1961) were eventually reinstated by Newman (1973) through his conception of defensible space which sought to use alienating mechanisms to reduce crime in neighbourhoods and make them safe. According to Newman (1973:50), there are four key design elements which act independently in creating safer urban spaces:

- Territoriality – built form acting as symbolic and real barriers.
- Surveillance – built form serves some surveillance functions and helps to protect the residents.
- Image and milieu – design and management of the built form assists in promoting safety through well-maintained and well-ordered places.
- Environment – the extent to which the surrounding spaces influence the security of adjacent areas and vice versa.

2.5 TYPOLOGIES OF HUMAN SETTLEMENT FORMS AND IMPLICATIONS ON SERVICE DELIVERY

The task of establishing the different typologies of settlement forms is equally daunting as defining the term ‘settlement form’. Various typologies have been conceptualised by different scholars based on different elements of human settlements. The transportation network characterising an area is usually one criterion used to define the settlement form typology. According to Besussi, Chin, Batty and Longley (2010:15) transportation is an intrinsic part of the built form as it underpins the skeletal structure of the settlement’s form. In this vein, sprawl is the main settlement form which is related to the transportation system of an urban area. Other typologies of settlement forms have been postulated by Jabareen (2006) namely neo-traditional development (NTD), urban containment, compact settlement and the eco-city.

2.5.1 Sprawl

Generally, sprawl explains when new developments are scattered and established on isolated land (Gómez-Antonio, Hortas-Rico & Li 2016:220; Gordon & Richardson 1997; Lata, Sankar, Krishna, Barinath, Raghavaswamy 2001). For example, the discontinuous settlements characterising sprawl form in Northern Italy are inhabited by more than 75% of the Northern Italian population (Salvati & Carlucci 2016:1351). From the perspective of Galster, Hanson, Ratcliffe, Wolman, Coleman and Freihage (2001:685), sprawl settlement is defined as a pattern of land use that is characterised by low levels of some combination of eight distinct dimensions: density, continuity, concentration, concentration, clustering, centrality, nuclearity, mixed uses and proximity.

Sprawl takes on different forms which include contiguous suburban growth, linear patterns of strip development along the main axis of transportation infrastructure and leapfrog development which is also referred to as scattered settlement form (Besussi et al. 2010). Mosammam, Na, Khani, Teymouri, and Kazemi (2016:104) brought in different perspectives of human settlements and defined the sprawl form as “certain forms of city spatial expansion toward suburbs and peripheral areas with, low density, single-use, extensive road and highway networks, car-dependent, open up vast spaces of territory, scattered and ribbon development in a mono-centric urban structure”.

By its nature, sprawl is associated with a number of demerits which often exacerbate urban dilemmas through difficulties in residents' access to basic services. Morote and Hernandez (2015:358-359) explained how urban sprawl in Alicante, Spain, has negatively impacted on the citizens' to access water for domestic use. The effects of water were explained by Bhatta (2010) who highlighted that sprawl requires more infrastructures through efforts to provide public services such as water, roads and sewerage in the low-density settlements. Moreover, the scattered nature of the development in sprawl makes it costly to provide such infrastructure (RTPI 2015:4). It is mainly for this reason that most settlements on the city edges have remained unserved with regard to municipal infrastructure, particularly in the developing countries.

Sprawl is also associated with an increase in road fatalities. The increase in motor vehicle crashes and accidents among residents living in sprawl settlements is attributed to the poor accessibility of land uses to each other, which forces residents to resort to long-distance travelling by automobiles (Ewing, Hamidi & Grace 2016:249; Yeo, Park & Jang 2015:397). Roads often lack sidewalks as they are major highways, hence making it unsafe for pedestrians (Bhatta 2010:35). Moreover, the feeder roads that connect the settlements to the highways are usually the most dangerous points as they usually lack crosswalks and make it difficult for pedestrians to cross the roads and for motorists to connect to the highways.

2.5.2 Neo-traditional development

The NTD is a settlement form which responds to the urban dilemmas associated with the late twentieth century American cities which were characterised by high dependence on automobiles and a number of urban ills (Handy 1991:136; Jabareen 2006:43). This settlement form is associated with different development initiatives that are pedestrian-oriented and mixed land use which integrates high-density residential services with retail and commercial services (Gupta & Rathore 2018; Nasar 2003:58). Generally, the NTD is premised on transit-oriented development, self-containment and tightly clustered development (Davies & Townshend 2015; Orenstein & Shach-Pinsley 2017:248).

Nasar (2003:58) elaborated that the NTD is characterised by street patterns which allow drivers and pedestrians multiple choices of walking from one area to the other. Seaside, Florida in the United States of America (USA), is a typical example of the application of NTD as it was designed and developed based on the principles of a walkable settlement characterised by

clustered development (Joshi, Joseph, Patel & Darji 2017:3). The settlement form may also be conceptualised as new urbanism and transit-oriented development. The promotion of walkability is a response to urban ills which has been associated with increasing urban sprawl, more space to accommodate the urbanites, traffic congestion, social segregation, crime and more investment in public services such as water and sewerage infrastructure (Al-Hindi & Staddon 1997:349). Through an emphasis on walkability and tightly clustered development, some proponents argue that NTD provides eyes on the streets which help to reduce crime and violence as the streets become active (Joshi et al. 2017; Nasar 2003).

However, amid the role of NTD in addressing the urban dilemmas, it remains criticised by some proponents due to some of its shortcomings. Handy (1991:139) argued that people do not generally prefer to live in compact, high-density development. They prefer to live in spacious areas. Furthermore, NTD forms are not easily implemented due to the number of technical challenges which limit the implementation of such settlement forms (Handy 1991). In the same manner, Nasar (2003) highlighted that the NTD has been criticised due to its aesthetic character with development which perpetuates a nostalgic way of life to those meant to reside in the area.

2.5.3 Urban containment

Generally, urban containment is a growth control typology of settlement form. Its main thrust is on concentrating development within the boundaries of the urban area. Any developments outside the urban area's jurisdiction are restricted. An example is the case of German cities which are increasingly adopting an urban containment policy⁶ to guide the rampant expansion of the country's urban development (Jehlinga, Hecht & Heroldb 2018:847). The logic, according to Pendall, Martin and Fulton (2002), is to minimise the costs associated with new growth, especially with regard to infrastructure development. There are three categories of urban containment.

First, urban growth boundary exists when a local authority draws a line around an urban area, beyond which new developments are not allowed or are discouraged (Cilliers 2009:944; Staley, Edgens & Mildner 1999). In this regard, urban land uses such as emerging settlements, are contained within the municipal jurisdiction, while rural land uses, for example low-density residential and agriculture areas, are concentrated outside the city boundary. The implication

⁶ Locally, urban containment is referred to as land thrift policy in German.

of urban growth boundary is that emerging settlements are concentrated within the urban boundaries. This type of urban containment is characterised by strict command and development control by the local authority. An example of urban growth boundary is the metropolitan urban limit of Auckland, New Zealand, which is a zoning restriction defining the boundary of Auckland as its rural hinterland (Auckland Regional Growth Forum 1999). However, there have been calls for the removal of this boundary as it is being associated with increasing land prices and rentals in Auckland as land becomes scarce (Daly 2018; Zheng 2013:5).

Second, greenbelt is a spatial technique to urban containment which mainly seeks to protect farmland, wildlife corridors and open spaces on the urban fringes (Jabareen 2006). A greenbelt is established around the urban boundary and no development is permitted within the belt area. The utility of greenbelts is in preserving open spaces, wildlife corridors and it is associated with some development challenges. For example, the introduction of a green belt in Korea led to leapfrog developments which compelled the local authorities to deregulate the greenbelt areas in seven large metropolitan cities (OECD 2014:21).

Lastly, urban containment may be in the form of urban service areas. An urban service area is the boundary beyond which the local authority will not provide public services for any emerging settlements. Unlike, the urban growth boundary which restricts development beyond the urban boundary, an urban service area acts as a ‘pull-policy’ which promotes a ‘market-based’ system of settlement development. In this instance, the local authority sets a boundary beyond which they do not provide the basic services such as bulk water and reticulated sewerage, electricity and roads. In such instances, emerging settlements are most likely to be concentrated within the municipal jurisdiction. However, there are some private players who may take up the task to provide such public services beyond the urban service area.

Pendall et al. (2002) highlighted that the urban service area is largely meant to minimise the financial costs associated with new developments. This has been the case in most African cities where local authorities are financially burdened and finds it difficult to finance infrastructure developments in emerging settlements (Cilliers 2009:942). Developers are then left to undertake the developments, a situation which often leads to compromised service delivery in most instances as the developers may not provide standard services often resulting in alternative services being used (Mphambukeli 2015). Urban containment is supported by most

proponents because it is argued that it promotes social cohesion, minimise development costs and encourage high-density development.

However, urban containment is discredited because it is associated with leapfrogging, which is associated with higher travel costs. The major disadvantage with urban containment is that it often results in rising land values and development costs. Once development is restricted within the boundaries of the urban area, it follows that the demand for land increases as land is a finite resource. Land scarcity is thereby a threat to open spaces. An example is the case of the Auckland urban boundary which has been identified as exacerbating land prices and rentals in the city (Zheng 2013:5). Fuller (2017:5) described how the effects of such escalating land and rental prices are worse felt by the poor who fail to pay such high prices and end up living in informal settlements, isolated from municipal services and various other socio-economic opportunities.

Overall, it can be concluded that the effects of urban containment policies are contentious. This is evident from a study to assess the effects of urban containment which concluded that a number of factors contribute to the effectiveness of the proposed urban containment policies and it is mainly the scale and prescribed density within and outside the boundary which has a bearing on the success or failure of the policies (Colsaet, Laurans & Levrel 2018:346).

2.5.4 Compact settlement form

Although there is much literature on compact form, there is no universally agreed definition of what it is. Rather, there are various characteristics which are associated with the compact form. The compact form is mainly characterised by mixed land use activities, high-density settlements, less dependence on automobiles and existence of clear boundaries from the surrounding areas (Frey 1999:36; Neuman 2005:14). The settlement is developed in such a way that citizens have better access to services and facilities and eventually improve citizens' quality of life (Elkin, McLaren & Hillman 1991:43; Lee, Kurisu, An & Hanaki 2015:1055). Such access is promoted through the use of public transport and non-vehicular transport, namely walking and cycling. The Council of the European Communities (1990:45) outlined that the compact form tries to evade challenges confronting cities through an extension of the city's boundary by localising such issues and dealing with them within existing boundaries.

Basically, the compact settlement form pays special attention to a number of issues which mainly strive to address urban dilemmas. In this way, the focus is on the densification of the built environment and the intensification of land use activities (OECD 2014:22). Densification results in lower costs for installation of bulk infrastructure through the reuse of infrastructure and previously developed land (Thomas & Cousins 1996). However, Kotharkar, Bahadure & Sarda (2014:4246) raised an argument concerning the utility of compactness in Indian cities which are already densely settled. Such a counter argument challenges the discourse on compact cities which is praised in both developing and developed countries for its merits in supporting inclusivity, access and spatial justice in cities (Ahlfeldt & Pietrostefani 2017:5). The implication is that citizens in the emerging settlements are more likely to access public services which in most instances will be disconnected from the existing system.

In efforts to address such challenges some strides have been made in the South African context where emphasis is on the development of an efficient transport system which is supported by mass-transit as well as encouraging walking and cycling as highlighted in the Integrated Urban Development Framework for South Africa which seeks to use compact policy to transform the cities in the country (RSA Cooperative Governance and Traditional Affairs [CoGTA] 2016:8). A form of this nature thus enables residents of the particular settlement to access various services with ease since the transport network will be efficient.

Albeit its importance in promoting the quality of life of citizens and stifling urban dilemmas, the compact form has some challenges which may render it difficult to operationalise in developing countries, especially Africa. The compact form requires strong governance with coherent networks for its successful implementation (OECD 2014:22). Neuman (2005:14) highlighted that the compact form requires sufficient government fiscal capacity to finance urban facilities and infrastructure, yet local authorities in most African cities are characterised by financial challenges, poor governance and corruption (Myers 2011).

Shi, Yang and Gao (2016) highlighted that the compact form is associated with multiple urban dilemmas. These dilemmas resulting from the compact settlement form include traffic congestion, higher crime rates, noise pollution and overcrowding (Knights 1996:116). Higher crime rates relate to issues of urban safety, while overcrowding is related to a multiplicity of public health issues which include infectious diseases. Densification may also put a strain on the existing infrastructure which in most African cities were not designed to accommodate

huge populations. The implication is that the city's infrastructure would eventually have to be replaced as it would be difficult to sustain the compacted settlement.

2.5.5 The eco-city

Jabareen (2006) noted that an eco-city is basically an umbrella concept with no specific definition. Albeit its growing popularity among planners and governments in the West and in Asia, there seems to be no agreed definition of what an eco-city form is. Rather, most proponents have tried to focus on what the eco-city form ought to achieve, that is, urban sustainability. Such initiatives which seek to achieve urban sustainability have a bearing on urban dilemmas. The provision of sustainable public transportation and water supply helps in facilitating human well-being by promoting a functional settlement. The rationale is to develop a self-sustaining and sufficient settlement with regard to energy, water and a sustainable transport system. For example, houses developed in Masdar City in Abu Dhabi in the United Arab Emirates, use 54% less water which is critical in water-scarce areas such that all residents have access to water.

Joss (2011:280) defined the eco-city form as development of substantial scale, occurring across multiple sectors through the support of policy processes. The development of the eco-city settlement is not only confined to a wider city region but may also be at the neighbourhood level. It can either be new developments (emerging settlements), urban expansions or retrofits. From his definition, Joss (2011) elaborated that the multiple sectors include an array of systems in the area being developed, for example housing, water, transport, energy, waste and land. According to Rapoport (2014:144), the eco-city may be conceived as a living laboratory which acts as a site for innovation and experimentation. Van Dijk (2015) argued along the same lines in that the eco-city is meant to contribute to the management of the settlement through paying attention to critical issues which include, but are not limited to energy, transportation, water, climate change and sanitation.

The eco-city settlement form does not have a distinct physical shape, rather its emphasis is on the way society is organised and managed. The main focus is on the management of the city rather than suggesting any settlement form (Jabareen 2006:47). Emphasis is on having a settlement form which supports the coexistence of nature and humans. The human settlement must be such that it allows eco-friendly design and walkability and consumes less energy. Examples of the application of this settlement form are in Masdar City, United Arab Emirates.

The settlement considers the ways and approaches to improve the sustainability of the settlement through the integration of economic, social and environmental issues. Achieving this particular form is made possible through a number of processes and initiatives. For example, there has to be political will which is also based on a bottom-up approach to development (Bunning 2014). This has to be complemented by an adaptable development of infrastructure which has to be premised on a systems approach where careful consideration is made of the interactions and interactions within and among the infrastructure system (Engel-Yan, Kennedy, Saiz & Pressnail 2005; Yu, Dijkema, Jong & Shi 2015).

With regard to urban dilemmas, the eco-city plays a critical role in that its focus is on managing urban areas such that sustainability is promoted. It follows that there is a consideration for the improvement of human well-being through a focus on the provision of infrastructure and services which are hinged on the notion of sustainability. However, the eco-city form is associated with high initial investment costs when compared to other conventional settlement forms. For example, a total of US\$22 billion was budgeted for the development of the Masdar City (Goldenberg 2016). Interestingly, Zimbabwe's national budget for 2018 was US\$5.74 billion (Government of Zimbabwe 2018b). This is a clear indication that such settlement forms are beyond the reach of most developing countries and remain as utopian forms because of the huge investment required to develop and manage the necessary infrastructure and services.

Considering the use of cost-intensive technologies and infrastructure associated with developing eco-city settlements, fewer governments are willing to implement such initiatives. The high development costs are a huge financial burden which may simply constrain local governments. When such initiatives are undertaken to develop eco-cities, the result is often that the poor citizens are largely penalised or fail to access and eventually use the new technology (Angelidou 2014; Saiu 2017). In the end, the settlement ends up becoming the preserve of the elite, or simply a ghost settlement as has been the case in Masdar City where only 300 citizens occupy the city meant to accommodate 50 000 to 60 000 inhabitants (Goldenberg 2016).

2.6 CONCLUSION

This chapter focused on human settlements in the context of planning, drawing from selected lessons and examples in both the developing and developed countries. First, the chapter highlighted that planning is a contested discipline which is guided by different ideologies such as master planning, incremental planning and collaborative planning. All these different types

of planning are mainly undertaken to guide the development of human settlement with a view to promote human well-being. A discussion is also presented on social planning which seeks to address the needs of the poor with regard to accessing basic services such as water and sanitation. Second, the chapter provided a discussion on human settlements. It focused on the function, hierarchy and form of human settlements. Lastly, the chapter highlighted the typologies of human settlement forms which include sprawl, neo-traditional development, urban containment, compact settlement and the eco-city and how each contributes or impacts on service delivery. The next chapter will focus on the theoretical framework of the study. The theories informing the study are on human settlement forms, urban dilemmas and systems theory.

Chapter 3

THEORETICAL PERSPECTIVES TO HUMAN SETTLEMENT FORMS AND URBAN DILEMMAS

3.1 INTRODUCTION

The previous chapter provided a synopsis of human settlements in the context of planning. In this chapter, the theories applicable to human settlement forms and urban dilemmas nexus are discussed. As explained in Chapter 2, settlement forms are never static; they rather evolve based on socio-economic and political factors within a particular area. However, understanding human settlements has never been an easy task as illustrated by Weber (1962:9):

The theory of the city somehow cannot account for what every journalist, poet, and novelist knows – the city is a living thing. As a system of life, the city penetrates the structure of biological evolution itself, creating new urban – insect and urban – animal form.

Settlement forms are temporal; the same is true for urban dilemmas which take on a different spectrum in different contexts. As such, this chapter takes it to task to discuss theories relating to human settlement forms and urban dilemmas. In understanding settlement forms, the discussion has been outlined categorising the theories of human settlement form as classical, neo-classical, normative as well as descriptive and functional. Another category of theories consists of a set of theoretical perspectives which attempt to explain the urban dilemmas experienced by communities, as also the systems theory which is a lens through which settlements can be analysed.

3.2 THEORISING HUMAN SETTLEMENT FORM

Considering the complexity of understanding and conceptualising the concept of form, the same applies to theorise settlement form. In this regard, various scholars have contributed to this discourse where they have come up with different theories of understanding settlement form. Salat et al. (2011:14) argued that no theory can sufficiently define the term settlement form to meet the challenges of urbanisation and settlement development. To make matters worse, settlements are always evolving, and they are complex, which make understanding the dynamics of settlement form difficult (Batty 2005:3; Short 2006:3). Of utmost importance in

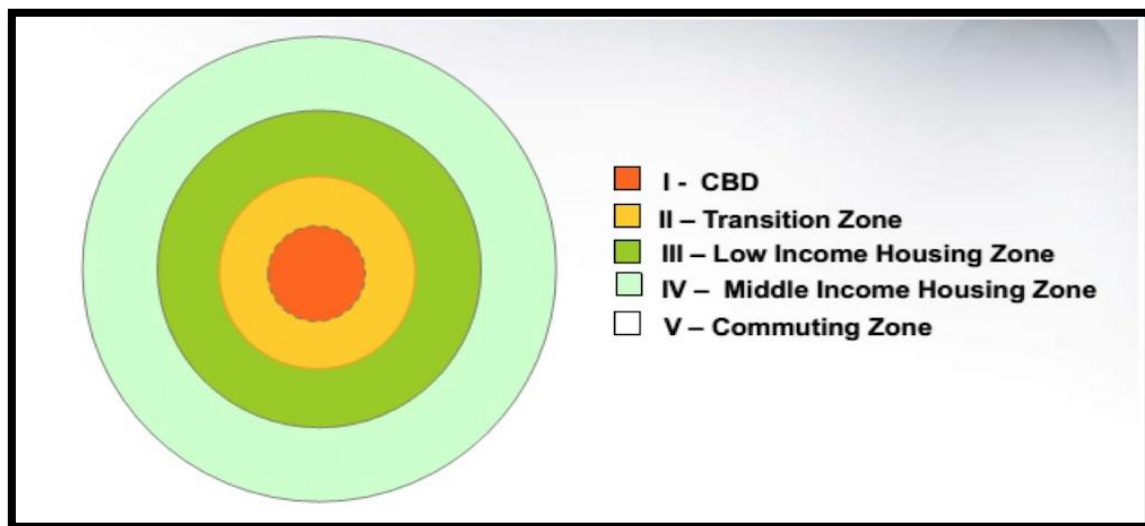
theorising settlement form is the fact that these forms are constantly evolving; therefore, the theorising and study of settlement forms have to be premised on the temporal, scale, socio-economic and political issues.

3.2.1 Classical theories on settlement forms

The first theories to understand settlement forms were found on sociological underpinnings. In this regard, emphasis was on explaining how the behaviour of people influences the pattern of cities. There are three main theories which inform this group of theories and which relate with this study. These theories analysed below include the concentric zone model, sector model, multiple nuclei model, Radburn concept, neighbourhood unit and ekistics theory.

3.2.1.1 Concentric zone model

The concentric zone model was developed by E.W. Burgess in the early 1920s thus it is also referred to as the Burgess Model. The concentric zone model is among the early descriptions of urban form that was applied in Chicago in the USA (Hall 1996:366; Meyer 2000:261). Basically, there are five zones that characterise the city and these depict the five rings defining the city (Figure 3.1).



Source: Jamal (2017)

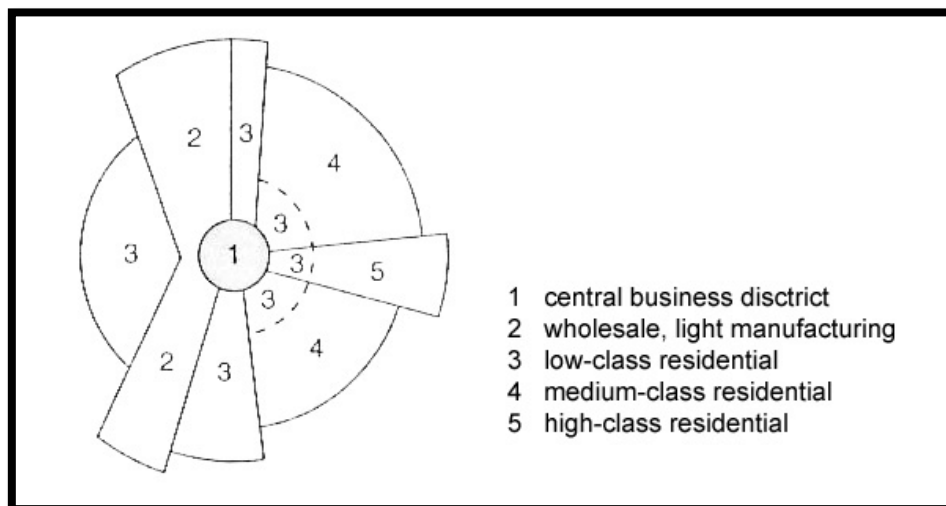
Figure 3.1 The five concentric rings which depict the spatial development of the city based on the Burgess concept

First, the core constitutes the CBD that is the hub for the city’s commercial activities. Second, the zone of transition contains a mixture of residential and commercial uses. The poor social groups of new immigrants reside in this second zone (Burgess 1925:51). Third, are the low-class residential areas that have limited amenities and are usually referred to as the zone of independent workers’ home or the inner city (Burgess 1925:56; Tian, Wu & Yang 2010). The fourth zone is the outer suburbs where the middle income earners reside on more spacious stands. Last is the commuting zone which accommodates the high-income earners who live beyond the city’s built-up area in large and open residential units (Jamal 2017; Pacione 2009).

This model postulates that similar land uses occur in rings around the city centre and there is a steady increase in residential status from the city to the periphery (Shane 2005:182). Major routes of transportation are conceived to be originating from the core; therefore, the centre becomes the most accessible location in the city.

3.2.1.2 Sector model

The sector model was proposed by Homer Hoyt in 1939, based on the concentric zone model. Herbert (1972:72) regards the sector model as the second classic model that helps to explain urban spatial form. Unlike the development of concentric zones posited by Burgess, Hoyt (1939) suggested that land uses develop from the centre to the fringe in a wedge-like fashion (Tian et al. 2010:249; Pacione 2005:144). Thus, the city centre remains but with well-defined transport routes branching from the centre to the fringe (Figure 3.2).



Source: Pacione (2001:101)

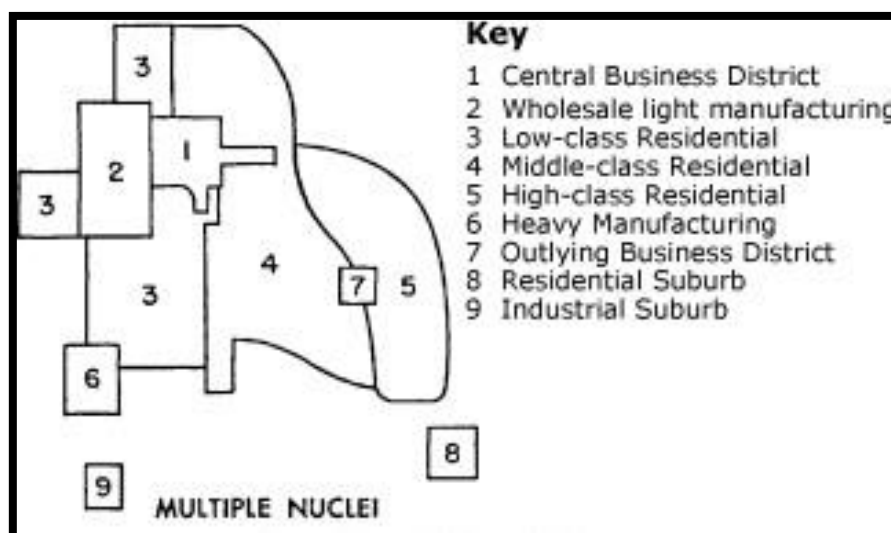
Figure 3.2 *The sector model showing the various sectors representing the settlement form where settlements are categorised based on income classes*

When the mixed land uses become distinct, they tend to move outwards from the centre along the definite public transport routes. It is this consideration of the impact of transportation systems on accessibility that distinguishes the sector model from the Burgess Model. In this regard, the sector model relates to my study as it helps in highlighting how emerging settlements are concentrated along transport routes to facilitate mobility among those dependent on public transport.

Hoyt (1939) posited that lower income households will be located along the transportation routes on land bordering manufacturing industries and middle- and higher-income households because of the traffic, noise and pollution associated with staying in close proximity to the industry and public transportation route. Consequently, in a way the sector model laid the basis for a clear physical segregation between the rich and the poor.

3.2.1.3 Multiple nuclei model

The multiple nuclei theory was postulated by Chauncy Harris and Edward Ullman in 1945. The model was aimed at improving on the shortcomings of the concentric and sector models. Harris and Ullman (1945) argued that the spatial structure of the city consists of multiple business centres coexisting with the main core. The CBD ceases to be the main factor for city development; rather, the mini-centres emerge as nodes for development (Figure 3.3) (Florida, Matheson, Alder & Brydges 2014).



Source: Harris and Ullman (1945)

Figure 3.3 Multiple nuclei model

The logic was that several types of economic activities and functions exist in the city and each one of them emerges to form districts which eventually become the nucleus. Land use zones emerge and develop around various mini-centres across the city. The development of these zones is influenced by the specific needs and functions of the respective land use. For example, housing development requires large tracts of open land, and thus tend to move away from the CBD where land values are high. On the other hand, heavy manufacturing industries are best placed in close proximity to transportation routes.

With regard to the conceptualisation of Harris and Ullman, the city is composed of nine areas, namely the CBD, wholesale light industry, low-income housing, middle-income housing, upper-income housing, heavy manufacturing industry, outlying business area, residential suburb and industrial suburb. The spatial form of the city, according to Harris and Ullman (1945), is a result of four factors. First, there are certain land uses in the cities which require specialised facilities. As a result, land uses and activities tend to concentrate in certain locations away from the CBD thereby forming a nucleus. Second, there are some land uses which are complementary and benefit more from cohesion. These land uses and activities tend to thrive best when they are clustered in specific regions. Third, some activities and land uses are detrimental to each other, hence they repel. For example, affluent and high-income neighbourhoods make every effort to avoid the ills and disamenities of heavy industries. This is often shown by cases where such neighbourhoods tend to be situated far away from heavy industries. Lastly, not all activities manage to pay for the high rentals and land values associated with the core business core. Low-income residential areas are a good example of this category which tends to cluster away from the city core. This may explain the emergence of city edge settlements.

The multiple nuclei model is useful in exploring the emerging human settlement forms in Harare as they focus on the socio-economic and political factors which influence the development of settlements. The model also acknowledges the issue of income which gives way to spatial segregation which is an intrinsic component in the morphology of cities in the developing countries.

3.2.1.4 Radburn concept

The Radburn concept was coined in America by Clarence Stein and Henry Wright around 1928. It is related to the Garden City movement championed by Howard, although the Radburn concept focused more on creating safe, orderly, convenient and peaceful and spacious suburbs (Hall, Tewdwr-Jones 2011:39; Kostof 1991:80). The increasing volume of traffic in residential areas was becoming a threat to pedestrians, especially housewives and children. Therefore, pedestrian paths and vehicular roads were designed to form two independent systems to separate transport avenues from local roads and streets (Mumford 1961:571).

Through its guiding principles, the Radburn concept influenced the way settlements were designed and subsequently helped to determine the form of the settlement. These principles are specialised highway system where roads were to be laid out as loops and cul-de-sacs so as to reduce traffic conflict; central open space that would serve as a backbone of the neighbourhood; super blocks; houses turned back; and complete separation of vehicular and pedestrian and bicycle paths (Hall 1996:127). These principles are critical in understanding the settlement forms and safety issues within the neighbourhood.

3.2.1.5 Neighbourhood unit

The neighbourhood unit theory was conceptualised by Clarence Perry in 1929⁷. The theory is considered to be a major planning landmark that significantly shaped and transformed the urban form of the twentieth century in most countries, particularly in the USA (Hall and Tewdwr-Jones 2011:38). Moreover, it has laid the foundation for modern-day planning movements such as the New Urbanism. The theory uses the traditional neighbourhood as the basis for planning human settlements, especially in urban areas (Habib, Moztarzadeh and Hodjati 2013). Perry's model was premised on six principles which are outlined in Table 3.2 and include site, boundaries, open spaces, institutional sites, local shops and internal street systems.

⁷ Although the neighbourhood unit theory is attributed to Clarence Perry, Johnson (2002) wrote that the architect William Drummond seems to have used the term 'neighbourhood unit' almost a decade before Perry. However, the conception by Perry is considered as the primer because he managed to synthesise a variety of ideas which helped to crystallise the neighbourhood unit theory into its current form.

Table 3.1 Six principles of Perry’s neighbourhood unit theory

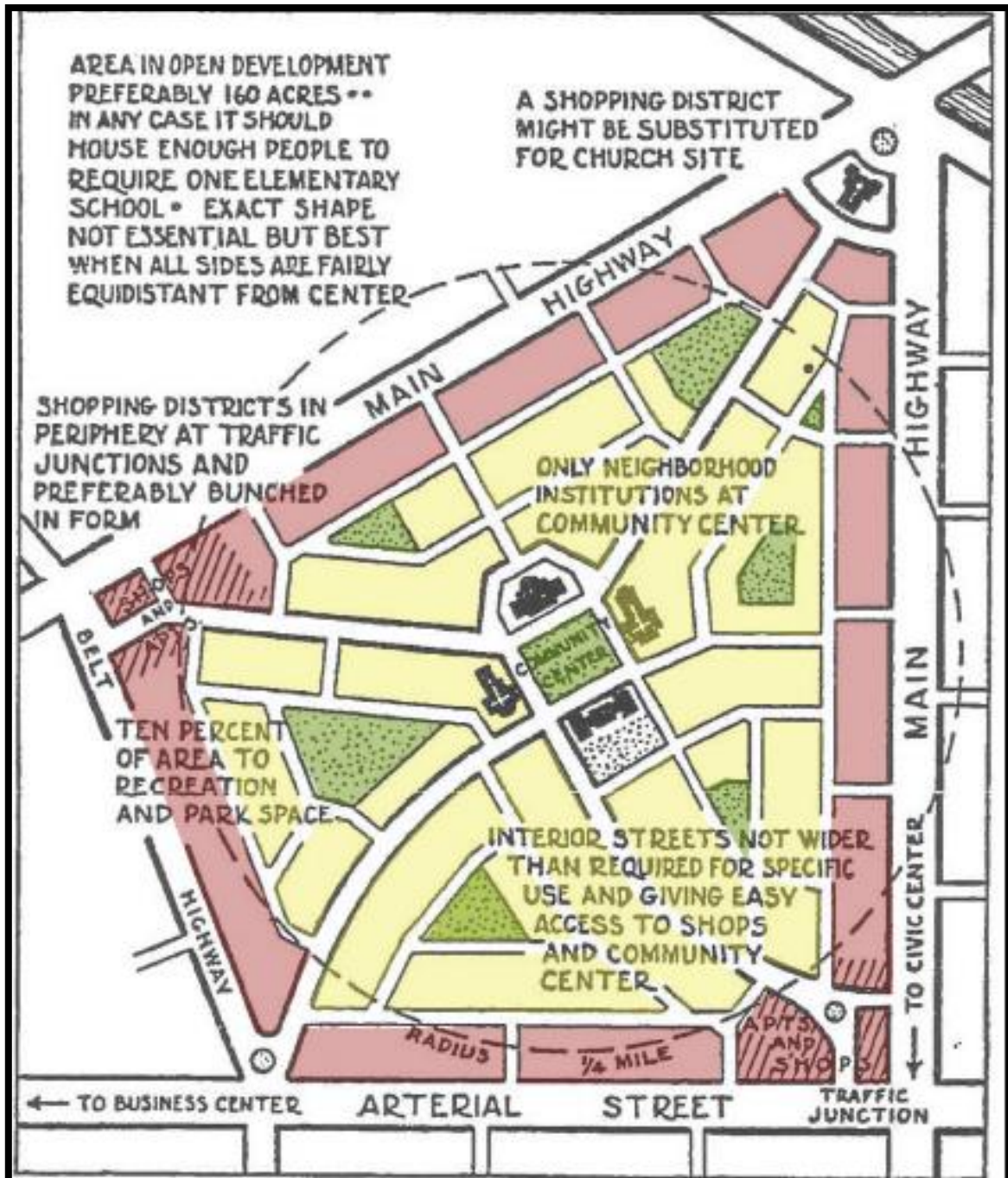
Site	A residential unit developed should provide housing for that population for which one elementary school depending upon population density.
Boundaries	The unit should be bounded on all sides by arterial streets, sufficiently wide to facilitate its bypassing by all through traffic.
Open spaces	A system of small parks and recreation spaces, planned to meet the needs of the particular neighbourhood, should be provided.
Institutional sites	Sites for the school and other institutions having service spheres coinciding with the limits of the unit should be suitably grouped about a central point.
Local shops	One or more shopping districts, adequate for the population to be served, should be laid out in the circumference of the unit, preferably at traffic junctions and adjacent to similar districts of adjoining neighbourhoods.
Internal street system	The unit should be for that purpose provided with a special street system, each highway being proportioned to its probable traffic load, and the street net as a whole being designed to facilitate circulation within the unit.

Source: Perry (1929:34-35)

Perry recognised that his idea could be best applied to new peripheral areas and new towns, although planners are now using it for urban redevelopment (Attia 1963; Brody 2009; Meenakshi 2011). The use of the theory to structure new towns and suburbs makes it applicable to explore the nexus of emerging human settlement forms and urban dilemmas in Hopley. It is thus used as a building block in forming urban patterns. Moreover, the theory may help inform this study because its novelty is that it fuses the social and physical components of the city through perceiving the residential neighbourhood as a special entity that has to be protected and deliberately planned for (Brody 2009:11).

Meenakshi (2011) suggested that Perry’s ideas were motivated by the need to insulate communities from the negative impacts of increasing vehicular traffic. However, the ideas by Perry are aimed at informing the spatial pattern of neighbourhoods with a view to create harmony among land uses, promote safety through active public spaces, create diversity for housing and transport options, all culminating into a place that has a clear identity. Through its six principles, the neighbourhood unit theory has the ability to embrace the public facilities and conditions required for the average family for its comfort and proper development within the vicinity of its dwellings (Perry 1929:34).

Ben-Joseph (2005:64) elaborated that Perry realised that better integration between the surrounding neighbourhoods and the centre must occur and that all elements of the urban plan must be dependent on each other. Such a dependency brings in the concept of systems analysis as the interactions between the elements in the neighbourhood have to be explored. Figure 3.1 gives a diagrammatic representation of this theory.



Source: Perry (1929)

Figure 3.4 Diagrammatic presentation of the neighbourhood unit

3.2.1.6 Ekistics theory

In 1942, Constantinos A. Doxiadis, a Greek architect and urban planner, conceptualised *The Science of Human Settlements* which is popularly referred to as the ekistics theory. Doxiadis (1970:393) argued that there was a need for a science that would specifically deal with human settlements to view the settlements in a systematic way. His idea was based on the fact that human settlements were no longer satisfactory for their inhabitants because of multiple problems in cities (Doxiadis 1968:5; Zarmakoupi 2015:2). These problems which include imbalance in public transport, zoning, communication, environmental degradation and sprawling, have caused untold suffering to urban dwellers in most cities, particularly in the Global South. Therefore, the theory introduces fundamental design principles that seek to promote social, environmental and economic sustainability of a new city (Pollalis, Kouveli, Orfanos & Tzioti 2014:52).

Through the ekistics theory, human settlements are considered as complex biological systems whose growth depends on the different patterns of mobility that are made available by numerous overlapping networks (Doxiadis 1965:41-42). Subsequently, the human settlements are conceived of as having their own laws. According to the ekistics theory, there are five principles which guide man in shaping settlements (Doxiadis 1970:393-394). These five principles subsequently formed the bedrock for the ekistics theory and they are:

- Ensuring man's contact with natural (for example, water) and man-made (for example, roads and buildings) systems.
- Reducing the efforts required to access the elements in the built environment.
- Man makes every effort to optimise their protective space. In this regard they try by every means possible to maintain a certain distance from other individuals, animals or objects which may threaten their safety.
- Man also seeks to optimise their relationship with environment leading to order, physiological and aesthetic, and that influences urban form.
- Man organises his settlements in an attempt to achieve an optimum synthesis of the other four principles.

These principles of the ekistics theory are significant in informing the understanding of the settlement form and urban dilemmas in accessing services such as water, public transport and sanitation by Hopley's residents. The utility of ekistics is that it was conceived as a knowledge

framework that could be used to analyse human settlements, and also as an approach to the development of integrated solutions experienced in cities and towns (Psomopoulos & Perovic 2005:40; Theodosis 2015:251).

Ekistics also conceptualises the city as a complex system and is capable of dealing with the current and future complexity as well as the new forces entering the systems. In this regard ekistics tries to respond to the totality of human needs in a holistic manner. Furthermore, it is interdisciplinary and cuts through different scientific fields; hence it has the ability to explore built forms, temporal issues, mobility and systems in the built environment (Doxiadis 1970; Pollalis et al. 2014). Thus, it informs the nexus of settlement forms and dilemmas in Hopley, Harare, considering that the study is interdisciplinary and cuts through fields such as geography, sociology, architecture and public health.

3.2.2 Neo-classical theories on settlement forms

This section highlights the neo-classical theories on settlement forms which sought to address the shortcomings of the classical theories. Two theories are analysed in this section and these include new urbanism and smart growth.

3.2.2.1 *New urbanism*

New urbanism is a movement that is rooted in architecture and planning. It is widely accepted that the ideas of the movement originated from the building of the new community of Seaside in Florida in the USA (Brooke 1995). In the recent decades, new urbanism has stimulated new forms of neighbourhood design and development through advocating for design-based strategies found in ‘traditional’ urban forms. Such strategies try to find components of vernacular and classical architecture from historic towns that worked well with regard to developing functional communities (Davies and Townshend 2015). Hall and Tewdwr-Jones (2011:244) characterised the designs as “fairly dense terrace houses facing out onto grid-pattern streets, enjoying good-quality public transport”. Additionally, new urbanism seeks to provide a design foundation for a more authentic urban life, designed at a human scale, walkable, have compact, mixed land uses and adequate public spaces (Rahnama, Roshani, Hassani & Hossienour 2012). Table 3.2 provides the major principles that guide new urbanism.

Table 3.2 Major principles of new urbanism

Walkability	Pedestrians must be able to walk in the urban space that is secure, comfortable, satisfying and convenient.
Connectivity	Need for paths and road hierarchies that make all the functions and services in the urban area accessible without much hustling.
Mixed land use and diversity	Diverse land uses should be brought together rather than having separate land uses, for example whole residential or industrial areas.
Mixed housing	Develop housing units in close proximity that have different models, sizes, typologies and costs, for example semi-detached and multi-storey residences within the same locality.
Smart transportation	A transport system that supports and encourages walking and mass-transit transport.
Increased density	The urban areas must be developed in such a way that buildings and services are close together, more of compactness so that everything may be accessed by the residents through walking.
Sustainability	Make use of environmentally friendly technologies and minimise the use of fossil fuels which may be done through the use of solar traffic lights and encouraging more walking and less driving.
Quality of life	Enhancing human well-being mostly by bringing goods and services closer to their homes.
Quality of architecture and urban design	Emphasis must be placed on aesthetics, beauty and order such that the urban spaces become more appealing.

Source: Adapted from Rahnama et al. (2012:198-199)

This movement is instrumental in addressing urban sprawl, urban blight and to build and rebuild neighbourhoods, cities and towns (Bohl 2000:763; Hall & Tewdwr-Jones 2011:244). Scott (2014) argued that new urbanism synthesises an entire range of spatial patterns that are not only good urban designs, but also contribute in other important planning goals such as growth management, environmental protection and urban revitalisation. The guiding design principles of new urbanism make it operational on different scales that range from buildings, stands to neighbourhoods, districts and even to whole cities or regions (Katz 1994). Therefore, the conceptions of new urbanism are informative in explaining the settlement forms at various scales and are thus useful and applicable for exploring the emerging settlements forms in Hopley.

3.2.2.2 Smart growth

The smart growth theory emerged in America in the mid-1990s (Mohammed, Alshuwaikhat & Adenle 2016). The theory originated from the growth management movement which focussed

more on controlling urban sprawl and associated urban problems. The main assumption was that it could help address urban challenges that were increasingly becoming endemic to urban growth and development in the USA (Downs 2005; Hall & Tewdwr-Jones 2011:244-245; Wey & Hsu 2014). The smart growth theory challenged traditional assumptions in urban planning that promoted low-density development, automobile dependence and single-zone land uses. It advocated that the growth of new neighbourhoods should focus on creating compact liveable communities that are walkable and where land uses are mixed (Chapin 2012; City of Kirkland 2013; Porter 2002). Furthermore, it is recommended that these new neighbourhoods should be directed towards existing development so that less will be spent on infrastructure development and public service delivery through installation of new infrastructure. Table 3.3 presents the principles of smart growth.

Table 3.3 Ten principles of smart growth

<ol style="list-style-type: none"> 1. Mix of land use. 2. Compacts development/building design. 3. Develops walkable neighbourhoods. 4. Provides transportation choices. 5. Strengthens and directs development to existing communities. 6. Preserves open space, farmland and critical environmental areas. 7. Fosters distinctive, attractive neighbourhoods with a sense of place. 8. Creates housing options. 9. Makes development decisions predictable, fair and cost-effective. 10. Encourages community collaboration in development decisions.

Source: Sykes and Robinson (2014:168)

Of utmost importance is the expectation of smart growth to effectively shape the urban form and socio-economic conditions of cities in the USA (Dong & Zhu 2015). Moreover, Chapin (2012) argued that smart growth is an opportunity that may help in achieving desirable development outcomes for a particular community. The conceptions of smart growth help to combine land use and transport planning of urban sprawl makes it applicable to local contexts such as Hopley, Harare. Smart growth is defined by development patterns that create attractive, unique, and walkable communities that provide safe, affordable and convenient choices to different age groups with regard to where they live and how they get around (Sykes & Robinson 2014:168). Therefore, the theory significantly informs this study through explaining the structure and form of Hopley and the associated dilemmas.

3.2.3 Normative theories of settlement form

Normative theories explain what is characterised as good settlement form. The theories and models in this category are prescriptive and seek to link settlement form to human values. The main aim is to identify what settlements ought to be if they are to be recognised as good. Normative theories are quite instrumental when it comes to the exploration of spatial–social dynamics in cities. Watson (2002:27) explained that normative theories have far greater potential for applicability in urban areas; therefore, they may facilitate the exploration of emerging human settlement forms and urban dilemmas nexus. In this section, the machine model and the good city form theory are analysed.

3.2.3.1 Machine model

The machine model considers settlement forms to be a product of some short-term plans which guide the development of settlements that are meant to be temporary. Thus, the machine model aligns with the incremental type of planning which is based on the short term and is reactive in nature (Lindblom 1959). It is mostly applicable in instances when settlements are created hurriedly, with its future growth determined by unforeseen forces (Massachusetts Institute of Technology, Open Courseware 2018). Settlements developed in this manner are mainly for convenience and flexibility and usually follow the aftermath of disasters or when there is a crisis of some sort.

Examples of such settlements include refugee camps or sites for construction workers working on major projects such as railway construction. An example is how Nairobi was initially established simply as a railway siding, as well as Cape Town as simply a resting place for passing ships (Dewar et al. 1990; Muthuma 2015). Eventually these settlements developed into complex forms which characterise what they are to this day. The allocation of land in such instances is usually quicker and at the initial stages there are no strict land use regulations, hence the settlement takes on different forms.

3.2.3.2 Theory of good city form

The theory of good city form searches for universal rules that comprehensively consider the interaction of human purpose and city form (Lynch 1981:37). Instead of focusing on the static and completed form of a city Lynch argued that there is a need to pay attention to the process of developing the form and its management; and postulated that the form of a city is rather a

product of multiple, interacting decisions and actions of agencies and persons (Lynch 1981:336).

His theory is premised on five dimensions of settlement performance namely vitality, sense, fit, access and control. In addition, there are two meta-criteria dimensions which operate on all the other five dimensions efficiency and justice. I will use this theory to explain the lived experiences of the residents in Hopley in relation to the dimensions proposed by Lynch.

❑ **Vitality**

Vitality considers the degree to which the human settlements provides and supports healthy and life-enhancing environments capable of promoting human well-being. The focus is on the settlement to support the health and biological functioning of the individual and the survival of the species (Lynch 1981:121). The rationale is on aspects of the settlement which encourage liveability. However, liveability is contextual and it therefore somehow becomes difficult to measure and identify the level of vitality. From a Global South perspective, vitality is mainly espoused with regard to the provision of basic services such as water and sanitation. In other contexts, for instance the Global North, internet connection in the settlement and electricity become crucial. Thus, vitality is contextual. Issues to be considered in vitality include safety, sustainability, and inclusivity in relation to human settlements.

Ford (1999:255) elaborated that issues such as access to safe drinking water, food, sanitation and housing become critical for consideration in light of vitality. Another aspect of vitality which is of relevance to this study is safety which refers to how the settlement is safe from certain hazards, for example accidents, crime, violence and diseases. To be viable, human settlements ought to promote human safety. Consequently, the SDG 11, target 11.2, commits to “provide access to safe ... transport systems for all, improving road safety ... with special attention to the needs of those in vulnerable situations” (UN-Habitat 2016:2).

❑ **Sense**

According to Lynch (1981:235), good sense of a settlement is one which is identifiable, structured, congruent, transparent, legible, unfolding and significant. Identity is a multifaceted concept when it comes to settlement forms. The first view is how the inhabitants of the settlements perceive it. El Nachar and Abdel-Hadi (2018:75) argued that identity of a settlement may mean the extent to which residents feel at home in the settlement where they reside. Residents ought to know where they can access basic services in the settlement, as well

as the time they will need to get to the basic services they require. A clear morphology translates into a good and sensible settlement form which planners shape through layout designs and management of the place over time.

The aspect of orientation may also come into perspective here, which relates to where certain elements are situated, for example water and sanitation facilities, bus stops, shops and schools. The time residents take to get to these resources may be a point to consider as it helps residents define the place.

In relation to the structure of a settlement, Lynch (1981:134) explained that the main focus should be to consider how the parts of the settlement fit together, and this may also include the sense of orientation. A good settlement structure is one that strives to ensure that all the elements situated in the settlement have the ability to reinforce each other. This reinforcement may be explained as the ability of the elements and land uses to co-exist so that orderly development can take place and nuisances are avoided (Ford 1999). For example, the orientation of sanitation facilities must be such that they do not cause public health nuisances through polluting groundwater or causing offensive smells (Ben-Joseph 2005). The road network and routes must also be integrated in such a way that pick-up and drop-off points are safe so that residents are not exposed to road accidents.

❑ **Fit**

From Lynch's (1981:151) perspective, fit refers to the extent to which the settlement's spatial and temporal patterns align with the sociocultural behaviour of the citizens. Critical questions to ask in relation to fit are: Will the human settlement be able to support human well-being and ensure that residents engage in their everyday activities without compromising their health, safety and livelihoods being? To what extent do the settlement forms fulfil their intended purposes which are gauged according to specific planning standards and socio-economic norms? Planning standards tend to be implemented through certain planning models which spell out the settlement boundaries, size, density, circulation system design and the outdoor recreation and open spaces (Ben-Joseph 2005:68-69).

Fit equally applies in the case of Hopley where there is a need to focus on the settlement forms and human well-being in light of the availability of basic services. In a nutshell, a good human settlement form is that which is manipulatable and resilient through maintaining the set standards, as well as performing its intended functions.

❑ Access

Access means the ability and degree to which residents within a particular settlement are able to reach services (Talen & Ellis 2002:44). The emphasis is on establishing the nature of the access system, equity with regard to serving the residents, as well as determining the control of such a system.

In the context of Hopley, it was critical to note how residents commute to work, and most importantly, the children who attend schools outside this community. Issues that have been considered for this study in this regard include: The ability of residents in Hopley to access water and sanitation and the nature of the public transport system in Hopley. This would be better explained through this theory as it gives insight into the nature of access routes in the settlements, for example roads and pathways.

❑ Control

Lynch (1981:220) explained that “good settlement control is characterised by certainty, responsibility and congruency to the users (present, potential and future) and the structure of problems of the place”. It follows that there is a need for certainty, responsibility and congruence when it comes to controlling the development and management of human settlements.

The issue of responsibility balances the aspect of congruence and is conceptualised by Lynch (1981:211) as “those who control the place should have the motives, information and power to do it well, a commitment to the place and to the needs of other persons and creatures in it, a willingness to accept and correct it”. It can be deduced that the establishment and management of human settlements are premised on motives, information and power which should then be encapsulated by the desire to advance human well-being.

In addition, power is also exercised through informal channels and this is evidenced through local party organisations which influence the activities of local authorities. In the Zimbabwean context, and Hopley as well, the domination of politics in influencing the emergence and management of human settlements is prominent. Muchadenyika and Williams (2017:33) highlighted how contested politics in the country have distorted intentions of sound planning systems as the political and ruling elite take matters into their own hands. Patronage or clientism is also used where certain members of the community are rewarded for sympathising with a particular political party. The issue of patronage also helps to explain the motives of

those in power (Simone 2005:5). Control of spaces may also be influenced by corruption where there may be embezzlement of funds meant to spearhead certain infrastructure development projects.

This may explain why settlements and their forms in the Global South are typical of this situation where, no matter how dysfunctional these forms prove to be, no one dares to challenge their applicability in the contexts they are applied. This is critical because whoever establishes what gets to be followed by everyone in society, is a powerful individual or group. Although it might seem as if local governments have much power to influence decisions relating to settlement forms, they are merely state apparatuses and usually have to conform to what the central government desires (Cirolia & Berrisford 2017:77; Marongwe, Mukoto & Chatiza 2011; Pacione 1990). For my study, this element of defining the norm raises the question of who really has the mandate to determine the most befitting settlement form – that is, good form according to Lynch (1981:211) – and how they conform to what society wants.

Lynch (1981:211) also stressed the importance of information in facilitating control of settlements and ultimately making it possible to govern and manage the problems associated with the settlements. This concept of information is related to the systems analysis approach through which information regarding the particular system has to be made available so as to inform decision-making (Castells 2010). Information is critical when it comes to the development of human settlements. In the realm of urban and regional planning, geospatial information has proved to be useful in helping municipalities to make informed decisions towards land use planning, management and improvement of service delivery (Geertman, Ferreira, Goodspeed & Stillwell 2015; Musakwa 2017:201).

It is argued that such geospatial information helps in keeping track with any changes in space, for example property boundaries, ownership and land use, while also showing the area's geology and hydrology (Musakwa & Van Niekerk 2014:150). Based on such information, decision-makers are better positioned to make decisions which will automatically help to monitor mobility, groundwater levels and demographics. Ironically, this is not always the case in the Global South where information is not always available; however, when it is available it is often archaic and does not reflect the current state of affairs.

The motives of those in control are always very important to factor in the development of human settlements. Are the plans meant to serve a certain part of the inhabitants? Does it

promote socio-economic justice and is it efficient? These questions were applicable in the colonial era when the European settlers in most African cities designed cities that perpetuated spatial segregation. Notable examples are the apartheid cities in South Africa which showed marked differences between the whites and African areas in terms of the quality of services provided in such areas. For this reason, the motive of the apartheid government and planning systems was to oppress the Africans such that they remained inferior to the whites (Mphambukeli 2015). In some instances, the motives are to create just societies where there are improved public health, water supply systems and sanitation facilities as was always the quest of Roman planners and engineers in the Roman cities around the 1880s (Ben-Joseph 2005:80-81).

□ **Efficiency and justice**

Efficiency and justice are the two overarching performance dimensions which operate above the other five which have been explained in the foregoing sections. Essentially, efficiency is associated with the process and condition of creating the maximum desired output while using the least amount of inputs (Peter 2010: Online). The logic with efficiency is that whatever is done must not lead to unnecessary wastage of resources.

In relation to Lynch (1981), efficiency acts as a balancing criterion among the different performance dimensions. It is critical to ensure that inasmuch as aesthetics are maintained, vitality, access and fit are upheld. The settlement cannot be good if one dimension, for instance vitality, is excellent while the others are out of order; hence there is a need to ensure that these dimensions are in balance and to identify the aspects which can be compromised. For example, it would be irrational to compromise water and sanitation facilities while prioritising the development of a recreational facility. In this regard, information will become useful as it will help inform the decision-makers on the optimum practices which would assist in the development of the settlement.

Considering that the theory of good city form was postulated by Lynch in 1981, he might have had thoughts which related to the concept of sustainability when he posited the dimension of efficiency for his study. In recent years, sustainability has become a mantra in all facets of human life and it captures the aspects of efficiency highlighted by Lynch (1981). The concept of sustainability was only coined in 1987 and came to refer to development which was meant to minimise economic, environmental and social inequity. One might argue that if the concept

had been coined earlier, Lynch might have used it as the overarching theme for his theory. Thus, I will take some time to outline the notion of sustainability and how it would possibly fit into Lynch's (1981) theory of good city form, as well as helping in understanding the characteristics of a good settlement form.

Justice is a highly contested term which, although it was used by Lynch (1981) in his theory on good city form, dates back to the times of Plato. In this regard, I will first outline the concept of justice from the viewpoint of Plato and then see how it has evolved and applies in the realm of human settlement and citizens' access to basic services. Plato cited by Wright (2012) argued that justice is a function of a state system which manipulates how the citizens assume their roles and get to access basic services. An unjust state is one that fails to accomplish the function of the state. From Plato's perspective, these functions of the state include making possible the conditions under which everyone can feed, clothe and shelter themselves as well as seeking the good. This shows that justice prevails when no member of the society is disadvantaged in any way with regard to accessing services or simply being in that community (Wright 2012).

For Lynch (1981), just like outlined by Plato, justice was meant to refer to the manner in which goods and services are distributed among the residents. Justice is considered to be prevalent when there is an expansion with regard to people's capabilities to lead the kind of lives which they value (Sen 1999:18). The kind of life that every human being desires is where basic services are accessible, safety is predominant, and there is a sense of place. Justice may thus also be understood through a focus on concepts such as social justice, spatial justice and a just city (Fainstein 2000; Harvey 1973:9; Sandercock 1997). Sandercock (1997) conceptualised the just city as socially inclusive and based on the promotion of respect and recognition of difference rather than mere tolerance of such differences. It means that the needs of the different groups in society have to be embraced and factored into settlement development if they are to be considered as good settlements. This dimension of bringing in the perspectives of different societal groups was elaborated by Fainstein (2000:468) who argued that the just city is that which allows insurgent groups to advance their agenda in development.

Considering that this study is situated in the Global South, there is a need to relate the justice within the African context. Therefore, for the African cities, justice has been conceptualised by Myers (2011:125) as a city developed and managed with efforts directed to the following goals:

[T]o improve the quality of life for all, while including more and different people in democratic decision-making within an overall framework that works toward an expansion of social and environmental justice through a thick and messy realignment of state–society relations that enhance people’s capabilities for leading the lives they choose.

From the foregoing discussion it can be concluded that the theory as conceptualised by Lynch is too vague and perceives human settlements as simple and linear systems. Yet, in reality, with the advent of technology and the rapid rate of urbanisation experienced across the world, there has been some remarkable progress in the development of human settlements. Some of the developments are beyond human imagination and, as a result, raises doubt about the applicability and utility of the theory of a good city form in exploring city forms. There are some developments which render Lynch’s (1981) urban form ineffective, for example the suspended pedestrian paths which connect buildings in Hong Kong. In this instance, the city evolves volumetrically and is described as having no ground (Frampton, Solomon and Wong 2012). The urban fabric tends to have an extensive network of suspended transport systems which connects buildings that are densely packed. The form is beyond compact development and has been conceived as sensory overdose, something which is difficult even for the citizens to visualise and at times distorts the citizens’ perception of distance and time (Frampton et al. 2012; Hwang 2009:2).

The theory of good city form was conceptualised for American cities thus it has some implications on an exploration of cities in the African context. In the African context, planning and human settlement development and management is riddled with much uncertainty, poor institutions and inadequate resources which stand in the way when it comes to turning plans into reality (Chirisa et al. 2018). It is in this regard that various scholars are calling for the use of local theories which are based on the realities in African cities, rather than exploring the African cityscape based on Eurocentric models and theories (Todes 2011; Watson 2009c).

The sociocultural and economic dynamics currently prevailing in Africa at times render the Western models ineffective. This is so because the development trajectory in most African cities and the development of human settlements is uncoordinated and spontaneous (Simone 2005). At times the informal settlements become so dense that one cannot even identify the access routes in the area, while some infrastructures such as open spaces is never present. For example, the Kibera slum in Nairobi which is home to at least one million people and has become a large district of informal settlements (Onyango & Tostensen 2015). Such a situation

makes it difficult to apply the well-structured theory of good city form as conceptualised by Lynch (1981).

Another shortcoming in the theory of good city form is that the sustainability mantra which is the glue to contemporary development was not factored in the theory. Although there is mention of the meta-criteria of balance, this does not suffice to embrace the pillars of sustainable development which envisage human settlement forms that support the socio-economic and economic components of the city's system. Human settlement form has to be sustainable such that it curbs urban dilemmas. This notion of sustainability may also be considered from the viewpoint of regenerative cities (Girardet 2015). Here the settlement form must be able to maintain a certain form of equilibrium which is beyond the good as highlighted by Lynch (1981). However, inasmuch as the theory has these shortcomings, it somehow remains useful in the exploration of Hopley Settlement. This usefulness is buttressed with the ASA theory which takes into perspective the complexity of the city system and tries to unpack it with the view to understand its dynamics.

3.2.4 Descriptive and functional theories of settlement form

Functional theories attempt to explain how settlements perform by focusing on the settlement form processes, spatial and social structures. The emphasis of these theories is on a description of what cities are. Included in this category of theories are theories on human settlement forms focusing on the city as an arena of conflict.

3.2.4.1 City as an arena of conflict

The city as an arena of conflict is a body of theories on settlement forms which rejects the previous theories. The theorists envision cities as an arena of conflict where the form and function is a product of some form of struggle among different stakeholders, mainly the working class and the ruling class. This struggle takes on different forms and is ultimately responsible for the spatial configuration of the city. In understanding, this theory, the works of David Harvey, Manuel Castells and Henry Lefebvre have been very influential and will be analysed in this section.

Manuel Castells made a breakthrough from the Chicago School's conceptualisation of space as merely a physical given. Castells (1977:263) postulated that urban and class struggles among particular urban groups tend to influence development, which eventually moves towards

structural transformation of the urban system. The struggle is often triggered by citizens who seek the attention of the state in their efforts to shake off the control of the capital and the state in order to manage the urban process in their favour. It is mainly through struggles that the citizens manage to have the development process underway. Castells (1978) highlighted that the government satisfies the needs of capitalists and this he refers to as collective consumption by the elite.

Henri Lefebvre contributed to the theoretical perspective of the city as an arena of conflict. The work of Lefebvre focuses on the creation of urban spaces and on how human practices help in shaping and giving meaning to urban common spaces. Human settlements are also a component of the urban common spaces as they inherently consist of public goods and services such as water, transport, road networks and sewerage systems. The production of spaces is wrought in class struggle as highlighted by Lefebvre (1991:55):

As for the class struggle, its role in the production of space is a cardinal one in that this production is performed solely by classes, fractions of classes and groups representative of classes. Today more than ever, the class struggle is inscribed in space.

This quotation clearly expresses that class struggle is at the epicentre of settlement development. The dominant classes who are often the elite (wealthy individuals and politicians) have the liberty to make decisions which influence the ultimate settlement form and provision of basic services in particular localities. Stressing on this point, Lefebvre (2008:175) opined that “more or less fragmented in suburbs, peripheries, satellite agglomerations, the city become, at the same time, a decision-making centre and a source of profit”. The development of settlements is thus a product of connections between power, space and everyday urban life which is rooted in the capitalist system.

David Harvey is a British geographer and anthropologist who subscribed to the Marxist ideology on capitalism. Most of his work has thus been informed by Marxism. Harvey’s contribution to the theory of settlement form is through his conceptualisation of capitalism which he argued, plays a significant role in urban development (Harvey 1982, 1985, 2001, 2012, 2018). Various proponents assert to this conceptualisation of cities as centres of capitalism which thrive through the creation of heterogeneity and difference (Flores 2013:339; Singh 2013:29). The development of settlements is thus a product of this capitalist system.

In *Spaces of Capital*, Harvey (2001:122) pointed out that capitalism is all about accumulation and growth and is always riddled in various forms of struggles and conflicts. The struggle is always bounded between the working class and the ruling class, with each group seeking to maximise profit from their capital, but the other has higher wages and more to spend. Flores (2013:339) explained how surplus capital is used by the capitalists to create more value in the city which makes cities to be cleaved by class struggles.

Harvey (1985:7) explained that there is a need to understand cities or physical form as arising from the creation of the infrastructure for production, circulation, exchange and social reproduction of labour and means of discipline and control. In outlining the manner in which conflict manifests in the development of settlements and provision of basic services, Harvey (2012:115) elaborated that:

If urbanization is so crucial in the history of capital accumulation, and if the forces of capital and its innumerable allies must relentlessly mobilize to periodically revolutionize urban life, then class struggles of some sort, no matter whether they are explicitly recognized as such, are inevitably involved. This is so if only because the forces of capital have to struggle mightily to impose their will on an urban process and whole populations that can never, even under the most favorable of circumstances, be under their total control.

The whole essence of settlement development is thus based on the availability of surplus capital and the need for capitalists to make more profit from the urban development process. It is in this vein that Harvey (2012:22) illustrated how urbanisation absorbs surplus capital which is then used to develop infrastructure and other public goods and services. Commenting on this point, Singh (2013:30) observed that capital accumulation is what drives urbanisation, and subsequently settlement development and management, since capital accumulation is driven by the individual–utility–maximisation behaviour which causes the destruction of the urban commons and its appropriation for private interests.

Interestingly, Harvey (2001:124-125) argued that a few individuals engage in the imagining and designing of the urban process which tends to alienate those who have less voice – particularly the working class. Harvey (2012:3) further noted that in creating spaces, that is cities, the rationale is mainly centred on individualistic and property-based concepts, which do nothing to challenge hegemonic liberal and neoliberal market logics, or legal and state action. This individualistic nature means that it is usually the desires of a few individuals which shape the planning discourse and resource distribution.

In this regard, the capitalists create privileged regional spaces of economic activity from which they can exclusively benefit, while the populations in the backyards gain little or nothing (Harvey 2018:429). Alienation is a result of this exclusion which results in some form of segregation with regard to the distribution of services and opportunities in the city. Harvey (1982:418) argued that capitalism leads to the accumulation of capital by the ruling class. He further explains that capital and misery coexist, concentrated in space where the concentration of misery form a breeding ground for class consciousness and social unrest (Harvey 1982:418).

Harvey (2012:3) argued along the same lines that in creating spaces, that is cities, the rationale is mainly centred on individualistic and property-based concepts, which do nothing to challenge hegemonic liberal and neoliberal market logics, or legal and state action. This individualistic nature means that it is usually the desires of a few individuals which shape the planning discourse and resource distribution.

The rights of citizens in controlling human settlements may be explained through the urban chaos theory (Castells 1977, 1978; Harvey 2012; Lefebvre 1991). First, there is the right to the city, which results in the production of spaces (Lefebvre 1991) and ultimately gives rise to the rebel city (Harvey 2012). It is argued that power struggles and motives of those undertaking the planning decisions, as well as controlling the shaping and management of the places, determines the ultimate form of cities and possibly birth urban dilemmas. This is so because the perception is that development of the form of human settlements is a product and sign of some form of struggle (Salat et al. 2011; Weber 1962:131).

Young (1990) highlighted that the conflicts mainly give rise to oppressions which he conceptualised as having five faces of which three relate to this study. First, exploitation is explained by Young (1990:49) as occurring when some people exercise their capacities under the control, according to the purposes, and for the benefit of other people. It is in this regard that the settlement forms emerge as a product of some people who work under the direct orders of others. For example, planners may serve the interests of the politicians, thereby diverting from their ethical conduct.

Second, marginalisation takes shape when a whole category of people is expelled from useful participation in social life and thus potentially subjected to several forms of material deprivation and even extermination (Young 1990:51). Through marginalisation, a certain part

of society may be side-lined in accessing basic services or they may be treated as second citizens, thus receiving inferior services in comparison to the others.

Third, powerlessness manifests when certain groups lack power or authority and upon whom power is exercised against their will (Young 1990:52). This usually occurs in the formulation of public policy and results in the powerless having no say in matters which affect them. It is in this regard that Foucault (1981) identified these individuals as those who have the ability to define or name the norm. Foucault (1981) argued that “production of discourse is controlled, organised, redistributed by number of procedures whose role is to ward off its powers and dangers, to gain mastery over its chance events, to evade its materiality”. Here, the discursive rules are linked to the exercise of power, that is, how the forms of discourse are both constituted by, and to ensure the reproduction of the social system through forms of selection, exclusion and domination (Castells 1978). Foucault then makes an interesting statement that to *think outside them is, by definition, to be mad* (Foucault 1981). This statement is of much interest to this study because it brings again the aspect of certain individuals, institutions or groups who name the norm and get everyone to believe that anything outside of that is wrong and unacceptable.

It is within this context of using capital where the settlement form is situated, and infrastructure provision is shaped and influenced. It is argued that the creation of the built environment (which constitutes the infrastructure) obligates us to consider the place and spatial arrangements as specific attributes of the capitalist mode of production (Harvey 1982:235). Harvey (1985:7) explained that there is a need to understand cities or physical form as arising from the creation of the infrastructure for production, circulation, exchange and social reproduction of labour and means of discipline and control.

However, Cirolia and Berrisford (2017:77) argued that there are some instances when the control by the state through legislation is contested, negotiated and compromised. Ironically, most of these legislations heavily empower the central government through powers vested in the president or ministers responsible for human settlement development issues. Planning is also a state-centred function, which means that the development of human settlements is usually controlled by the state apparatus. This is evident in instances when planning decisions do not serve the interests of those individuals in power, hence they end up rendering it useless and ultimately ignoring it (Hammar 2017:83; Muchadenyika 2015).

3.3 THEORETICAL PERSPECTIVES TO URBAN DILEMMAS

Urban dilemmas are complex, contextual and always evolving problems which overwhelm society. They exist when something is wrong in society and everyone agrees that something needs to be done to address the problem. They are a divergence from the status quo. With the increasing rate of urbanisation in the Global South, urban areas have been grappling with a multiplicity of these urban dilemmas. They present chaotic logic as settlements development and mutate in unexpected ways, sometimes even after carefully thought plans exist for the settlements. Rittel and Webber (1973) referred to these urban dilemmas as wicked problems. Norton (2012) argues that they are wicked in the sense that they are dynamics and efforts to resolve a particular issue which may end up triggering another problem. It is very difficult for one to cage the problems for they are intricately entwined. Much effort has been undertaken by sociologists to categorise these urban dilemmas which they refer to as social problems (Durkheim 1952; Kornblum & Julian 2012). Two theories which relate to urban dilemmas are discussed in this subsection, namely structural functionalism and conflict theory.

3.3.1 Functionalist theory

The functionalist theory is rooted in sociology and is largely credited to Emile Durkheim. The theory postulates that society is akin to a living organism which is composed of various interrelated parts working in unison (Kornblum & Julian 2012). Each part of the social system contributes an important function to society. For example, the economic system serves to advance the production, distribution and consumption of goods and services, while the political system serves to govern people.

Durkheim (1952) highlighted that problems arise in society when each part fails to perform its function, resulting in social disruption. The respective individuals and institutions are confronted with drastic changes which they fail to cope with. Social pathology thus occurs due to the failure of social expectations; normlessness and breakdown of institutions which are meant to provide order and maintain the status quo. According to Parrilo (2005:111), urban dilemmas are a result of rapid urbanisation which disrupts the social organisation of societies. This is also explained through the events of the Industrial Revolution where European cities became dominated by the poor who could not afford to pay taxes. Authorities thus found it increasingly difficult to support this growing population through service delivery. Although

the demand for basic services was on the increase, the responsible institutions were heavily constrained to provide basic services (Hall 1996).

The functionalist theory helps in explaining the failure of institutions to deal with change, especially when there is a remarkable shift from the status quo. Emerging settlements tend to be a problem which the authorities have to deal with considering the unexpected transformations they pose on the form and function of cities. It is through this lens that the theory may be of assistance in addressing the nature and extent of urban dilemmas in Hopley, with regard to citizens' access to basic services. However, the functionalist theory refutes or suppresses change by supporting the status quo. The theory also does not explain how issues of power and conflict are at play in influencing the emergence and persistence of the problems.

3.3.2 Conflict theory

Karl Marx is considered the proponent of the conflict theory. The starting point with this theory is that society is composed of two conflicting groups – the ruling class and the workers – who are constantly competing for scarce resources and power. The ruling class consists of the elite who control the means of production and the decision-making processes. Their focus is on maintaining dominance, power and wealth. On the other hand, the working class aspires to be at the top and overthrows the ruling class who are usually exploiting them. Problems mainly arise from the diverging perspectives of these two groups with regard to their needs and aspirations when it comes to social issues (Parrilo 2005:112). Chiefly, the ruling class's desire to maximise profits outweighs any humanitarian impulse to care for the welfare of the working class (Kornblum & Julian 2012:11).

The conflict theory informs my study in that it outlines the exploitative nature of capitalism along with the class, racial, ethnic and other forms of inequalities. In this way, those in power seem to ignore the needs or priorities of the majority who are left to languish in abject poverty. The rationale seems to be that the ruling class strives to find means to widen the gap existing between them and the working class. The major shortcoming identified with the conflict theory is that it assumes that there is always tension and struggle for power and dominance in society. There is no explanation or aspect of cohesion and harmony which tends to exist in some instances where authorities engage in coproduction mechanisms to promote the welfare of the working class. Cooperation is considered to be the utopia, and not operational according to this model, which is not always true.

3.4 ANALYSING SETTLEMENTS THROUGH THE SYSTEMS THEORY

Exploring human settlements and attempting to understand the seemingly complex nature of dilemmas that manifest in the settlements and their relation to settlement forms is a challenging task which may best be facilitated through the use of the systems theory (Innes & Booher 2010:1).

3.4.1 What constitutes a system?

The word ‘system’ originates from the Greek *systema* which means an organised whole or body. A number of definitions have been proffered based on the origin of the word. For example, Churchman (1979) defined a system as a structure that is composed of organised components. Boulding (1956) argued along the same line of organisation within the whole by referring to a system as anything that is not chaos. Similarly, any structure characterised with the order, any pattern and purpose are what Lars (2001:53) considered to be a system.

It emerges that a system is that which is organised and reflects some order. Considering what order is, may not always be an easy task as this is something which is context-specific. For example, what may be considered to be organised in the African context may simply be chaos from a Western perspective. On the other hand, who really defines this order? For this reason, the biologist Paul Weiss (1959) defined a system as anything unitary enough to deserve a name.

The scientific definitions of the term ‘system’, which have also helped to shape the systems theory, have been postulated by various proponents such as Russell Lincoln Ackoff, a pioneer in systems thinking, and Ludwig von Bertalanffy⁸, who is considered as the ‘founding father’ of the systems theory. According to Ackoff (1981:15-16), a system is any set of at least two elements satisfying three conditions: First, the behaviour of each element affects the behaviour of the whole; second, there is an interdependence on the behaviour of the elements and their effects on the whole; and lastly, subgroups of the elements are formed; all have an effect on the behaviour of the whole, but none has an independent effect on it. Likewise, Von Bertalanffy (1968:55-56) defined a system as a set of elements standing in interrelations, and the elements behave independently with respect to their relations.

⁸ Ludwig von Bertalanffy was a biologist who developed the general systems theory in the mid-1920s.

Another critical characteristic which defines a system is the existence of a boundary, which is outlined by Blanchard and Fabrycky (1998) as a bounded region in space-time, in which the component parts are associated in functional relationships. From the foregoing definitions of a system, it is evident that a system is that which is well organised and has constituent elements which, when put together, define the whole. This whole exists in an orderly form whereby it takes a particular order and pattern, while serving a particular purpose and function. Once there are chaos and disorder, the system ceases to be as it collapses and the elements fail to function in harmony. A system can thus be natural or artificial, existing at the micro or macro level, abstract or real. In this same vein, a settlement may also be conceptualised as a system as it has order, a pattern and certain functions which may be predetermined at the planning stage of the settlement.

3.4.2 Tecktology: The precursor to the systems theory

Although Ludwig von Bertalanffy is often considered to be the ‘founding father’ of the systems theory, most scholars are increasingly acknowledging the contributions made by Alexander Aleksandrovich Bogdanov (alias Alyaksandr Malinovsky) (Capra 1996:43-44; Gare 2000:341). Alexander Bogdanov was a Russian-trained medical doctor who also practiced as a philosopher, economist, revolutionary, political activist and fiction writer. He made the initial contributions to the systems theory in 1913 when he conceptualised his original philosophy which he referred to as *Tecktology*.

Through *Tecktology*, Bogdanov’s main focus was on the science of structures. He sought to clarify and generalise the fundamental organisation of all living and non-living structures. The tenant of his philosophy was on envisaging the possibilities of unifying all social, biological and physical sciences by taking these as systems of relationships. This relationship was to be focusing on the organisational principles which guide and define all systems. From his philosophy, His work anticipated what was later postulated by Von Bertalanffy in 1968 in the *General Systems Theory* and Wiener in *Cybernetics* in 1948.

3.4.3 General systems theory – Focusing on the whole

Ludwig von Bertalanffy was inspired by the need to embrace a holistic and reductionist view in understanding phenomena in the physical sciences beyond the mechanist ideology used by scientists at the time. Von Bertalanffy conceptualised his theory in the context of organismic

biology. Ryan (2008) commented that Von Bertalanffy developed his theory with a view to account for the apparent paradoxes in the characteristics of living systems when considered in relation to the physics of closed systems. The general systems theory highlighted the importance of focusing on the whole, through a focus on the parts which make the whole. In this regard, Von Bertalanffy (1968:12) explained that:

General systems theory is a general science of 'wholeness' which up till now was considered a vague, hazy and semi-metaphysical concept. In elaborate form, it would be a logico-mathematical discipline, in its purely formal but applicable to the various empirical sciences ...

According to Bertalanffy (1968b:38), the objectives of the general systems theory can be summarised in five points:

- 1) The integration of various sciences, for example, natural and social which is the major issue defining the theory.
- 2) This integration is anchored in a general theory of systems.
- 3) Such a theory is the most significance means of achieving the exact theory in the nonphysical fields of science.
- 4) Efforts to develop unifying principles which run 'vertically' through the universe of the individual sciences.
- 5) The result is a possible integration of scientific education.

3.4.4 Cybernetics: Emphasising the feedback from the system

Before and during World War II (1939–1945) another contribution was made to the systems theory, mainly through the military where there was an increasing need for efficiency and effectiveness in defence and logistics (Geyer & Rahini 2010). At the time, the concept of cybernetics was introduced and popularised by different theorists, chief among them being Wiener who was a mathematician. The word 'cybernetics' originates from the Greek *kibernetes* which means steersman. Focusing on its origin, cybernetics considers how systems are guided and their performance in relation to the environment in which they are embedded (Ay, Der & Prokopenko 2012; Gershenson, Csermely, Erdi, Knyazeva & Laszlo 2013:6). According to Wiener (1948), cybernetics focus on the scientific study of control and communication in animals and machines.

Basically, from the perspective of cybernetics, systems assumed to have a purpose through which action is undertaken to ensure that the purpose is achieved. However, there is an environment which eventually has some effects on the systems such that the intended purpose of the systems may not easily be achieved. In this way, there is some information – feedback – which results from the environmental effects. Cook (1980:41) explained that the focus of cybernetics is thus on processes and mechanisms involving information and communication aimed at maintaining the desired balance and state within the system.

The best way to explain the contribution of cybernetics to the systems theory is through the teleology philosophy which was postulated by Wiener. Through teleology, Wiener (1948) argued that natural events and processes may also be caused by future events instead of present events. This philosophy and line of thinking contradict all the mechanist philosophies of the time which explained natural processes in a linear manner. Wiener thus used the regulatory model to proffer a description of the consequences of various actions occurring in time and space. In addition to this description, he also added the current state and desired state so that a plan of action could be constructed (Umpleby & Dent 1999). This was all to be centred on the notion of feedback which became critical to his conceptualisation of systems as it helped to identify the ‘causes’ of particular malfunctioning. It was thus possible to ‘steer’ the system back to the required path. The fundamental question which cybernetics sought to address was: How do systems use feedback to remain stable or adapt to new circumstances?

3.4.5 Systems theory explored

Although the systems theory grew out of organismic biology and the military, it eventually branched into most of the humanities and social sciences. Boulding (1956) confirmed the utility of the systems theory in solving complex problems in other fields other than biology. By the 1960s, the systems theory started to be recognised as a classical effort that focussed more on scientific integration and theory formulation on the transdisciplinary plane (Forrester 1969). Increasingly, the systems theory gained prominence in different fields and disciplines where researchers and scholars applied it in disciplines such as social work, environmental studies, political science and mental health.

Laszlo and Krippner (1998) attributed the rise and popularity of the systems theory to societal pressures on science, calling for the development of theories capable of a transdisciplinary systems analysis. The multidisciplinary (holism) and cross-disciplinary approach used in

systems analysis confirm the applicability of a systems analysis in resolving the different problems overwhelming society (Beck et al. 2018:13-14). Gharajedaghi (2011:25) argued that “we see the world as increasingly more complex and chaotic because we use inadequate concepts to explain it”.

When we understand something, we no longer see it as chaotic or complex. Maybe playing the new game requires learning a new language. In his preposition, the challenges that one encounter in everyday life call for a different approach to planning as well as analysing the problems and the contexts in which they occur. Therefore, Capra (2015) wrote that it is now becoming clearer and more evident that the major problems of our time cannot be understood in isolation. However, although the systems analysis is globally hailed by various scholars and professionals, the formation of a systems analysis as a scientific discipline is not yet complete and its direction has not been definitively shaped (Zgurovsky & Pankratova 2007).

The foregoing discussion indicates that the systems theory is vague and context-specific; however, there are key concepts and indicators which help to explain the system theory. First, system theory explicitly considers the system which can either be physical or nonphysical and this includes economic, political, environmental or social systems (Tshangela 2018:3). A system is basically a component which is connected to form a more complex component. This complex is constituted with various subsystems which at any given time may be broken down or dismantled. Likewise, cities may be conceptualised and explored as systems which constitute different components, that is, subsystems (Matamanda & Chirisa 2014:1; Wilson 2000:1). For example, solid waste systems, water systems, public transport systems, and sewerage systems constitute some of the subsystems which are related to the human settlement systems (Chirisa et al. 2016:2; Pincetl, Bunje & Holmes 2012).

Second, any system is composed of inputs, outputs, feedbacks and transformation. The inputs are the components which are introduced into the system to enable it to function or to facilitate certain processes. For example, financial resources are required for the development of infrastructure, while technology and human capital are also used as inputs to the development and management of the settlement system. It is of utmost importance to determine the inputs to a system and how they affect the operation of that particular system together with its subsystems. On the other hand, a system is also associated with outputs which are the products of the processing of the inputs. In exploring any system, it is thus critical to consider the outputs

which are produced by the system. In relation to human settlements, the output may be a certain form which emerges; types of infrastructure developed or even the governance system.

Third, interrelationship is a key element of the systems analysis because it helps to show how elements of a system affect each other. In the context of human settlements, such interrelationships are explained by the fact that the resource base of cities is usually linked to human decision-making frameworks which are mostly nested in politics (Pincetl et al. 2012:194). The resource base and decision-making frameworks may also be framed into the *Theory of Good City Form* where Lynch (1981) highlighted how the control of a settlement is critical in establishing its form.

For this reason, the systems theory considers the different components of the system with the view to understanding their relationships, for example, what resources are there, who controls them and how can they be used efficiently to develop and manage the system (Kubanza, Das & Simatele 2017:612-615). This calls for a multidisciplinary perspective where the components of the whole system are explored holistically (Beck et al. 2018). In the same vein, with regard to human settlement and urban dilemmas, a relationship may be presented of the different performance dimensions to identify the most ideal settlement form with the least possibility of causing urban dilemmas.

Fourth, the essence of the systems theory is the recognition of interaction or feedback (Zwick 1963). Events occurring in any given system are best explored in the context of causal feedback relations as also the mechanisms they work on. The comprehension of the causal feedback is a critical component of the systems analysis, especially for measures based on qualitative and quantitative measurements (Maxwell 2004). Du Plessis and Landman (2002) explained that there are multiplicities of feedback loops which are controlled by non-linear relationships.

In relation to human settlements, these feedbacks may help to explain what happens to the performance dimensions if one variable is changed in one subsystem. Lynch (1981) explained this through the meta-criteria of efficiency in that emphasis is on balancing the other performance dimensions of the settlement so that it remains vital, fit and accessible to the residents. No part of the system must cause disequilibrium which, in the context of this study, will refer to urban dilemmas and compromised livelihoods to the residents.

Fifth, the systems theory is supported by creativity innovation where there is need to open one's mind and make efforts to come up with something new that will help to understand the problem at hand and eventually solve it. The same sentiments are shared by Rotmans, Van Asselt and Vellinga (2000:267) that technology is a tool which has the ability to inform decision-makers to cut across disciplinary boundaries in making decisions about cities. As highlighted earlier on, Musakwa and Van Niekerk (2014) outlined the utility of geospatial information and technology as a tool to facilitate creative innovation and a better understanding of settlements as a system. Albeit its importance and utility, some proponents argue that if technology and engineering were the only problems of unsustainable cities, then such could have been addressed long ago (Beck et al. 2018:17). Such an argument leaves one questioning the utility of science and technology in addressing the challenges confronting cities.

3.4.6 Methodologies of systems theory

Various scholars have come up with different definitions which all seek to define systems analysis, yet no universal definition exists for defining systems analysis. The difficulty in defining systems analysis is attributed to the fact that the term is context-specific and evolutionary (Hordjik 2015).

For Rittel (1972:390), systems analysis 'attacks' planning problems in a rational, straightforward, synthetic way, characterised by a number of attitudes which a systems analyst and designer should have. In this definition by Horst Rittel, systems analysis emerges as a linear process or tool, yet the world and the nature of the problems overwhelming cities are complex phenomena (Geyer & Rihani 2010:30; Innes & Booher 2010:1; Wilson 2000:1). Therefore, this definition somehow fails to bring out the complexity of the problems addressed through the systems analysis in which there are feedbacks as well. A definition which attempts to capture the complexity of systems is provided by Quade and Boucher (1968:2) who defined systems analysis as follows:

[A] systemic approach to helping a decision-maker choose a course of action by investigating his full problem, searching out objectives and alternatives and comparing them in the light of their consequences, using an appropriate framework ... in so far as possible analytical ... to bring expert judgement and intuition to bear on the problem.

This study will adopt the definition of systems analysis proffered by Zgurovsky and Pankratova (2007:33-34) who posited as follows:

System analysis is an applied scientific methodology based on a diverse system of organised, structurally interconnected, and functionally interacting heuristic procedures, as well as methodological equipment, mathematical methods and algorithmic, programmatic and computing means that ensures the formation of complete interdisciplinary knowledge about an object under investigation, as the totality of various interconnected processes for subsequent decision-making with regard to its further development and behaviour, taking into account many conflicting criteria and goals, the presence of risk factors, as well as incompleteness and uncertainty of information.

From this definition by Zgurovsky and Pankratova (2007), it is clear that system analysis can either be qualitative or quantitative. This confirms the point raised by Williams (1970) who argued that systems analysis is riddled with misconceptions that it always involves the building of mathematical models, yet such an exercise may not necessarily be a part of systems analysis. There is evidence that systems analysis has been successfully used in numerous examples to solve complicated and practically important system problems and ensured qualitative new results (Kubanza et al. 2017; Maxwell 2004; Zgurovsky & Pankratova 2007). In a situation where mathematical modelling may not be applicable, heuristics, a non-algorithmic procedure of systems analysis may be used to produce satisfactory results (Laszlo & Krippner 1998:12). Moreover, Beck et al. (2018:13) highlighted that systems analysis may be qualitative where stock-flow diagrams and causal loop diagrams are used for problem-solving.

3.4.6.1 Applied systems analysis methodology

Regardless of the popularity of the ASA methodology, there has been no single way of executing the analysis using this methodology. There are a number of principles and activities which guide analysts. Beimborn (2003) identified five activities which guide ASA and act as a framework for the methodology. These five activities include formulation, searching, explanation, evaluation and interpretation. Enserink, Hemans, Kwakkel, Thissen, Koppenjan and Bots (2010:57) presented four steps which they used to demonstrate the ASA methodology.

A more comprehensive guide was outlined by Beck et al. (2018) who indicated that there are six steps to ASA which are summarised as follows: Initial crafting of a ‘problem’; identification of the system, its environment and the system’s subsystems; preliminary analysis of logic of visual–analogue representation; computational analysis with a model; screening and analysis of computational results; and implementing the decision and handling uncertainty. From this it is clear that there is no clear-cut way to ASA, rather it is contextual depending on the system and nature of the problem.

Formulation is the initial stage in ASA which entails problem identification. Similarly, from the four steps guiding ASA presented by Enserink et al. (2010: 57), the initial step in ASA involves setting the problem demarcation and level of analysis to guide the analyst. In a similar manner, Beck et al. (2018) in their six stages of ASA considered this initial step as the initial crafting of a problem. This initial stage is very crucial as it helps in identifying the elements of the system, how it is supposed to be functioning and what is deficient with regard to the status quo. Therefore, the first step is to identify and define the problem with respect to the system under deliberation, and to outline its severity and effects on society.

Once the problem has been identified, there is a need to gather all the facts and data which relate to the issue under study (Beimborn 2003). According to Enserink et al. (2010:57), this second stage involves spelling out the objectives and criteria which may be defined as the outcomes of interest related to the system under study. A deeper understanding of the problem at hand is sought and this was identified by Beck et al. (2018:14) as the prelude to formal analysis.

A model, theory or framework may then be developed to facilitate the explanation of the system behaviour in relation to the problem(s) which would have been identified. Enserink et al. (2010:57) indicated that there will be a need for the identification of the potential means and mapping of the main causal relations and their influence on the outcomes of interest. The causal loop diagram is mainly the best way of modelling the problem if the data is qualitative. This modelling process is of utmost importance in that it helps in understanding processes or acts as a direct tool in analysis (Beimborn 2003). In the formal analysis using the causal loop diagram, the analyst identifies the cause–effect relationships, focusing on what affects what (Beck et al. 2018). It is also possible through the causal loop diagram to identify the feedback loops capable of dominating the whole system and eventually influence the policy–technology interventions.

Beyond the causal loop diagram, a systems diagram may also be used to explain the relationships among the loops in the system. In this stage, Beck et al. (2018) indicated the use of ‘what if’ scenarios to project what could have been. This relates to the concept of teleology which focuses on what could happen in the system in future.

Screening and analysis of computational results then follows (Beck et al. 2018). The focus is on providing answers to the ‘what if’ questions raised during the previous stage. Lastly, the

decisions are then implemented based on the outcome of the analysis. It is critical to note that the last stage may not be within the limits of the analysts who simply has the mandate to analyse and guide policymakers with policy interventions.

3.4.6.2 Systems analysis in urban planning and human settlements development

The systems analysis has been used in the field of urban planning since the late 1940s when scholars such as Abercrombie applied the systems analysis method to model traffic flows in cities. Batty and Marshall (2009:562) stated that by the beginning of the 1950s, social engineering and policy analysis began to have a huge impact based on the notion that cities might be seen as systems to be engineered into more efficient forms. During the 1960s, the systems analysis methods that dominated were wholly consistent with the notion that situations in cities remained in equilibrium and the approaches were similar to management and control than to the notion that well-functioning systems must adapt themselves by learning what works and what does not (Batty & Marshall 2009:563). In the 1960s, it was mainly used in urban planning to understand the dynamics of the physical infrastructure which characterised city development (Forrester 1969).

In 1970, Williams wrote: “In recent years the literature of both regional and urban planning has contained many references to the suggestion that systems analysis might be helpful in solving planning problems” (Williams, 1970:3). However, despite this recognition of systems analysis as an effective tool for solving planning problems, Williams (1970) lamented that there remained only a few books that dealt with a systems analysis of regional or urban planning. The implication is that although scholars and practitioners acknowledged the utility of systems analysis in solving complex planning problems, the concept remained a fantasy which was rarely applied and tested in practical situations.

During the early 1970s American scholars, Horst Rittel and Melvin Webber, undertook a seminal work in which they concluded that systems analysis is a critical tool that may be used by urban planners to tackle wicked problems (Rittel & Webber 1973). This study was a build-up of earlier work which had been undertaken by Rittel in which he demonstrated the need to adopt a new paradigm of systems analysis from what he termed ‘systems approach of the first generation’ and proposed the adoption of the systems approach of the second generation in addressing planning problems (Rittel 1972). Proponents such as George Chadwick went on to argue that cities are complex systems and, in the systems approach, there is need to focus on

aspects such as feedback, exponential growth, emergence, chaos and evolution (Chadwick 1971).

Colldahl, Frey and Kelemen (2013) argued that the application of the systems analysis approach in urban studies presents a better understanding of the interconnections and relationships that help to create the conditions necessary for the development of inclusive and effective urban systems. The systems analysis approach has also been used in the *Sustainability Analysis of Human Settlements in South Africa* and the authors proposed that the systems analysis is a critical tool when one intends to understand the sustainability potential of a settlement (Du Plessis and Landman 2002). Another practical use of systems analysis was in the city of Durban in South Africa where the approach was used to analyse the resilience of the city. Various other studies have applied the systems analysis methodology in trying to understand different planning issues and problems (Chirisa, Dirwai & Matamanda 2015; Pincetl et al. 2012; Wilson 2000).

Systems analysis may be useful in directing urban planners and policymakers to effectively examine human settlement forms and urban dilemmas to identify the root causes of the urban dilemmas and the most efficient human settlement forms. In this way, urban planners and policymakers will be able to focus their attention on the root causes rather than the symptoms of the urban dilemmas (Bai et al. 2016; Beck et al. 2018). The foregoing sections showed that systems analysis has been used by urban planners in different contexts and areas of urban and regional planning.

3.4.6.3 Advantages of systems analysis

The increasing popularity of systems analysis is not by coincidence. Rather, this is based on the numerous advantages which are related to systems analysis. First, systems analysis has the ability to provide a transdisciplinary framework that enables a simultaneously critical and normative exploration of the relationship between man's perceptions and conceptions and the world they purport to represent (Laszlot & Krippner 1998:4). The world is dynamic and cannot be explored by looking at systems in a disciplinary way. Systems analysis thus offers the opportunity to break these silos and eventually explore the world in a holistic way.

Second, the systems analysis is hailed because it assists in the identification of interdependencies as well as enabling the distinction of causes from symptoms. This may

be elaborated by the use of causal feedback diagrams which show the cause and effects of a particular phenomenon in the system (Kubanza et al. 2017:611). No single system exists in isolation; rather there are many interdependencies between these systems, which mean that an understanding of the system is best done through an examination of the interdependencies among various systems. This is highlighted in the cases presented by Beck et al. (2018) which shows how the adoption of a multidisciplinary approach helps in understanding the events occurring in the cities. Likewise, specific problems emerging in a particular system may be emerging from another system which then necessitates the application of cross-disciplinary analysis which thus explores the root causes of the complex issues arising (Bai et al. 2016:69).

Third, systems analysis is highly effective in solving complex problems (Dalberg Global Development Advisors 2016:123-131; Rittel & Webber, 1973; Tshangela 2018). The ability of systems analysis to solve complex problems is made possible by the fact that systems analysis approaches problems by tackling all its aspects in the broadest terms. The success of systems analysis is evident from its application in different situations which include transport planning (Cascetta 2009); water resources management (Hellström, Jeppsson & Kärman 2000); environmental planning and management (Chirisa et al. 2015); urban policymaking and planning (Batty & Hutchinson, 2012; Kubanza et al. 2017); and human settlement planning (Dalberg Global Development Advisors, 2016; Du Plessis & Landman, 2002).

Fourth, systems analysis thus emerges as a decision-making tool which assists policymakers and various professionals to make decisions when faced with uncertainties. Enserink et al. (2010:52) opined that systems analysis provides useful guidelines, tools and techniques which help policymakers to develop detailed and comprehensive policy models. Systems analysis is helpful in decision-making because it helps in shedding more light and producing information that will eventually assist private decision-makers and public policymakers (Beimborn 2003; Hordijk 2015).

Despite the utility of systems analysis in addressing complex problems and assisting urban planners and public policymakers among many stakeholders, systems analysis has been criticised just like any other methodology. However, much of the criticism was during the 1970s when ASA was still in its infancy and many people did not understand its utility.

Systems analysis is also criticised for being too abstract as well as neglecting people and situations from the analysis (Anderberg 2004). The argument is that such an approach which

is too quantitative leads to a situation where empirical studies could tend to be replaced by simulations leading to the loss of reality. In this way systems analysis is regarded as being a natural–scientific theory or model, hence it is presumed that it fails to accommodate the fundamental differences between naturally given systems and social systems.

3.5 CONCLUSION

This chapter has discussed the theories relating to human settlement forms and urban dilemmas. The chapter highlighted that theorising about human settlements is not an easy task because settlements are complex systems, always evolving and context-specific. The first theories on settlement forms were postulated by the Chicago School in the early 1900s and focused more on sociological issues in settlement development, for example, race, incomes and aesthetics. Next, the neo-classic theories focus more on attaining compactness in cities and integrating rather than separating land uses. Normative theories on settlement forms were thus conceived around the 1970s and include Lynch’s theory of good city form and the machine model. Both theories sought to explain what a good city ought to be like; however, they also failed to holistically comprehend the complexities within human settlements. The last group considered settlements to be an arena of conflict through focusing on class struggles. These theories highlighted how human settlement forms are influenced by class struggles and how politicians and the elite oppress certain groups in society with regard to marginalising them in accessing basic services.

In understanding the urban dilemmas, sociological theories were used which clearly highlighted how urban dilemmas manifest in emerging human settlements. It is highlighted that urban dilemmas are a product of multifaceted factors which include conflict, institutional incapacity and power dynamics. The chapter thus presented a discussion on the systems theory which seeks to understand issues in complex systems, especially in multidisciplinary studies. For example, the diversity of issues in understanding emerging human settlements and urban dilemmas nexus would be best understood through the systems theory.

The next chapter presents the methodology of the study. It discusses and justifies the methodology and methods used in developing this study.

Chapter 4

RESEARCH METHODOLOGY AND DESIGN

Science is best defined as a careful, disciplined, logical search of knowledge about any and all aspects of the universe, obtained by examination of the best available evidence and always subject to correction and improvement upon discovery of better evidence. What's left is magic. And it doesn't work.

– James Randi (1993:66).

4.1 INTRODUCTION

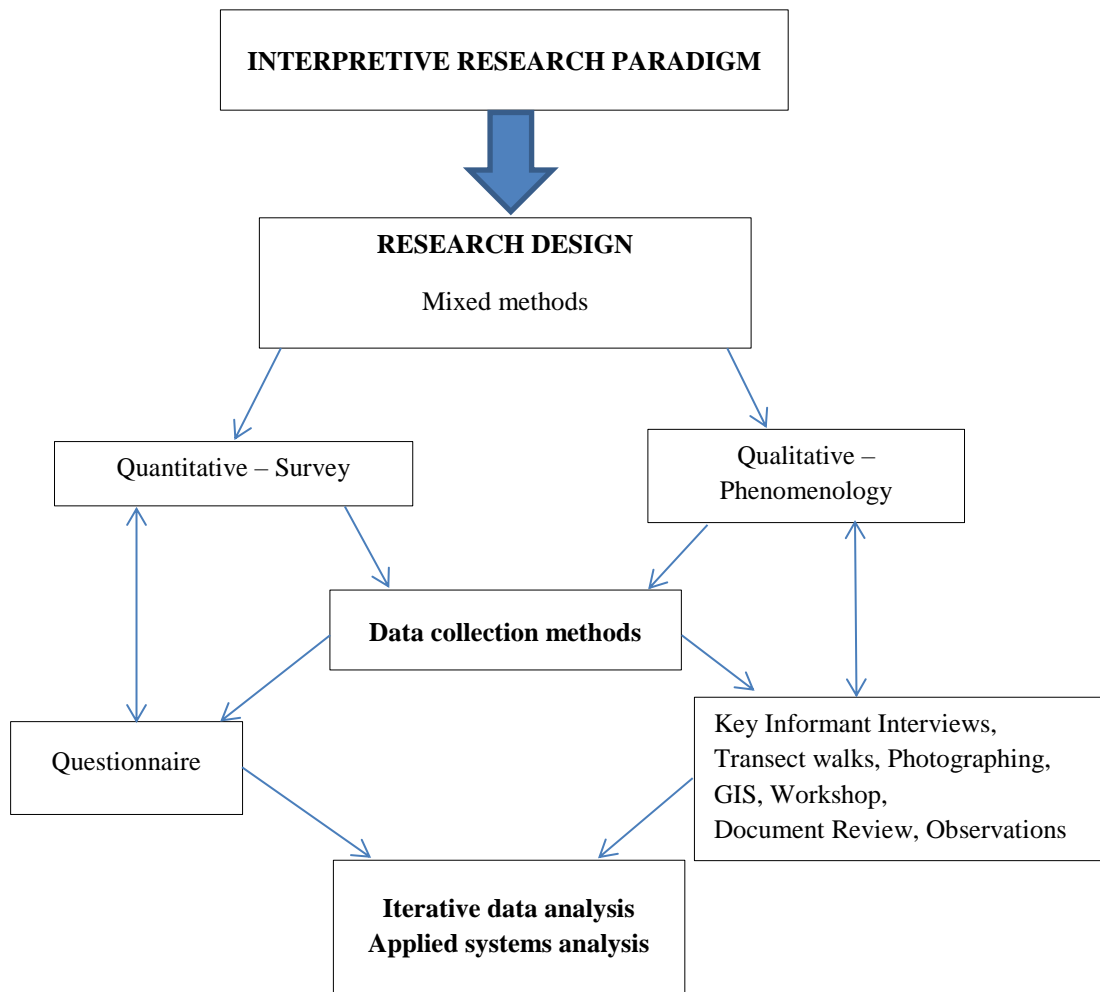
In relation to the above quotation by Randi (1993:66) where science is informed by a careful, disciplined and logical search of knowledge, the purpose of this chapter is to introduce the mixed methods study that I employed in exploring the emerging human settlement forms and urban dilemmas nexus in Hopley, Harare. The chapter commences with an explanation of the research paradigm which guides the study. Figure 4.1 presents a research map which diagrammatically summarises the research design and methodology. The research design that was adopted is also outlined. This chapter also explains the data collection techniques that have been used, followed by data analysis and presentation. The sampling methods and ethical considerations are also discussed. Overall, the chapter justifies the methodology and procedures which I undertook in gathering and analysing the data.

4.2 RESEARCH APPROACH: PARADIGM, METHODOLOGY AND METHODS

4.2.1 Research paradigm

A paradigm is a worldview and philosophical orientation which defines how a group of people (researchers) within a particular discipline act with regard to conceptualising research, research methodology and methods to be used for a particular research project. Creswell (2014:6) conceptualised the term ‘research paradigm’ as a worldview which refers to the general philosophical orientation about the world and nature of research which the researcher brings to a study. Despite the seeming ambiguities in defining a research paradigm, most proponents are

in agreement that research paradigms guide the researcher and help to pave a way with regard to the type of information to be collected, and also the data collection and analysis methods (Creswell 2014; Guba 1990:17; Tracy 2013:38). This is so because the research paradigm sets the tone and helps in establishing the theoretical assumptions which are considered to be rational, legitimate and applicable within a particular field of study (Creswell 2014:6; Kuhn 1962).



Source: Author's own (2018)

Figure 4.1 *Research map summarising the research design and methodology*

I used the interpretive paradigm in designing this study which sought to explore the emerging human forms in Hopley, as well as gaining insights into the experiences and challenges experienced by residents in accessing water, sanitation, public transport and security. The interpretive paradigm involves meaningful social action with respondents to get interpretations and understand social realities. The involvement of the respondents helped in getting more insights into the research problem, as Neuman (2014:95) posited that true meaning is rarely

obvious on the surface, and what Kaufmann (1958:7) referred to as copy theory. It was through this interaction with the respondents that I managed to understand the lived experiences of Hopley's residents with regard to accessing water, sanitation, public transport and security. As such, the study adopted the interpretive paradigm which is based on the assumption that reality is socially constructed.

The main purpose of this research was to contribute towards the exploration of emerging human settlement forms and urban dilemmas nexus. The research process thus has to be done in a logical manner with the view to search for knowledge. Considering the complexity of the world, knowledge is also diverse which makes it difficult to identify the type of knowledge to be gathered. The research paradigm also gives insight into the type of knowledge as Patton (1990:37) indicated that a paradigm is:

a worldview, a general perspective, a way of breaking down the complexity of the real world. As such paradigms are deeply embedded in the socialisation of adherents and practitioners telling them what is important, what is legitimate, what is reasonable. Paradigms are normative; they tell the practitioner what to do without the necessity of long existential or epistemological consideration.

As outlined earlier, the research paradigm considers how to understand the problem and how to address it. In this regard, there is a focus on the nature of the problem and its context which is the reality of the task at hand. This is referred to as ontology whose central theme is on attempting to answer the question relating to what can be real and what cannot. In exploring the nexus of emerging human settlement forms and urban dilemmas, I used the subjective ontology to understand the challenges and insights in Hopley, Harare. Ontology deals with the nature of being, or what exists; the area of philosophy that asks what reality is and what the fundamental categories of reality are (Crotty 2003:10; Neuman 2014:94). The central idea with ontology is reflecting on what is the form and nature of reality, which led Guba and Lincoln (1994:108) to ask: What is there that can be known about it [the reality]?

The dilemmas which residents face in accessing basic services are best narrated from their lived experiences. In this way, I used the subjective ontology which acknowledges that respondents have their own thoughts, interpretations, and meanings which they attach to events and reality. O'Gorman and MacIntosh (2015: online) highlighted that a "subjective ontology sees facts as culturally and historically located, and therefore subject to variable behaviours, attitudes, experiences, and interpretations – what we call subjectivity". This subjective ontology differs

from objective ontology which adheres to the notion that reality is made up of solid objects that can be measured and tested and is thus heavily inclined towards scientific research which deals with experiments (Dieronitou 2014:3; Neuman 2014:94).

In formulating this study and the research paradigm, I was guided by the following questions: What is the reality of the envisaged human settlement forms in Harare, Zimbabwe? What form should this human settlement have for it to be considered to be fit, functional and sustainable in relation to inhabitants' access to basic services? Thus, in relation to this reality, I explored the nature of the human settlements in Hopley, how they have come to be planned, which have become the product of the urban planning system and related to the residents' access to basic services such as water, sanitation, public transport and security.

Following the subjective ontology, I also designed the study by focusing on epistemology which tries to answer the question: *How do you know something?* (Guba 1990:18; Walliman 2011:25). In this way, epistemology included the actions that I had to undertake to produce relevant, valid and logical knowledge, as well as giving parameters as to what the scientific knowledge will look like once it was produced. Anything which triggers discussion from the respondents and allows the researcher to document the lived experiences of the respondents usually has its place in the toolbox of a qualitative researcher. Common data collection techniques used by qualitative researchers include key informant interviews, observations, remote sensing, photographing, focus group discussions and document review and analysis (Denzin & Lincoln 2011). This explains why I made use of both primary and secondary data collection techniques which also enabled the triangulation of information as highlighted by Creswell (2013).

In collecting relevant and valid knowledge for the study, I observed inductively, interpreted, and reflected on what the respondents were saying and doing in specific social contexts (Neuman 2014:95), for example, the lived experiences of residents in Hopley, as well as the Harare City Council's approaches to planning and managing emerging human settlements. The essence here was to include the respondents instead of merely observing events without understanding and probing those involved in the problem. Similarly, Kaufmann (1958:13) posited that knowledge of reality is acquired through systematic observations and their interpretation in terms of theoretical principles. For example, the observations and interactions with the respondents have to be guided by particular research methods.

4.2.1.1 Justification of interpretive paradigm

The rationale behind the use of the interpretive paradigm is that there are multiple ways of understanding a phenomenon, and the reality is socially constructed and focuses on meanings as ascribed by the respondents (Schwartz-Shea & Yanow 2012:17; Walliman 2011:21-22; Willis 2007:6). It allows an understanding of what is happening within a given research context rather than simply focusing on the measurement of the phenomenon under study (Tracy 2013:41).

The interpretivism paradigm, therefore, helped me to discover and understand the world [Hopley] through the experiences, background, and perceptions of the participants which included residents in Hopley and various key informants. In this way, the exploration of the emerging human settlement forms and urban dilemmas nexus in Hopley was made possible through accommodating multiple versions and perceptions of truths from different sources, starting with residents, political leaders, local government and planning experts (Willis 2007:6; Yanow & Schwarts-Shea 2006:381). Eventually, I was able to document the lived experiences of the residents in Hopley with regard to their dilemmas in accessing basic services. Such experiences and dilemmas are socially constructed and best captured and understood through interaction with the respondents (residents and key informants). Also, the interpretivist paradigm is premised on the notion that the truth lies within human experience, thus true knowledge is obtained from the communities' stories which help to substantiate the knowledge to be generated.

4.2.2 Research design

The research design helps in outlining the end-product of the study by articulating the kind of study that is envisaged. The research design is thus an overall map of the study. Research can either be qualitative, quantitative or mixed. Based on the nature of the study, it takes any one of the research designs. According to Creswell (2014:247), research design is a type of inquiry within qualitative, quantitative and mixed methods approaches and provides specific direction for procedures in a research study.

This study has been informed by a mixed method research design in which both qualitative (QUAL) and quantitative (quan) methods were employed. The sequential mixed method design was used, which is more inclined towards the qualitative approach and correlates with the

interpretive research design (Hesse-Biber 2010:71). A survey, which is a quantitative approach, was first undertaken and the results were used to enhance the generalisability of the qualitative component of the study where in-depth interviews were then conducted. Johnson and Onwuegbuzie (2004:21) described this combination of the two methods as adding meaning to numbers, which helps in enriching the research findings.

For this study, the mixed method research design enabled a detailed understanding of the research problem through complementing of qualitative and quantitative designs (Almalki 2016; Creswell & Plano Clark 2011). The significance of mixed methods in the field of urban planning is evident from its use by different scholars. Robert Park (1926:153) applied the method in his study of inner-city urban life; urban ethnographers made use of the mixed method (Bulmer 1984:6). Hesse-Biber (2010:6) highlighted how a mixed method has been used to tackle complex social problems which relate to this study.

Within the mixed methods design, there are different strategies which may be adopted by researchers, for example, Creswell (2013) identified five research designs for qualitative studies, namely case study, phenomenology, grounded theory, ethnography, and narrative approach, and two for quantitative studies, namely experimental and survey approaches. I adopted the phenomenology and survey research inquiries to guide this study. It is interesting, however, to note that although Creswell considers phenomenology as a research design, it is considered to be a research paradigm by other methodologists, while Du Toit and Mouton (2013) regard it as core logic.

I employed the phenomenological design because it helped me in comprehending the emerging settlement forms and residents' dilemmas in accessing basic services from the respondents' own perspectives. This was achieved through a description of the realities in Hopley and emerging human settlements as experienced by these respondents (Creswell 2014; Giorgi 2009; Smith, Flowers & Larkin 2009:11; Steinar 2005). The concern on the lived experiences of the respondents in Harare resonated with Harman (2009:14) who posited that the phenomenological approach regard objects under study as systems of things in reciprocal connections rather than as isolated solid objects.

The interaction with respondents helped me to push aside any theoretical preconceptions and other pre-understandings that could possibly have prevented the respondents to "speak for themselves" (Adams & Thompson 2016:9). It is in the same vein that Kaufmann (1958:14)

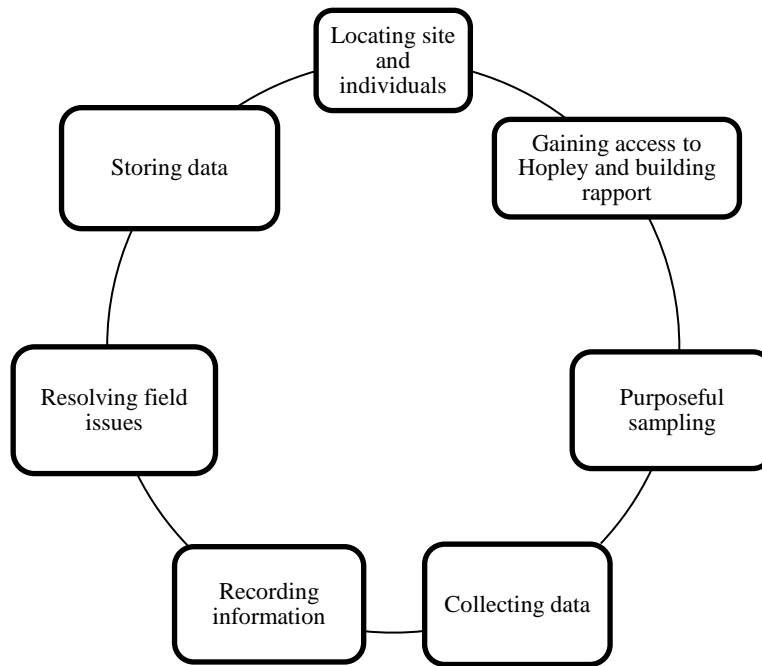
argued that all concepts, including categories such as causality, have meaning only in relation to possible human experience.

Mphambukeli (2015) argued that phenomenological research is less commonly used in urban and regional planning practice, yet it emerges as a critical research approach in instances when the researcher seeks to examine the lived experiences of certain communities. Lester (1999:4) acknowledged the utility of the phenomenological approach because it helps to act through taken-for-granted assumptions, prompting action or challenging complacency. It is in this vein that this research design became critical for this study.

I used the survey research design to construct the quantitative descriptor of the attributes of the residents in Hopley with regard to their demographic data and socio-economic data. This research design helped me to establish the prevalence and incidence of Hopley's residents in accessing basic services such as water, sanitation, public transport and security. The survey enabled me to randomise the behaviour and attitudes of the residents in Hopley with regard to how they access basic services. This information was not available to me through observations; hence I had to interact with the residents and generalise their opinions. I used a survey to gain a broad perspective of the themes that emanated from the respondents; thereafter I followed up with the qualitative data methods (Hesse-Biber 2010:71). Kaufmann (1958:13) suggested that knowledge of reality is acquired through systematic observations and their interpretation in terms of theoretical principles. As such the survey research design helped me to gain deeper insights and exploration of emerging human settlement forms and urban dilemmas experienced by residents in Hopley.

4.3 DATA GATHERING

In collecting the data for the study I adopted and was guided by the data collection circle postulated by Creswell (2013:146) which envisages data gathering as a series of interrelated activities aimed at collecting good information to answer emerging research questions. The data collection circle is presented in Figure 4.2 and highlights the steps which informed me in executing the data collection process.



Source: Adapted from Creswell (2013:146)

Figure 4.2 Data collection activities

4.3.1 Gaining access to Hopley and building rapport

The period of my data collection coincided with political events in the country which posed challenges for me with regard to gaining access to Hopley as well as building rapport. First, by August 2017 when I intended to commence my data collection, Zimbabwe was preparing for presidential and parliamentary elections which were scheduled for March 2018. Harare South, where Hopley is situated, is the only constituency which had a Member of Parliament (MP) in the ZANU-PF. Therefore, the politicians had a great impact on the occurrences in Hopley.

Against this background, Hopley Settlement was characterised as a ZANU-PF stronghold where the local political leaders and community were wary of outsiders. The situation was not any better prior to elections as the leaders posed as gatekeepers to researchers. It is in this regard that gaining access to a research site and creating rapport becomes one of the most fundamental aspects of research work (Gummesson 2000; Okumus, Altinay & Roper 2007:6). Although some models have been postulated to guide researchers in gaining access for research (Buchanan, Boddy & McCalman 1988; Johl & Renganathan 2010; Patton 2002), in practice it emerges that the process is not cast in stone. Rather, gaining access and building rapport requires some combination of strategic planning, hard work and luck (Van Maanen & Kolb

1985). From my experience in Hopley, the participants eventually opened up after I had explained that my study was solely for academic purposes which were not directly linked to any organisation which had the mandate to provide basic services, for example, the local authority.

4.3.2 Getting in and getting started

To gain access and build rapport for this study, I was guided by the four-stage access model postulated by Buchanan et al. (1988) which includes: getting in, getting on, getting out and getting back. Getting in emerges as the first stage which involves establishing contact with the gatekeepers to explain the nature of the study and its importance and the expectations from the participants (Okumus et al. 2007). Considering that Hopley is a politically-sensitive settlement and the timing of my data collection which coincided with the national presidential elections scheduled for 2018, I had to be cleared by the political leaders who emerged as the gatekeepers. This confirmed studies which concluded that politicians are the greatest gatekeepers and usually they do not open up easily to ‘outsiders’, especially when the topic is sensitive or raises contested issues such as access to basic services of Hopley’s residents (Gummesson 2000).

In this regard, I went with the help of a friend who connected me to the councillor and the MP where I paid them visits at their residences, respectively, and explained the nature and purpose of my study. The fact that I had been referred by my friend who had some political connections, softened the councillor and MP. The councillor went on to remark that:

Well, my son, if you have been referred to me by Ms Moyo*⁹ then it is fine, you can go ahead and undertake your study because I have known her for long and I don’t think she would send someone untrustworthy or with a clandestine agenda. However, make an effort to call me first every day you get into the field so that I will direct you to the person who will guide you through the specific area you will be working from.

I learned that political leaders play a major role as gatekeepers in communities and it is through them that entrance into research sites is obtained. In this particular case, the ruling ZANU-PF has been responsible for allocation of some stands in Hopley.

⁹ *Indicates that a pseudonym was used and not the person’s real name.

4.3.2.1 Getting on

Once, I obtained clearance from the councillor and MP, I was able to access legitimate entry into Hopley. However, getting on was made possible through the ‘youth’ (Paul*) who was assigned to guide me during the data collection in the area. Paul volunteered to work with the team for the rest of the period (I had some research assistants who were assisting with the administration of questionnaires). During the interactions with the participants, I established relationships with some of the participants who did not feel comfortable with Paul’s* presence and advised the team that:

It is unfortunate that you are walking with this young man, if only he was not with you, we could have had told you more with regard to our sufferings here in Hopley.

During the administration of the questionnaires, I advised the research assistants to take down the contact details of the candid analysers with the view to come back for in-depth interviews in the absence of Paul*. Such participants enabled me to get back into Hopley without being accompanied by Paul* (Buchanan et al. 1988). These participants are categorised by Laurila (1997) as candid analysers who provide detailed information and they tend to talk openly and freely about the issue under investigation.

4.3.2.2 Building rapport in Hopley

I used formal channels, including telephone calls, letters of motivation on a University of the Free State letterhead bearing the signatures and contacts of my supervisors to make rapport with the respondents in Hopley. This helped me so much as it gave an impression of the importance of my study, thereby prompting the participants to pay extra attention and give full cooperation and assistance.

However, there was one instance where the documentation worked against me as one of the ZANU-PF chairmen in Zone 1 asked why my letterhead had a South African address, namely the University of the Free State contact details. I had to explain that I was a Zimbabwean national studying at a South African university and one of my supervisors was based at the University of Zimbabwe. I contacted my co-promoter, who called the chairman and explained the purpose of my study in Hopley which then enabled the team to proceed with the day’s work. The issue was also resolved when I produced my national identity card which confirmed that I

am a Zimbabwean. Overall, my experiences confirmed the argument by Van Maanen and Kolb (1985) that gaining access requires strategic planning, hard work and luck.

4.3.3 Target population and sampling procedures

The target population represents the entire group or community which the researcher identifies for a particular study. Studying this entire population is often not feasible considering the time and financial constraints. Researchers are therefore compelled to select a part of the population which is representative of the target population (Tracy 2013:134). This selected population is referred to as the sample.

4.3.3.1 Sample size for household survey

For this study, there were a number of target populations from which I had to select a representative sample. Hopley residents constituted the target population for the survey. I had to choose a sample that would be fully representative of Hopley's population. I used the household as the sampling unit based on two reasons. First, I realised that there are a number of existing and similar studies (Rost & Koissy-Kpein 2018:22; Yunusa 2005:181) which have employed the same sampling unit. Second, most of the indicators and urban dilemmas such as water and sanitation issues are best measured, explored and understood at the household level (Thomson, Stevens, Ruktanonchai, Tatem & Castro 2017:1; We Pay You Deliver Consortium 2017). I used the population figures from the 2012 national census reports by ZimStat to establish the total population and number of households in Hopley (Government of Zimbabwe 2012).

After establishing the number of households in Hopley estimated to be 7 000, probability sampling was used to select the number of households where the questionnaire could be administered. The selection of the sample was informed by the Yamane formula, which is applicable for known target populations, which are basically finite (Yamane 1967:886). The Yamane formula for calculating the sample (n) constitutes the target population (N), and the level of precision or sampling error (e) which are as presented in the formula below:

$$n = \frac{N}{1+N(e)^2}$$

Therefore, for this study, N was 7 000, representing the households in Hopley, while the margin of error was 0.05 which means that the confident interval of this sample was 95%. Using the Yamane formula, the sample size was 378 which was calculated as follows.

$$n = \frac{7000}{1+7000(0.05)^2}$$

The total calculated sample size was 378 households. However, a total of 450 questionnaires were administered instead of the calculated 378. The 450 questionnaires administered provided an attrition level of 19% which was statistically significant and also valid for the study. In an interview with the councillor she explained that the household numbers in Hopley have surpassed the 7 000 estimate and were now approximately 7 500. This allowance for the attrition was also meant to cushion the effect of non-respondents such that the results would remain statistically significant and give an overview of the generalisation of the household characteristics.

4.3.3.2 Purposive sampling

Establishing a sample for qualitative research is subjective. The process is informed by non-probability methods. This is so because certain information relevant to the study may simply be obtained from specific respondents who make it possible to elucidate the particular and the specific (Pinnegar & Daynes 2007; Tracy 2013:134). For the in-depth interviews, I kept on engaging the candid analysers until I had done the twentieth interview and was no longer generating any new information. Instead of basing the sample on the number of respondents, it was the range of meanings and stories which I got from the residents which ultimately informed the sample size for the in-depth interviews. I ended up adopting the concept of saturation which supports research based on the interpretive paradigm (Edwards & Holland 2013:65).

Twenty remains a good representative number for a phenomenological study, considering that Creswell (2013:157) highlighted that the sample size ranges from one, while Riemen (1986) indicated that 10 individuals may be adequate for a phenomenological study. Onwuegbuzie and Collins (2007:289) highlighted that a minimum of 10 interviews are statistically justified for a phenomenological qualitative research design.

Purposive sampling was used to select individuals who participated in the in-depth interviews and the expert interviews. The same sampling method was also used to classify and recruit participants for experts who participated in the facilitated workshop. In selecting the potential

respondents, I did not consider demographic criteria such as age, gender, ethnicity and race, but rather the basis of selection was the stakeholders' professional role/sector and their respective contributions in the planning and management of human settlements in Harare. This selection was based on merit in that the respondents would provide crucial and unique information which has been mostly from an expert perspective.

However, from the initial list of respondents which I prepared (Appendix 1), some respondents refused to participate based on several reasons. First, one potential respondent indicated that he was busy with his studies and work which made it difficult for him to take time off and engage in the key informant interviews. Second, officials from the Department of Physical Planning (DPP) at the City of Harare advised me to refer to official documents from which I would yield 'more valuable' information rather than interview them as they would provide me some inaccurate information. Third, the events of November 2017 (Operation Restore Legacy) resulted in other officials refusing to participate, fearing that the study was a fact-finding mission aimed at exposing incompetent officials who were part of the Mugabe administration.

4.3.4 Data collection techniques

This section of the thesis presents and justifies the data collection techniques which I used for the gathering data. Table 4.1 summarises the relationship between the research objectives, indicators and methods which I used to gather the data. The rest of the section highlights the primary and secondary data collection techniques which I used during the data collection stage of the study.

Table 4.1 Research design matrix

Objectives	Indicators	Methods
1. To characterise the extant human settlement forms and associated dilemmas in Hopley, Harare	<ul style="list-style-type: none"> • Type of settlement forms • The hierarchy and function of the settlement 	<ul style="list-style-type: none"> • Key informant interviews • In-depth interviews • Document analysis • Applied systems analysis
2. To analyse the official land use scheme in Hopley, Harare, in relation to the emergent human settlement forms of the area	<ul style="list-style-type: none"> • Measures to regulate human settlement development • The extent to which statutory and institutional frameworks address human settlements problems 	<ul style="list-style-type: none"> • Remote sensing • Mapping • Document analysis
3. To explore dilemmas experienced by the residents of Hopley in accessing water, sanitation, public transportation, and safety	<ul style="list-style-type: none"> • Morbidity of diseases such as cholera and typhoid • Prevalence of crime and violence • Evidence of the existence of urban dilemmas in the study area • Accessibility to adequate water and sanitation facilities • The proportion of the residents with access to basic services 	<ul style="list-style-type: none"> • Transect walk • Household survey • Observations • Photographing
4. To draw out the implications of the emergent human settlement forms and dilemmas nexus for effective planning		

Source: Own compilation (2017)

4.3.4.1 Primary data collection

Primary data collection involves the process wherein the researcher collects first-hand information from the field. The data collected is usually raw and will have to be processed and/or analysed. Hox and Boeije (2005) defined primary data as original data collected for a specific research goal. Primary data collection is significant for any study because it gives the researcher the chance to collect data that has not been influenced by the decisions of any previous researchers (Creswell 2013). The conclusions and deductions which the researchers draw will be based on their own judgment. The data may be collected through interviews, observations, focus group discussions, field surveys or administration of questionnaires (Collis & Hussey 2003; Hox & Boeije 2005). As for this study, primary data collection was collected through key informant and in-depth interviews, a survey, unobtrusive observations, transect walks and photographing.

❑ **Transect walks and participant/unobtrusive observations**

I conducted the transect walks before undertaking any field work in Hopley. I found it necessary, for both my own safety and ease of access, to have a local resident with me during the transect walks. Therefore, during the period I engaged in the transect walks in Hopley, I was accompanied by a resident previously known to me. During the walk, he explained interesting things and elements which we came across and which were of interest to me. The elements of observation which guided me during the transect walks were the land uses, challenges in accessing basic services such as water and sanitation, the condition of the roads and housing types.

Transect walks are spatial data gathering tools which have been used extensively by social scientists. The use of transect walks in urban studies is becoming increasingly prominent as it enable researchers to evaluate the built environment and assess infrastructure conditions. Lorenzo and Motau (2014:49) defined the method as a systematic walk along a predetermined route through areas, to gather information about things such as land use, social and economic resources or state of the environment.

Observations were also done during the transect walks and survey. Observations are a useful primary data collection method which has been used widely by early researchers and scientists such as Charles Darwin and Malinowski (Kawulich 2005). Proponents such as Jane Jacobs (1961) and Whyte (1980) have also used observations in their studies in urban areas.

❑ **Questionnaire survey**

A mobile-based data collection technique was used to conduct the survey where 450 questionnaires were administered to the residents in Hopley from early August 2017 until early September 2017. The survey sought to extract the lived experiences of the residents in Hopley. The questionnaire was administered when there was a head of the household or any adult member of the household who would provide the required information; otherwise, if there were only children, the research assistant would move to the next location. The questionnaire consisted of closed questions (Appendix 2). The questionnaire survey formed the basis for the in-depth interviews as particular respondents divulged particular issues that needed further discussion. It is during this stage of the survey where I sought the consent of some of the respondents who were willing to provide more in-depth information with regard to accessing basic services in Hopley.

At first, I prepared a set of questions which addressed the various areas of the study. The questionnaire consisted of demographic information, socio-economic conditions of residents and the sources of water, state of sanitation, public transport infrastructure and residents' perceptions and experiences towards security. The questionnaire was then critically examined by the supervisors to increase its validity. Once agreed, the questionnaire was then digitised and developed as a tailor-made Android geographic application based on a Geographic Positioning System for use in the survey. The Kobo Data Collector was used in this instance where it helped in the digitisation of the questionnaire during the data collection process. This mobile application was cloud-hosted to enable communication between the server and mobile devices in the field. Upon entering data in the field, it was instantly transferred to the server.

❑ **Photographing**

The adage that a picture is worth a million words perfectly explains the utility of photographs in research and their importance as data collection techniques. The significance of photographs for qualitative research cannot be underestimated. Photographing has proved to be an invaluable data collection tool which helps to capture some complex issues and scenes which would rather be difficult to narrate (Collier & Collier 1986; Freund 2007; Girardet 2015; Salat et al. 2011). Metelerkamp (2010:117) used the same technique in a study to profile and reflect on the urbanisation of Cape Town. He explained that:

[T]his collection also tries to peel back what could become a lifeless reflection on the change in urban form or a dualistic between cul-de-sacs and green fields, by bringing the eyes and voices out from within the smarty box satellite images. The photographs draw people out from within the maps.

The ability of photographs to capture people in their contexts is a critical aspect which has compelled me to use this method to visualise the lived experiences of the residents in Hopley with regard to the nature and state of the water and sanitation infrastructure. I used photographs to help me convey truth and clarity in obscure circumstances while capturing events that I could not realise or imagine before scrutinising the images (Collier & Collier 1986; Mbiba 1995).

❑ **Key informant interviews**

In relation to the interpretive paradigm adopted for this study, I used interviews as a data collection method based on the following argument as proffered by Edwards and Holland (2013:17):

As human interaction and negotiation are seen as the basis for the creation and understanding of social life in interpretive approaches, it is the interaction of the participants in the interview situation – the researcher and the researched – that creates knowledge.

One-on-one face interviews were then conducted with various key informants (Appendix 3). These interviews were interactive and involved conversation where I had to make sure that the respondents understood the purpose of the study, did not feel threatened or coerced by me and eventually answered the questions truthfully (Creswell 2013:162). Interviews are part of life due to the nature of information they produce which is socially situated (Cohen, Manion & Morrison 2000:267; Tracy 2013:132), hence making them applicable for the study.

For the in-depth interviews, a research assistant accompanied me and helped to take down notes as some of the residents were not comfortable with having the conversation on record. Twenty in-depth interviews were conducted with residents in Hopley from early September 2017 up to early November 2017. Each in-depth interview was conducted for an average of 90 minutes. The respondents were selected during the survey. These respondents provided vital information with regard to the urban dilemmas they experience in Hopley with regard to accessing water, sanitation and public transportation and security.

I always began the interview by seeking permission to record the proceedings; otherwise I had to jot down notes as some respondents refused to be put on record. Initially, I would ask a question and then listen attentively as the interviewee responded. Once I have made sure that the interviewee was aware of the purpose of the interview, I remained guided by Edwards and Holland (2013:71) who opined that effective interviews are a product of listening, probing and follow-up. In this way, I was able to find out with a high degree of accuracy what respondents were thinking (Krauss 2005).

I let the interviewees tell me, while I engaged in listening. As the interviewees were talking, I listened attentively while occasionally taking notes on what they had said and not said (Edwards & Holland 2013:72). This enabled me to probe the interviewees to get clarity on certain responses which seemed to be vague and required them to tell me more (Bernard 2000; Rapley 2007:16). In this regard, I exercised much caution to motivate the interviewees to give me full and accurate responses free from biases (Hoyle, Harris & Judd 2002:144). In instances when the interviewees gave vague responses, I asked follow-up questions (Bernard 2000; Patton 2002). Furthermore, when I had not expressed myself clearly to the interviewee or they had not understood the question, I used the elaboration probe which entailed demystifying the

question. I always strived to keep my questions and interjections as concise as possible, while giving more time to the interviewees to give longer responses (Barbour & Schostak 2005:43).

❑ **Stakeholders/facilitated workshop**

Facilitated workshops with key stakeholders are qualitative data collection methods which help to validate and triangulate data collected by researchers. The use of facilitated workshops to triangulate data is on the rise owing to the need to produce evidence-based policy, especially in the domain of public health (Slunge, Drakenberg, Ekblom, Gotheberg, Knaggard et al. 2017). The method has also been used in different fields of study, for example, when addressing social, environmental, wastewater and wilderness preservation problems (Gregory & Keeney 1994; McDaniels & Roessler 1998). The duration of the workshop(s) varies from half a day to several days depending on the nature of the study and the time and financial resources available.

Hall, Davies and Sherriff (2010:13) used the same method for their study to supplement information provided by the key informant interviews. In their study, the focus was on health in the urban environment. I adopted the approach they used as it enabled me to validate and triangulate the information that I initially obtained from the interviews with the key informants. Therefore, I drew lessons from the facilitated workshops which have been conducted by other researchers (Hall et al. 2010; Slunge et al. 2017). I then organised and managed this information to successfully conduct a half-day workshop on 23 February 2018 at the Department of Rural and Urban Planning, University of Zimbabwe (Appendix 4). The main objective of the facilitated workshop was to present and get feedback on the preliminary findings.

The workshop had a chair who presided over the proceedings. I gave my presentation which was followed by a discussion as the participants (Appendix 4) commented and advised me, which enabled the generation of new research ideas and perspectives (Slunge et al. 2017:14). During the discussion, a rapporteur captured the comments and provided a write-up which I used. The workshop was a reflective platform which provided me the opportunity to share my research with the public which also forms part of a systems analysis approach in research work.

❑ **Mapping**

In this study, GIS was used for mapping the study area and collecting the actual data for the research which were the household locations where questionnaires were administered. GIS is a computer system for collecting, analysing, querying, storing, manipulating, and displaying

geographically related information (Holdstock 2017:1). The utility of GIS as a planning technique and research tool in enhancing the analysis of urban form and planning for complex spatial systems is increasing as indicated from its use by different researchers in urban planning (Chitekwe-Biti, Mudimu, Nyama, Jera 2012:136-139; Lai & Han 2012:73; Long & Shen 2012:98; Long, Shen & Mao 2012:4).

To map the study area, that is, Hopley Farm, I initially used the layout plan for Hopley which I obtained from the City of Harare. I scanned the base map and then converted it into a format which is compatible with the Quantum Geographic Information Systems (QGIS) software, version 2.18.9. The base map was accessed using QGIS software where the map had to be geo-referenced first – a process of assigning real-world coordinates to a scanned document to identify the location on the real world. After the process of geo-referencing where the map was projected to Universal Transverse Mercator Grid Zone 36 South which is the zone in which Harare is found, the wards of interest were digitised from the information of the administrative boundaries on the map.

After the necessary information had been captured for presenting the study area map, a layout was compiled, and the study area map was produced. Verification of the geo-referencing process was done using SPOT images available via Google Earth. Acquiring spatial data GIS through remote sensing plays a major role in information management systems like the provision of the SPOT images.

Data collection of the residential areas was done using hand-held Geographic Positioning System receivers where I went to the field to collect coordinates for each household. The edges defining the perimeter were mapped through a collection of coordinates of all the fields. After the data was captured it was typed into Microsoft Excel where I stored it in a QGIS software accessible format. I then displayed the point data and initiated the process of digitising to come up with the extent coverage of the households. After digitising, an overlay analysis was conducted where the data of the planned council map was overlaid onto the extant land use in Hopley to inform the data analysis. The overlay analysis helped to identify the deviations from the original council plan and to see if the developments in the area tallied with what the city council had already planned.

4.3.4.2 Secondary data collection

Secondary data refer to data that researchers do not collect directly from the respondents but has been collected by other researchers or government institutions. Data is collected from historic information which is contained in other sources or that has been previously collected and documented by other researchers (Mogalakwe 2006:222). This kind of data exists in the form of textbooks, journal articles, letters, published and unpublished theses or development plans and layout reports.

❑ Document review

I undertook the document review to gain an understanding of the issue of the emerging settlement form, together with citizens' access to basic services' as documented in various texts and policy documents. In this regard, city development plans, legislative instruments and statutes were examined to establish the extent to which they promote influence and regulate settlements planning and development, and ultimately influencing the settlement form and urban dilemmas. Document review has been useful in addressing the objective that sought to compare emergent human settlement forms with the official land use scheme in Hopley, Harare.

I used document review to a large extent because it helped to validate the data from the respondents during key informant interviews. For example, various key informants were asked whether they made use of the Southern Incorporated Areas Local Development Plan (LDP) No. 31 which covers Hopley. One respondent from the DPP requested me to go through the LDP31 and the layout report for Hopley before I could interview him. Others also referred me to the Harare Combination Master Plan as it is the broad plan informing the development and ultimate form of Harare. The respondent at the Dialogue for Shelter also gave me documents that explained their innovative approaches to provide sanitation. The other public documents which I reviewed included: Public Health Act (Chapter 15:09); Regional Town and Country Planning Act (Chapter 29:12); Water Act (Chapter 20:24), Housing Policy; National Water Policy; Constitution of Zimbabwe Amendment (No 20); Urban Councils Act (Chapter 29:15); and UDCORP Act (Chapter 29:16).

One respondent refused to be interviewed but advised me to refer to certain official documents, which I appreciated because these documents contained a wealth of information which took me through the development and morphology of Hopley. These included correspondent letters

and memos sent between various departments from the City of Harare and the DPP. However, getting access to these documents was not easy as there were procedures to follow. At the local authority offices, the head of the DPP first had to approve and allow me access to the documents. Upon her approval, I had to pay a research fee of US\$10 for the LDP31. At the DPP, I had to get approval from the permanent secretary and had to sign an official secrecy document (see Appendix 5 and Appendix 6 respectively). Getting this approval was also not easy as it took longer and I had to arrange follow-ups until I was assisted. I spent days at the DPP offices going through the files and jotting down notes. I also managed to get layout plans for Hopley which I then scanned and digitised. The was the case with the City of Harare where I also had to obtain a letter which would allow me to conduct my study and access any information from the local authority (Appendix 7).

In addition to the official documents, I also listened to Star FM¹⁰ weekly programme (City Watch) in September 2017 which featured an episode on Hopley titled *Hopley: In Search of Hope*. I missed one of the episodes, but fortunately I contacted the radio station and they managed to provide me with the audio recordings of the whole episode on Hopley's story. These recordings have been a vital source of data as they featured a series of interviews and radio talks with key informants involved in the development and planning of Hopley and its residents. I transcribed the audios to get meaning and information from these radio talks with regard to the residents' lived experiences with accessing basic services in Hopley. The audios also helped me to get insights from the planners who were interviewed in some of the series.

4.4 DATA ANALYSIS

Data analysis involves the arrangement, reduction, and synthesis of raw data so that it can tell a meaningful story. Data analysis is basically a body of methods that help to describe facts, detect patterns, develop explanations and test hypothesis (Freeman 2017:4). Considering the nature of this study which adopted a mixed method design, data was analysed both quantitatively and qualitatively. In this study, the iterative analysis technique by Tracy (2013:183) was used throughout the study where data analysis was an on-going process once data collection started. This approach also confirms the strategy for data analysis by Creswell (2014:195) who argued that data analysis in qualitative research proceeds hand-in-hand with

¹⁰ Star FM is one of the local radio channels in Zimbabwe.

other parts of developing the qualitative study. As I engaged in the data collection, I constantly referred to the previous interview(s), the literature and theories which led me to develop more questions in an attempt to fully understand the human settlement forms and urban dilemmas nexus in Hopley.

4.4.1 Quantitative data analysis

The questionnaire survey asked closed questions yielding quantitative data. As explained in section 4.3.4.1, an open data kit, called the Kobo Toolbox, was used for data collection; it is the same software which was then used to facilitate the analysis of the quantitative data. In this regard, the responses from the questionnaires were captured in a database. Once this was done, the data was then analysed using the Kobo Toolbox which enabled me to create summary reports which contained the graphs and tables presented in Chapter 7. I was also able to generate and visualise data on maps, as well as disintegrate the data in reports and maps, for example when categorising the respondents according to gender or educational level. The analysis of such data was through descriptive statistics which mainly showed the range of scores for a particular phenomenon; this was useful for indicating the prevalence of certain indicators, for example, residents with access to adequate water sources. Graphs and pie charts were also used to analyse the quantitative data.

4.4.2 Qualitative data analysis

Qualitative data analysis as mentioned earlier, commenced with data collection. The qualitative data I gathered was voluminous and had to be analysed systematically to get meaning from these data that would contribute to knowledge. Therefore, the qualitative data analysis for this study was guided by the iterative analysis process as outlined by Tracy (2013:184).

First, I organised all the raw data that I collected. This included capturing the data collected from various sources and transcribing it where recordings had been made. The data was organised chronologically based on its source and type. Second, I then coded the data which involved systematically chunking out sections of the data and labelling it (Dey 1993:54; Tracy 2013:186). For example, some responses focused on the morphology of Hopley which I coded Morphology, while some data focused on planning and politics, water and sanitation dilemmas.

Third was the data immersion phase which is described by Tracy (2013:188) as a phase where the researcher has conversation with others to hear their views and perspectives. It was at this

point that I conducted the stakeholder workshop at the University of Zimbabwe where I shared my preliminary results with different stakeholders. The workshop enabled me to add multiple perspectives and dimensions to my study. The questions and comments received revealed some grey areas which I had to fill in to obtain more information.

Fourth, I engaged in primary cycle coding which was followed by secondary cycle coding (Tracy 2013:189). In the primary cycle coding stage, I was mainly focusing on issues such as what was exactly going on in Hopley, as well as the system of planning. In this regard, the emphasis was on revealing what has been going on, more or less what is evident to the eye, what Kaufmann (1958:7) referred to as the copy theory. Next, was the secondary cycle coding process which involved addressing questions such as ‘why’ and ‘how’? In this instance, the main focus was now to understand and explain the ‘what’ issues and the component of the study. Lastly, was the stage where I synthesised the data and drew meaning from the codes that I had developed.

4.4.2.1 Applied systems analysis

ASA was used to understand the dilemmas experienced by Hopley’s residents in accessing basic services such as water, sanitation, public transport and security in relation to Hopley’s settlement form. In ASA, the main objective was to explore and understand the nexus of the aforementioned dilemmas experienced by the residents in Hopley and the settlement form of the area. This exploration thus formed the first component of the analysis as it enabled me to craft the problem and, therefore, focus the analysis on the variables relating to the access to water, sanitation, public transportation and security. Moreover, an ASA is made possible through an identification of the system. In this regard, Hopley Settlement was identified as the main system which is composed of various subsystems that include water supply, sanitation, public transportation, security and governance.

After identifying the subsystems, relevant themes were extracted from each and these were used as variables for the preliminary analysis of the causal loop diagrams. For each of the subsystems, actions and decisions relating to each were outlined. For example, in relation to water supply subsystems the following were identified: source of water, quality of the water, cost, reliability, governance and management. The Vensim PLE 7.3.5 computer software programme was used to develop the causal loops and the cause tree which helped in showing

the relationship between the themes. The use of ASA helped in highlighting the relationship between the themes and revealed some unintended consequences from the causal loops.

4.5 QUALITY OF FINDINGS

Research is the search for knowledge, and knowledge is relevant when it is of high quality and helps in explaining the phenomenon under investigation. However, establishing the quality of knowledge and ultimately the findings, is not an easy task, especially for interpretive studies (Tracy 2010:837). Despite this complexity, I used all means to ensure that my findings were reliable and valid thereby of scientifically proven quality. In ensuring that the study was of sound research quality, I was guided by the eight ‘big-tent’ criteria for excellent qualitative research postulated by Tracy (2010:837) as outlined in Table 4.2. The reliability and validity of the study is explored in the forthcoming sections.

Table 4.2 Gauging the quality of the study

Quality criteria	Efforts made to meet the criteria
Worth topic	The topic under investigation is currently on the top of the world development agenda as evident from the commitment from global leaders to create sustainable human settlements.
Rich rigour	To maintain the rigour of the study I spent a considerable amount of time, that is, nine months in the field to collect data. Moreover, verified tools were used to gather this data as well as the theoretical basis which is concomitant with the topic. The use of the mixed method design also enhanced the rigour of the study.
Sincerity	Sincerity was maintained through self-reflexivity with regard to some sticky situations which I encountered during the research process. For example, the fact that the research context was politically hostile has been clearly outlined.
Credibility	In upholding the credibility of the study, I used the mixed methods research design which provides a rich description of data. The triangulation of data collection methods was also significant to the credibility of the study.
Resonance	The multidisciplinary nature of the study means that it provokes the traditional perspective of identifying urban planning as a caged discipline. For this reason, the study results will speak to a wide audience.
Significant contribution	The study makes a novel contribution to the field of urban and regional planning in that it explores the conceptual and policy frameworks which could work for the planning, development and management of human settlements in Zimbabwe (see section 1.81).
Ethics	In executing the research, I remained guided by ethical considerations from the conceptualisation of the topic up to the writing of the thesis (section 5.6).
Meaningful coherence	In maintaining meaningful coherence, I ensured that the whole study was rooted in the research objectives and questions which guided the literature review, data collection process, analysis and the findings reported in this thesis.

Source: Author’s own (2018)

4.5.1 Reliability

Reliability refers to the level of consistence which is shown by the findings and the dependability of such findings. This may be explained by the fact that if the research is undertaken by a different person, it would produce the same results. On the whole, reliability seeks to reduce the level of errors in the results through ensuring that the data to be collected is within the confines of the research questions, thus the knowledge generated is considered reliable (Tracy 2013:228). In undertaking this study, reliability was ensured through the different stages of the study.

First, reliability was enabled through the use of explicit terms and words that I used during interactions with the respondents so that they could easily understand the question as well as interpret it, and thereby give me appropriate responses. Second, with regard to the questionnaire I used multiple indicators of a variable to get comprehensive responses from the responses, especially considering that questionnaires have closed questions. For example, in trying to capture the water resources used by the residents in Hopley, the following options were given to this question: municipal network, borehole, protected well, unprotected well, surface water, and 'other' which had to be specified. Third, I also pre-tested the questionnaire during a couple of sessions with the research assistants where we went through each of the questions in the questionnaire. During this process, the research assistants provided critical feedback and I factored their contributions, which included rephrasing and rewording some questions.

4.5.2 Validity

In simple terms, validity refers to the truthfulness of the study (Neuman 2014:212). Validity thus considers the level to which the study measures social reality through addressing the threats and biases which would otherwise undermine the truthfulness of the social realities (Garson 2013:8). Clearly, this is a complex situation, especially for this study where reality is socially constructed and subjective. It is through validity that the researcher confirms that the data presented reflects the issues under investigation. However, validity tends to be relative to the purpose and circumstances under which it is assessed. It therefore tends to be context-specific and not clear-cut (Brinberg & McGrath 1985:13).

In order to ensure the validity of the study, I used two different approaches, namely face validity and content validity (Tracy 2013:238) to ascertain the truthfulness of the data that I collected. Face validity is a measure which tests the scientific integrity and relevance of the measures used by the researcher. Thus, in this regard, I made use of the interpretive research paradigm which is relevant for exploratory studies in the field of Urban and Regional Planning. This was also followed by the use of a mixed methods research design which entailed the adoption of both qualitative and quantitative data collection methods. In this regard, I consulted with my supervisors and other professionals and experts in urban planning, who acknowledged that such instruments and methodology were relevant in addressing my research questions. This followed Hardesty and Bearden (2004) who recommend the use of expert judges to improve the face validity of measures. Moreover, I also made use of discussions with some of the participants to gauge their opinions with regard to some of the questions and tools which were used to address the research questions.

Content validity refers to the use of conceptual definitions which explicitly addresses all the aspects and concepts under study (Neuman 2014). For this study, I spent nine months in the field from August 2017 to April 2018, which enabled me to gain a rich understanding of the lived experiences of the residents in Hopley in accessing basic services, as well as the planning system and its complexities in Harare, through constant engagement with the various respondents. Creswell (2014:202) recommended spending a longer period in the field, as a strategy to increase the validity of the findings.

Validity was also enhanced for the study through the triangulation of data sources. In this regard, I collected data from multiple sources (Taylor 2013:11), first starting with the questionnaire survey which provided an overview of the lived experiences of the residents in Hopley with regard to accessing basic services. This was augmented by in-depth interviews with selected residents as well as the archival data from the Star FM programme, *Hopley: In Search of Hope*. The same applies for the multiple interviews which I conducted with different key informants.

4.6 ETHICAL CONSIDERATIONS

In conducting this study, I first had to apply for ethical clearance from the University of the Free State Ethical Committee. The ethical clearance was approved on 18 August 2017, thereby enabling me to commence my fieldwork (Appendix 8).

The process of generating knowledge should be undertaken in a way which does not cause harm to others, particularly the participants. Moreover, researchers are always obliged to engage in good conduct and uphold high moral standards and values (Edwards & Mauthner 2002:14). It is in this regard that ethical considerations are critical for any study where researchers have to ensure that in their quest for searching for answers to particular questions relating to the phenomenon under investigation, no one will be disadvantaged by the ultimate knowledge that will be generated from the study.

The first aspect of ethics which I had to deal with was procedural ethics which refer to the universal ethical guidelines that researchers have to abide to. Basically, procedural ethics entail doing no harm, avoiding deception, getting informed consent and ensuring privacy and confidentiality (Edwards & Mauthner 2002:14; Tracy 2013).

When I started doing research in the field, it was of paramount importance to also take into consideration situational ethics in addition to the procedural ethics. This is so because research contexts differ and many times there are particular instances where researchers are confronted with certain situations which may not be applicable in other settings (Oliver 2003:24). This also applied for my study, as mentioned earlier, the nature of my study area which is a politically sensitive area. In addition to the procedural ethics, I also had to constantly think through the ethical integrity of the methods I had to use.

I had to apply for consent from the DPP, City of Harare, as well as to verbally inform all the participants on the nature of my study. Here I explained how long the interview would take and the nature of information I sought from the respective respondents. At times I had to send emails or make phone calls to confirm the appointments with the respondents. In this way I avoided deception and always made my intentions clear; thus, the respondents were always aware of the purpose of the study which also helped in validating the findings (Wiles 2013:25). Subsequently, no fake promises were ever made to the respondents, especially when others became excited about the nature of my study and would want to know if my study was going to result in residents getting basic services.

During the data collection process, I also respected the study sites in Hopley (Oliver 2003:35). When administering questionnaires and during the in-depth interviews, there was little infringement on the privacy of the respondents and we always settled for the best place where the respondents would be comfortable to have the research assistants administer the

questionnaires. Privacy was also observed when taking photographs as some respondents did not want to be photographed. Therefore, I always asked for permission to capture any images, for example, the water sources and sanitation facilities.

Ethical considerations for this study also extended beyond data collection as I had to engage in the same during data analysis, reporting and storage (Israel & Hay 2006:1). During data analysis, I disclosed all forms of data that emerged from the codes, I adhered to the principle of academic honesty throughout the process. Moreover, the privacy of the respondents was respected and in this way no respondent was referred to by their names, rather aliases and pseudonyms were used for certain individuals.

I also kept all the raw data and materials from the data collection. Considering that the questionnaires were administered using a computer-aided system which transferred everything to a server at the end of the day, of which only I had access to, it meant that the data was also safely kept. I have made every effort to report the results fairly and accurately.

4.7 LIMITATIONS OF THE STUDY

Despite having clearly outlined the research design to guide the study, still there were some issues which remained beyond my control during the research process. Institutional bureaucracy was one major challenge which I confronted. The need to conduct the in-depth interviews with key informants was a daunting task which I realised was meshed in institutional bureaucracy. Some of the officials and respondents were hesitant to be interviewed and at times instead offered me materials to read. Obtaining an ethical clearance document (Appendix 8) and other letters from the university were helpful in overcoming the institutional bureaucracy.

Second, the volatile political landscape in Zimbabwe, particularly during the data collection period, influenced the research process as some respondents were sceptical to participate in the study. They had the impression that the researcher was part of Operation Restore Legacy¹¹. The same applied in the study area, Hopley, where there is strong political interferences and intimidation among the residents, and outsiders are viewed with disdain. The company of a

¹¹ The Operation Restore Legacy was initiated on 13 November 2017 by the military in Zimbabwe as a way to deal with all the criminals in the country and it resulted in the resignation of the former President of Zimbabwe, Robert Mugabe a few days later. He was succeeded by President Emmerson Mnangagwa. The operation also resulted in the arrest of a couple of ministers who were accused of various charges which were levelled against them. As a result of this operation, there was much pandemonium in the public sector.

Hopley resident known to me during the research process in Hopley helped. Moreover, the production of the student identity card was also helpful as it confirmed that I was a student engaged in academic research.

4.8 CONCLUSION

This chapter has outlined the research methodology which guided the study. The research paradigm has been explained and this was elaborated through a research map. The research design which has been adopted, that is, mixed methods design was presented and how it aligned with the study. This was followed by a presentation of the data collection methods which were categorised as being qualitative and quantitative. The data analysis and presentation techniques were also explored. Next were the sampling strategies which have been used to guide the data collection, followed by a presentation of the quality of the research and ethical considerations. Overall, the chapter justified the methodology and procedures which I have been undertaken in gathering and analysing the data. The next chapter presents a review of the policy and legislative framework which guided the planning and management of human settlements in Zimbabwe.

Chapter 5

THE SOCIO-ECONOMIC, POLITICAL AND LEGISLATIVE LANDSCAPE OF ZIMBABWE'S HUMAN SETTLEMENT DEVELOPMENT

The correct policies on density, land use, public space and the layout of infrastructure and services can make a difference to the delivery of good quality of life at the right price. Designing a spatial pattern that addresses citizen's concerns is a means for achieving a better city.

Pablo Vaggione (2013:13).

5.1 INTRODUCTION

This chapter first presents the socio-economic and political context characterising Zimbabwe since 1980. It then analyses the legislative and policy framework which guides human settlement development and provision of basic services in Zimbabwe. The emphasis is on the legislative and policy framework which guides and regulates the planning of human settlements, controls development, and facilitates the provision of basic services such as water, public health, sanitation, public roads and transport. This follows the observation that planning and development of human settlements is a statutory process undertaken by local authorities who are guided by various legislative and policy documents (Wekwete 1990). Similarly, Pablo Vaggione (2013:13) highlighted that the correct policies on land use and the provision of basic services make a significant difference to the delivery of good quality of life at the right price. This chapter is constituted of three major parts. The first part outlines the socio-economic political context of Zimbabwe, the second part discusses the urban planning system for Zimbabwe, while the third part analyses the legislative and policy framework for Zimbabwe with regard to human settlement development.

5.2 ZIMBABWE'S SOCIO-ECONOMIC AND POLITICAL CONTEXT: 1980–2018

The first historical epoch in postcolonial Zimbabwe is the 1980s and 1990s which was characterised by a socialist ideology to development. The main focus of the government was

to redress the imbalances created by the British colonial government. Zimbabwe inherited a colonial legacy from Britain which constituted infrastructure such as roads, water and sanitation. The largest inventory of the infrastructure was in urban areas.

5.2.1 1980–1989: State-centred planning or state capture?

When Zimbabwe gained independence from colonial rule in 1980, she inherited an economy which was premised on separate development characterised by white supremacy and neglect of the black majority. Zimbabwe also inherited a strong colonial infrastructure, mostly in the urban areas, which served as the preserve of the white minority (Kanyenze 2003:34; Besada & Moyo 2008:1). For example, the infrastructure in Harare was designed for a population of approximately 300 000 people (City of Harare 2012). Munzwa and Jonga (2010) were of the opinion that such restrictive laws imposed by the colonial government were meant to limit the urban population to maintain a balance between urban basic service demand and supply. The strong infrastructure inherited was therefore intended to support a few people. The rapid increase in the urban population which followed in the country confirms the functionalist perspectives to urban dilemmas where the central government and local authorities failed to address the problems which were to be associated with the increasing population.

In response, the new government led by ZANU-PF sought to redress the socio-economic and spatial inequalities and injustices which prevailed during the colonial era. With the dawn of independence and the relaxation of migratory laws which once restricted blacks to migrate to urban areas, there was a right to the city which triggered increasing urbanisation across the country (Patel 1988). Big cities such as Harare and Bulawayo attracted more people because of the greater economic opportunities they had to offer. This was explained by the blossoming national economic growth of 2.9% which was higher than the 1.7% of the southern African region (Besada & Moyo 2008:2). The urban population of the country rose from 23% in 1982 to 30% by the early 1990s, which confirms the increasing population in the country's urban centres (Tibajuka 2005). Table 5.1 demonstrates the population increases in the major towns and cities across Zimbabwe from 1982 to 2017.

Table 5.1 Population figures for selected towns and cities in Zimbabwe

Town/City	1982 Census	1992 Census	2002 Census	2012 Census	2017 Estimates*
Harare	656 011	1 189 103	1 444 534	1 485 231	1 592 368
Bulawayo	413 814	621 742	676 787	653 337**	700 466
Chitungwiza	172 556	274 912	321 782	356 840	382 581
Mutare	69 621	131 367	170 106	187 621	201 155
Gweru	78 918	128 037	141 260	157 865	169 253
Kwekwe	47 607	75 425	93 072	100 900	108 178
Kadoma	44 613	67 750	76 173	92 469	99 139
Masvingo	30 523	51 743	69 993	87 886	94 226
Chinhoyi	24 322	43 054	56 794	77 929	83 550
Marondera	19 971	39 384	52 283	61 998	66 470

*The figures shown are estimates calculated by ZimStat for 2017 (ZimStat 2018).

** Much debate has been raised with regard to this figure. Local authorities in Bulawayo argue that the population of the city is much more than the census figure and they estimate the population of Bulawayo to be at least 1,1 million (Mlotshwa 2012; Dube 2015). This figure is based on the Council's own study which they termed the Consolidated Bulawayo Municipal Housing and Population Statistics (Dube 2015).

In attempting to redress the colonial disparities, a socialist approach was then adopted to guide national development through a distributive and welfarist state (Makaye & Munhande 2013; Rambanapasi 1989; Wekwete 1989). The government was so much engrossed in the need to redress the inequalities such that planning became top-down. This was evident from the central role which the government assumed in national development with minimal citizen participation. In this regard, the state identified itself as helping the people, yet this did little with regard to empowering the indigenous people (Rambanapasi 1989).

In efforts to succeed in their socialist pursuit, the government introduced the Transitional Development Plan and Growth-with-Equity as short-term plans. The Transitional Development Plan aimed to advance economic growth and redistribution among the citizens. On the other hand, the Growth-with-equity envisaged embracing good governance, efficiency in allocation of resources and ensuring that all citizens would benefit equitably from national development initiatives (Government of Zimbabwe 1981:2).

With regard to settlement development, the National Development Plan made strides towards addressing settlement development through the state sponsored self-help housing policy. Auret (1995:13) explained that the development of settlements was to be undertaken by private sector contractors, and beneficiaries could only be accommodated once the stand had been fully developed. Such a policy ensured that settlements could be inhabited once they had all the services. Growth points were to be developed across the country to support rural areas with services as well as to curb rural–urban migration and urbanisation.

The major flaw with these plans is that they failed to specify the spatial framework for development; hence their success was not prominent. Although the state assumed to follow a socialist ideology, this was hampered by a number of factors. First, was the ideological crisis identified by Rambanapasi (1989) who pointed out that the country remained guided by a constitution which was inherited from the colonial era. It was thus simply an apparatus of the colonial government and simply served their interests.

On the other hand, Mugabe sought to advance the socialist stance to help the masses while he wanted to maintain ties with the private sector which remained dominated by the whites. The reality was that the socialist mantra remained rhetoric and the country's economy was operated by white-controlled market forces and parastatals which were largely run through bureaucratic principles (Raftopoulos & Compagnon 2003:19). It became a means of the power elite and those bearing allegiance to Mugabe to control the country's resources, although at the time no one seemed to be paying heed to it.

In the end, the intended interventionist planning was never really achieved in reality as functionalism continued in planning with the private sector determining the success of national development. However, state capture became prevalent as a new crop of indigenous elite emerged who controlled the means of production in parastatals. It is indicated by Raftopoulos & Compagnon (2003:20) that the increased public debt, budget deficit, mismanagement of funds in parastatals, and the dwindling private sector investment all contributed to the failure of the socialist ideology.

5.2.2 1990–2000: Whither socialism hither capitalism

Upon realising the failure of the socialist ideology and its constrain on the government, the government of Zimbabwe at the behest of the International Monetary Fund and the World

Bank, adopted the Economic Structural Adjustment Programme (ESAP) in 1991. Kanyenze (2003:56) noted that, although the civil society was supposed to play a crucial role in the implementation of ESAP, it was never fully consulted. The main objectives of ESAP were to liberalise trade, cut on government spending through removing subsidies and privatisation of parastatals. Through ESAP there was a transition from the socialist ideology to capitalism which resulted in market forces determining the allocation of goods and services.

ESAP resulted in massive social costs which were not anticipated by the government. There were massive retrenchments in industry which resulted in high rates of unemployment across the country (Toriro 2008:156). Economic hardships also resulted from the introduction of user fees for various services which were once subsidised by the state. The result was proliferation of informality in towns and cities as urbanites sought to find means to make a living.

The introduction of ESAP also affected the provision of basic services, as user fees were introduced for social services in cities and towns following the removal of government subsidies. The provision of basic services in settlements were now the responsibility of the beneficiaries who had to first pay the councils before services could be installed in new developments. To make matters worse, the budgets allocated to local authorities were reduced and this resulted in deficiencies in service delivery in cities and towns. For example, in the 1994/95 financial year, the government spent only 0.2% of the national budget on shelters, which was far less than the 2–8% spent in other countries (Government of Zimbabwe 1996:11). This had negative implications on service delivery in emerging settlements since the urbanisation rate continued to increase, putting strain on service delivery.

During this time, some bilateral loans and assistance from institutions such as the United States Agency for International Development (USAID) and the World Bank supported settlement development projects and service delivery in emerging human settlements. For instance, in 1989, USAID provided US\$50 million to the government to enable the construction of 20 000 low-income houses in Harare and nine other towns (Auret 1995:26). Settlement development during this epoch was heavily regulated and bulk infrastructure had to be installed first before any person could reside in the area. However, the heavy burden on the government resulted in the government's failure to provide the required basic services in emerging settlements.

Settlement development during this era was greatly compromised as the provision of basic services was also supposed to be provided through privatisation processes. Auret (1995:18)

pointed out that under ESAP, urban development and housing came to be seen conceptually and operationally as part of the overall strategy of structural development policies, in which cities, through the privatisation process, play an important role in national economic growth. However, the social dimensions of ESAP did not pay much attention to provisions for shelter, rather its focus was on provision of food, health and education to vulnerable groups in society.

Amid the economic decline, there was increasing corruption and the perpetrators were mainly top government officials and politicians. Large sums of public funds which could otherwise have been used for socio-economic development and basic service delivery were looted by a few individuals and in most cases no one was ever prosecuted. The very important person (VIP) Housing Scandal of 1996 resulted in civil servants losing close to US\$1.21 million which they had donated towards their own housing development. Among the 185 looters comprising of top government officials and politicians was Grace Mugabe, who used money from the fund to build her own house which she later sold to the Libyan Embassy (Yamamoto 2016). Muroyi (2017) is of the view that Mugabe used corruption to maintain allegiance and trust among his cadres.

The Movement for Democratic Change (MDC) was formed in 1999, following increased disenchantments among the citizens towards Mugabe's rule. The MDC became influential and has been the only major opposition political party which has threatened ZANU-PF (Nyarota 2018:45). The MDC was more influential in the urban areas where it garnered much support among the disgruntled urbanites as the government focused more on the rural citizens. The emergence of the MDC changed the socio-political landscape of Zimbabwe as the government continued to embark on various initiatives in the early 2000s to sanction MDC supporters mainly in urban areas, while incentivising those who sympathised with the ruling party.

5.2.3 2000–2009: The lost decade: Chaos, disorder and madness

The period 2000–2009 is often described as the lost decade in Zimbabwe and was characterised by turmoil and uncertainty. The socio-political landscape in the country was very tense, mainly due to the increasing dominance of the MDC in urban areas. There was a transition again from capitalism to authoritarianism with ZANU-PF using force and power to advance their agenda. In 2002, the government initiated the Fast Track Land Reform Programme to redistribute land following the failure of the British government to honour its promises of the Lancaster House Agreement towards land redistribution which remained in the control of the white minority.

Commercial farms were seized from the white farmers without any compensation. Although the target was on agricultural land, some individuals took advantage of the chaos and started to invade peri-urban land and any vacant or open spaces in towns and cities across the country. Mbiba (2017) noted that land invaded in urban areas was mainly used for housing development considering the housing shortages which were prominent in the country.

Besada and Moyo (2008) reported that the FTRLP resulted in the unemployment and displacement of approximately 1.6 million farmworkers. These individuals were mostly migrant workers who had come from Mozambique, Malawi and Zambia during the colonial times and had nowhere else to go. Most of these individuals then migrated to the urban areas where they invaded pieces of land in peri-urban areas or in informal settlements as they had no alternative places to stay (Marongwe, Mukoto & Chatiza 2011). Moreover, agricultural productivity decreased immensely as the black farmers failed to sustain the once thriving agricultural sector. Political persecutions also peaked during this period with the militia and police emerging as a state appendage in suppressing human rights through violence, especially in urban areas for those who supported the MDC (Onslow 2011:8).

In 2005, a nationwide blitz coded Operation Murambatsvina (Remove Filth). Its purpose according to most proponents was to sanction the urbanites that were sympathising with the MDC party. The operation targeted all forms of informality in urban areas through demolitions and forced evictions. After the forced evictions and demolitions, a United Nations report concluded that approximately 700 000 people were negatively affected by the operations as they lost their homes and livelihoods (Tibaijuka 2005). Immediately after Operation Murambatsvina, the government introduced Operation Garikai/Hlalani Kuhle (GHK) to accommodate the victims of Operation Murambatsvina.

However, Operation GHK was a cover-up by the government to make it seem as if they were assisting the victims when in actual essence most of the houses built under Operation GHK lacked basic services. Some had communal water and sanitation facilities and were built hurriedly with the assistance of personnel from the Zimbabwe National Army, prisoners and youth militia. The result was a chaotic process which resulted in houses and stands with no bulk infrastructure in the form of water, sanitation as well as roads being allocated to beneficiaries, and in some instances it was discovered later on that basic services could not be

provided in the area as the houses were constructed on top of a *dwala*¹² (Solidarity Peace Trust 2006:28). The result of Operation GHK was a perpetuation of the situation before Operation Murambatsvina where settlements continued to emerge without access to basic services.

The period was also characterised by hyperinflation which peaked in 2008, when the country recorded the second worst hyperinflation in human history. By November 2008, the annual inflation rate peaked, reaching 89.7 sextillion (10²¹)% (Hanke 2017). As a result of this hyperinflationary environment, the standard of living declined gradually across the country. Basic commodities were scarce, and everyone was struggling to put bread on the table which just made the provision of basic services a luxury.

Local authorities were the worst affected institutions as residents struggled to pay their bills for basic service provision such as water and sanitation. The result was financially strapped councils which could not recoup their investment in basic service provision. There is not much of infrastructure development which occurred during this decade, rather there was a continued strain and decline of the existing infrastructure due to increasing urbanisation. The collapse of service delivery subsequently birthed the 2008/2009 cholera outbreak in the country, which resulted in the death of at least 4 000 people (Chambers 2009:993; Fernandez, Mason, Gray, Bauernfeind, Fesselet, Maes 2011: 38; Mason 2009:149).

5.2.4 2009–2013: Government of national unity and the dawn of prosperity

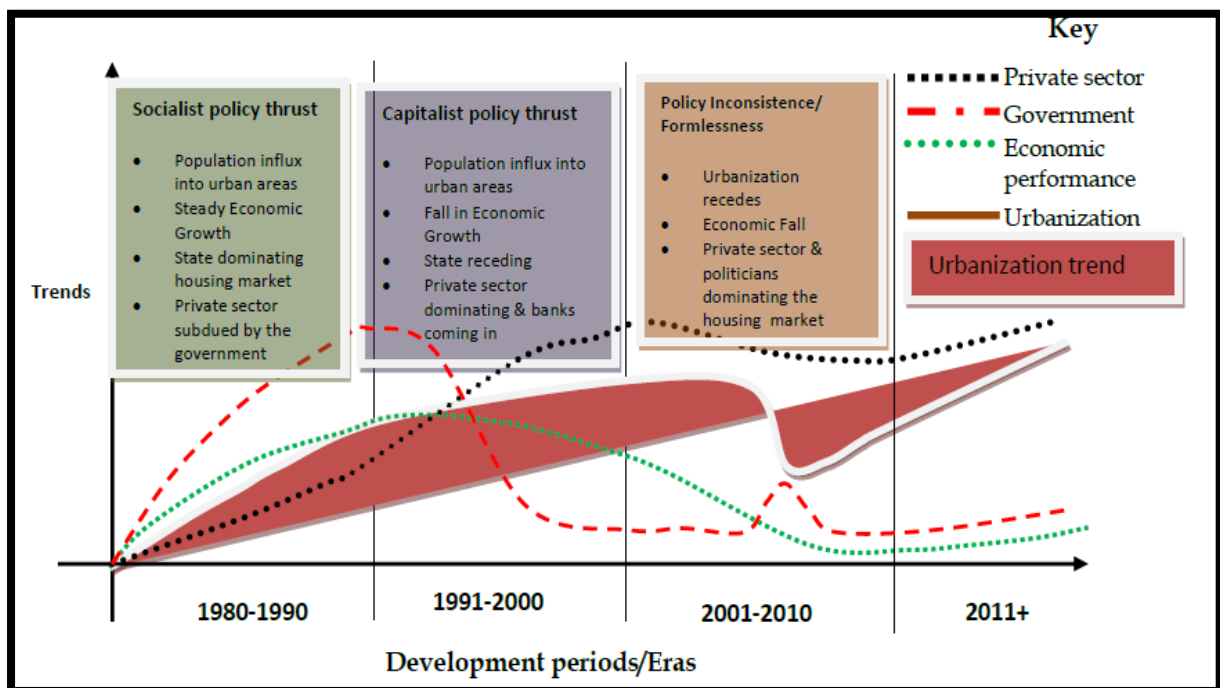
This was a turning point in the history of Zimbabwe. Following the controversial presidential elections of 2008, the cholera outbreak of 2008/2009 and the hyperinflation, the international community intervened in the local politics and recommended the formation of a Government of National Unity (GNU) (Biti 2014; Raftopoulos 2010:708). The GNU was a merger between ZANU-PF and the two MDCs¹³ and resulted in the formation of a coalition government. Through the GNU, a multi-currency economy was introduced in Zimbabwe where the US dollar became the main currency. The inflation rate decreased, and this resulted in a number of reforms towards settlement development and the local authorities' commitment to service delivery. It is in this period that policies such as the National Water Policy, the National Housing Policy and the Constitution of Zimbabwe were formulated and amended. It may be

¹² A *dwala* known as *ruware* in Shona is a massive rock outcrop, mainly granite, which may extend underneath the ground surface and covers a large expanse in most instances.

¹³ The MDC T led by the late Morgan Tsvangirai and the MDC M, which was led by Professor Arthur Mutambara.

argued that social service delivery improved in urban areas; rather the government remained financially constrained, some donations and bilateral loans to central and local governments helped in infrastructure development.

Considering that the GNU was a temporary initiative, the respective political parties continued to advance their respective agenda in preparation for the 2013 parliamentary elections. Biti (2014:22) lamented that the shortcomings and incomplete reforms associated with the GNU were attributed to the lack of a common vision and effective leadership. A typical example is that debts from January 2009 to June 2013 owed by rate payers to local authorities were cancelled just before the July 2013 parliamentary and presidential elections. Rate payers owed Harare close to US\$400 million. By August 2013 councils were beginning to feel the strain of the debt cancellation as residents became reluctant to pay their debts beyond June 2013. This compromised service delivery in most local authorities, considering that approximately US\$14 billion was required to address the infrastructure crisis in the country (Biti 2014:23). Figure 5.1 provides a summary of the development trajectory in Zimbabwe with regard to the rate of urbanisation and government policies from 1980 to 2011.



Source: Muderere (2011:17)

Figure 5.1 An overview of the urbanisation trajectory, economic performance and planning ideology charactering Zimbabwe from 1980 to post 2011

5.2.5 2013–2017: Things begin to fall apart again

The ZANU-PF party retained political rule and once again the economy was crumbling. Human settlement developments and service delivery was largely controlled by land barons. Land grabbing in urban areas was rampant and considering the increasing demand for residential stands, ZANU-PF somehow maintained a laissez-faire situation where land barons were parcelling out land to the homeless (Mahove 2016; Muchadenyika 2015). Unserviced stands were mainly allocated to potential home owners in open spaces such as wetlands, urban edge and infill stands (Matamanda, Chirisa, Mukamuri, Kaduwo & Mhlanga 2018; Samukange 2013). This resulted in proliferation of informal settlements which the government was always reluctant to address, although some evictions and demolitions were made every now and again.

In November 2017 the citizens backed by the army protested against Mugabe's rule and he eventually resigned, giving way to President Emmerson Munangangwa (Nyarota 2018). Munangangwa came into office with the mantra of restoring legacy. He promised a number of reforms which would transform the socio-economic landscape of the country. Amid all the euphoria of Mugabe's exit many people were sceptical of Mugabe's predecessor and his ability and capacity to transform the country (Southall 2017). During his interim term in office he set some 100 day plans which he envisaged creating an environment ideal for foreign investment in the country, political reforms and addressing various socio-economic woes bedevilling the country (The Sunday Mail, 2018 January 21).

5.2.6 Post-2018: Presidential elections – A new era or error?

The socio-economic and political context of the country has taken another turn following the July 2018 Presidential and parliamentary elections. The elections have been riddled with a lot of inconsistencies and power struggles between the MDC Alliance led by Nelson Chamisa and ZANU-PF led by President Munangangwa. The former and other civil rights activities contested the outcome of the elections claiming that like always the elections were rigged and characterised by infringement of human rights. It is in this regard that Matara and Nyamande (2018:3) question if the outcome of the elections characterised a new era/error for Zimbabwe. Following the victory of ZANU-PF in the elections, the economy has taken a downward turn and the inflation rate began to rise (Latek 2018). At the local level, city of Harare crafted its 100-day Quick wins rapid results initiative in September 2018. The city sought to address

issues such as road maintenance, water supply, bus transport system and street and traffic lighting.

5.3 URBAN PLANNING SYSTEM FOR ZIMBABWE

This section focuses on the urban planning system in Zimbabwe and how the planning process and plans impacted on settlement forms and citizens access to basic services. The provision of basic services is also explored through a policy review which includes international conventions and protocols.

Zimbabwe was colonised by Britain up to 1980 when the country gained independence. As such, the country inherited the British system of physical planning which is still practised and guides the development of human settlements in the country (Mabaso et al. 2015; Mbiba 2017; Tibaijuka 2005:56). The planning system is guided and regulated mainly by the Regional Town and Country Planning Act (RTCPA) (Chapter 29:12), which sets provisions for planning and ultimately influencing the form of the settlements through layout plans which have to be prepared prior to any development commencing. The continued use of the colonial planning systems confirms the arguments by various proponents who attribute the failure of the planning in most African cities to the adoption of Western planning ideology and paradigms (Nnaggenda-Musana & Elwidaa 2018:130-131; Watson 2009).

It is in this regard that various scholars have questioned the effectiveness of this planning system in Zimbabwe, with some arguing that it has been responsible for inefficacy in the settlements created (Cirolia & Berrisford 2017; Mbiba 2017). Some scholars have argued that this European planning system was the best for Zimbabwe in that there was strictness in the development and management of human settlements with no compromises. The result was the orderliness which characterised most settlements around the country. Mbiba (2017) narrated that Harare was described as a Europe in Africa, and it was also affectionately known as the 'Sunshine City'.

The RTCPA is used with allied acts which focus on certain issues relating to the built environment and ultimately contributing to the form of the settlements. Such allied acts include the Water Act, the Public Health Act, the Urban Council's Act and the Roads Act. There are also certain institutions that are responsible for the planning and administration of the human settlements in Zimbabwe. These institutions play different roles, but their objective is mainly

to promote the development of sustainable human settlements where residents can enjoy their life. Over and above the local statutory and legislative policy framework, these institutions which are mandated to plan, regulate and administer human settlements in the country, are also guided by some international conventions and protocols which they localise to conform to international standards.

The product of the planning process and activities is a plan which helps to guide the city managers on the development path to be taken to achieve the desired outcome and human settlement form. Although a plan is often considered among laymen as a document that presents an inspiring vision of how the city should and might look like in the near future, Ford (2010:45) elaborated as follows:

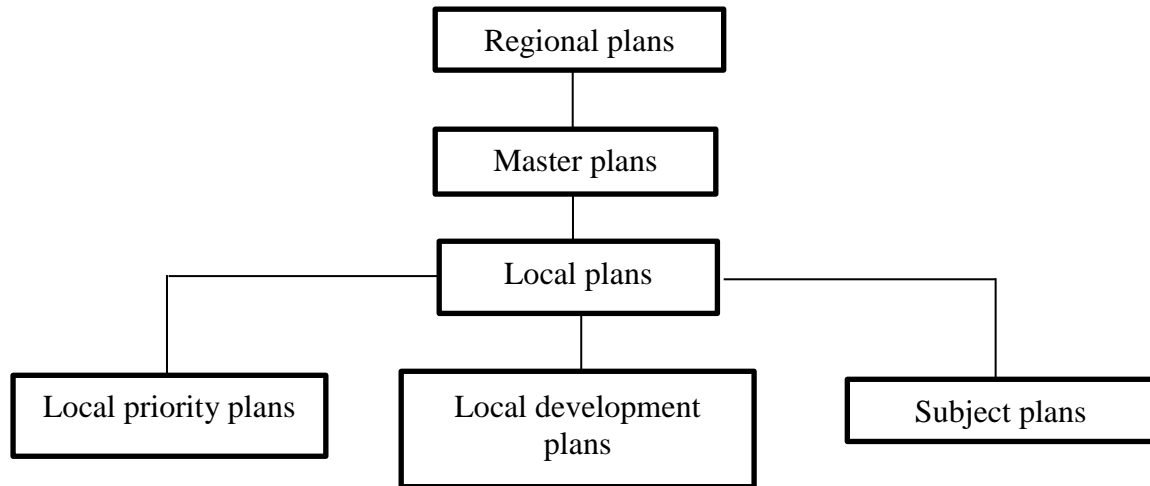
[T]o a modern city planner, a 'plan' implies a compendium of mostly unillustrated documents that act together to predict and oversee the process of urban development. Such documents include economic studies and projections, demographic descriptions of the local citizenry, and many technical reports and individual plans for various aspects of urban life.

The implication of this quotation is that the ultimate plan for an area or settlement is a system comprising other plans which focuses on different aspects of the planning arena. For example, there might be detailed provisions of water supply infrastructure for the area which will be accompanied by road network plans, a socio-economic profile of the area and even environmental status. All these components are meant to give a clear picture of the area being planned for, rather than simply providing an arbitrary conceptualisation of the envisaged outcome. There is a danger among planners in that they tend to focus more on the contents of the plans and eventually fail to consider issues on the ground. In Zimbabwe, statutory plans are created to guide development of settlements and these are mostly prepared with little contribution from the communities.

5.3.1 Statutory plans

Urban planning in Zimbabwe is guided and regulated through the use of statutory plans. Likewise, the development of human settlements is also informed and shaped by certain statutory plans which provide a broad perspective of the proposed development prior to residents settling in the area. Statutory plans are prepared by local authorities in consultation with the Ministry of Local Government, Public Works and National Housing (MLGPWNH). It is through these statutory plans that settlement forms are determined. There are different

types of statutory plans which guide development, and ultimately the settlement forms in Zimbabwe. Rather, it would be best to present the statutory plans in their hierarchical manner. Figure 5.2 outlines the statutory plans used in Zimbabwe and their hierarchy.



Source: Author's own (2018)

Figure 5.2 *Hierarchy of statutory plans in Zimbabwe*

5.3.1.1 Master plans

A master plan is a comprehensive planning document prepared by local authorities to structure land use and development. The master plan is futuristic and looks at the big picture of the orderly planning and improvement of an area (Watson 2008:19). It is a *de facto* principal planning policy which to many is the blueprint of a system's future improvement programmes, and actually forms the basis or first step to development prior to the undertaking of any specific designs (Todes, Karam, Klug & Malaza 2010:415). In Zimbabwe, master plans are used to guide development, and the provisions for the preparation of master plans are provided for in Part IV of the RTCPA.

Despite long-standing and increasing disenchantments levelled against master plans (Todes et al. 2010:414; Watson 2009), they still remain relevant and among the statutory plans regulating and guiding physical planning in Zimbabwe (Government of Zimbabwe 2018a:6). Through section 14 of the RTCPA, local authorities are empowered to prepare master plans. Section 13(1)(a) compels the local authority to first undertake a study of the planning area prior to preparation of a master plan. The rationale for this proposed study of the area is to identify the existing components within the system (planning area or city) together with the deficiencies. Socio-economic and environmental issues are considered which means that the

state of water, sanitation and road infrastructure is factored in, together with demographic trends.

The results of this study helped in identifying critical areas that need special attention; the plan then earmarked some areas for comprehensive development, redevelopment or improvement. The results mainly informed how the city is supposed to grow and this will include taking note of major road upgrades, water and sewer infrastructure, strategies for housing provision, employment creation and environmental management (Kakore 2018). The main objective is to ensure that there is coordinated development, efficient movement of traffic, regulation of the use of land and construction of buildings.

Citizen participation in preparing master plans is outlined in section 15 of the RTCPA. This is an important issue which helps in increasing the legitimacy of the plans, identifying community needs and priorities as well as producing settlements which people relate to and where they find fulfilment (Fischler 2002:111). This is meant to keep an inventory of the development trajectory of the area as well as recognising the future needs which would be required to promote and maintain the citizen's well-being, access to basic services and most importantly, to achieve sustainable development.

5.3.1.2 Local plans

Local plans are specific plans which are the building blocks of the master plan. The settlement forms are largely determined by these local plans which specifically focus on the '*trees and not the forest*' like the master plan does. In this way, the local plans may be formulated for the CBD, for example, Local Plan 22 for Harare seeks to monitor and regulate development in the city's CBD and the surrounding areas. There are various other local development plans that focus on certain residential suburbs in Harare, for example the Avondale LDP39 and the Waterfalls/Hatfield LDP26. This supports section 17(2) of the RTCPA which indicates that local plans may be prepared for different purposes.

The RTCPA, in section 17, shows that local plans have to be prepared for certain areas and they have to conform to the master plan. The preparation of local plans is meant to guide development at the local level and it is in this vein that layout plans are prepared for certain residential suburbs or districts. Section 17(3)(a) stipulates that the local plans have to be prepared to ensure coordinated and harmonious development or improvement of an area. Land

use regulation and traffic movement are the critical elements to be considered in these local plans. The human settlement forms are also considered at this stage where the local plan outlines the proposed land uses and supporting infrastructure and services.

The most important thing is to make sure that these local plans align with the provisions of the master plan, in instances where it exists. This is to ensure that coordinated development takes place at local level which then satisfies the provisions of the master plans. Ultimately, the local plans are prepared with the view to ensure harmonious development, regulation of land uses and construction of buildings, smooth movement of transport and improvement of the environment. In a nutshell, the local plans influence the human settlement forms through their configuration and the location and positioning of different elements on the plans. On the other hand, the provision of basic services such as water, sanitation and roads are also factored in the plans through the study analysis of the areas and subsequently their provision.

5.3.2 International conventions guiding human settlements development

5.3.2.1 Sustainable development goals

Zimbabwe is a signatory to the SDGs which are a set of goals enacted by world leaders around the world to overcome development challenges overwhelming mankind in both the Global South and North. The SDGs seek to transform the lives and human well-being, especially focusing on poverty and inequality which characterise the Global South. Shettima (2016:19) explained that the SDGs are meant to ‘Leave No one Behind’; hence they are a global vision for people, the universe and long-term peace and prosperity (Omisore 2018; Parnell 2016:530).

There are seventeen broad goals which focus on different facets of development (Box 1). Goals 6, 9 and 11 are relevant to this study as they relate to issues of infrastructure, water and sanitation, and sustainable human settlements.

Box 1 Broad goals which focus on different facets of development

- Goal 1 End poverty in all its forms everywhere
- Goal 2 End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3 Ensure healthy lives and promote well-being for all at all ages
- Goal 4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Goal 5 Achieve gender equality and empower all women and girls
- Goal 6 Ensure availability and sustainable management of water and sanitation for all
- Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9 Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation
- Goal 10 Reduce inequality within and among countries
- Goal 11 Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12 Ensure sustainable consumption and production patterns
- Goal 13 Take urgent action to combat climate change and its impacts
- Goal 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17 Strengthen the means of implementation and revitalise the global partnerships for sustainable development

The following targets which fall under Goal 6, conform to the confines of this study. Target 6.1 aimed that by 2030, there will be universal and equitable access to safe and affordable drinking water. Additionally, target 6.2 envisaged that by 2030 there will be improved access to sanitation and hygiene which will be translated through an end to open defecation, paying attention to the needs of communities living in vulnerable conditions and the needs of women and girls. This goal is among the goals which have been prioritised by the Government of Zimbabwe through its commitment to implement initiatives which seek to promote citizens access to water and sanitation services (Government of Zimbabwe 2017:5).

It is stated that Zimbabwe has made great strides in ensuring that citizens have access to water and sanitation as espoused in SDG 6. This access is outlined in the Constitution of Zimbabwe which upholds the citizens' rights to safe water and sanitation. It is interesting to note that the SDGs do not focus on human rights and democracy, a situation which makes them appear as an authoritarian document aimed at fostering the power and dominance of a few world leaders. Smith (2018) refuted the arguments raised by most proponents such as Shettima (2016) and Omisore (2018) that the SDGs are a global vision for advancing human well-being. Rather, they are an instrument which is used by authoritarian regimes to rule the world. Examples are China, Rwanda, Turkey and Zimbabwe where government leaders do not respect human rights, but the countries are tasked to implement and monitor the SDG progress. Such situations clearly show how policies and conventions may be used to perpetuate inequality and injustices in the name of development. For Zimbabwe, Smith (2018) highlighted that the leaders, mainly the former president Robert Mugabe, infringed on numerous human rights for the citizens in the form of demolitions of settlements, corruption, and poor governance, yet the country claims to be committed to achieving the SDGs (Nyarota 2018).

Goal 9 focuses on building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation. The first part of the goal is of utmost importance to human settlement development as envisaged in target 9.1 which indicates that by 2030 all counties must have developed quality, reliable, sustainable and resilient infrastructure to support economic development and human well-being. The Government of Zimbabwe also acknowledges the utility of building resilient infrastructure; hence the SDG 9 has been placed at the centre of the government's programme to implement the SDG at national level (Government of Zimbabwe 2017:8).

According to the annual report on the SDGs progress of the Government of Zimbabwe (2017:8), the key initiatives by the government in providing resilience, include rehabilitation of water and sewerage infrastructure across the country's urban centres. However, events on the ground show a different picture as the water infrastructure in most cities and towns is dilapidated and fails to provide adequate water to the urbanites. The deplorable state of this water infrastructure, especially in Harare, is evident from the endemic cholera outbreaks which have plagued the city, especially the 2018 cholera outbreak which has resulted in at least 25 deaths and 1 900 cases being reported (UNICEF 2018). In this regard, Smith (2018) argued that the SDGs can be identified as merely pushing an agenda that is carefully calibrated to

avoid upsetting the world's dictators, kleptocrats and human rights offenders (Smith 2018). This is so because, through the SDGs, these dictators are able to conceal their crimes through preaching 'development', while they fundamentally continue to undermine it in their countries.

Goal 11 seeks to make cities and human settlements inclusive, safe, resilient and sustainable. It is in this regard that the human settlement forms come into perspective considering that settlement forms are an integral component of the ultimate urban fabric. In efforts to achieve this goal, certain targets have been set and the following were applicable to this study:

Target 11.1 states that by 2030, all citizens across the world must have access to adequate, safe and affordable housing and basic services and upgrade slums. Accessibility is an intrinsic element which facilitates the functionality of settlements as it enables citizens to access various basic services. In this vein, target 11.2 envisages providing citizens with access to the safe, affordable and sustainable transport system. These will be provided through expansions on public transport systems and paying special attention to the needs of individuals in vulnerable situations. Road safety is also another critical issue which the SDGs commit to improving. The governance of urban areas and control in urban planning matters are espoused in target 11.3 which seeks to enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries across the world. The commissioning of dualisation projects of national highways such as Beitbridge–Harare and Harare–Mutare are also milestones aimed at improving the road infrastructure in the country (Government of Zimbabwe 2017).

However, inasmuch as the SDGs appear to be geared towards advancing human well-being, there are some ambiguities with the agenda. For a country like Zimbabwe which is wrought in debilitating socio-economic and political environment, it becomes difficult to identify how the SDGs will be realised by 2030. Unlike other countries which have stable socio-economic landscapes, there is a need for institutional and governance reforms in Zimbabwe which will then pave way for effective implementation and monitoring of the goals and targets. There also seems to be vagueness with regard to the meaning of sustainability, a term which is not well defined or articulated in the agenda.

Inasmuch as the SDGs are hailed as being 'the thing', they remain like any other programmes and conventions formulated by the West with a view to advance their own agenda. The

government of Zimbabwe, on the other hand, only chose to adopt these goals to benefit from some development grants which in most instances are seldom used for their intended purposes.

5.3.2.2 *New Urban Agenda*

The New Urban Agenda (NUA) is a document which was produced by attendants at the Habitat III Cities Conference in Quito, Ecuador, in October 2016 (United Nations 2016b). The document has become a key guide to urban development and management across the world considering that it enshrines the SDG goal 11 which exclusively focuses on urban areas. Zimbabwe is among the countries who are signatories to the Habitat III Agenda. From 1996, Zimbabwe has shown its commitment to improving the condition of human settlements across the country (Government of Zimbabwe 2015).

In attempts to map a way forward with regard to vision and mission, the NUA envisages cities and human settlements which fulfil social functions with the aim of gradually promoting the citizens' access to **safe** and **affordable** basic services such as water, sanitation and equal access to mobility and transportation (Caprotti et al. 2017; Satterthwaite 2016b:7-9). Age and gender dimensions are also taken into consideration as the development of the human settlement has to factor in the needs of these vulnerable groups and giving them the ability to engage effectively in decision-making.

The NUA acknowledges the rapid urbanisation trend in this century and how such a process is impacting on urban development, both negatively and positively (Clos 2016:239). In this way, the NUA thus calls for the need to readdress the planning, designing, financing, development, governance, and management of cities and human settlements around the world. It is evident here that planning, designing, and management are presumed to be among the panacea to the urban challenges confronting human settlements. This is so, because it is argued that adopting such a stance will immensely help in increasing the sustainability of cities and human settlements (United Nations 2016b). Pieterse (2016:21) argued that the NUA is not very relevant for Africa as it fails to take note of critical issues such as urban exclusion and injustices in much of Africa. It is for this reason that the NUA also follows the same strand as the SDGs which are a product of a few authoritarian western leaders.

Since Zimbabwe is a signatory to the Habitat Agenda, it has also developed some initiatives and policies with the view to make positive progress towards attaining a NUA. Judiciary

reforms have been undertaken to improve the governance of urban development; public participation is increasingly becoming a top agenda in settlement development although much has to be done in this regard considering that most citizens are not aware of platforms where they can participate. It can also be noted that politicians have taken centre stage in urban development and in this way citizen participation has not been observed (Muchadenyika 2015:1220). It is recognised that efforts to achieve the NUA also lies in attention being paid to governance issues, compact development, institutional reforms, human capital development and paying attention to rural development to limit rural–urban migration and decongest the urban areas, especially Harare and Bulawayo (Government of Zimbabwe 2015).

5.3.2.3 Africa Agenda 2063

The Africa Agenda 2063 is a strategic framework which was commissioned in 2013 by African leaders and it intends to promote the socio-economic transformation of Africa with targets set for 2063 (African Union Commission 2015). There are seven aspirations which guide the development trajectory for the Africa Agenda (African Capacity Building Foundation 2016:13). In the first aspiration of the Africa Agenda, the emphasis is on creating a prosperous Africa premised on inclusive growth and sustainable development. It is projected that by 2063, African countries will have the best performers in global quality of life measures. Such global quality will be achieved through the provision of basic services which include water, sanitation, and shelter (African Union Commission 2015:3). Moreover, it is elaborated that by 2063, Africa should have equitable and sustainable use and management of water resources for socio-economic development, regional cooperation, and the environment.

Good governance is critical to human settlement development and this is also provided in the Africa Agenda which highlights the utility of good governance in all aspects of human life (Amupanda 2018). The need for security in human settlements is also mentioned in the Africa Agenda which include aspirations for improved human security with sharp reductions in violent crimes, and maintenance of safe and peaceful spaces for individuals, families, and communities (African Union Commission 2015:6). The spaces for the communities are the human settlements or neighbourhoods which are supposed to be safe and inclusive, as espoused in the SDGs.

Unlike the SDGs and NUA which are global agenda for promoting human well-being, the Africa Agenda has been developed by African leaders; hence they may be assumed to be the

best agenda guiding human settlement in Africa, including Zimbabwe. However, Amupanda (2018) questioned the inclusivity of the Africa Agenda and their agenda in promoting human well-being, when he asked who the ‘we’ is referred to in the Africa Agenda. It is interesting to note that although Africa has a youthful population; it is mainly the elite who advance their agendas. The African elite mainly dictate who has the power to control and use certain resources. Despite the fact that Africa has a youthful population, the African heads of states have used the Africa Agenda to advance their own selfish agendas. Amupanda (2018:72) indicated that the African elite always see the demands of the youth as being sponsored from outside and heavily influenced by the West. When the demands of the youth are taken into consideration, it is mainly to advance the interests of the elite.

In the context of Zimbabwe, although Amupanda (2018:71) highlighted that there is economic freedom in Zimbabwe aimed at empowering the youth, in reality, there are individuals who take advantage of the youth for their own personal gains. Chirisa et al. (2018) referred this as the ‘big man’ syndrome where the vulnerable youth are used as objects by the elite. This relationship is masked in clientism and only aimed at benefitting the elite. For example, politicians have been allocating residential stands to the youth in areas which are not serviced just to gain their votes but compromising their well-being.

5.4 LEGISLATIVE AND POLICY FRAMEWORK

5.4.1 National policies

5.4.1.1 Constitution of Zimbabwe Amendment (No. 20) 2013

The Constitution of Zimbabwe (COZ) Amendment (No. 20) of 2013 is the supreme statutory law which governs and regulates all affairs in the country, including the planning and development of human settlements. Unlike the previous constitution, COZ provides a more detailed summary of the human rights which encompasses the issues in human settlement and urban dilemmas. According to Chatiza (2015:4), COZ was mainly developed to redress the colonial and postcolonial governance struggles which were characterised by subjugation on democracy by the central government. It is in this regard that many proponents gave their approval to COZ as it envisages the promotion of human rights and good governance in the management of spaces and human well-being and upholds the socio-economic rights of citizens

(Chigwata & De Visser 2018; Kondo 2017; Muchadenyika & Williams 2016). The Bill of Rights is also more detailed than the previous constitution.

As highlighted in Chapter 2, settlements are shaped through control by some authorities. This control may be in accessing services in a particular area or on the nature and type of development which may be permitted in the locality. From the previous constitution, the central government had the power to govern affairs in local authorities. This has been changed in COZ, section 274(1), which empowers local authorities to govern all the affairs in their locality. Five powers of local authorities are listed in section 274. According to Section 270(1)(a-f), the provincial or metropolitan council is responsible for the social and economic development of its province, including:

- (a) planning and implementing social and economic development activities in its province;*
- (b) co-ordinating and implementing governmental programmes in the province;*
- (c) planning and implementing measures for the conservation, improvement, and management of natural resources in its province;*
- (d) monitoring and evaluating the use of resources in its province;*
- (e) exercising any other functions, including legislative functions, that may be conferred or imposed on it by or under an Act of Parliament.*

These powers to govern ensure that local authorities look after the interests of citizens in their jurisdictions (Mapuva 2015:191). Interestingly, the power bestowed on local authorities is somehow vague. This is explained by Chigwata and De Visser (2018) that COZ merely provides generic powers and the function of local government, but the details are largely influenced by and depend on national legislation. The implication is that the powers given to local authorities may be disregarded as the central government, mainly through the MLGPWNH may recentralise certain powers and functions of the local authorities. Under such circumstances, COZ thus leaves loopholes with regard to this governance and it is through such ambiguities that the ‘blame game’ tends to be played between local and central government when things do not go according to plan. It is illustrated by Muchadenyika and Williams (2016) that local authorities in actual essence lack real power and autonomy to plan and govern cities as stipulated by COZ.

The governance of urban areas, whether by local authorities or by the national government, is guided by the provisions outlined in section 194 of COZ, which stipulates the basic values and principles governing public administration. Section 194(1) lists a number of issues which have

to be taken into consideration in public administration. Among these are issues on professional ethics, efficiency and economical use of resources, development-orientation, public participation in policymaking, transparency, accountability, cooperation among government institutions and agencies, and impartiality, fairness and equity in service provision (Government of Zimbabwe 2013a). The notion of good governance also comes into context here as the public administration has to be anchored on good governance and this is illustrated in section 9 of COZ which reiterates the issues outlined in section 194.

According to section 2(2) of COZ, the obligations imposed by the Constitution are binding upon every individual, organisation, and institutions, including the state who have to play their role in development initiatives. Section 13(2) mandates state institutions to “involve the people in the formulation and implementation of development plans and programmes that affect them”. Certain groups and categories of citizens are mentioned in the Constitution and these require special attention in development initiatives. Section 17(1) focuses on gender equity, while section 80(1) upholds the rights of women as the section envisages that every woman ought to have the full and equal dignity of the person with men, and this includes equal opportunities in political, economic and social activities. The representation and participation of the youth in all spheres of life are outlined in section 20(1)(b) and (3), the rights of the elderly in section 21(2)(a) and (d), while section 22(1) and 3(d) takes note of citizens with physical and mental disabilities.

From the mentioned sections, it emerges that COZ is elaborate with regard to the manner in which public administration must be exercised in Zimbabwe. Section 194 calls for the need for local authorities and government to desist from corrupt tendencies and impartiality which means that no discrimination would be allowed against citizens, especially based on political grounds. Ironically, the reality in Zimbabwe is such that public administration is influenced by politics and services are provided mainly to individuals and communities who support and/or sympathise with the ruling party, ZANU-PF (Sachikonye 2011:100). Muchadenyika and Williams (2016:260) highlighted that the national government takes the form of the ‘big man’ (Chirisa et al. 2018) and simply manipulates local governments to advance its interests mainly of ZANU-PF. McGregor (2013) highlighted how urban governance in Harare is manipulated by ZANU-PF much to the detriment of service delivery and settlement development.

It is in this context that central government through local governments is held responsible for planning and managing human settlements which promote human well-being. COZ recognises a range of issues and statutory obligations which relate to the planning of human settlements together with the provision of basic services such as water, sanitation and public safety. In its Declaration of Human Rights, COZ enshrines socio-economic rights to water in the country (Government of Zimbabwe 2013a). Section 77(a) states that:

Every person has the right to safe, clean and potable water ... and the State must take reasonable legislative and other measures, within the limits of the resources available to it, to achieve the progressive realisation of this right.

This provision by COZ on citizens' right to water is commendable and it gives the state the mandate to ensure that this right is fulfilled, albeit the limited success that various initiatives have been made towards water supply provision across the country. This is explained by occurrences in most urban areas across Zimbabwe where citizens have been accessing water from unprotected wells, yet such water is not clean and potable. On the other hand, it was highlighted by Soyapi (2017:17) that COZ fails to mention 'access' in the provision for water.

5.4.1.2 Circular No. 70 of 2004, Ministry of Local Government, Public Works and National Housing

Circular No. 70 of 2004 of the MLGPWNH was developed in reaction to the criticisms levelled against the strict housing standards which acted negatively on the housing development in the country. Through the circular, the MLGPWNH set out new planning, housing and infrastructure servicing standards. It is through such standards that the development of settlements would be affected. With a view to reducing development costs, Circular No. 70 set the standards for stand sizes for low-, middle- and high-income residential suburbs as follows:

- Low-income suburbs were to be between 70 m² and 200 m².
- Between 300 m² and 500 m² for medium-income housing.
- Between 800 m² and 2 000 m² for high-income housing.

It has been argued that the main thrust of the reduction of the stand sizes had been to support densification as espoused in the operational Harare Combination Master Plan. The rationale was to advance compact development where the cost of installing infrastructure tends to be lower than when settlements are dispersed and sprawled.

Access roads which support public transport ought to be appropriately gravelled in high-density areas, while resurfacing is a prerequisite for those in medium- and low-density areas (Marongwe et al. 2011:46). The circular stated that all stands in the high-density suburbs must be connected to a reticulated water supply network. In instances where there is a lack of the reticulated infrastructure, it was recommended that communal standpipes be permitted as alternative short-term measures. Moreover, the circular made it mandatory for all stands in high- and medium-density areas to be connected to a reticulated sewer system. However, there were some exceptions for low-density areas where on-site sewage treatment was permitted for stand sizes above 1 200 m².

The circular also paid attention to the issue of parallel development in housing development. It was made permissible for housing development to be done simultaneously with the provision of basic services. Amid the revisions in housing standards espoused by Circular No. 70, the delivery of housing was still perceived as being too rigid, cumbersome and unrealistic. For example, the economic situation made it difficult for the installation of infrastructure in low-cost and low-income housing areas.

5.4.1.3 National Housing Policy of 2012

Considering the increasing housing challenges in most cities and towns across the country, the National Housing Policy of 2012 (NHP) was developed by the government to find ways to address the challenge. The policy was premised on a rights-based approach which aimed to promote citizens' well-being with regard to housing development. In this way, the NHP claimed to be people-centred and addressing the needs of all citizens regardless of income, race or ethnic group. It was also highlighted that the NHP adopted a reactive and correctional approach through which emphasis was on addressing the previous injustices. Such an approach, although critical on nation-building, somehow led to resources being channelled in redressing the 'past bad' without factoring in the socio-economic realities. Of special note were the challenges faced by the low-income group as the most disadvantaged economic group.

The result was the introduction of incremental development where housing development would be done in a piece-meal fashion. In this manner, houses could be built prior to the development of bulk infrastructures such as reticulated water and sewerage. These could then be installed at a later stage, as much emphasis was on the shelter. This initiative negatively impacted on basic service delivery as it gave little regard to other critical amenities which are ancillary in

settlement development. This shortcoming of the NHP was iterated by the Minister of State Affairs for Manicaland Province, Monica Mutsvangwa, that:

the existing housing policy [NHP] was porous as it trivialised other requisite ancillary services such as bulk infrastructure for sewer, water, smart energy, optic fibre network, education, health and employment among other amenities (Chiwereweshe 2018).

In order to address the proliferating of informal settlements across the country, the policy called for orderly development and in situ improvements through slum upgrading and urban renewal instead of forced displacements, evictions, and demolitions. Such commitments also contributed to the rights based-approach since the rationale was on advancing human well-being through doing whatever is possible to ensure housing is availed to those in need of it.

The incremental development approach was also buttressed by the involvement of different players in the housing development process. Among these players, special mention has been made of housing cooperatives as key players in the housing development process. The NHP envisaged that cooperatives play a significant role in housing development through the pooling of resources and eventually provision of bulk infrastructure. Rather, a number of cooperatives and land barons have abused their role in settlement development through abusing and misappropriating funds intended for the provision of basic services. These occurrences are attributed to the NHP which legitimised the operation of cooperatives in the housing delivery system (Tafa 2016).

5.4.1.4 Zimbabwe National Human Settlements Policy

Following the inconsistencies and shortcomings with the NHP, the Zimbabwe National Human Settlements Policy was coined in October 2018 following nationwide consultations with human settlements experts. Clearly, from this stance, there were some flaws in the formulation of the policy which were largely informed by the views and perspectives of 690 experts and professionals. The issue of citizen representation was thus jeopardised as the realities of the citizenry were not fully integrated into the policy beyond hearsay. Again, such incidences brought to the fore the critical issue of who gets to define the norm.

The Zimbabwe National Human Settlements Policy provided an overview of human settlements and their hierarchy. A critical issue emerging from the policy was the infrastructure gap which existed in emerging settlements across the country as highlighted in the policy:

Zimbabwean settlements lack adequate large-scale offsite infrastructure ... where anchored on national policy and legislative clarity supported by settlement-level fiscal discipline and administrative prudence practical service delivery and user input for on-site services become possible. In reality, users cannot wholly fund large-scale offsite infrastructure without these macro-level instruments (Government of Zimbabwe 2018a:5).

Although the Zimbabwe National Human Settlements Policy attempted to address the gaps in settlement development and provision of services in human settlements, it somehow remained anchored in the colonial planning system of settlement development. The planning and development of the settlements in Zimbabwe will continue to be guided by the RTCPA through the preparation of master and local plans (Government of Zimbabwe 2018a:6).

5.4.1.5 National Water Policy 2012

Despite the utility of water in sustaining human settlements, Zimbabwe had no water policy up to 2013. Makurira and Viriri (2017) highlighted that issues of policy were simply implied without any basis for tracing them to any policy document. Interestingly, the water sector in the country during the early years of independence, that is, from 1980 to the 1990s was considered to be one of the best in Africa. It was only in 2013 that the policy came into effect after a baseline study had been undertaken by the Ministry of Water Resources Development and Management, the World Bank and UNICEF. The World Bank and UNICEF provided the technical expertise to the government which enabled the formulation of this policy (Tom & Munemo 2015:62). In addition, stakeholder participation was also central to the formulation of the policy which involved different players in the private sector.

The first issue concerning the NWP centred on the involvement of multi-stakeholders. The engagement of the World Bank and UNICEF in providing the expertise, brought to attention the arguments raised by some scholars on adopting western ideologies to policy development which tend to be catastrophic in the Global South (Watson 2009c). It is in this vein that Tom and Munemo (2015:68) outlined that the implementation of the NWP had been compromised by conceptual and ideological contestations among the different players. The public sector, mainly composed of the government, had always purported to be guided by a socialist and interventionist ideology which played human needs at the forefront of water use and management. This approach was mainly informed by international conventions and protocols such as the millennium development goals which were in effect by the time. The private sector is profit-oriented, and their concern is not solely on human advancement but on maximising

profits and returns from investing in the water sector. Lastly, the World Bank, UNICEF and other non-governmental organisations (NGOs) were guided by a neoliberal ideology and agenda.

Against this background, the policy recognised the role of water and sanitation supply in promoting the sustainability of human settlements in the country. It also identified the collapse of the water and sanitation sector in the country and attributed this to the rapid urban population growth and the increasing urban housing developments (Government of Zimbabwe 2012:13). Through the recovery phase, the NWP envisaged engaging in recovery activities through which the continued deterioration of the water and sanitation sector and infrastructure are rehabilitated before they reach a point where it would be difficult to recover them.

It is in this regard that the policy contestations came into effect as to who had the mandate to provide the water infrastructure, especially for the urban poor, considering that the investment on water infrastructure is mainly capital-intensive. According to the NWP, the urban local authorities were therefore tasked to ensure efficient, affordable and sustainable access to water services in areas of their jurisdiction. In this regard, the NWP aligned with COZ in that it bestows local authorities with powers to provide water to its citizens. Overall, the aim of the NWP was to improve water security and availability to all users in the country.

With regard to the urban housing developments, the NWP opted to maintain high standards and called for a moratorium on new housing developments that did not meet the existing standards stipulated in the various national statutes and legislative guides (Government of Zimbabwe 2012:13). This significantly applied to emerging human settlements, where developments would not take place or would not be approved by the council unless they conformed to the regulations relating to water and sanitation supply. The rationale was to promote the establishment of human settlements in which residents have access to the critical basic services, thereby mitigating the possibilities of disease outbreaks.

5.4.1.6 Zimbabwe Agenda for Sustained Socio-Economic Transformation

The Zimbabwe Agenda for Sustained Socio-Economic Transformation (ZimAsset) is a results-based agenda which was formulated by the Government of Zimbabwe in 2013 with the aim of advancing the country's socio-economic growth and repositioning by December 2018. The agenda is anchored on four strategic clusters which include: food security and nutrition; social

services and poverty eradication; infrastructure and utilities; and value addition and beneficiation. From the four clusters, two (social services and poverty eradication, and infrastructure and utility clusters) directly relate with human settlement development and human well-being with regard to accessing basic services.

Through ZimAsset, the government committed to provide social services which include construction of houses, schools, hospitals and other social amenities, particularly in new resettlement areas (Government of Zimbabwe 2013b:34). This will be achieved through building and rehabilitation of infrastructure and utilities in areas where such services are required. There is also a commitment in the agenda to undertake a national blitz to rehabilitate water supplies, sewerage works, roads and other social amenities in all the local authorities across the country. Such an initiative is meant to ensure that residents are served with potable water and have access to adequate sanitation facilities as espoused in the NUA and SDGs. From an analysis of ZimAsset by Matutu (2014), he argued that the blueprint was merely utopia and far from reality, considering the proliferation of corruption, infringement of human rights and financial challenges which characterised the country.

The infrastructure and utilities cluster places the development of robust, elaborate and resilient infrastructure at the centre of sustained growth of the country. To this end, the infrastructure and utilities cluster focuses on the rehabilitation of infrastructure which includes water, sanitation and transport. Among the water supply projects envisaged is the Kunzvi Dam Water Project which is meant to provide water to Harare and neighbouring towns. This water supply project if implemented and completed will go a long way in alleviating the water challenges overwhelming Harare and neighbouring towns. One of the key result areas in this cluster is the construction of road infrastructure in the country. However, the emphasis is mainly on national roads with little regard for the district roads.

The implementation of ZimAsset is premised on the systems analysis approach. This is so because the document encourages the different ministries and government agencies responsible for implementing the plan to shy away from compartmentalisation and the silo approach to development. Rather, stakeholders implementing ZimAsset are encouraged to create strong synergistic relationships which seek to advance the provisions of the plan.

5.4.1.7 Transitional Stabilisation Programme

The Transitional Stabilisation Programme (TSP) was launched in October 2018 by the Minister of Finance, Prof Mthuli, with a focus to spearhead socio-economic development in the country and contribute towards the country's vision 2030, which envisages Zimbabwe as a prosperous and empowered upper-middle income country by 2030. With regard to human settlements and basic services provision, the TSP focuses on addressing the infrastructure gaps which currently exist in the country. The TSP acknowledges the importance of equity in service delivery, particularly water supply, as it states that "in line with best practices, it is virtually important to ensure that water supply services are developed and provided to uniform standards across the country" (Government of Zimbabwe 2018c:75). However, it is provided in the TSP that the attainment of such standards where there is equity (uniformity) are currently jeopardised by the existing formal infrastructure systems which are dilapidated and constrained by increasing populations, especially in urban areas. In response to this inadequate public infrastructure, local authorities are mandated to ensure that citizens have access to basic services with the view to curb the outbreak of diseases.

Efforts in ensuring that the public infrastructure is provided include reforms in water, sanitation and transport systems, while safety issues have not been mentioned. With regard to water supply, local authorities have been mandated to ring-fence the 2019 budgets so that they rehabilitate, repair and expand water treatment plants and pumping lines. The construction of new pumps and lines for water supply has also been prioritised with work already having commenced for Harare, Bulawayo, Kwekwe and Chinhoyi (Government of Zimbabwe 2018c:74). The provision of sanitation is envisioned to be provided through the rehabilitation of sewerage network and pump stations as well as treatment plants and outfall works. Commitment has also been made to expand the road network so as to promote mobility and accessibility of places across the country.

The TSP has been criticised on the basis that the conspicuous absence of a participatory and inclusive consultation has subjected the vision to intense criticism as it is neither shared nor inclusive (ZIMCODD 2018). In this regard, attaining the set goals may prove to be a mammoth task since most people do not relate with the programme. Moreover, the financial burden on the local authorities is so much and the TSP may simply remain as another good plan which will never be realised.

5.4.2 Acts of parliament

5.4.2.1 Urban Development Corporation Act

The Urban Development Corporation Act (UDCA) (Chapter 29:16) is an act of parliament which provides for the declaration of development areas through the Urban Development Corporation (UDCORP). The functions of UDCORP are outlined in section 19 of the UDCA. First, the UDCA highlights in section 19(a) that the UDCORP shall encourage and assist local authorities to plan and coordinate urban growth and development within development areas. From this section, the UDCORP takes a minimal role in urban development as their task is largely restricted to encouraging and assisting projects initiated by local authorities and other development stakeholders and agencies.

The assistance of UDCORP in the provision of housing and basic services is stipulated in section 19(c–d) where the main objective is to establish attractive environments which would encourage people to reside and work therein. The provisions of this act, especially the sections outlined, were critical for this study in that they focus on efforts to facilitate the development and management of human settlements, as well as acknowledging the fact that provision of basic social services is key in human settlements and is a driver which encourages people to settle in communities where such services and goods are provided.

5.4.2.2 Regional Town and Country Planning Act 1976

The Regional Town and Country Planning Act (RTCPA) (Chapter 29:12) of 1976 is considered by many proponents to be the mother of all planning legislation in Zimbabwe (Wekwete 1989). The act was a legacy of the British colonial government which ruled Zimbabwe at the time. As such, its ideals were largely rooted in the British planning system which emphasised issues of order, aesthetics and zoning. This is outlined in its preamble, envisaging the creation of sustainable spaces which are safe, convenient and orderly, as well as improving public health, efficiency and general welfare of citizens. Baffour and Baffour (2014) thus defined the RTCPA as the curse of the Rhodesians and warned the local authorities in the country to stop behaving like the colonial masters.

Considering the fact that the act was deeply rooted in the colonial legacy, various proponents have argued that the act simply perpetuated the colonial type of urban planning which imposed strict planning laws and segregation of the poor (Tibaijuka 2005:56). In a study by Kamete

(2007:165), one of his respondents described the RTCPA as “a colonial baggage that we stupidly hook, line, sinker and all ... [which is] now devouring us in its original horrible state ... because of the fear of our officers and politicians to change it”.

The RTCPA recognised development control as a tool which the local authorities used to regulate and manage the development and planning of settlements. Many scholars have questioned the integrity of this approach when it comes to evictions and demolitions which were undertaken under the banner of development control when, in actual essence, they were meant to punish some political ‘culprit’. For example, victims of Operation Murambatsvina were mainly affected by the operation because they were believed to be sympathisers and supporters of MDC (Nyarota 2018).

Local authorities and the MLGPWNH are empowered to undertake planning decisions in areas of their jurisdiction with the president having the final say in some instances. Part IV focuses on physical planning which is facilitated through the preparation of master and local plans. Local authorities are mandated to engage in master plans which become the blueprints for development in particular areas. The powers bestowed on the president, ministers and local authorities have led to stern criticism of the RTCPA among many planning scholars and professionals in Zimbabwe as they argued that the act tended to be too bureaucratic (Chigara et al. 2013:143). The development of human settlements thus remained the responsibility of the ruling elite who have powers to establish the norm and eventually even override planning decisions. The human rights in many times also tend to be contravened as a result of these excessive powers, for example, the evictions of some residents on Porta Farm in 2005 after they had been settled there by the government in the early 1990s.

The RTCPA, in section 17, shows that local plans have to be prepared for certain areas and they have to conform to the master plan. The preparation of local plans is meant to guide development at the local level and it is in this vein that layout plans are prepared for certain residential suburbs or districts. Section 17(3)(a) stipulates that the local plans have to be prepared to ensure coordinated and harmonious development or improvement of an area. Land use regulation and traffic movement are the critical elements to be considered in these local plans. The human settlement forms are also considered at this stage where the local plan outlines the proposed land uses and supporting infrastructure and services. Albeit the novelty of such approaches to settlement development, Chigara et al. (2013) lamented that the approach

to settlement development tends to be influenced by engineers and architects which made the process too technical. Moreover, there were also some issues on the plan preparation being identified as too complex, cumbersome and time-consuming.

Part V considers development control which is affected through development orders (section 25), preliminary planning permissions (section 26), enforcement orders (section 32) and prohibition orders (section 34). Although some proponents argued that development control stifles development, it emerged as a critical component of human settlement development because it helped in regulating the development of human settlements and ensuring that development conforms to the plans. It is through development control that the desired and envisioned human settlement forms are produced. However, there were also some instances where development control has actually resulted in settlement forms diverging from the proposed and envisaged plans and conceptions.

Part VII reflects on the acquisition and disposal of land in Zimbabwe. This is a critical part which relates to this study, considering that human settlements occur in space and the process entails possession and dispossession of land. The land has to be acquired by the responsible stakeholders so that they implement the proposed plans and ultimately produce the planned land uses.

5.4.2.3 Public Health Act, 1924

The Public Health Act (PHA) of 1924 (Chapter 15:09) was an act of parliament which guided and regulated the issues of public health in the country. Just like the RTCPA, this act was also a legacy of the British colonial government which envisaged public health issues as they related to the British cities and towns during the Industrial Revolution. From 1924, there has never been a holistic review of the PHA. The result over the years has been serious shortcomings with regard to public health issues in the country as evident from out-dated issues being addressed, emerging public health issues and pandemics, overlapping responsibilities and misalignment with the Constitution (Training and Research Support Centre 2011:5). In order to address this quagmire, a Public Health Bill was gazetted on 21 December 2017 with the view to replace, update and align the PHA with the Constitution of Zimbabwe and emerging public health problems.

Albeit being out-dated and embedded in the colonial system, various issues pertaining to public health were addressed in the PHA with consideration of the need to provide adequate water and sanitation facilities in human settlements. Part VI specifically outlined the provisions for water supply and water safety as well as empowering certain institutions to manage the provision of the water supply. In section 64(1), local authorities are required to inspect and test water supplies as required by the Minister of Health to ensure that citizens have access to wholesome water for drinking and domestic purposes. The word 'wholesome', however, does not appear in the COZ and this may refer to safe and clean water. In that case, section 64(1) of the PHA aligns with the COZ (section 77) which states that citizens have a right to safe and clean water (Government of Zimbabwe 2013a).

Local authorities are also obliged to maintain and secure water sources so that citizens have access to this critical basic service. In ensuring that citizens have access to a safe and adequate water supply, section 64(2) compels owners of premises to connect to municipal water. The local authority fixes a minimum charge for this connection to the main water trunks. In instances where the local authority fails to provide the water supply to its citizens, provisions are made for subcontracting, though the local authorities remain with powers to inspect the water supplies.

Section 65 places the overall responsibility of water supply in the state as it indicates that water works have to be approved by the state before they commence operations. Such a provision is meant to ensure a supply of safe water which conforms to international standards. Local authorities are then mandated to maintain water supply system in their areas of jurisdiction. It is again evident that the state is greatly empowered to manage the affairs relating to water supply and management. Even in instances where private players take on the task to provide water within a certain locality, they remain accountable to the state.

The lack of water infrastructure and use of unprotected water sources such as a shallow well are considered to be a nuisance to public health (section 85(c)). The section discourages citizens from drinking such water or using it for domestic purposes as it is considered to be injurious and dangerous to public health. This section thus pays attention to the need to provide safe water which does not compromise human well-being.

On the other hand, sanitation issues are covered in Part IX of the PHA. Section 82 considers the role of local authorities in prohibiting nuisances which are liable to be dangerous to health,

of which lack of sanitation is mentioned under the nuisances. According to section 85(b), a nuisance includes:

any stream, pool, lagoon, ditch, gutter, watercourse, drain, sewer, dung pit, slop-tank, ashpit or manure heap so foul or in such a state or so situated or constructed as to be offensive or to be injurious or dangerous to health; or any collection of water which may serve as a breeding pool for mosquitoes.

In section 85(m) cemeteries and burial places are also considered to be nuisances because of the health implications associated with decomposing human bodies which have the capacity to contaminate underground water. This becomes a dilemma for residents living near cemeteries and relying on underground water resources.

5.4.2.4 Urban Council's Act, 2015

The Urban Council's Act (UCA) of 2015 (Chapter 29:15) provides for the establishment and administration of cities, towns, municipalities, councils and town boards. The management of human settlements results in the establishment of governance systems which become responsible for the affairs of the settlements. Urban spaces are complex and dynamic and need to be regulated and governed in ways which promote order, safety, aesthetics and convenience as provided in the RTCPA. In this regard, local authorities are empowered and compelled to administer areas under their jurisdiction.

In Part XII, the UCA considers issues of sewerage and drainage in urban areas. Section 168 of the UCA empowers and compels the council to take measures and construct sewerage and drainage works inside or outside the council area. Such works include the collection, conveyance, treatment and disposal of sewage or stormwater. However, in undertaking this critical basic service function, councils are cautioned against unsustainable discharge of any sewage which may be in water bodies or in areas which may pollute water resources or cause a nuisance to the public. The rationale is that the council has to take stern measures and ensure that sewage is disposed of in a befitting manner. The disposal entails that the council must first make sure that human settlements are serviced such that sewage finds its ways into the proper channel as it flows to the treatment plants.

According to section 173, councils are empowered to compel property owners to connect to public sewer systems. In instances where the property owners do not have access to the public sewer system, there are provisions for the construction of septic tanks so that all the wastewater

generated by a particular household is properly disposed of and does not become a nuisance. However, there are limitations to the construction of septic tanks on private properties. The regulations are that a septic tank can only be constructed on a property which is at least 2 000 m². Therefore, a septic tank that will be constructed on a property that is less than 2 000 m² poses health threats to the occupiers of the premises which means that such properties have to be connected to a conventional sewerage system.

Inasmuch as property owners are compelled by section 173 to connect to the public sewerage system, there are exceptions to this section. Section 178 encourages councils to finance waterborne sanitation and sanitary fittings in situations where the property owners fail to comply to connect with the public sewerage system. Subsequently, the council will then levy the costs of such installations and construction to the respective property owners. This is meant to recoup the costs incurred by the council in facilitating property owners' access to sanitation. It also emerges that the UCA acknowledges the importance of adequate sanitation facilities in human settlements; hence taking the initiative to develop a sustainable infrastructure on behalf of the citizens.

Part XII of the UCA outlines the provisions for water supply in urban areas and the role of the council in water supply provision. Councils are empowered and compelled to provide water to residents in their areas of jurisdictions. Such water may be abstracted within or outside the council's boundaries. Through section 184, the council may require owners of premises within the council areas and not yet connected to the council's water supply system, to connect to the system for the purpose of accessing water for drinking, domestic and sanitary purposes. The emphasis is on ensuring that all premises within the council area are connected to the water supply system and they have access to the water supply at all times.

The rationale is to conform to the provisions of SDG 6, NUA and the Africa Agenda where citizens are supposed to have access to adequate water. Just like with access to sanitation, according to section 184(2), the council may then connect the premises who fail to comply by connecting to the council's water supply system. This again emphasises the significance of water as a basic human right where the councils cannot afford to have citizens living in their area without connection to the water supply systems.

The provisions for public transport are outlined in section 192 and 193 of the UCA. In section 192, councils are mandated to establish, acquire, construct, maintain and carry on minibus

services. This follows that due diligence has to be paid during the planning stage and layout preparation such that adequate public transport infrastructure is provided for within the planned areas. The rationale is to ensure that such a transport system conforms to the provisions of the RTCP which seeks to promote safety (among the minibus users) and convenience (the routes and pick-up and drop points), and above all, ensure efficiency.

Issues in estate development are spelt out in section 205 of the UCA. The council has the mandate to lay out and service land for residential, commercial or industrial purposes. Prior to engaging in estate development which, in this context, encompasses the development of human settlements, particularly the residential land uses, the council must first submit a proposal to the MLGPWNH for approval. In this regard, it follows that there has to be a layout which must be prepared by the responsible local authority. This layout is then submitted to the MLGPWNH where it is scrutinised, and recommendations and suggestions are made to promote the functionality of such proposal.

The UCA also empowers the MLGPWNH to act on behalf of the council with regard to estate development. Section 206(1) provides for circumstances where the Minister may find it befitting and necessary to provide serviced land for estate development. When such situations arise, the Minister will direct the council to do so. However, failure by the council to comply with such directive from the Minister will result in the Minister taking possession of such land, regardless of whether there exists a town planning scheme or not. Such provision shows how the Minister may help in facilitating development through requesting councils to service the land prior to development taking place. Such a move is meant to promote the development of human settlements that have requisite basic services such as water, sanitation and public roads.

The aspect of safety when developing estates is also outlined in section 205 where provision is made to reserve land for a police station and schools in the proposals that will be prepared by the council. Such land becomes state land and is transferred to the president at no cost. This section demonstrates the significance of safety issues in human settlements and the need to integrate such critical land uses as police stations which help to promote surveillance. The presence of schools also makes it convenient for the school children who will not need to travel long distances to access education which is their basic human right. In travelling long distances, school children are also exposed to multiple risks which include harassment, mugging and accidents.

5.4.2.5 Water Act, 1998

The Water Act of 1998 (Chapter 20:24) repealed the Water Act of 1976 (Chapter 20:22). The Water Act mainly seeks to guide the development and utilisation of water resources in Zimbabwe. A participatory process was used to inform the development of the Water Act. This process was meant to produce an act which would address the needs of the citizens and tackle the challenges which were beginning to overwhelm the water sector in the country at the times.

During the late 1990s there was a growing need for indigenisation; hence the act vests all water in the president and there is no private ownership of water in the country. The main motive behind this was to strip the whites of powers to control water bodies and catchments in the country as they still owned most of the land and their riparian water across the country. Therefore, the Water Act enables the decentralisation of water management which involved catchment councils. Of utmost importance is the fact that the Water Act recognises and prioritises water for primary purposes which include water for basic domestic human needs in or about the area of residential purposes. The rationale is that water is life; water for primary purposes must thus take priority and precede any other uses.

According to section 6(a) of the Water Act, the functions of the minister of Environment, Water and Climate with regard to water issues, are as follows: The Minister shall develop policies that guide the orderly and integrated planning of utilisation and protection of the country's water resources and to ensure that all citizens have access to water for primary purposes. This access to water has to be done in an equitable and efficient manner to all sectors, which include urban and rural areas, industrial, mining and agricultural sectors. The minister is also obliged to secure the provision of affordable water to consumers in underprivileged communities.

Part IV of the Water Act reiterates on the uses of water in the country. According to section 32(1), any person may abstract water for primary purposes provided that such abstraction conforms to the provisions of the act and does not become a nuisance to public health and safety. For persons who wish to construct waterworks capable of storing more than 5 000 m³ of water for primary purposes must notify the catchment council and their neighbours. According to the Water Act, water storage refers to a dam, reservoir or well. For this study and in relation to human settlements, it is mainly the wells which are of relevance in the neighbourhoods where the developments will be taking place. The citizens will need to seek permission in writing if they decide to sink boreholes for primary purposes (section 35).

5.4.2.6 Zimbabwe National Water Authority Act, 1998

The Zimbabwe National Water Authority Act of 1998 (Chapter 20:25) repealed the Regional Water Authority Act of 1965 (Chapter 20:16). The main function of this act is to administer issues of water management in the country. Therefore, for the purposes of this study, the act mainly outlines the functions of the water authority which are provided for in section 5. The authority is mandated to advise the Ministry of Environment Water and Climate on the formulation of national policies and standards relating to water quality, borehole drilling, and water resources planning. It is also incumbent upon the authority to promote an equitable, efficient and sustainable allocation and distribution of water resources to all citizens in the country. This means that all individuals and sectors are to be serviced with potable water to satisfy their various uses. With regard to the development of human settlements, the authority is tasked to encourage and assist urban local authorities to develop and manage water resources in their areas, paying special attention to the provision of potable water and the disposal of wastewater.

5.5 CONCLUSION

The first part of the chapter outlined the socio-economic political context of Zimbabwe, followed by the urban planning system in Zimbabwe. This was followed by an analysis of the policies and legislative framework guiding settlement development and citizens' access to water, sanitation, public transport and security. Interestingly, the chapter noted that the urban planning system in Zimbabwe is rooted in the colonial system which emphasised development control and separate development. This planning system was informed by the statutory plan which acts as blueprint to the development of settlements. Zimbabwe is a signatory to a number of international and regional conventions which inform the development of human settlements and ultimately promoting human rights access to basic services. However, the commitment at national level does not align with the provisions of such conventions as the interests of a few individuals are advanced through these conventions and when annual reports are prepared.

At the local level, the majority of the legislative instruments are out-dated, for example the PHA of 1924 which remains in use. Others have remained in use, despite being enacted during the colonial era; hence they perpetuate the colonial spatial segregation in settlement development and provision of basic services. The ambiguity and lack of consistency and overlaps between some of the legislations complicate their effectiveness in enabling service

delivery. Power issues also remain a challenge as citizens are marginalised in decision-making with power being centralised. Politics also largely stifle the successful implementation of some legislation. This chapter wound up Part I of this thesis and paves the way for Part II which outlines the findings and analysis of the study.

PART II

FINDINGS, ANALYSIS AND CONCLUSION

Part I introduced the scope of the study. Its focus was on orienting the reader with the purpose of the study, the problem under investigation, which was to explore the emerging human settlement forms and urban dilemmas nexus in Hopley, Harare. Theories and concepts related to human settlement forms and urban dilemmas have been analysed. Part I was wound by a discussion on the study context.

Part II builds up from the previous part and consists of three chapters. Chapter 6 and 7 present the findings from the analysed data. Chapter 6 presents the findings and discussion relating to the official land use planning scheme for Hopley and the realities of Hopley's form. This is meant to understand the morphology of Hopley and the emergent form which is currently in existence.

Chapter 7 is a follow up to Chapter 6 and highlights the lived experiences of the residents in Hopley in accessing water, sanitation, public transport, and safety. This is meant to highlight the dilemmas which the residents experience in accessing these basic services as a result of the form of the settlement.

Chapter 8 concludes the thesis and presents the policy options and recommendations. A critical issue presented in this chapter is the implications of the emergent human settlement forms and dilemmas nexus for effective planning.

Chapter 6

AN EMERGING SETTLEMENT: HOPLEY'S MORPHOLOGY AND REALITIES

6.1 INTRODUCTION

The purpose of this chapter is to present the findings and to generate a discussion guided by the objectives which sought to map and classify the extant human settlement forms, as well as to compare emergent human settlement forms with the official land use scheme of Hopley Settlement. In presenting the findings, the following research questions are addressed:

- 1. What are the extant human settlement forms and associated dilemmas in Hopley, Harare?**
- 2. To what extent do emergent human settlement forms align with the official land use scheme in Hopley, Harare?**

Three themes emerged from the collected data, namely:

1. The land use planning scheme as envisaged and proposed by the City of Harare and government of Zimbabwe.
2. The extant settlement form of Hopley.
3. Hopley's morphology and realities as an emerging settlement.

6.2 THE LAND USE PLANNING SCHEME AS ENVISAGED AND PROPOSED FOR HOPLEY SETTLEMENT

As outlined in the literature review chapters, the development of human settlements in Zimbabwe remains guided and informed by statutory plans of which Hopley Settlement is no exception (Government of Zimbabwe 2018a:6; Mabaso et al. 2015:73; Toriro 2008). The establishment of Hopley Settlement were made by the City of Harare in the late-1990s. A memorandum sent by the Director of the City of Harare to the Director of the DPP contained the plans to develop Hopley Settlement in November 1999 (City of Harare, 21 November 1999). There are two statutory plans which were supposed to give effect to the development

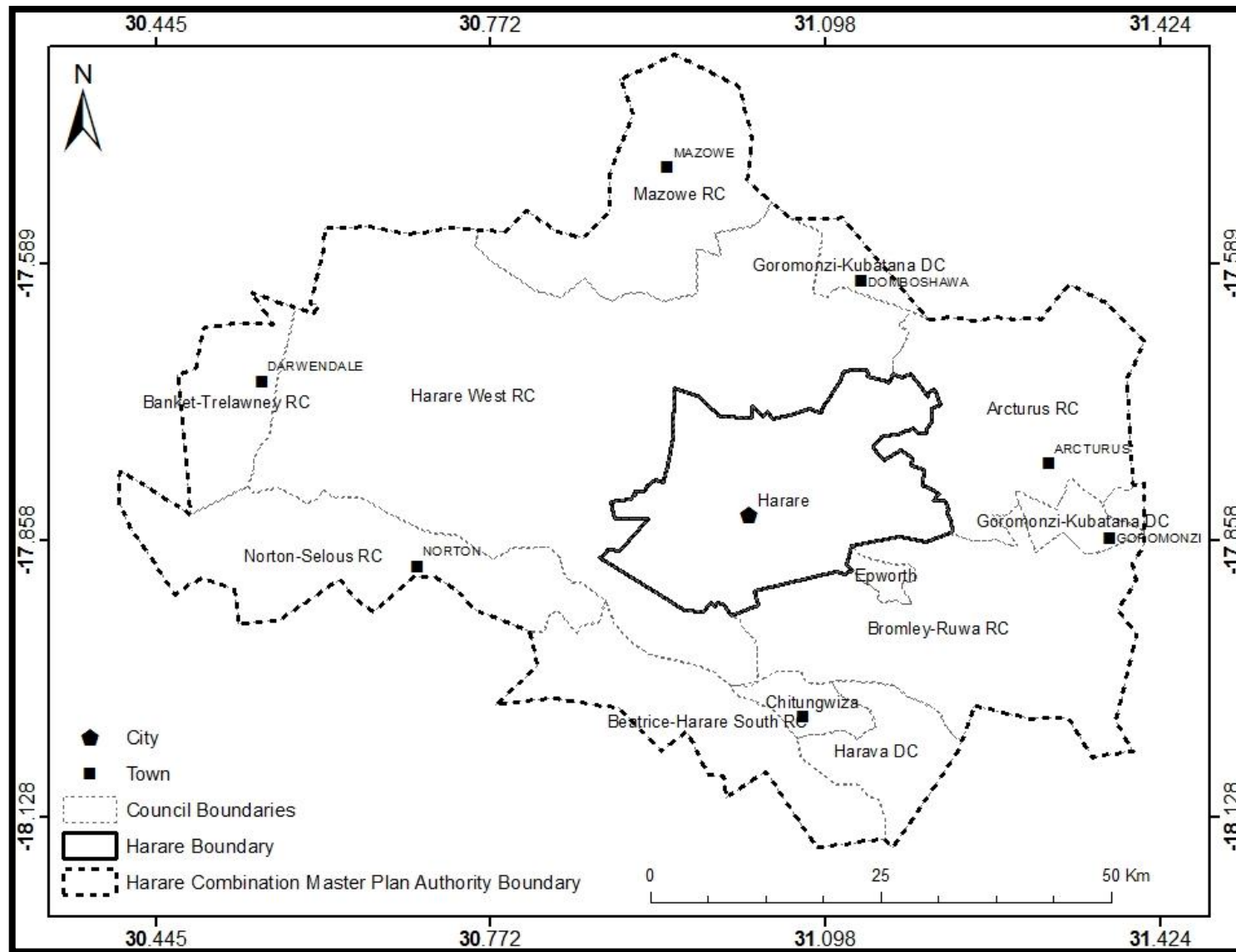
and morphology of Hopley, namely the Harare Combination Master Plan (HCMP) and the LDP31. This section of the study thus presents the findings of the content analysis of these statutory plans as discussed in Chapter 4.

6.2.1 Provisions from the Harare Combination Master Plan

The HCMP was launched by the City of Harare in 1992 with the main objective to guide the future development of the city. The formulation of the HCMP and its influence in the morphology of Hopley shows how the planning officials in Zimbabwe adhered to the system of master planning. This could possibly be explained by the argument raised by Watson (2009a:2261) that master planning helps in envisaging the future of the city. Similarly, the same was true with the HCMP which aimed at providing a forward-looking strategy for the city (City of Harare 1992).

With regard to the HCMP, its main focus was on inhibiting urban sprawl which was increasingly becoming a challenge in Harare due to the rapid urbanisation since 1980. The HCMP prescribed the land uses which would occupy the various areas in Harare. The HCMP also prescribed a southward expansion of the city of Harare which meant that the spatial configuration of the city would be concentrated in this area (City of Harare 1992). This prescription had implications on the future development of Harare because it provided a template guiding and directing any future development towards the southern part of the city.

Figure 6.1 shows the boundary of the city of Harare as well as that for Greater Harare as envisaged by the HCMP. The proposed expansion of the city of Harare, according to the HCMP, was envisaged to be mainly towards Chitungwiza which is at the southern part of the city.



Source: Adapted from Chirisa, Matamanda and Mukarwi (2019)

Figure 6.1 The boundaries of the city of Harare and the Harare Combination Master Plan boundaries

The HCMP envisaged the densification and concentration of land uses in and around the city so that emerging settlements would be connected to the existing infrastructure in the city (City of Harare 1992:7). The compact development envisaged and prescribed for the emerging settlements around Harare relates to the arguments raised by different scholars who recommended the compact form as the most ideal settlement type (Elkin et al. 1991:43; Jabareen 2006; Lee et al. 2015:1055). In the case of the HCMP, it emerged that the compact settlement form was to be achieved through densification which would utilise existing facilities to the full, particularly public utility infrastructure in the built-up areas as well as undeveloped land in the urban areas.

The HCMP stated that some of the areas with high potential for urban development would require new works before they could be opened up for urban development (City of Harare 1992:4). This statement clearly applied for Hopley Settlement which was formerly a farm and had no public utility infrastructure. As an urban settlement, it would be ideal to have reticulated public utility infrastructure which conforms to the services characteristic of urban settlements (Mudzingwa 2017; Government of Zimbabwe 2013a). Therefore, as much as densification and concentration was envisaged in the development of Harare, the deficiency of bulk infrastructure would make this impossible in some instances, as was the case in Hopley. A key informant practicing as a planning consultant in Harare also stressed that the increasing population in the City of Harare and failure to upgrade the infrastructure was overlooked and eventually birthed the deficiency of infrastructure which currently characterises the city. This is so because the availability of such infrastructure is a prerequisite such that the emerging settlements will be connected to the existing infrastructure system at minimum cost. Such a situation confirms the findings from the OECD (2014:22) which indicated how emerging settlements may be developed and supported through the connection to existing infrastructure. However, this paradox falters in the cities of the Global South as is evident in the case of Hopley where the existing infrastructure is already constrained and fails to support the current settlements. How then does it become possible to add on new connections to the already constrained infrastructure?

The development of new infrastructure, according to the HCMP, was defined by a threshold beyond which the city indicated it would be costly to do so. In this instance, an urban containment form was thus prescribed for the emerging settlements in Harare.

The emphasis given to the provision of public utility infrastructure is an indication of a neo-traditional development form which is centred on transit-oriented development, as well as increased attention on the provision of basic services such as water and sanitation (Davies & Townshend 2015; Orenstein & Shach-Pinsley 2017:248). The HCMP showed the commitment to a neo-traditional settlement form as it gives prominence to the provision of transportation routes which form part of an efficient circulation and distribution system. Specifically, the HCMP stated that there was a serious problem which required immediate attention and this included the long travel time to work which residents living along the Chitungwiza/Harare route endure on a daily basis (City of Harare 1993:4). In this regard, the HCMP was already highlighting the challenges of public transportation which characterise the southern parts of the city.

Lastly, the implications of politics in the development of human settlements have been stressed by many proponents and it is indicated that political will is mainly responsible for the success of most human settlement planning initiatives (Foucault 1981; Harvey 2012; Muchadenyika 2015; Young 1990). The same point has been pointed out in the HCMP:

The implementation of the above strategy coupled with strong political commitment, administrative efficiency, and public participation will lead to a qualitative and quantitative expansion of all sectors and the amelioration of planning problems and constraints without adverse effects on the generally high-quality character of the existing environment (City of Harare 1992:8).

This quotation highlights the acknowledgment of the political influence in human settlement planning as espoused by proponents such as Harvey (2012) and Healey (2010) who explained the manner in which politicians decide on the norm and push for those agendas which first benefit the elite and their patrons. It is evident that politics thus contribute to the ultimate implementation of plans. The study established that the role of planners thus remains shadowed by politicians who may decide to take a different course of action. Albeit the existence of institutions responsible for planning, politicians override events and get to spearhead their own agendas which may be contrary to national or local development plans. Overall, the significance of politicians in planning decisions is clearly shown and how the political landscape may have a bearing on the emerging human settlement forms, and subsequently the citizens' access to basic services (Kamete & Lindell 2010; Muchadenyika & Williams 2017; Pincetl et al. 2012). Mostly because of politics, some decisions tend to be ignored and the decisions which help to spearhead the agenda of a few individuals are usually advanced. At

this juncture the systems theory is put into perspective as it elaborates how the planning for human settlements needs to be approached through the integration of various sciences (Bertalanffy, 1968).

The following proposals of the HCMP directly affected the morphology of Hopley Settlement:

- **Proposal 7:** Speed up servicing of land with high potential for urban development in the initial stage of implementation of the plan, and for the medium- and long-term period.
- **Proposal 20:** Provide for an integrated direct bicycle route.
- **Proposal 21:** Where possible, it would be ideal to implement a system of preferential bus routes which would help in supporting the public transport system in Hopley.
- **Proposal 24:** Designate areas identified as having a high potential for integrated urban development as new housing areas with incorporated employment centres (City of Harare 1992:13, 19, 22).

6.2.2 Provisions from the Local Development Plan No. 31

The LDP31 covers the Southern Incorporated Areas where Hopley Settlement is located. It is through this broader plan that the land uses for Hopley would be initially determined. As stipulated in the HCMP that the expansion of the city of Harare would be towards the southern parts of the city, the LDP31 was thus developed to guide the development of the city as envisaged by the HCMP (City of Harare 1999:1). This shows how master planning is used in Zimbabwe to guide human settlement planning where all the other local plans have to conform to the provisions of this broader blueprint plan.

From the content analysis of the LDP31, it emerged that the purpose of the local plan was to supersede the provision of the approved outline plan of 1959 and the Harare Rural Town Planning Scheme in the south-eastern section adopted in 1973 which largely restricted the area to farming uses, and implemented urban development as proposed in the HCMP (City of Harare 1999:2). In this regard, the scheme served as an urban growth boundary because urban land uses were restricted beyond the city edge. This restriction was affected through zoning the southern parts to the edge of Harare as a farming zone. To some extent, the restriction may be explained as a greenbelt as it was conserved for farming purposes (Jabareen 2006; OECD 2014:21). However, it is clear that there was urban containment which restricted the urban

development in Hopley. Therefore, considering that Hopley Farm was previously zoned as a farming area, the provisions of the LDP31 thus made it possible for urban development to be undertaken.

Subsequently, LDP31 affected the conversion of the southern part of Harare, including the Hopley Settlement from a rural to urban zone. This change confirms Weber's (1966:242) definition of an urban area as characterised by non-agricultural land uses. In efforts to facilitate the transformation of the planned area, which included Hopley Settlement into an urban area, the LDP31 also envisaged the release into the market of suitable land for mixed commercial, industrial, recreational and residential development (City of Harare 1999:2). Commensurate with this urban development, the land uses for Hopley would eventually be envisaged to be commensurate with the standards for urban areas as stipulated in the settlement hierarchy of the country (Government of Zimbabwe 2018a).

Hopley is among the sections of the LDP31 which were identified as having the potential for residential development. With regard to this residential development, the plan envisaged the optimisation and sustainable use of land for mixed urban development (City of Harare 1999:26). The optimisation of land confirms with the provisions of the HCMP which spelled out the compact development of the emerging settlements in Harare, and Hopley Settlement being one such area had to align with this provision. However, since urban development is commensurate with infrastructure development there was a need for the development of such in most parts of the Southern Incorporated Areas. As the HCMP highlighted the deficiency of infrastructure in some parts of the city where new developments would have to be undertaken, the LDP31 also raised the same concern:

The plan area [Southern Incorporated Areas including Hopley Farm] presently has physical infrastructure provision which is commensurate with a farming area. The provision of a reticulated sewerage system, water traffic, and transportation infrastructure as well as electricity, post, and telecommunications systems needs to be upgraded to meet proposed urban development in the area (City of Harare 1999:25).

The above quotation clearly shows the need for upgrading the infrastructure in Hopley which somehow contradicts the compact development proposed in the HCMP where existing infrastructure would be utilised.

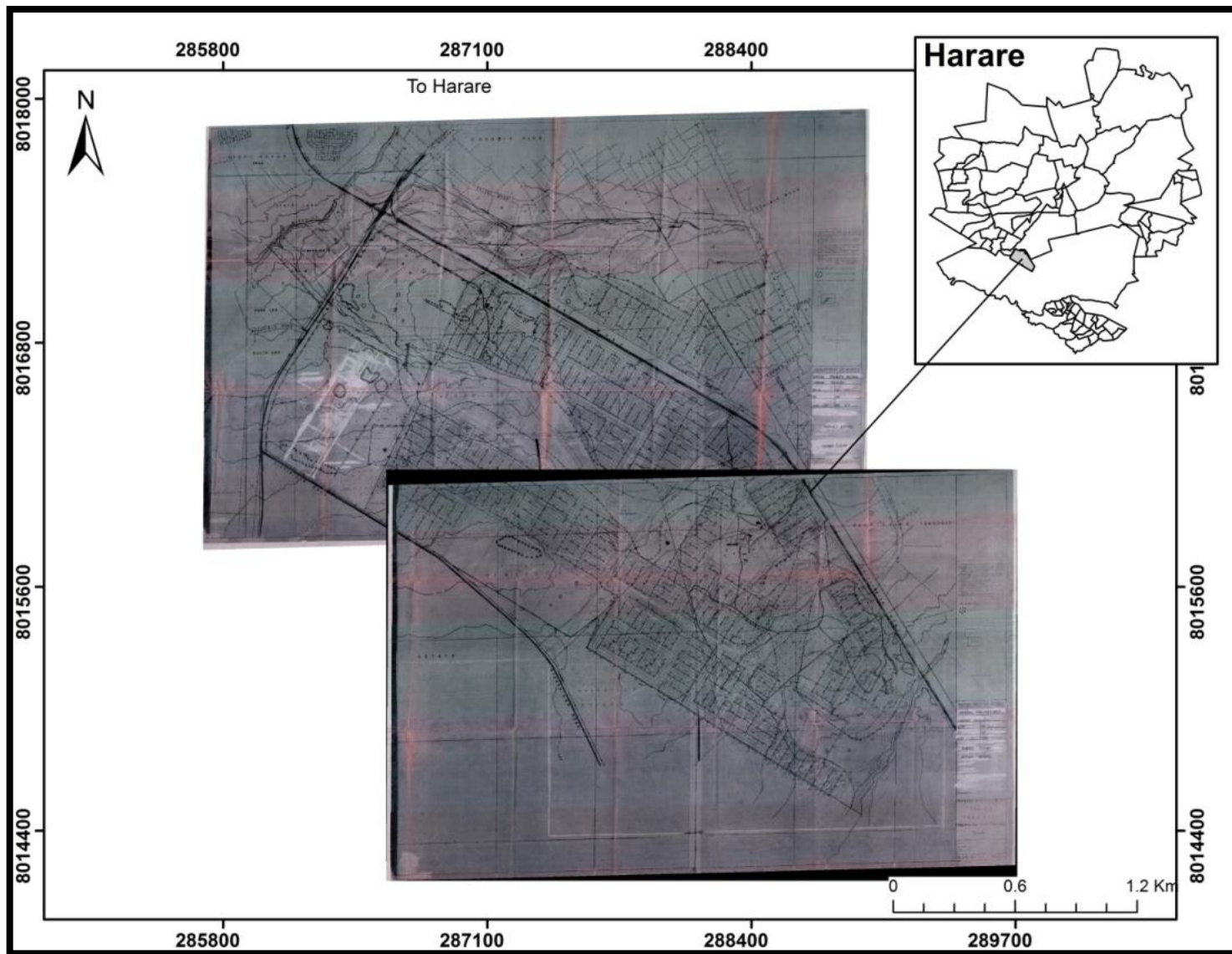
Overall, from the review of the LDP31, I identified the following goals which directly affect the morphology of Hopley Settlement:

- Goal 1 which focused on ensuring the optimum and sustainable use of land for mixed urban development.
- Goal 3 sought to ensure adequate and cost recovery provision of infrastructure to facilitate the urban development of the planning area economically.
- Goal 4 focused on housing development issues within the planning area and the need to encourage a variety of housing densities and types within easy reach of employment opportunities (City of Harare 1999:26, 27).

With regard to the provisions of the statutory plans, the study found that despite the limitations of master planning, the same planning approach still applies in Zimbabwe and has been instrumental in guiding the location of Hopley (Lane 2005; Taylor 2009; Watson 2014). The elements of urban planning as a futuristic activity as espoused by Healey (2010:19), are evident from the way Hopley was planned in the 1990s, beginning with the HCMP and then the LDP31. However, the shortcomings of master planning are manifest here, where the plans become rigid and fail to anticipate and integrate certain changes which are always taking place in space.

6.2.3 Promoting a compact settlement? Proposed land uses for Hopley and the provision of basic services

It emerges that the City of Harare's Department of Works had proposed to subdivide Hopley Farm for the development of low-income housing (City of Harare, 21 November 1995). The initial proposal for the development of Hopley was outlined and subsequent memorandums and letters between the Department of Works and the DPP showed the engagement between two stakeholders in the development of statutory plans. The communication between these two departments went on until 2000 and the plan for Hopley was still not approved by that times. As a result, neither the City of Harare nor the DPP has an official layout or written statement for Hopley. The findings of the 'official' land use for Hopley were thus informed by the files and maps obtained from the DPP. There were two maps which I had to align and then scan as presented in Figure 6.2. In this format, it was difficult to comprehend the information on the map. I eventually used GIS (as explained in Chapter 4) to produce the same image in digitised form, as presented in Figure 6.3.



Source: City of Harare (2000)

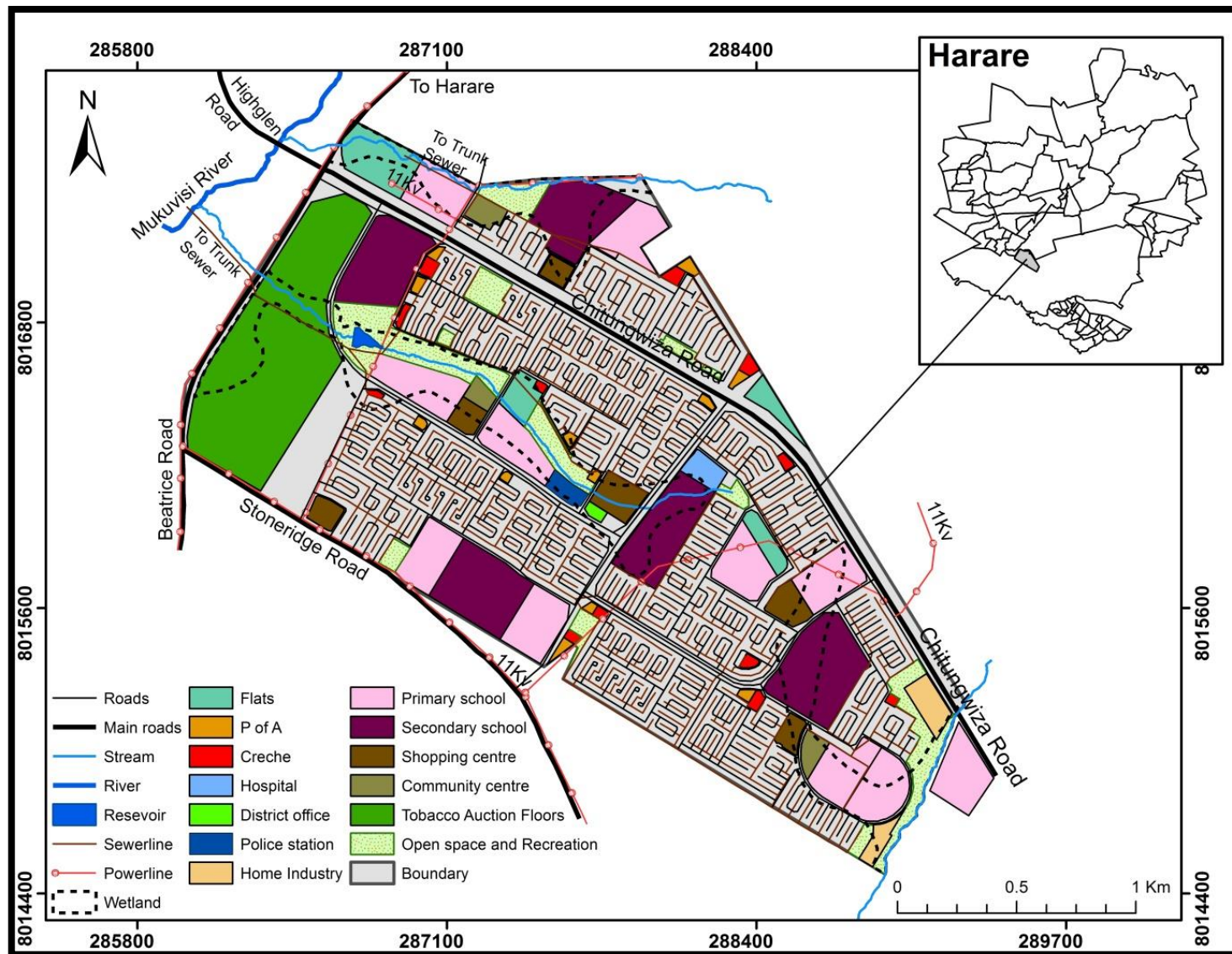
Figure 6.2: The scanned layout map of Hopley Settlement

The findings indicate that a compact development form was envisaged for Hopley Settlement. This is evident from the mixed land use approach envisaged for Hopley where other ancillary services such as schools, crèches, industrial and commercial sites were set aside. These ancillaries were to complement the predominant residential land use characterising the settlement. The rationale was to develop a settlement premised on the notion of walkability as characterised by the neo-traditional settlement form (Gupta & Rathore 2018; Nasar 2003:58). Mixed land use encourages inhabitants of a settlement to easily access services such as employment and education (Lee et al. 2015; Joshi et al. 2017). Diversity was also factored in the land use scheme for Hopley Settlement as evident from the different stand sizes which also include flats. Figure 6.3 shows the layout plan for Hopley which corresponds with the proposed land use distribution presented in Table 6.1.

Table 6.1: Proposed land use distribution for Hopley

Land use	Number of sites/lots	Area (ha)	Percentage of total area
Residential/conventional			
150 m ² stands	3 120	46.80	11
200 m ² stands	3 120	46.80	11
300 m ² stands	1 560	23.40	4
Flat sites	4	14.00	3
Industrial	12	44.87	10
Commercial	8	18.05	3
Institutional			
Primary school	11	55	13
Secondary school	5	50	11
Other: Crèche/Church/Clinic	30	12.68	3
Open space and recreation	14	37.79	9
Roads		94.28	22
Total		443.67	100

Source: City of Harare (1999)



Source: City of Harare (1999)

Figure 6.3 Proposed development of Hopley Settlement depicting a mixed-use form of settlement which is premised on the notion of compactness

Table 6.1 indicates that 29% of the area in Hopley was for residential development, which constituted of 7 800 stands and four sites for flats. Table 6.1 further shows that 22% (93.6 ha) of the total area was equally allocated for the development of 150 m² and 200 m² residential units. A further 4% (23.40 ha) was set aside for the development of 300 m² sites, while 3% (14 ha) was allocated for the development of flats. At the time the layout plan for Hopley was conceptualised, the minimum stand sizes were to be restricted to 150 m², otherwise they could have been reduced to 70 m² as would, later on, be stipulated by Circular No. 70 of 2004. The small stand sizes proposed for Hopley were meant to promote densification and concentration of people in the settlement as prescribed in the HCMP (City of Harare 1992:22).

Inasmuch as the HCMP and LDP31 envisaged a compact development for Hopley, the proposed plan as shown in Figure 6.3 also highlighted that there are some elements of neighbourhood unit, new urbanism and smart growth which informed the envisaged and proposed plan for Hopley Settlement. First, the focus on mixed land use is a principle which is among the ten principles of the smart growth concept which also encourage compactness and the development of walkable neighbourhoods (Chapin 2012; City of Kirkland 2013; Porter 2002).

Likewise, the new urbanism concept was envisaged to inform the morphology of Hopley as evident from the proposed mixed land uses presented in Figure 6.3, showing commercial, residential, recreational and industrial areas within the settlement. Such a settlement form would enable the inhabitants of the settlement to walk across the settlement instead of going elsewhere to access basic services or for employment opportunities (Rahnama et al. 2012:198-199). In the same manner, the provisions of the neighbourhood unit have also been considered where eleven primary schools and five secondary schools were to be developed to cater for the residents of Hopley.

Therefore, residential development constitutes the main land use for Hopley. The proposed land uses also included commercial, institutional, industrial, open spaces and recreational areas. Some land was also set aside for vehicular and pedestrian traffics as roads and walkways, respectively.

6.2.4 Reflections from the key informants on proposed land use for Hopley

Reflections on the responses of the key informants with regard to the proposed land use for Hopley showed that five key informants, both from the private (professional planning consultants) and eight from the public sector (officials from the City of Harare and DPP), were in agreement that Hopley Settlement was initially well planned by the City of Harare. Its planning was guided by statutory plans just as explained in section 6.2.1 and 6.2.2. A key informant mentioned:

In order to understand the dynamics of Hopley, understand what the Southern Incorporated Areas and HCMP say as they provide the bigger picture to the subsequent developments in Hopley.

This response showed that the development of Hopley was not by chance but it was deliberated by the City of Harare before Operation Murambatsvina of 2005.

With regard to the planning of the settlement, I found that the board member for UDCORP who was working for the City of Harare during the late-1990s, acknowledged that the plans for Hopley were already underway during this period and funding proved to be the major hindrance to the implementation of the plan. This confirmed the sentiments of the city planner for Harare, who recalled that:

I will not say Hopley was a mistake. It was a well-planned settlement. By the late 1990s we already had an approved plan for Hopley which was a council farm.

Likewise, a planner from the private sector stated that:

City of Harare planned Hopley then sold stands to the public. Unfortunately, at the time people allocated the stands did not occupy. There was no take-up of the stands because the area was far from 'development' and resembled a rural area, hence there was no development. No one was initially willing to settle there.

In this regard, it emerges that the planning of Hopley mainly focused on the drafting and designing of *plans without taking consideration of the broader issues which include the implementation of the plan. This realisation and focus on drafting and designing of plans may be reflected through the systems theory where there is a need for the identifications of inputs, outputs and feedback which relates to a system. This is explained by the fact that inasmuch as urban planning is projected to forecast about the future, there is also a need to take measures for identifying the key players* who would enable the implementation of the plan. It is in this

vein that the critical elements be put into perspective for Hopley and identify how the performance of the settlement may be analysed through a bigger picture, possibly through an interdisciplinary perspective.

Second, five key informants from the private sector identified the proposed and envisaged plan for Hopley to be the product of a top-down process. In this way, the key informants raised the point that the whole process of developing the plan for Hopley was simply ‘a thing’ of the City of Harare and the DPP, which hardly consulted other stakeholders, especially the beneficiaries of the stands. A point emerging here is that the planning now becomes a state apparatus which helps to advance the agenda of a specific group of people. There were similarities with the traditional view of planning where the process is perceived as a state activity and apparatus that seeks to further the interests of the elite – mainly the politicians who own land and other means of production (Fainstein & Fainstein 1979; Harvey 1973; Healey 2010:15; Watson 2009a:2260; Wildavsky 1973).

Yet, effective planning, according to Campbell (2002:274), is an idea that is fundamentally about making choices *with* and *for* others about what makes good places. In this regard, the envisaged settlement form was merely a perpetuation of some modernist plans which failed to factor in the voice of the intended beneficiaries. One of the key informants stated that:

There was no input from the various stakeholders as to the proposals of Hopley. The whole thing was a council and DPP issue.

This contradicts the common thinking among most proponents that the success of any plan is anchored on interactive processes among society, planners and various other stakeholders within an area (Healey 1997; 2010; Watson 2002). These findings are consistent with the observations made by Chigara et al. (2013) that the approaches used in the planning and development of settlements in Zimbabwe tends to be influenced by engineers and architects who made the process too technical and the preparations of the plans were too complex, cumbersome and time-consuming.

State-centred planning is thus questioned here because it is perceived to be an activity aimed at promoting social justice and advancing human welfare. When the realities on the ground depict the chaos evident in Hopley, it raises alarm bells on what exactly the state values and whom do they plan for? Does the state really know what the people want? If it does, why does

it fail to deliver the requisite services which would eventually make it impossible for the residents of certain settlements to access basic services?

Third, some of the key informants criticised the proposed plan for Hopley on the presumption that it was guided by statutes and legislations which were archaic and failed to facilitate the timeous development of human settlements. The argument raised here was that these plans promoted a modernist and utopian vision which failed to integrate the realities of the issues on the ground. A planning officer commented:

The use of local plans and conforming to these statutes has got us where we are now with Hopley. The council has been engrossed in trying to have neat lines when things are literally falling apart on the ground.

In this regard, I deduced that there are times when the statutory plan fails to relate to the socio-economic and political realities of the area. The realities in settlement planning are complex and evolving. Dealing with such issues requires up-to-date statutes which also render traditional forms of planning to be archaic. The shortcomings of conforming to the modernist planning laws, which are largely centred on the bureaucratic way of doing things, are rendered ineffective, thus calling for strategic plans and approaches to settlement development.

Lastly, it emerged that the key informants, mostly from the DPP and the City of Harare, explained that a compact settlement form was imagined for Hopley. This was highlighted in an interview with a planning official from the City of Harare who explained the thrust on compactness:

Our main concern was to make sure that we have a compact development where low-income earners are provided with housing. The essence was to maximise on the number of units that we would produce in the area.

From the foregoing quotation, it emerges that there is an increasing adoption of the compact development settlement form in Zimbabwe. This imagination is largely informed by the need for maximising land-use in urban spaces where sprawling is discouraged. On the other hand, the attention to compactness is also explained due to the need for planning of sustainable, inclusive, safe and resilient settlements as espoused in the SDG 11.

6.3 ENVISAGED PROVISION OF BASIC SERVICES IN HOPLEY

This section presents the findings relating to the plans for the provision of water, sanitation, public transport and safety in Hopley Settlement as was envisaged by the City of Harare. Just like any other settlement, the functionality of Hopley was based on the availability of public infrastructure (Dumba 2018; Kenworthy 2006; Mudzingwa 2017; Satterthwaite 2016a:100). As mentioned in Chapter 1, section 1.6.2, Hopley Settlement was only a smallholding commercial farm characterised by a farmhouse and some dirty-roads which provided access to the farm. In light of the absence of public infrastructure in Hopley Settlement, the provision of a public utility infrastructure was thus a priority. HCMP warned that the expansion of the city faced a number of challenges which included deficiency of public utility infrastructure (water, sewage, electricity, traffic, and transportation systems) which would eventually prove to be prohibitively expensive (City of Harare 1992:2).

6.3.1 Water provision

The provision of reticulated water was identified in the statutory plans which were supposed to guide the development of Hopley as constraining the development of the settlement. It was proposed by the City of Harare that water supply for Hopley would be connected from the existing network which would only require some extension and not necessarily new water mains and works which would require larger amounts of money (City of Harare 1999:17). However, the HCMP (1992:3) stated that

The potential for development in both Harare and Chitungwiza depends on the availability of public utility infrastructure (water, sewage, electricity, traffic and transportation systems). In the long run, the continued outward expansion of the City of Harare will prove to be prohibitively expensive.

From the above quotation, it emerges that the existing water facilities for the city were constrained. The provision of water for Hopley was thus supposed to be obtained from the new dams, for which the City of Harare was working on plans to construct so as to double the water supply for the city (City of Harare 1999:18). It was found that there would be adequate water for Harare and all the emerging settlements by the year 2005 depending on the successful completion of the proposed plan.

Clearly, the options for water provision were only limited to the centralised system where water for the settlement had to be imported into the settlement. This was possibly in line with the

standards and norms defining the provision of potable water in urban areas and only looking up to the reticulated system. Considering the financial constraints in developing a water infrastructure system for Hopley, the City of Harare failed to incorporate the principles of water sensitive settlements (Armitage et al. 2015). The use of diverse water sources would have been ideal for Hopley where the City of Harare would have considered the use of groundwater sources, rain harvesting instead of solely relying on the reticulated water system.

6.3.2 Sanitation

Since reticulated sewer is considered as the norm in urban settlements in Zimbabwe, it was proposed that Hopley would be connected through the Mukuvisi outfall to the Firle Sewerage Works (Figure 6.1; City of Harare 1999:18). The LDP31 envisaged that Hopley could be drained to the Mukuvisi outfall sewer, which meant that the development of the settlement could be implemented in the first five years of the plan period – that was by 2004 (City of Harare 1999:11). This connection would allow the wastewater to be transported from the settlement for treatment, thereby limiting human contact with faecal matter. This plan was based on the concept of smart growth which encourages compact development as this would promote densification where Hopley was to be connected to the existing infrastructure. The need to have Hopley being connected to a reticulated sanitation system was also informed by the Public Health Act, part IX, section 82, which encourages the safe disposal of faecal matter and wastewater.

Also considering the stand sizes of the settlements in Hopley, presented in Table 6.1, the local authority was obliged to provide a centralised sanitation system because the stand sizes were too small and did not permit the decentralisation of faecal matter and wastewater. This point was elaborated on in Circular 70 of 2004 which stipulated that all stand sizes in the high density suburbs must be connected to a reticulated sewer system. The proposed plan as envisaged in LDP31 indicated that the use of septic tanks was discouraged due to the high population density which was to characterise Hopley Settlement. In the same manner, the close proximity of Hopley to existing sewer works meant it would be easier for the settlement to be connected as explained above.

One of the planning consultants who was part of the team that designed the LDP31 highlighted that:

A mixed land use planning approach was used in Hopley. The design took cognisance of the adjacent Waterfalls. The emphasis was to try and make use of existing and planned infrastructure. We envisaged the development of a critical contour which would tap into the planned and existing infrastructure. With regard to sewer, we were banking on the Firle as well as the use of ponds which would be decommissioned once the works were finalised.

His sentiments confirmed the findings that the proposal for the treatment of sewage from Hopley was to be facilitated through the pumping of the sewage to an expanded Firle treatment works (City of Harare 1999). From the foregoing, it is evident that the functionality of Hopley was to depend on the existing settlements and infrastructure. This would mean a reduction in development costs since there would only be a need to connect to the existing sewer trunks.

6.3.3 Roads and public transport

It emerged that the proposed road network in Hopley constitutes 2 100 m of national roads forming the primary distributors, coupled with 20 m district distributors, 12 m local roads and 10 m access roads; 20 m district distributors draw traffic from 100 m national/primary distributors into 12 m local roads which in turn feed the 10 m access roads serving individual stands. Chitungwiza Road and Beatrice Road constitute the national distributors which bound the settlement. The road design combines curvi-linear roads for the district distributors; P-loops, cul-de-sacs, and crescents for the access roads.

With regard to the proposed guideway in Hopley, the existing road network was to be used to help in the accessibility of Hopley as evident from the Chitungwiza Road and Beatrice Road which bound the settlement (Figure 6.2). The key official from the City of Harare Department of Transport indicated that in planning for Hopley, they proposed the access roads across the settlement as well as the public transportation system which consisted of road infrastructure, bus termini, bus stops and sidewalks for cyclists and pedestrians. The proposal for the provision of the public transport was meant to ease the transportation burden on the intended residents of the settlement as is demonstrated that public transportation is a critical element in human settlements which usually complicates human lives if it is not well-planned for (Merlin et al. 2018; Sola et al. 2018).

It emerged that the provision of transportation was guided by the need to develop an integrated traffic and transportation system that serves all areas efficiently as provided for in the HCMP (City of Harare 1992:18). According to the HCMP, it envisaged that:

*there is a need to develop a versatile traffic and transportation system deliberately biased in favour of **public** transport and capable of carrying goods during off peak periods as well as creating conditions of high accessibility and efficiency in all areas of the settlement (City of Harare 1992:18).*

Figure 6.3 shows that there is a mixed land use which was also meant to support non-motorised vehicles. In a similar manner, the official from the City of Harare Department of Transport iterated that besides the use of higher capacity modes of public transport, they also envisaged other modes of public transport for Hopley which included cycling, considering that there was to be a mixed-use development which meant people would be living and working in the same locality.

6.3.4 Safety

The provision of safety in Hopley was to be provided through the inclusion of a police station in the settlement as shown on the map in Figure 6.3. The inclusion of police stations in settlements has been found to deter crime and violence as the presence of the police can be threatening to petty criminals (Nyabvedzi & Chirisa 2012). In addition to the police station, safety was also envisaged in the plans for Hopley through the mixed land use principle. It emerged that through this design principle, residents would access nearby basic services such as schools for children, thereby limiting the threats of insecurity since school children would not need to travel long distances to access schools. Moreover, there was careful consideration of transport planning for the proposed settlement where the transport system would ensure the safety of the residents. This was explained by the official from the City of Harare's transport department that in planning for Hopley, there was a consideration on how best road safety was to be affected so that road accidents would be minimised as well.

6.4 EXTANT FORM OF HOPLEY SETTLEMENT

6.4.1 Planned and proposed settlement but not implemented

By March 1998, the plan for Hopley was finalised but the settlement remained unoccupied until late 2002. With regard to the situation where stands were not occupied, an official from DPP highlighted that the stands remained unoccupied due to the provisions of Section 43 of the RTCPA which states that the Director of DPP approves a layout design for the development

of housing schemes and other land use activities. Section 43 of the RTCPA outlines that the stands shall not be occupied until:

- buildings based on plans submitted to and approved by the local authority have been constructed and completed;
- a reliable source of water approved by the local authority has been provided thereto; and
- a certificate of occupation is issued by the local authority.

It emerged that the huge sums of money required for developing the infrastructure projects in Hopley acted as a barrier to the implementation of the proposed land use plan for the settlement. The estimated costs of such infrastructure development for Hopley were a staggering Z\$58 886 477 (approximately US\$5 888 647) which constituted Z\$5740 000 (approximately US\$574 000) for surveying the land, Z\$30 826 155 (approximately US\$3 082 615) for roads and stormwater drains and Z\$22 320 322 (approximately US\$2 232 032) for water and sewerage reticulation. The following response from the town planner helps to explain this failure to implement the proposed plan for Hopley:

However, we could not service Hopley, hence it remained undeveloped because there was no off-site infrastructure for servicing Hopley. Infrastructure within the vicinity of Hopley is very far away and requires huge sums of money to bring to Hopley. For example, the possible sewer line connection is around Mukuvisi area which is some 10 km away. On the other hand, water was supposed to be connected I think from Mufakose reservoirs which are also very far away. As a result, we remained with Hopley as a settlement which we could not implement considering that we did not have the money to install the off-site infrastructure which is a prerequisite for developing any human settlement according to the council standards. Then there came the economic challenges which bedevilled the country and made it even more difficult for the council to engage in any development work in Hopley.

Similarly, a town planning consultant explained that:

City of Harare planned Hopley then sold stands to the public. Unfortunately, at the time people allocated the stands did not occupy. There was no take-up of the stands because the area was far from 'development' and resembled a rural area, hence there was no development. No one was initially willing to settle there.

The response by the town planning consultant confirms the findings from one of the memorandums from the DPP files which indicated that by August 2003, there have been illegal occupations of certain farms around Harare with some people occupying parts of Hopley Farm

(City of Harare 2003). This period coincides with the Fast Track Land Reform Programme which resulted in the occupation of any vacant land by the homeless.

6.4.2 Planning values and political will

The preceding sections have shown what was envisaged for Hopley Settlement. Therefore, the actual occupation of Hopley and the extant settlement form is best understood as being a product first of the Fast Track Land Reform Programme which saw an exodus of urban residents who lacked land, occupying open spaces and peri-urban areas as highlighted by Mbiba (2017b) and Marongwe et al. (2011). Hopley had been identified as an ideal settlement and its strategic location provided a convenient site for the homeless as it was also relatively closer to the CBD than other areas. Hence, the demand for housing and urban land in Harare led to the initial occupation of Hopley. The town planning consultant indicated that:

However, after re-advertisement of the stands in Hopley in early 2000s, surrounding settlements in southern area such as Saturday Retreat were coming up, hence the demand for Hopley was taken. All this was around 2003 before Murambatsvina and a layout was therefore part of the settlement. The main factor was the increasing demand for urban land and housing shortages in Harare.

It is evident from the foregoing statement that the pressure on the council to accommodate the growing population in the city was limiting their options and emerging settlements were their only answer in redressing the housing challenges. However, the city council seemed to be hesitant in allocating people stands in Hopley because of the absence of infrastructure and basic services.

The realities of the settlement form were as a result of the decision which was made by the government to facilitate the allocation of residential stands in the area following Operation Murambatsvina. Despite the planning statutes which restrict any developments to be undertaken in an area without adequate basic services, the government disregarded this provision and went ahead to push for the occupation of Hopley. A somewhat mixed answer was given to the question which related to the establishment of Hopley and eventually its current form. Hopley emerged as a reactive response to Operation Murambatsvina. This was confirmed by a majority of the key informants who asserted that following Operation Murambatsvina, the government had the responsibility to accommodate the victims of the operation as it had grossly undermined the citizens' constitutional rights with regard to

eviction, with providing an alternative settlement (Government of Zimbabwe 2013a). Therefore, the initial settlement of Hopley can thus be framed into the machine model where a settlement emerges as a reactive response to some challenges (Lindblom 1959; Massachusetts Institute of Technology, Open Courseware 2018). One planning consultant I interviewed confirmed that:

Hopley has been a result of a crisis because the history of the settlement shows that the increasing demand for housing and the government was responding to a crisis in the absence of resources then that's a recipe for disaster.

The above quotation relates to the machine model (see Chapter 3 section 3.2.3.1) which postulates that settlements are planned on short notice and the allocation of stands is hurriedly done which is what was done in Hopley. Despite the existence of the layout plan and the reservations by the council to settle people, the situation in 2005 was a crisis which required immediate action. The town planner explained that:

Then came Operation Murambatsvina in 2005, people were displaced from different areas and had to be accommodated. The government then came to us and asked if the council had any land available for human settlement and we indicated that there was Hopley though we explained the complications of the settlement. So, the government took the plan and started allocating the stands, even without basic services.

The town planner emphasised that the directive from the government resulted in the City of Harare compromising on their standards and settling the victims on the unserviced land. This was justified by an official form the City of Harare who described the situation as premature development which is provided for in the RTCPA. Through this type of development, people may be settled in an area and then communal facilities are provided. The study established that such communal facilities were provided by NGOs such as UNICEF which constructed communal boreholes in the area to enable residents to have access to water. On the other hand, the engineer from the City of Harare indicated:

In Hopley, when it was initially started there were one or two points where the bulk supply of water was provided by City of Harare.

The engineer added that owing to the high population in Hopley, the communal facilities which were installed were inadequate and failed to satisfy the water demand for the population (see Chapter 7, section 7.3).

The communal taps set by the City of Harare were eventually removed because the pressure in Hopley was thus affecting the other areas from where the taps were connected. This was highlighted by one of the engineers who indicated that:

Inasmuch as we provided communal taps, the pressure of the water was affected in the established settlements such that we ended up disrupting that water source and leaving the residents to rely on the UNICEF boreholes.

Gogo Mawowo commented that some of the communal taps were either vandalised as people stole the taps or were appropriated by some community leaders and locked (Figure 6.4), especially ZANU-PF leaders who would ask residents to pay to access the water.



Source: Author's own (2018)

Figure 6.4 A communal tap which has been locked and no longer in use

In addition to the victims of Operation Murambatsvina, the City of Harare also allocated some of the stands to individuals on the Council's waiting list, hence the settlement was not solely accommodated by victims of Operation Murambatsvina. Gogo Mawowo*, a former employee of the City of Harare, is one such beneficiary to the stands in Hopley. She explained that:

I worked for City of Harare for many years and have been on the council's housing waiting list. Towards the end of 2006, I was allocated a stand here in Hopley but unfortunately, there was no water provided in the area.

As envisaged that water supply will be provided through dams that will be constructed, no such thing was affected and Hopley has never been connected to any reticulated sewer. Rather, efforts which were made to connect Hopley to the existing water supply system in neighbouring established settlements were eventually reversed when the water supply in the existing settlements was then compromised. A key informant stated that:

Currently there is no plan for sewer or water supply. The city on the whole doesn't even have concrete plans for water supply for the budding city. Kunzvi Dam largely remains a talk show.

The failure of the city to make plans for the water supply is an indication of how social planning is not observed in the context of urban Zimbabwe. As discussed in Chapter 5, the political landscape of the country has been characterised by false promises where the Mugabe administration has thrived on oppressing the rights of residents (especially the poor) through failure to provide them with requisite basic services. This negligence has persisted over the last decades where visions and programmes explicitly highlighted the infrastructure gap, but in reality, little or no effort was made in attempting to alleviate the plight of those in need of the services.

6.4.3 The hybrid settlement form of Hopley

The existing land uses in Hopley Settlement are a reflection of a hybrid settlement form which has some partial elements of compactness and heavily inclining towards a sprawling form. The compact development is represented by the denseness of the settlement, which is shown in Figure 6.5, showing the residential developments concentrated within the planning area.

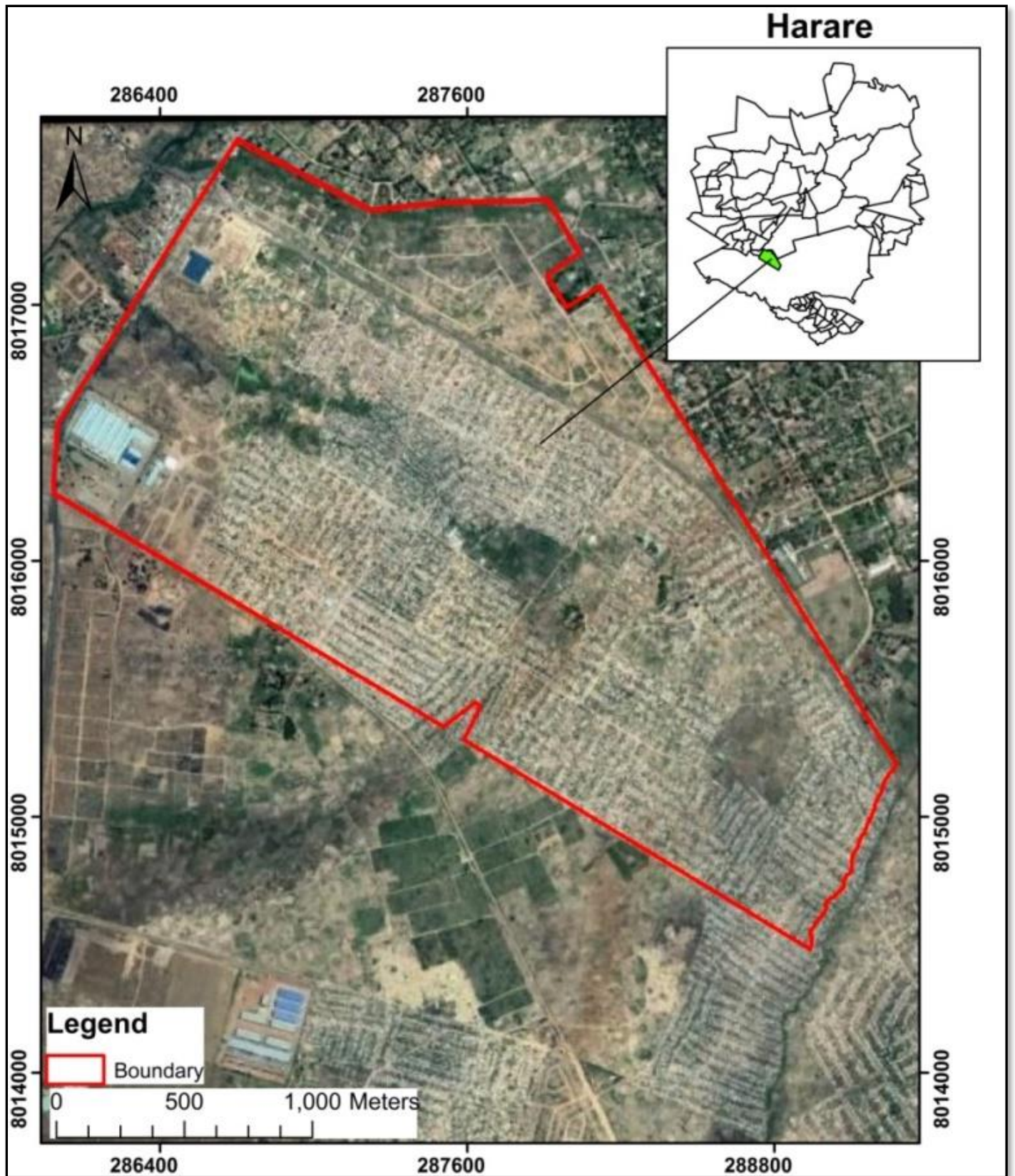


Figure 6.5 Extant settlement form of Hopley

The elements of sprawl are observed in Hopley due to the fact that the settlement has remained isolated from other settlements. This isolation is explained with regard to the absence of the basic services in the settlement which was supposed to be connected to the existing water and sewer system as described in section 6.4.1. It has emerged that the development of Hopley has been done on isolated land which is a characteristic of sprawl form (Gómez-Antonio et al. 2016:220; Lata et al. 2001).

Moreover, the characteristic of sprawl which describe the emergent settlement in Hopley is also explained by the single land use which dominate in the area as indicated by Mosammam et al. (2016:104), that sprawl form refers to a certain form of the city spatial expansion toward suburbs and peripheral areas with single-use, extensive road and highway networks and being car-dependent. The realities from Hopley subscribe to this articulation by Mosammam et al. (2016:104), as the settlement has been dominated by residential land use only, residents depend on motorised transport to get to employment places, schools and markets. The predominance of residential land uses in the settlement is evident across the settlement and is shown in Figure 6.6 where areas earmarked for other developments have been engulfed by residential developments. The characteristics of a sprawling settlement were explained by one of the private planners who stated that:

the failure by City of Harare to provide basic services meant that Hopley Settlement thus remained as an isolated settlement characteristic of a sprawl settlement. Yet this is not what the city envisaged.

The development of residential units in such areas has resulted in the intensification of the developments in the area as well as a blossoming population.

Figure 6.6 shows two maps juxtaposed. The one on the left is the proposed map for the land uses in Hopley Settlement, while the other one indicates the existing land uses. The existing settlement form of Hopley shows land uses which contradict the envisaged plan. All the sites for schools have been developed for residential use and the same is true for the sites for hospital and police station. A key informant commenting on this issue also highlighted how some of the land reserved for shops and roads has been developed. In his words he explained that: ‘there are some developments which have encroached onto the roads or have totally blocked some roads which were envisaged on the plan by City of Harare. This complicates mobility in the settlement and rectifying such issues will not be so easy.

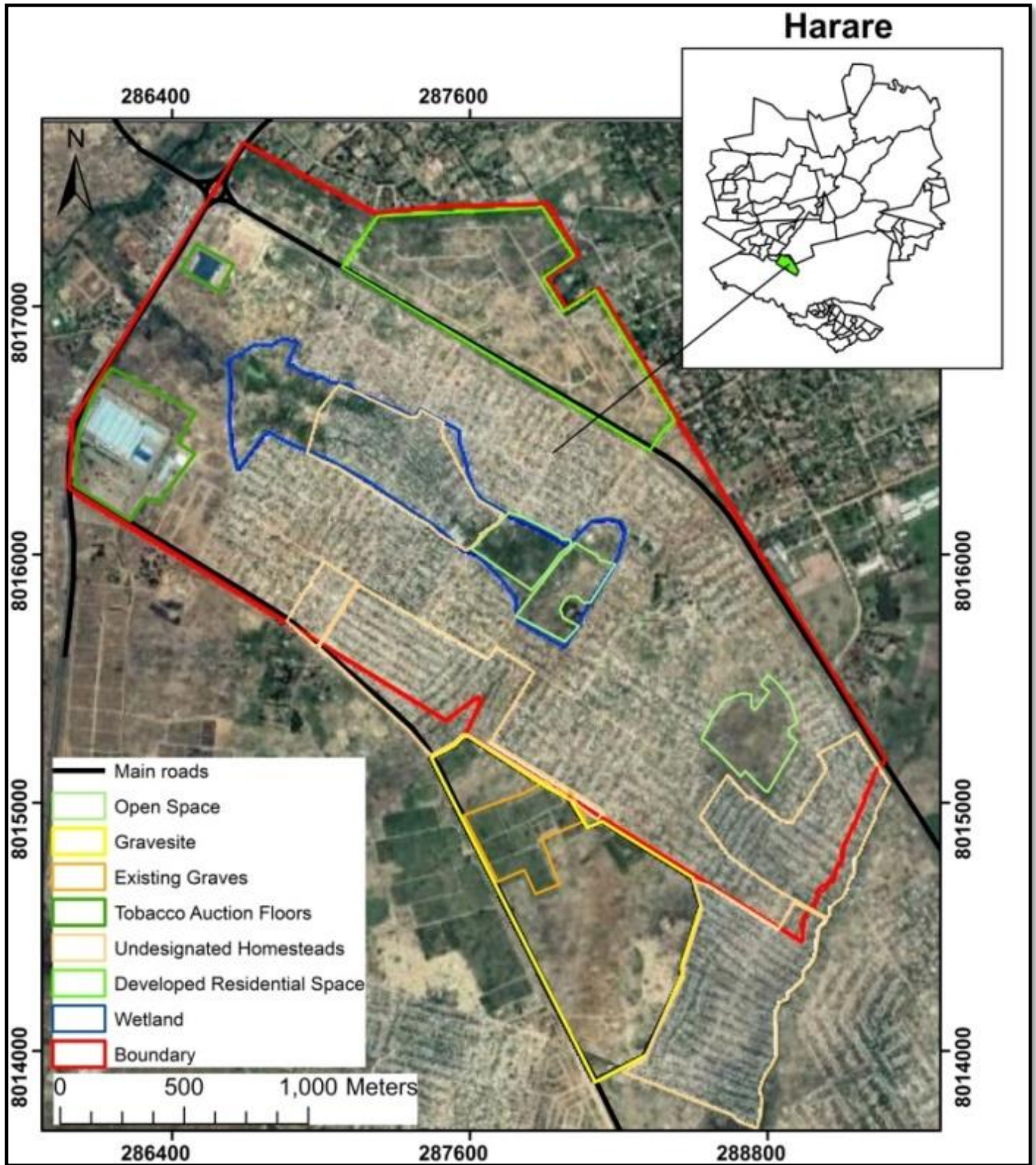
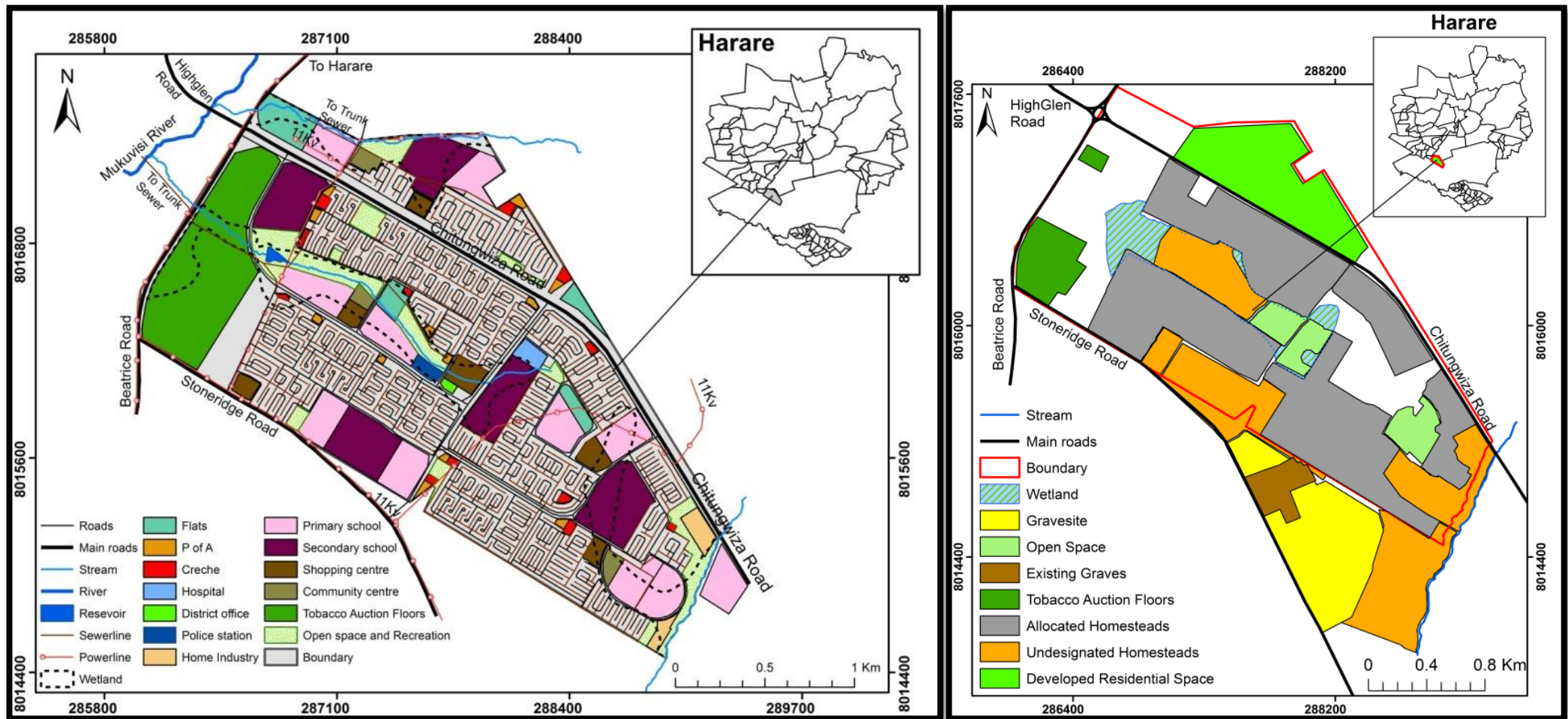


Figure 6.6 The extant land uses of Hopley Settlement in 2018 showing undesignated developments in sites reserved for schools and open spaces



Note: The map on the left shows the proposed land uses while the one on the right shows the existing land uses. There is a contrast with regard the proposed land uses which depicts a mixed land use pattern, yet the existing one shows a situation where most of the land has been absorbed for residential development. The map of the existing land uses also shows the encroachment of residential uses beyond the boundaries of Hopley Settlement

Figure 6.7 *The contrasts between the envisaged land uses for Hopley and the existing land uses on the right*

Table 6.2 provides a summary of a comparison of the envisaged land uses and settlement form for Hopley with the existing settlement forms and land uses for Hopley Settlement.

Table 6.2 Comparing Hopley’s envisaged settlement form and land uses with the existing settlement form and land uses

Variable	Envisaged for Hopley	Realities for Hopley Settlement
Settlement form	Compact settlement form was envisaged and characterised by mixed land uses. Urban containment as provision of services was restricted to the 22.2 km radius from the city centre.	Hybrid settlement form which has elements of sprawl.
Land uses	Different typologies of houses were to be developed to include four blocks of flats and three types of stand sizes. Land was also allocated for institutional purposes which include schools, a hospital and crèche. Provision was also made for home industries.	Residential is the predominant land use and the stand sizes are more or less the same and densely packed. The land allocated for other land uses such as schools, crèche, hospital and the open spaces have been invaded and settled. Some individuals have also settled on land designated for roads.
Water provision	Reticulated water to be connected to the existing water mains supplying the nearby existing settlements. The construction of dams to provide water for Harare would also help in providing reticulated water in Hopley.	There is no reticulated water system in Hopley (see Chapter 7, section 7.3). Residents make use of shallow wells and community boreholes.
Sanitation provision	Reticulated sewer system which would be provided through connection to the existing Firlie treatment plant.	Decentralised sewer systems are used in Hopley and consist of pit latrines, pour-flush which all result in localisation of faecal matter (see Chapter 7, section 7.4).
Public transport	Use of existing road infrastructure. Develop access roads within Hopley and provide mass-transit public transport as well as promote walking and cycling.	Access roads have not been maintained and in some instances, development has taken place in areas designated for residential developments. No public transportation residents rely on kombis.
Safety	Establishment of a police station. Provision of schools and services in close proximity to the houses.	Safety is an issue of major concern in Hopley Settlement. The settlement has some hotspots which make residents vulnerable to violence and crime (see Chapter 7, section 7.6). No police station has been constructed to serve the settlement.

6.5 HOPLEY'S MORPHOLOGY AND REALITIES AS AN EMERGING SETTLEMENT: A DISCUSSION

The existing settlement form for Hopley is a result of different factors which have resulted in the occupation of open spaces, wetlands, roads and school sites. These factors include the following:

6.5.1 Role of funding and the economy in Hopley

The significance of capital in shaping the form of settlement as postulated by Harvey (1985) is evident in Hopley. From the interactions with planning officials from the City of Harare, the DPP and the consultants, it emerged that funding was a critical component which influenced the ultimate form of a settlement and its unavailability resulted in a disconnect between the intended settlement form and realities as evident in Hopley.

The financial constraints facing the City of Harare were observed as the major cause of the divergent of the reality from the proposed plans. The depressed economy of the country and financially constrained government has thus been responsible for emerging human settlements which lack basic services. The respondents explained that providing basic services in settlements is capital-intensive and requires central government support or bilateral loans which would eventually be paid over longer periods of times, say twenty years. The deputy city planner illustrated the financial challenges facing both the central and local government and noted that:

Local authority (City of Harare) has no capacity to fund such a big project, or even the government as well, considering the various issues which they need to take care of. Ironically, the residents have no capacity as well to raise such huge sums of money. Hence, the most appropriate mechanisms of funding will be bilateral agencies, for example, USAID, World Bank, International Monetary Fund who have to come in and assist with the bulk off-site infrastructure.

It was outlined here that the main challenges in providing basic services in emerging human settlements were due to a lack of financial resources because any urban development requires huge sums of money for the planning, designs, actual servicing and professional fees. However, this has not been happening over the years, especially if one considers the times Hopley was established when Zimbabwe was experiencing hyperinflation and foreign investment into the country was largely cut due to economic sanctions imposed on the country (Muderere 2011).

The issue at hand is that huge sums of money are required to spearhead the development of a settlement. When the economy was still good, urban municipalities used to get loans from World Bank which they would pay back over long periods of time through recovery rates. The money would then be used to service new settlements like Hopley. Unfortunately, these institutions (International Monetary Fund and World Bank) have pulled out in funding infrastructure projects since the late 1990s and this has left a huge vacuum which the local authorities are failing to fill hence this mess you see now.

The utility of funding is confirmed in the foregoing quotation and this may explain why Hopley has remained unserved as the City of Harare lacks the financial capacity to do so. An official from the City of Harare also highlighted that even the development fund outlined in the RTCPA has largely remained dry and the council has not been receiving any development funds from the central government. Yet, developments of the magnitude of Hopley are capital-intensive. As indicated by the engineer from Harare, a staggering US\$80 million is required to install the sewerage system which would serve Hopley Settlement.

It has been shown that excess capital is channelled where it can benefit the capitalists and if there is no benefit, then little to no development is brought in such places. Considering the socio-economic background of residents in Hopley who are financially constrained (see Chapter 7, section 7), it has been difficult for the financially-constrained City of Harare or private actors to fund the development of Hopley. For Hopley a planning consultant explained:

The city is also unable to collect revenue from some of the settlements such as Hopley and therefore these settlements are disconnected both in terms of governance and revenue collection. The financial architecture of the City of Harare doesn't benefit from and also doesn't contribute to the development of these emerging settlements.

This is a clear indication of the alienation of Hopley as explained by Harvey (2018), and what Young (1990) refers to as marginalisation of certain groups in society.

6.5.2 Politics and power dynamics

In this study, the influence of politics in the development of Hopley and the current state of the settlement cannot be underestimated. In explaining the significance of politics in influencing the settlement form of Hopley, one respondent highlighted that:

You cannot discuss human settlements without examining the politics of land. No matter how you look at it, you have to look at politics of land delivery in Zimbabwe. Zvatirikuona nhasi

(what we are seeing today) is not something new, it is a long historical struggle. It is a continuation of a struggle. Political struggle has an effect on all the social processes in the country. It's thus important to have a grasp of the political struggles of Zimbabwe and what has happened over the years. It's more like bringing in the political economy issues around human settlements in the country. Because you see at times it is the state which is responsible for some of the dilemmas you are referring to.

This quotation relates with the conceptualisation of human settlements as an arena of conflicts where there are numerous competing interests among different groups and class struggles are rife (see section 3.2.4.1). It emerged from this study that for Hopley, politicians have taken over the affairs of the settlements. This is explained by the fact that politicians in Hopley Settlement have been instrumental in defining the norm as put across by Foucault (1981), where they have been controlling all the processes from land allocation to the daily lives of the residents with regard to accessing basic services. This situation has been rampant, especially during the year 2013 prior to the presidential elections. An official from UDCORP pointed out that:

The allocations of most stands in Hopley were done and continue to be done on a partisan basis, formally and informally. It is the political gimmicks who lead in Hopley. Politics rule in Hopley because of poor governance – no will by the City of Harare to develop Hopley into a sustainable settlement. The sad part is that politicians at first purported to be representing the people but it has emerged that they are now simply advancing their selfish gains and interests. The politicians took advantage of the incompetence of the City of Harare and took matters into their hands where they have been exploiting people and causing more chaos and degrading the form of the settlement.

This quotation illustrates how politicians use their powers to spearhead development regardless of the presence of institutions which are supposed to perform certain functions. The worst part is when politicians then go ahead and exploit the residents as postulated by Young (1990) that those in power come in and exploit the weak. In the case of Hopley, exploitation takes form through the land barons and politicians who fleece residents and purport to be agents of development. Explaining the realities in Hopley, a planning consultant pointed out:

What is required is to unblock the power and the hold that political or politicising institutions have on residents ... if you listen to the amount of money people have lost in those communities you start realising how much lost opportunity you have and how much lives we have ruined by just looking at this settlement just flourishing and it is mainly ZANU-PF cadres and land barons who have benefitted from conning people but they did not benefit in a sustainable way because the people have remained impoverished whilst they took 'development funds' and never did anything close to development.

The power of the politicians in controlling the spatial development of Hopley has been overwhelming to the extent that even the council finds it difficult to service the settlement. The problem has partly to do with the lack of property rights which leaves the people at the mercy of the ruling party as they are constantly reminded that if they fail to bear allegiance to the party, they risk losing their stands. The city planner pointed out how politicians and some elites have become so powerful and rendered the council ineffective:

Unfortunately, the process was overtaken by land barons and it has become chaotic ever since. This is so because some of these land barons have become so powerful that the council cannot even approach them. They have gone on to squander funds collected from members, allocated people stands on land reserved for schools, clinics etc., and sad to note is the fact that some of these politicians are so powerful that even the council cannot approach them because they use political connections and affiliations. Overall, I can say we have a problem in Hopley which begs for solutions.

The deputy town planner also highlighted that:

However, despite the issue of finances, politics has also greatly affected everything in Hopley. Vanhu vaingoiswa musango [in the jungle] for political gains without even thinking of infrastructure or how such people were going to access basic services or even access their residential stands because the issue of roads was not even taken into consideration.

Figure 6.8 shows the undesignated sites where residents have been settled mostly on a partisan basis.

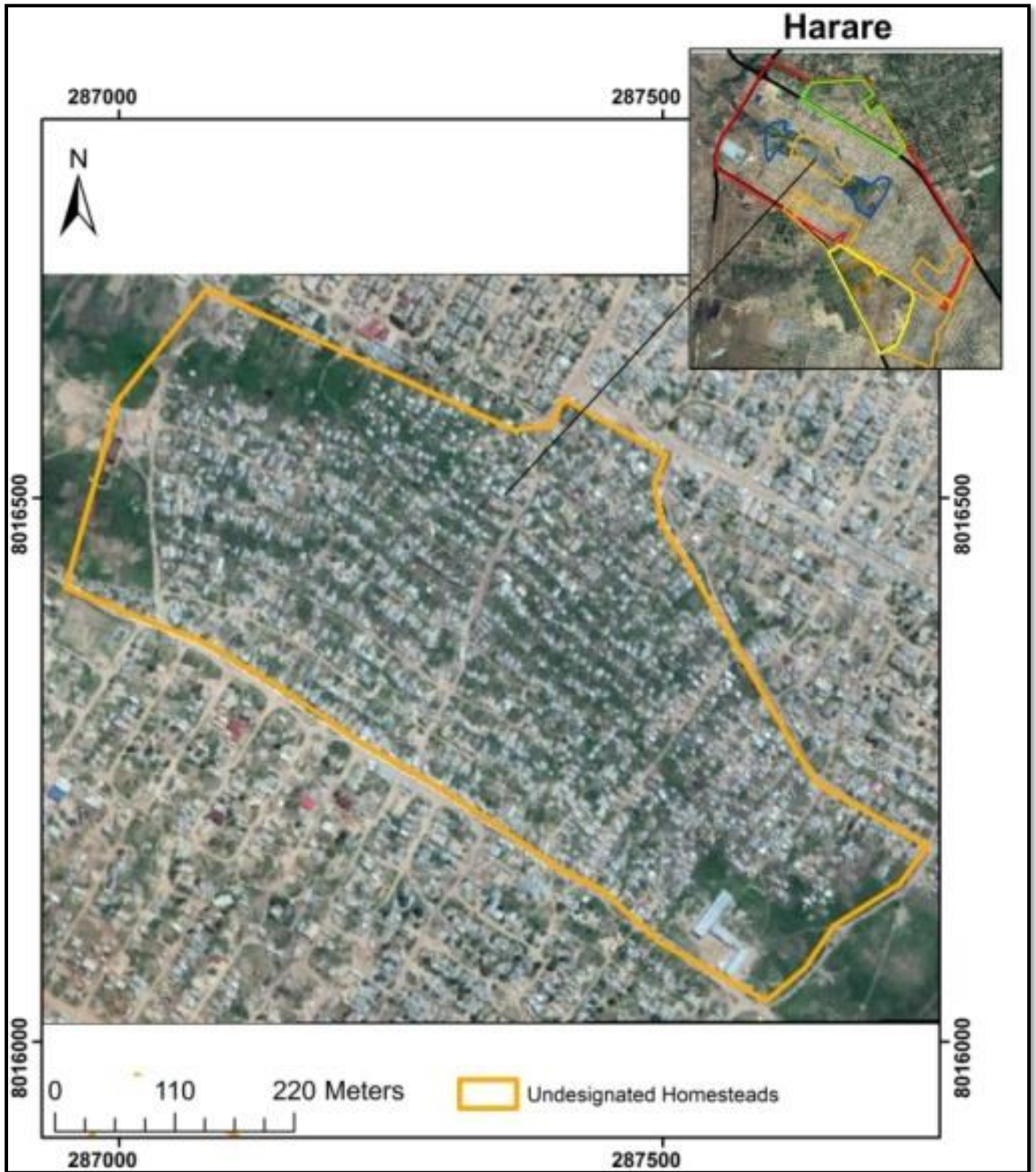


Figure 6.8 Undesignated sites where stands have been allocated in various spaces which include land reserved for schools, clinics, crèches and open spaces such as wetlands

6.5.3 Public administration and poor governance

Inasmuch as politics and the economy may have been responsible for the emerging human settlement forms in Hopley characterised by chaos and a lack of basic services, the public administration system used by the City of Harare was also identified as a constraining factor in achieving the intended form of the settlement. The development and success of any settlement is largely dependent on public administration and how institutions mandated to undertake specific functions perform.

As postulated by the functional theory, urban dilemmas manifest when certain institutions fail to properly execute their responsibilities (Kornblum & Julian 2012). Likewise, the situation in Hopley, characterised by an emerging settlement form which does not relate with the planned and envisaged, is also attributed to the dysfunctional of City of Harare. Respondents who were interviewed pointed out that for various reasons; the City of Harare has largely failed to deal with the issues in the emerging human settlements in Harare. Put aside the financial problems there are also a plethora of administrative issues which have rendered the local authority to be ineffective in fulfilling its mandate.

First, the institution was overcome with events. The City of Harare failed to keep pace with the growing population of the city and craft solutions which would have had ameliorated the growing demand for housing and basic services in the city. Coupled with a slow land development system and a sit-and-watch approach, the situation slowly grew out of hand until citizens began to take matters into their own hands and improvise in servicing human settlement development. In this regard, the observations confirm the argument raised by Castells (1977), that people will always find means to get by, regardless of the incompetence of the institutions mandated to execute certain functions. The city planner stated:

Essentially Harare was increasingly being overwhelmed by the growing city's population. So naturally, people found solutions. We started doing backyard structures expanding density rather than perhaps capturing that momentum by doing vertical and not horizontal backyard structuring. We could have pulled the infrastructure we already have upwards. We didn't do that, rather we did selective infill and it was also captured by the elites and eventually became unavailable for high rise low-income housing.

Clearly, the planner demonstrated how the City of Harare failed to be proactive. They remained stuck in the past and hence the development challenges became too great for them to handle. Another point raised in this regard was that the City of Harare has failed to maintain a constant flow of new blood into the institution, but rather retained a lot of redundant employees. Some of them are not even able to use requisite systems for urban development such as GIS and always want things to be done the old way, yet a lot has changed in the city. It was iterated that:

There are institutional challenges in roles and responsibilities in performance at the City of Harare. The local authority's legitimacy is in question and the viability remains in question. The authority of the local authority is not established and at the same time the services in the community are not available and people is open to all forms of abuse by local institutions that are not even necessarily connected to the city so a lot of money is being collected and used in ways that are not beneficial to the settlement under the perspective of service delivery of the area.

6.5.4 Disjointed planning

The emerging human settlement and urban dilemmas characterising Hopley were identified to be a product of some form of disjointed planning which characterises the development of most emerging human settlements in Harare. The City of Harare failed to properly plan for these emerging settlements, including Hopley Settlement, which according to one key informant, are best described as inadequately planned and disconnected settlements. The respondent stated that:

The City of Harare has engaged in a disjointed form of planning. There are things which they have not been doing right or taking for granted. Here I am not necessarily even interested in the neat straight lines (the drawing of layout plans and producing good maps on paper) but I am saying the City of Harare need to understand that there are services that people require and how they can get them into their community and the connection for paying for these to the local authority and then the local authority spearheading the servicing of the community and therefore maintaining those services.

The point raised in the foregoing quotation is that the City of Harare has been engrossed mostly in the physical components of settlements where they emphasise the spatial issues like having layouts, yet they give little regard to the critical components which make the settlements functional. A planning officer from the City of Harare explained:

The layout of Hopley was designed by planners and after we were through with the plan, we then gave it to engineers and told them to make it work.

This type of planning affirms the emphasis on physical designs as forming the basis of urban planning with little regard for inputs, even from other stakeholders. Here it is clear that the planner is at the centre of the development process. In relation to this point, another planning consultant added that the dysfunctionality of emerging human settlements such as Hopley are largely attributed to a number of factors which are linked to a disjointed form of planning. This form of planning is somehow foreign and does not look at the realities on the ground but rather is constrained by some planning legislation or standards. A planning consultant stated that:

Instead of just coming up with the layout, I strongly believe it is important to first get the cost of all the services, water, roads, etc. Then consider if the people able to shoulder the cost for capital expenditure required to give people services is very high such that people in Hopley can't afford it. Go to the engineers and get the cost, how many people would be needed to cover that? You can actually model this. That's the approach we use now. First, we ask are people able to afford what is being constructed; it's a model I am actually using now. Consider the class of people. Have a layout and consider the cost of off-site infrastructure. Then what does it translate into per square meter of land? Then it gives an indication of how land should cost. That is a shortcoming of the planning system in Zimbabwe at the present. People just draw layouts and do not factor in the costs. What is the basis for costing the land?

6.5.5 The use of out-dated planning ideologies and regulations

The extant settlement form in Hopley characterised by a deficiency in basic services such as reticulated water and sewerage, was also attributed to the use of conservative planning approaches and regulations. It was argued by a project planning officer from a local NGO that the current planning approaches used in the planning and regulation of human settlements have a lot of shortcomings. He pointed out:

The challenges in Hopley cannot be solved using the conventional methods, because the settlement we are talking about is so complex. It is sad to note that our statutes remain old and do not accommodate innovative approaches in emerging settlements. They remain strict thereby compromising human welfare in most instances. For example, the Ministry of Health does not approve Eco-san toilets in urban areas as they only recognise and approve of Blair toilets.

The planning officer highlights the complexity of emerging human settlements and the need to have a paradigm shift from the conventional way of planning for these settlements. This resonates with the arguments raised by Norton (2012) with regard to the urban dilemmas linked

to complexity and power issues. It is interesting that the town planner noted that the statutes in place facilitated orderly development through the provisions for special development orders to enable one to develop under certain circumstances. However, she went on to state that things have now changed, explaining that:

in the past, we could not approve development where there were no tarred roads, water, and reticulated sewer. But this has now changed and in many instances, people have been cutting corners and this has back-fired as evident from what we are seeing now in settlements like Hopley.

From the sentiments of the town planner, it is evident that she had mixed feelings with regard to the planning approaches used by the City of Harare. On the one hand, she highly regards the statutes used but these are mainly theoretical when in actual essence, the practice is riddled with inconsistencies which were mentioned by most of the planning professionals. The major shortcoming identified by the planning professionals as stifling success of human settlement development was the issue of parallel development, which allows residential developments to be done in areas without requisite bulk services. This type of development came into effect through the National Housing Policy of 2012 which allowed for incremental development in human settlement development. An engineer from Harare Water described the approach as follows:

I think we went through a moment of madness under government directives. There is a concept which was introduced some years ago which is called parallel development. I think government position towards that approach is clearly seen in the Garikai Hlalani Kuhle project where government directed local authorities to allow people to just build their infrastructure and as they do, so support infrastructure will be under construction. However, people built at a much faster rate and in some cases, like Hopley, the housing structures were constructed anywhere.

Parallel development has thus been labelled as the major constraining factor in the development of emerging human settlements and provision of basic services. This type of planning is associated with the machine model where the essence is to get things done now and solve immediate problems without factoring in long-lasting solutions.

Moreover, the planning system for human settlements development was also considered to be slow and unresponsive to the urban complexities which require a robust planning system. As pointed out earlier that master planning was still in use in guiding the development of settlements in Harare, this proved to be a major shortcoming and result for the current state of

Hopley's settlement form among other emerging settlements in Harare. This point was explained by a planning consultant who stated that:

The planning system we have now is very slow and unresponsive to the urban dynamics. It was meant for a population which was much lower than what we have now. It has not adapted, you see. We still using master planning and local planning when other jurisdictions are using integrated development planning or other frameworks. We still have land-use zones when we do mixed development.

Catchment-based planning is lacking. There is shared infrastructure, which needs to be holistically considered rather than take it in a piece-meal fashion. You cannot expect the development of a smaller project to shoulder the responsibility for the bigger picture.

6.6 CONCLUSION

In this chapter, the morphology of Hopley was presented. The master plan and local plan which informed and guided the development of Hopley Settlement and provision of basic services within the settlement were discussed, particularly paying attention to the proposed settlement form, provision of basic services such as water, sanitation, and public transportation. The plans envisaged a compact form for Hopley where there would be densification and basic services such as water and sewer systems were to be provided through connections to the existing infrastructure. Hopley was also to be guided by an urban containment settlement form as it was within the urban service area. It was highlighted in this chapter that the proposed development of the settlement was also meant to facilitate the housing plights of the poor, thus it was largely characterised as a high-density residential suburb.

In spite of having plans which were set in the mid-1990s for the development of Hopley, the council never implemented the plan through the allocation of stands, because they remained guided by planning regulations which restrict settlements developing in areas without off-site basic services. However, Operation Murambatsvina, and subsequently GHK, saw the government initiating the occupation of Hopley. Thus, Hopley emerged as a response to a national crisis which sought to accommodate the victims of Operation Murambatsvina. The current settlement form shows a stark contrast from the envisaged settlement form and a number of factors were discussed as being responsible for this dichotomy between what was planned and the realities of Hopley. These factors included political influence in planning, use of planning statutes and regulations which did not conform to the realities of the city of Harare,

financial constraints overwhelming both central and local government, uncoordinated development and planning, economic decline in the country, institutional incapacity and poor governance, mainly characterised by corruption and elite capture. The next chapter will present the findings relating to the lived experiences of the Hopley residents with regard to accessing water, sanitation, public transport and safety.

Chapter 7

SERVICES AND PROVISIONAL DILEMMAS IN HOPLEY SETTLEMENT

7.1 INTRODUCTION

In this chapter, I present the findings and discussion relating to the dilemmas faced by residents in Hopley in accessing water, sanitation, public transportation and safety. The focus is on the lived experiences of the residents in Hopley with regard to how they access basic services. The chapter addresses the research question: What are the dilemmas experienced by Hopley's residents in accessing basic services such as water, sanitation, public transportation and safety? This chapter presents the findings from the 450 household questionnaires completed by respondents from the study area (see section 4.3.4), including responses from in-depth interviews with Hopley's residents, observations and photographs captured during the transect walk, as well as files from the three-week Star FM programme – *Hopley in search of hope*. I first present the socio-economic profile of Hopley residents and proceed to highlight the challenges and insights of the lived experiences of Hopley's residents in accessing basic services through a focus on water, sanitation, public transportation and safety. The chapter ends with a section which presents a discussion on the lived experiences of the residents in Hopley with regards accessing basic services in the context of the good city postulated by Lynch (1981).

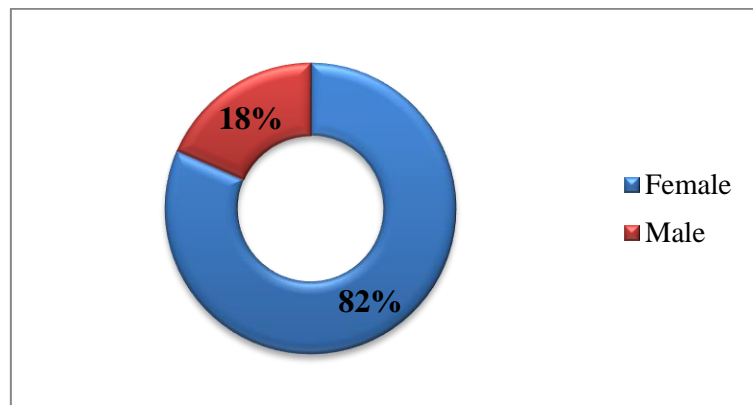
7.2 SOCIO-ECONOMIC PROFILE OF HOPLEY RESIDENTS

This section presents the socio-economic profile of Hopley residents. The socio-economic profile presented focuses on the respondent's gender profile, marital status, age, educational profile, employment, income and place of origin.

7.2.1 Gender profile

Figure 7.1 presents a summary of the survey findings related to the gender composition of the respondents. From this survey, 81.6% (N=367) of the respondents were female, while only 18.4% (N=83) were male. From the marital status profile of the respondents as presented in

Table 7.1, it was deduced that the high proportion of female respondents may be explained by the fact that women are the ones who have the responsibility to take care of the household chores, hence they spend more time at home and they were present during the survey. Since the questionnaire was only administered to an adult member of a family, women were the ones who were mostly at home and even when their male counterparts were present, it was the women who mainly had information relating to the household's access to basic services. This point is supported by the findings in section 7.3 which found that it is mainly women who engage in tasks such as collecting water for drinking and other domestic work.



Source: Author's own (2018)

Figure 7.1 Gender of the respondents in Hopley

7.2.2 Marital status

Table 7.1 presents the marital status of the respondents from Hopley. It highlights that most of the respondents (72.9%; n=328) were married. The proportion of the respondents which was not married and which could constitute the female-headed families was represented by 49 (10.9%) widows, 47 (10.4%) who indicated that they were single and lastly 26 (5.8%) divorcees.

Table 7.1 Marital status

Marital status	Frequency	Percentage
Married	328	72.9
Widowed	49	10.9
Single	47	10.4
Divorced	26	5.8
Total	450	100

7.2.3 Age of the respondents

The age of the respondents is presented in Table 7.2 it shows that the majority of the respondents (51.1%; n=230) were aged between 18 and 30. A fair proportion of the respondents (37.3%; n=168) were in the 31–40 age group, while 10% (n=45) were aged between 41 and 64. Lastly, only 1.6% (n=7) were at least 64 years old.

Table 7.2: Age distribution

Age	Frequency	Percentage
18–30	230	51.1
31–40	168	37.3
41–64	45	10
64+	7	1.6
Total	450	100

These findings are commensurate with the population figures for Zimbabwe which indicates that the country is dominated by a youthful population with 54.3% of the population within the 15–64 years age group (ZimStat 2018). However, this may be a result of clientism where the youth are patrons of the ZANU-PF and have benefited from the allocation of residential stands as was happening in most urban areas across the country (Mbiba 2017b; Muchadenyika 2015). This finding which relates to the dominance of a youthful population among the respondents in Hopley Settlement correlates with the sentiments of a key informant (planning officer) as highlighted in Chapter 6, section 6.5:

The allocations of most stands in Hopley were done and continue to be done on a partisan basis, formally and informally.”

7.2.4 Educational profile

Table 7.3 indicates that 7.33% (N=33) of the respondents have not received any formal education. The respondents with primary education constitute 17.11% (N=77). The majority of the respondents have received secondary education which is constituted of 47.78% (N=215) with Ordinary Level, while there is 23.33% (N=105) with a Zimbabwe Junior Certificate. Only two (0.44%) of the respondents have received tertiary education and 12 (2.67%) reached Advanced Level. These data shows that the greater proportion of the population in Hopley settlement is literate but lacks any tertiary education qualification. The prevalence of low levels of education is therefore associated with individuals who fail to make it up the social ladder.

Their vulnerability is thus increased as they end up opting for cheaper accommodation and housing alternatives which may even lack access to basic services.

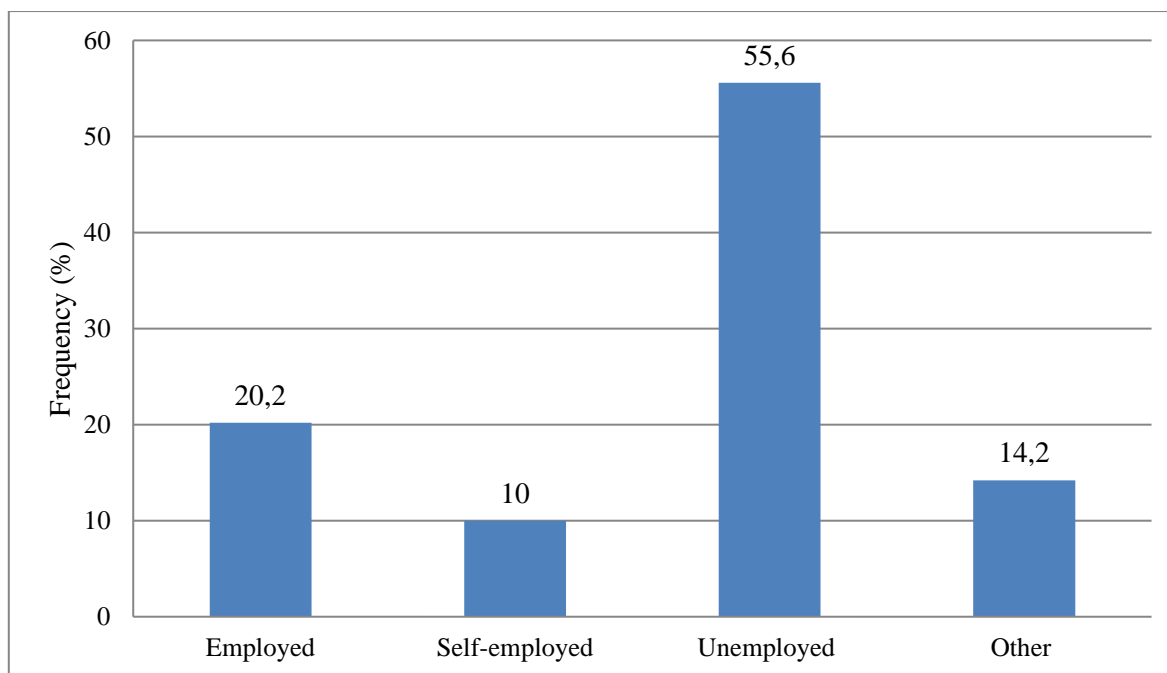
Table 7.3 Educational profile

Level of education	Number of respondents	Percentage
None	33	7.33
Primary education	77	17.11
Zimbabwe Junior Certificate ¹⁴	105	23.33
Ordinary level	215	47.78
Advanced level	12	2.67
Tertiary	2	0.44
Other	6	1.33
Total	450	100

7.2.5 Employment

The employment status of the respondents is presented in Figure 7.2 and it is shown that 20.2% (n=91) are employed, 55.6% (n=250) are unemployed, 10% (n=45) are self-employed, while 14.2% (n=64) did not disclose what they do. Upon investigation, it emerged that those who were not comfortable in disclosing their employment status and chose to shy away from answering the question were mostly sex workers. Overall, the residents mainly survive on informal economic activities. In this regard, the greater proportion of the respondents (55.6%, n=250) indicated that they are unemployed and engage in vending as a livelihood. The rest of the respondents highlighted that they engage in various forms of informal activities that range from carpentry, collecting waste for recycling, cross-border trading, hairdressing, prostitution, and any other menial work.

¹⁴ The Zimbabwe Junior Certificate is a qualification which is obtained in Zimbabwe following two years of high school.



Source: Author's own (2018)

Figure 7.2 Employment status

7.2.6 Income distribution

The mean monthly family income for residents in Hopley was US\$105.65 with a standard deviation of US\$110.20, yet the modal family income was a meagre US\$50 per month. The high unemployment rate among the respondents translates into low family incomes. Hopley is poverty stricken as the sample respondents revealed that at times their daily incomes may be about US\$1 which is far below the US\$1.90 per day which characterises extreme poverty for citizens in the Global South (Weller 2017:Online). These findings confirm the findings that Hopley is a poverty stricken settlement as articulated by the councillor on the Star FM programme – *Hopley in search of Hope* – where she reported that the majority of residents in Hopley are poor and do not have any meaningful form of livelihood and thus live from hand to mouth. The disposable incomes in this instance are very limited as residents largely live from hand to mouth, leaving them in a position where little is left to invest in infrastructure development or to contribute to their well-being. Commenting on their vulnerability, an official from *Dialogue on Shelter* indicated that it is a nightmare to imagine the situation in Hopley and how the residents manage in such circumstances. The official was intrigued by the contrasts between what the statutes say in terms of basic services provision and the realities on the ground, the latter being an indication of gross human rights violations.

7.2.7 Place of origin

The respondents highlighted that they came from different areas, while some came from Porta Farm which confirmed the assertion by Chitekwe-Biti (2009) that the first residents in Hopley in 2005 were the victims of forced displacement. It emerged that 26.4% (n=119) of the respondents originally came from Porta Farm and constituted the direct victims of Operation Murambatsvina as the government forcibly displaced them from Porta Farm and brought them to Hopley (Chitekwe-Biti 2009). The other respondents (52.7%; n=237) were from various areas around Harare and were not even direct beneficiaries of Operation Murambatsvina, as some explained that they were previously on the council's waiting list. A resident explained that:

When Operation Murambatsvina began and people realised that victims were being allocated stands, it became an opportunity even for those who were not impacted by the operation in any way. So not everyone who is here came from Porta Farm.

The other respondents (20.9%; n=94) stated that they migrated to Harare from different parts of the country. The findings relating to the period when respondents came to Hopley show that 40% (n=180) came to Hopley in 2005 and 2006, 25.8% (n=116) between 2007 and 2010, while a further 34.2% (n=154) started living in Hopley from 2011 to 2018. From these data, it emerges that most of the respondents came to Hopley between 2005 and 2006, which coincides with the Operation Murambatsvina, and subsequently Operation Garikai/Hlalani Kuhle. The increased occupation of Hopley post-2010 may be attributed to the economic performance which was beginning to recover and resulted in more people migrating to Harare, yet the City of Harare was failing to accommodate this growing urban population (Matamanda 2019; Muderere 2011:17).

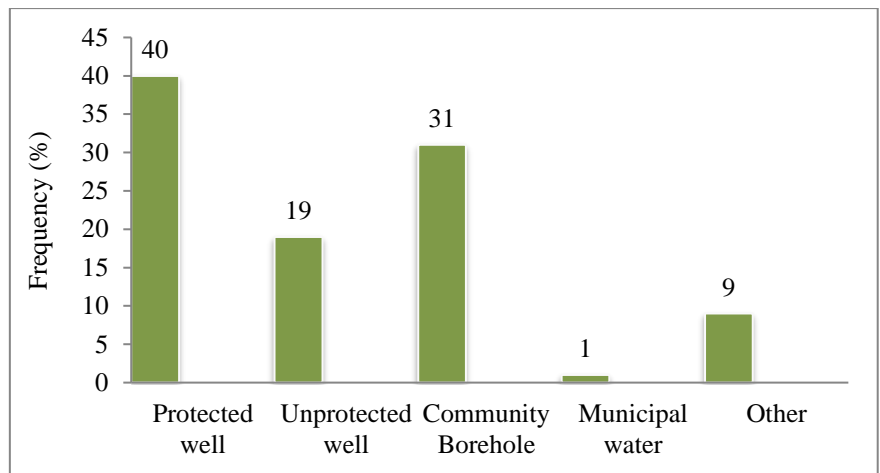
7.3 ACCESS TO WATER: EXPERIENCES AND REALITIES FROM HOPLEY

This section presents the results and findings on the experiences and realities of access to water as experienced by the Hopley residents.

7.3.1 Water sources in Hopley

Residents in Hopley access water from different sources. The major water source which the residents rely on is groundwater (Figure 7.3). Somehow, this relates to the situation in Durban,

Johannesburg and Cape Town in South Africa where the local authorities have acknowledged the utility of groundwater in the water supply (Armitage et al. 2015). Although in the case of South Africa, there are concrete plans which guide, promote and facilitate the use of alternative water sources in human settlements (Carden et al. 2013).



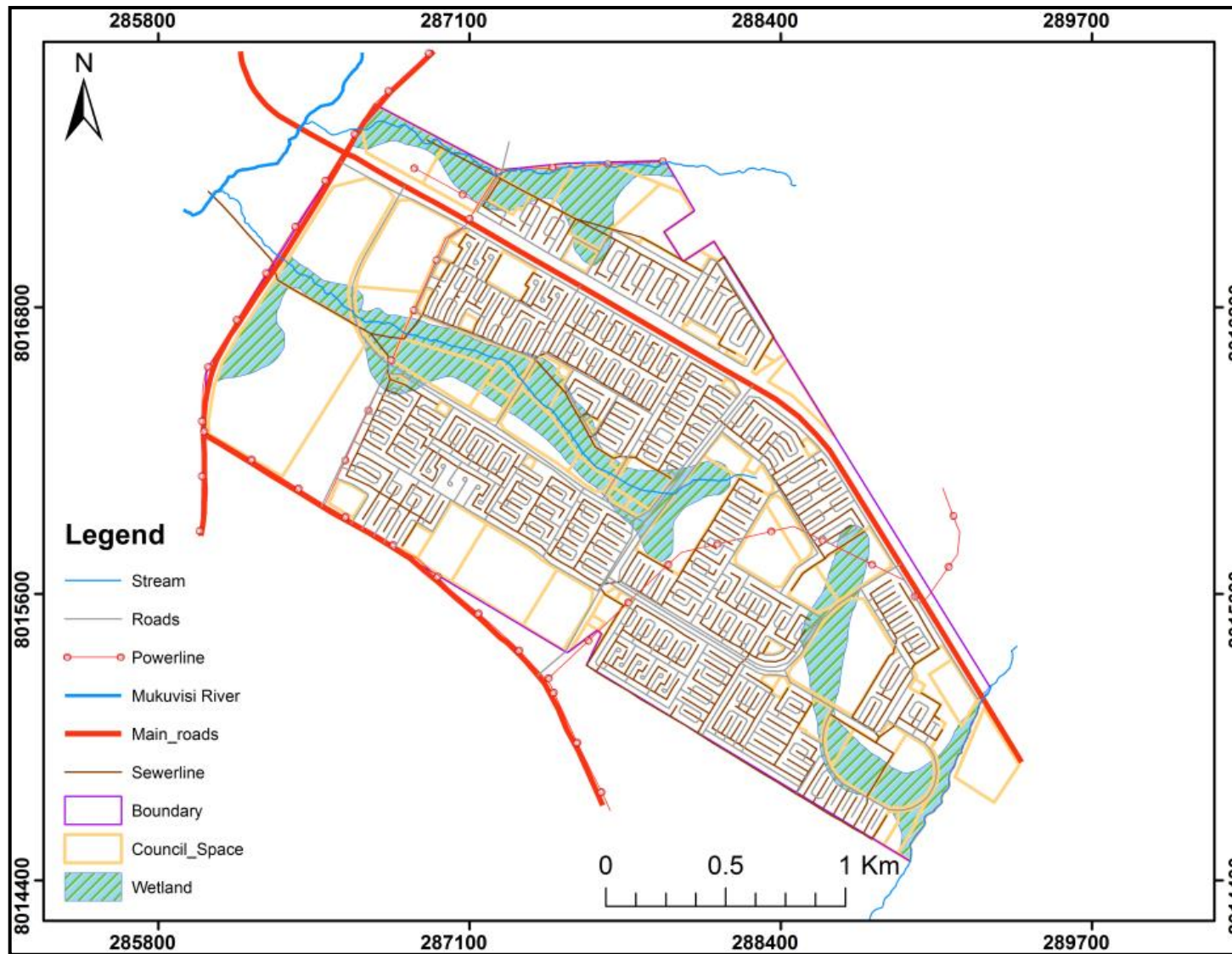
Source: Author's own (2018)

Figure 7.3 Sources of water used by Hopley residents

The data presented in Figure 7.3 show that the majority of the respondents use protected wells, constituting 40% (182), followed by 31% (141) who used the community borehole. It emerged that 19% (N=87) of the respondents acknowledged that they accessed their water from unprotected wells, while 9% (N=38) said that they used other sources. A mere one percent (two respondents) claimed that they used municipal water. From the in-depth interviews, it emerged that the other options to access water for drinking included buying the water (for those who could afford it), harvesting rainwater during the rainy season, fetching water from donor tanks¹⁵ and the dam which is an open source of water.

In Hopley, underground water is extracted in different ways. Yet, inasmuch as groundwater seems to be in abundance across the settlement due to the fact that part of Hopley Settlement sits on a wetland (Figure 7.4), there are some places where the ground is very rocky, thus making it difficult for the residents to have access the groundwater.

¹⁵ This refers to water bowsers that bring drinking water to the community. These were from various NGOs, which include UNICEF.



Source: modified from City of Harare (2000)

Figure 7.4 A modified map of Hopley showing the wetland which makes groundwater to be available in most parts of the settlement

From the transect walk in Hopley, it could be observed that there were only two points where there were boreholes across the settlement. Both were solar powered. The first one was not open to the residents as it is on a school property which was still under construction (Figure 7.5). The other borehole was located in Zone 4 and is controlled by community leaders who monitor the users, hence making it difficult for some residents to access water from this facility, particularly those from other zones. This behavior shows how resources are controlled by certain individuals and in this instance, the power is exercised at the local level by certain individuals who are mostly affiliated with the ruling party. These are the individuals described by Lynch (1981) as having the responsibility to control the events within a particular settlement, while Young (1990) described this as marginalisation where certain individuals are denied access to some resources, thereby they are labelled as being marginalised. Marginalisation manifests in this instance because access to water is a constitutional right which is espoused in the Constitution of Zimbabwe (Government of Zimbabwe 2013).



Source: Author's own (2018)

Figure 7.5 The solar system which powers the borehole supplying water to the school under construction in Hopley

Commenting on the water obtained from the tanks as indicated by some respondents, Masimbi*, who has been a resident in Hopley since 2009, had this to say:

As much as some residents highlighted that they fetch water from the donor tanks which bring water in the settlement, this is not a consistent supply of water. Unlike back then, the council and some NGOs were more concerned about our welfare and they used to make much effort to

ensure that we have access to potable water. Unfortunately, of late the tanks come approximately once a fortnight and it is always a very big hassle to fetch the water, hence one cannot really count on such a water source.

During the transect walks, I observed that residents accessed water from different types of wells which may be described as either protected or unprotected wells. The description of a protected well, according to the residents in Hopley, leaves a lot to be desired. First, there were some protected wells (see Figure 7.6) which conformed to the provisions of the PHA. These protected wells allowing residents to access potable water as they are far from the pit latrines minimising the chances of contamination of the water in the wells; hence ensuring that households have access to a safe water supply.



Source: Author's own (2018)

Figure 7.6 Strategically situated protected wells in Hopley

While some wells were identified by the respondents as protected, yet they were in actual essence simple holes which were dug until the water table was reached, then water would be extracted from such wells (Figure 7.7). Others were partially covered, while some were developed in such a way that they somehow ensured that the water was safe and not contaminated, especially when it was raining. Moreover, some of the wells were susceptible to rainwater runoff entering the uncovered wells (Figure 7.7). The residents in Hopley refer to both covered and uncovered wells as 'protected wells'. These water sources used by the residents fell short of the description of improved water sources described by the WHO and UNICEF (2017:8).



Source: Author's own (2018)

Figure 7.7: Shallow wells which are left open and or has a lid to cover it, referred to as ‘protected wells’

Therefore, the water sources used in Hopley clearly shows a situation where residents do not have access to improved water sources as identified by the WHO and UNICEF (2017:8) who prescribe that improved water sources have to be protected wells unlike the unprotected wells shown in Figure 7.8.



Source: Author's own (2018)

Figure 7.8 Examples of unprotected wells used by residents in Hopley

7.3.2 Navigating the water scape in the face of scarcity

An intrinsic component of water supply is its reliability and availability. Water reliability is a measure of how easy it is for the residents to access the water when they need it (WHO & UNICEF 2017:8). Such a measure is critical in determining the fit of the settlement as well as promoting human well-being. From the lenses of the good city theory, the aspect of ‘fit’ comes

into perspective here as the reliability and availability of water enhance human well-being within the settlement (Lynch 1981). Moreover, the reliability of the water supply is also important in establishing the vitality of the settlement, since the low reliability of water sources puts residents in a precarious situation (Satterthwaite 2016a:100). Table 7.4 summarises the levels of water reliability among residents in Hopley, based on the sample who responded to the survey questionnaire.

Table 7.4 Reliability of water

Reliability of water source	Frequency	Percentage
Very bad	51	11.3
Poor	180	40
Good	117	26
Excellent	96	21.3
No response	6	1.4
Total	450	100

The data presented in Table 7.4 shows that 40% (N=180) of the respondents indicated that the reliability of the water sources they used was poor, while 11.3% (N=51) identified the reliability of their water sources as being very bad. On the other hand, 26% (N=117) highlighted that the reliability of the water source was good, with a further 21.3% (N=96) who indicated that the reliability of the water source was excellent.

The respondents (40%) largely acknowledged that the reliability of the water source was poor in Hopley. This ultimately translates into a situation where there is water scarcity because if water is not reliable, then it means the residents are left without water for some time and they have to improvise or limit the use of the water which they have. I found that the increasing population in Hopley over the years has been attributed as the driving factor for the decreasing levels of groundwater which results in drying of wells from around August until early December when the rainy season commences. In explaining the poor reliability of water sources, one of the residents narrated that:

During summer the situation is worse since almost all the residents in Hopley depend on groundwater and during this period the water levels are very low which makes the groundwater to be erratic.

On the same note, Amai Matwins*, a widow who has been residing in Hopley since 2013, explained that:

We share the water since there is no point in denying those who do not have wells on their stands. But over the years, since I started staying here in 2011, I have to deepen the well every year during the dry season. This is also attributed to the fact that the demand for the groundwater is increasing and the wells also dry quickly now around August, hence making it difficult for us to access water readily before the rains come in late November or early December.

The point raised by Amai Matwins* is that the concentration of people in Hopley has impacted on the water levels as water is a finite resource. In the absence of reticulated water systems, residents have simply improvised through digging shallow wells. This confirms the observations by Davis and Hirji (2014) who noted that abstraction of underground water in Zimbabwe is not monitored, yet it is another source of water supply which can sustain the city. I also found that water extraction in Hopley is not monitored, a situation which complicates groundwater management. However, there are some areas in Hopley where the ground is very rocky and it makes it very difficult for the residents to dig shallow wells because they end up having unsuccessful dry wells. Masimbi* reported that these pits from the unsuccessful wells end up being hazards where water collects when it rains and become breeding sites for mosquitoes. Children have also been reported to have fallen into such pits and get injured as they often play close to the holes.

Figure 7.9 shows one of the research assistants, who would not step any closer as the well was too deep and she was afraid of falling in, indicating the danger posed by such wells.

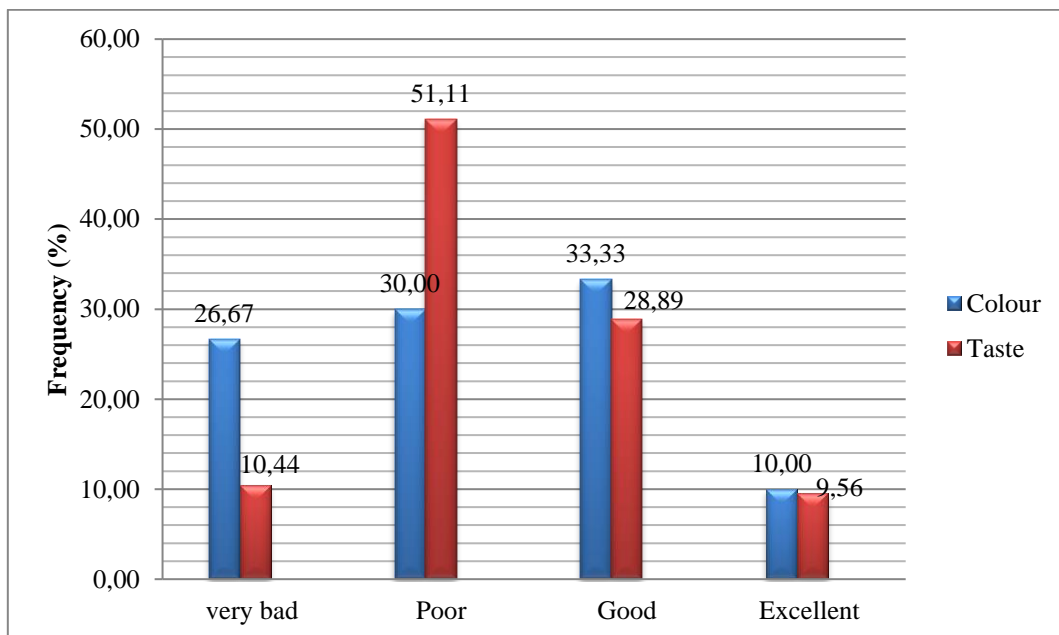


Source: Author's own (2018)

Figure 7.9 *Children playing around a dry well*

7.3.3 Water quality

The responses from the sample respondents with regard to the colour and taste of the drinking water were explored. Potable water has to be clear, as well as having a good taste such that it sustains human well-being (Mudzingwa 2017). Figure 7.10 summarises the data with regard to the views and experiences from the sample respondents in relation to the colour and taste of the water sources used by households in Hopley.



Source: Author's own (2018)

Figure 7.10 Sample respondents' perspective towards the water supply in relation to colour and taste

Figure 7.10 shows that the majority of the respondents (51.11%; N=230) lamented that the taste of the water was poor, followed by 10.44% (N=47) who confirmed that the taste of the water was very bad. A further 28.89% (N=130) indicated that the taste of the water was good, while the remaining 9.56% (N=43) rated it as being excellent. In explaining the poor taste of the water, most of the residents indicated that it was mainly the proliferation of pit latrines in the area which has resulted in the increasing poor quality of the underground water. The extracts from the in-depth interviews with the respondents in Hopley revealed that residents were not satisfied with the taste of the water:

When we first came here in 2006, the taste of the water was okay as one would literally drink it without thinking twice, but of late the increase in population and mushrooming of pit latrines on almost every stand has greatly resulted in the contamination of the underground water such that its taste is no longer the same with that of 2006 when we arrived here ... besides the taste,

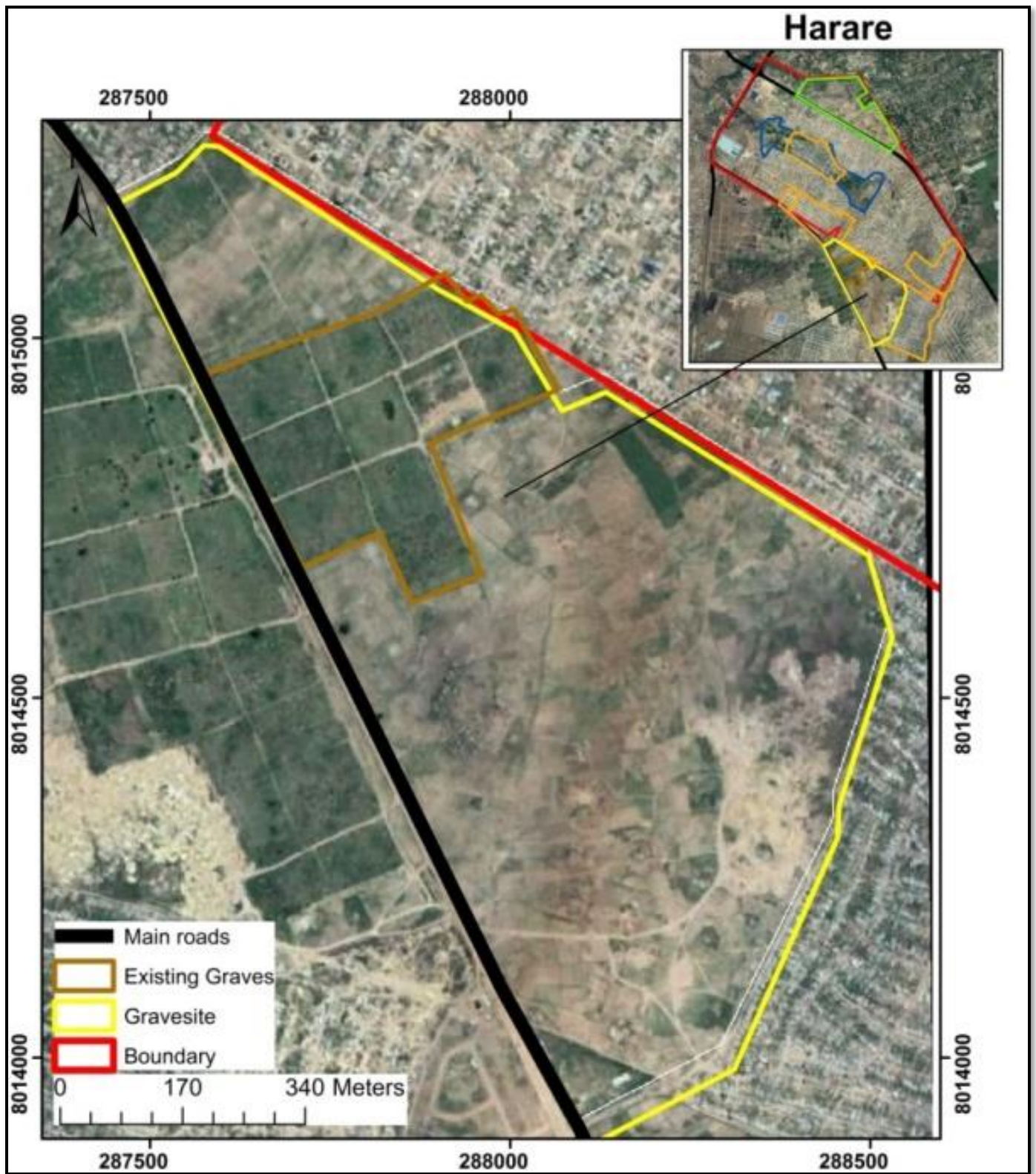
the water is simply contaminated and will make you sick if you drink it. [Widow who has been living in Hopley since 2010, she is a former employee of the City of Harare.]

The water we drink *inovavira, ine kasalty* taste meaning it is contaminated. But we have no option ‘buuutt’ to just drink the water like that. [Male respondent, who has been living in Hopley since 2013.]

With regard to the colour of the water, the data presented in Figure 7.10 indicates that 10% (N=45) regarded the colour of the water to be excellent, while 33.33% (N=150) agreed that the colour of the water is good. On the other end of the spectrum, a majority of the respondents showed dissatisfaction with the colour of the water as evident from 30% (N=135) who noted that the colour of the water they accessed was poor and an additional 26.67% (N=120) who related that the colour of the water was very bad. A respondent commented:

Sometimes the water from the wells is dirty and has a milky white colour which makes it difficult to drink or use for other domestic chores such as doing one’s laundry because of its thickness. In such instances, we are then compelled to source water from the boreholes or go to the farm.

Another respondent further iterated that there is a part of Hopley which is close to the cemetery and they hinted that this might be a source of contamination of the groundwater owing to decomposing bodies in the graves (Figure 7.11). The PHA, in section 85(m), described cemeteries and burial places to be nuisances in the water system because of the health implications associated with decomposing human bodies which have the capacity to contaminate groundwater. From this, it can be concluded that the colour and taste of the water which the residents access in Hopley is poor and at times falls short of the expectations of national and international standards on safe, potable water as espoused in SDG 6 (United Nations 2016).



Source: Google Earth (2018)

Figure 7.11: Part of Hopley settlement in close proximity to the cemetery

Overall, the study concluded that the quality of water which the residents in Hopley access are very poor. Another point which was raised by the residents, as well as some key informants, was that there could be possible contamination of the groundwater due to the close proximity of shallow wells and pit latrines on the stands as well as on adjacent stands (Figure 7.12). During the transect walks, I noted proximity between the wells and toilets and septic tanks. This situation contradicts Circular No. 70 which stipulated that septic tanks must be only erected in low-density settlements. Gogo Makanaka* explained:

The problem is the stand sizes are so small and almost every stand has a pit latrine and shallow well. This situation results in groundwater being contaminated as there are instances where neighbours do not coordinate in situating their shallow wells and pit latrines.



Source: Author's own (2018)

Figure 7.12 The close proximity of a pit latrine (on the left with the cracked wall) and a shallow well on the right

The same point was iterated by a lecturer from the University of Zimbabwe on the Star FM series – *Hopley in search of Hope* – where she reported that the residents in Hopley were drinking contaminated water. She added that some studies undertaken by the Institute of Environmental Management at the University of Zimbabwe found that the groundwater in most parts of Harare's high-density suburbs and emerging settlements, including Hopley, contained some faecal matter. In Hopley, this contamination has been explained by many respondents as a result of the proximity of shallow wells and pit latrines.

7.3.4 Burden of accessing potable water in Hopley

The other dilemma confronting residents in Hopley with regard to accessing water was the cost of water which the residents have to shoulder. The dilemmas of increased costs were iterated by Khan and Javed (2007) who confirmed that in instances where residents have limited access to improved water supplies, they end up paying more to water vendors. An interesting fact was that there were some residents who received utility bills from the City of Harare, yet the council has not made any effort in providing water to the settlement. Gogo Makanaka* indicated that she owed the City of Harare US\$250 for services which were never delivered. Likewise, Gogo Mufaro* raised the same point, noting that she owed the City of Harare US\$400 for rates. In addition to these amounts which residents like Gogo Makanaka and Gogo Mufaro have to pay to the council, they still have to pay US\$1 per day to the local leaders in Zone 1 where the communal boreholes are situated so that they can access water. Residents are thus left with no option but to resort to the shallow wells, as Gogo Mufaro* narrates:

We just make use of the water from the well regardless of its contamination. I cannot afford to buy or access tap water. Where can I get the money from? But the water is really bad because earlier on my 5-year-old daughter got really sick and she was passing out stool with blood. She was admitted in hospital for a week and it was dysentery which had infected her.

The same point was also raised in an interview with a respondent from an NGO which engages in some settlement upgrading work in Hopley. He related that:

Most areas in Hopley do not have access to reticulated water. Some organisations have come to help alleviate this problem but their efforts have been futile. However, the quality of the water for those who can access it is very poor. Residents (those who can afford) are left with no option but to buy the water. This is an additional cost incurred by the residents considering that such water is very expensive.

Although a significant number of the households (31%) indicated that they accessed drinking water from the communal borehole, not everyone had access to this water sources as it is controlled and access is restricted due to the payment which has to be made for residents outside Zone 2 where the borehole is situated. In an interview with Amai Matwins, a divorcee living in Hopley with her two children, she narrated her experiences in accessing water to drink as follows:

Unotohurira mugomo wemvura otherwise hautowane mvura nokuti kuswerero chera mvura kunorwadza. (I engage in prostitution so as to get a bucket of water, otherwise I won't have water to drink because it is so taxing to spend the greater part of the day trying to access water]

The average distance travelled by residents in Hopley to access potable water is 553 m to collect water. Yet, according to ZimStat (2018), the maximum distance an individual should travel to access water should not exceed 500 m if the water is to be considered as being accessible. Moreover, it also emerged that the mean time taken to collect the water for drinking was 53 minutes. The time taken to fetch water surpasses the 30 minutes maximum period stipulated by Mudzingwa (2018:10), as well as the WHO and UNICEF (2017:8), as being acceptable for a round trip to collect water. In this regard, the burden of accessing water is placed on the shoulders of women and the girls who spend much of their time collecting water for the household (Figure 7.13). Collecting water at this communal point is not an easy task considering the waiting time, as well as the distance some residents have to travel from the other zones since the borehole is in Zone 1. In describing their woes, residents who were interviewed pointed out that:

You have to wake up at around 5 am, but one will eventually fetch the water around 10 am which is approximately 5 hours spent in trying to fetch the water.

Although we can access water from the black tanks, these are far from our homes hence it's a great burden on my wife to collect the water. So, at times when I have the money, we simply buy the water from those guys who sell it after fetching at the boreholes.

The communal borehole which have three tanks as shown in Figure 7.13, was meant to serve the whole community of over 7 000 households. As a result, the time spent waiting to fetch the water is productive time that is lost and constitutes unpaid work which women need to bear. Therefore, most residents find other alternatives to access water, which include buying from water vendors, depending on whether they have the money to spare.



Source: Author's own (2018)

Figure 7.13 *The communal borehole (three black tanks)*

Besides the financial burden associated with accessing potable water, the residents in Hopley also pointed out that there are health impacts which they experienced due to the water scarcity. Considering that water is life, its absence significantly affects human well-being as it is described by Lynch as a vital resource which enhances the performance of a settlement (Lynch 1981). The study established that the burden of collecting water for drinking is heavily placed on the shoulders of women and children who have to endure carrying water in 20-litre (approximately 20 kg) containers which they have to balance on their head (Figure 7.14). Most of the women complained that the task of collecting water affected them in multiple ways, which include back pains, emotional trauma and constant headaches. It also emerged that the water scarcity had implications on women's personal hygiene, especially when they are on their periods. The daunting task of carrying water on their heads was regarded as too much, especially for the girls who assisted their mothers in the house. A respondent indicated that:

Life is really tough for me, I have to make sure that there is enough water for all the domestic uses. I do not have a shallow well, hence even the water for bathing and washing the dishes I get it from my neighbours. The main challenge is getting the water to drink which I have to endure the long distance every 2-3 days carrying the 20-litre bucket. My husband doesn't even assist in collecting the water and my children are still small.

This quotation shows how water scarcity becomes a burden for girls and women who spend much time collecting the water, as well as having a strain on their health. Figure 7.14 shows young girls carrying 20-litre buckets they collect from the black tanks. This is a compromise on the citizens' right to potable water which has to be accessible and not cause a strain on the

users as stated in the Constitution of Zimbabwe, PHA and SDG 6 (Government of Zimbabwe 2013).



Source: Author's own (2018)

Figure 7.14 Young girls carrying 20-litre buckets of water on their heads

The other water dilemma affecting the residents in Hopley was related to individuals who survived on recycling wastes. Figure 7.14 shows a lady washing plastics that she has collected for recycling purpose. The plastics are collected from different areas which include dumpsites, hence some of them will first have to be washed before she can go and sell them. The woman explained that the process of cleaning the plastics requires a lot of water, therefore the water scarcity in Hopley is a challenge for her.



Source: Author's own (2018)

Figure 7.15 A woman washing plastics which she collects for recycling.

7.4 SANITATION PROVISION IN HOPLEY

This section presents the lived experiences of the residents in Hopley with regard to their access to sanitation facilities.

7.4.1 Sanitation systems and facilities used in Hopley settlement

Sanitation is one critical component which supports the vitality of any settlement (Mmom & Mmom 2011; WHO & UNICEF 2017). The various statutory and legislative frameworks for settlement development in Zimbabwe have emphasised the significance of sanitation as a building block to the creation of sustainable settlements (see section 5.4). It is indicated that an improved sanitation system is supported by the existence of a functional and vibrant water infrastructure which, unfortunately, is not existent in Hopley (Banana et al. 2015; Satterthwaite 2016a; WHO & UNICEF 2017). The absence of a sanitation system in Hopley was captured in the interviews with residents who showed their disgruntlement with the absence of a sanitation system in the settlement, highlighting that the government is responsible for the mess they are in:

We are the less-privileged citizens in Harare. We live here where the government simply dumped us and made no effort to connect us to the reticulated sewer. There is virtually no development in this place.

The government has failed us; they have shown that they do not care about our welfare by leaving us to reside in this place devoid of local services for all these years.

The absence of reticulated sanitation services in Hopley is a huge compromise on the well-being of the residents in the settlement. As outlined in Chapter 5 section 5.4, the statutes in Zimbabwe recommended the development of reticulated sewer infrastructure as being the best practice in enabling sanitation provision in human settlements. Circular No. 70 of 2004 specifically stated that high- and medium-density suburbs must be connected to reticulated sewer systems if these suburbs are to be considered habitable. The PHA stresses that the absence of a sanitation system in a settlement is a nuisance, as it compromises public health.

Table 7.5 Type of toilet used by members of the households

Type of toilet used	Frequency	Percentage
Pit latrine	189	42
Sit down with a flush	152	33.78
Squat with flush	65	14.44
Bucket	3	0.67
Other	41	9.11
Total	450	100

The disposal of human excreta and wastewater are critical for any sanitation systems, especially considering that human excreta are a source of infection (Satterthwaite 2016a). Disposing excreta must be done in such a way that it will not pose a health hazard or spread diseases such as dysentery, typhoid and cholera. The sanitation system is instrumental in ensuring the proper disposal of human excreta in any settlement (WHO & UNICEF 2017). The absence of a reticulated sewerage system in Hopley has left residents with no alternative but to make use of a decentralised sanitation system which was described by one key informant as ‘domestication of waste’. The disposal of human excreta in this way is thus associated with various challenges which include contamination of groundwater as explained by Satterthwaite (2016a). The absence of a sanitation system in Hopley was explained in the following words by Achimwene*, a man who lives in Hopley with his wife and two children:

We are a neglected people, the government doesn’t care about us, and they only need us during election times. The state of sanitation here is totally dysfunctional, rather it’s not there. We survive with makeshift toilets which expose us to many problems as sewerage is in close proximity to our houses and flies are so common – they just fly around and this is a threat to public health.

In relation to the absence of a sanitation system and use of makeshift toilets as highlighted by Achimwene*, the findings from the survey showed that domestication of waste was made possible through the use of various sanitation facilities which included open defecation, buckets, and pit trines. Table 7.5 indicates that 42% (N=189) of the respondents used pit latrines, 33.78% (N=152) made use of a sit-down toilet with a flush, while 14.44% (N=65) used a squat type of toilet with a flush. Only 9.11% (N=41) indicated that they used other

sources of sanitation. The other sources of sanitation used by the residents include the use of ‘flying toilets.’¹⁶

7.4.2 Disposal of human excreta through septic tanks

Although the majority of the residents (48.22%; N=217), indicated that their households made use of a flush toilet, it was observed that the flush system is a makeshift and does not consist of all the components necessary to dispose of the excreta (Figure 7.16). Users have to bring water in a bucket which they use to flush their excreta. This is mainly a result of the city council and their planning standards which recommend and approve wet and centralised sanitation systems in urban areas as being the norm. From the transect walks, I observed that there were instances when the wastewater and sewage were simply flowing outside through a pipe with no system to transport it to any treatment site. Such unsustainable and hazardous disposal poses more than a nuisance as stipulated in the PHA and is a serious health hazard.



Source: Author's own (2018)

Figure 7.16 On the left, a sanitation facility on one of the stands showing the interior with only a seat but no water tank to use for flushing and on the right, showing raw sewage flowing to the outside

Although decentralised sanitation systems can be useful in disposing human excreta, their construction is important to ensure their functionality and fit in fulfilling their intended purpose (Banana et al. 2015; Chirisa et al. 2016). A lecturer at the University of Zimbabwe interviewed on Star FM's City Watch series – *Hopley: In search of Hope*, described the existence of septic tanks in Hopley as a disaster. Her argument confirmed that of Satterthwaite (2016a), that due to the small stand sizes there is no place for excreta to be treated on site. Rather there is a need

¹⁶ Flying toilets are basically the same as open defecation because residents defecate in plastic bags which they tie and throw in the streets. Such a system is prevalent in the Kibera slums in Kenya.

for a reticulated sewer system. Consequently, the situation in Hopley reveals sanitation systems that compromise human well-being as they do not properly dispose of the excreta. Residents who were interviewed narrated as follows:

Sanitation is one of the bigger challenges that people are encountering in Hopley. It is being caused by both the residents and lack of services within the area. There is the use of self-made toilets which are not safe for the people within. There are many pits being dug without them covered properly and these act as breeding sites for flies, as well as being hazardous to children and even the adults who risk falling into such pits. [Gogo Moyo*, who has been residing in Hopley since 2012.]

Sewer is the major challenge here in Hopley. The septic tank on my stand but it was not constructed adequately hence there are instances when water overflows and it just flows in the streets. The septic tank is also responsible for the contamination of groundwater. Above all, the smell coming from this system can be overpowering at times because I could not afford the cost of putting a slab on the septic tank. [Mamoyo*, a widow who lives in Hopley and operates as a vendor in the area selling fruits and vegetables.]

Most of the septic tanks around here are just holes which are dug and covered. Some are even less than one metre deep and you can only imagine what kind of a septic tank that will be. [Joromiyo*]

Figure 7.17 shows a toilet under construction, where the ‘septic tank’ is usually just a hole that is dug and is not built to contain the excreta in the hole. In some instances, the hole is simply covered by plastic or any other makeshift materials.



Source: Author's own (2018)

Figure 7.17 *On the left, showing a toilet under construction with a hole to contain the excreta, and on the right, the hole is temporarily covered by plastic or other materials*

The challenge with the shallow holes that are constructed to serve as septic tanks is that they fill up quickly and the householders are often clueless as to how best to manage the pits when they are full. Residents from Hopley who called in during the Star FM programme, *Hopley: In search of Hope*, reported that some of the pits dug for the toilets are less than one metre deep and when it rains, they see worms swimming in the sewage. This confirms the observations during the transect walk where it was noted some pits filled up and faecal matter exposed without being covered (Figure 7.18). In some cases, it was observed that the excreta was simply directed into the street where it would just accumulate, replicating the situation which prevailed during the Industrial Revolution where raw sewage could be seen flowing on the streets (Hall 1996:13).



Source: Author's own (2018)

Figure 7.18 *Sewage flowing onto the street and children are seen playing in the background in close proximity to the sewage water*

The study also found that there are some households who have managed to construct septic tanks which to some extent enables the sewage to be disposed of in a safe manner. However, the challenge facing some of these residents is the nature of the access roads within Hopley which makes them impassable in certain areas. In reporting on the nature of the roads in Hopley Settlement, an official interviewed on the Star FM programme highlighted that “*the settlement is intertwined that you cannot even manoeuvre around it, there is a need for proper roads in Hopley*”. Similarly, in an interview I had with Gogo Makanaka* she echoed her sentiments blaming the state for the roads in hampering the emptying of septic tanks:

I have a septic tank on my stand and if it is full I need \$15 to have it drained and emptied so that I can continue to use it again. However, this was only possible and practical back then when I had moved to Hopley around 2006. At the time there were few stands unlike now where the stands are closely packed to each other thereby making it extremely difficult for the vans to come and remove the sewerage from the tanks when it is filled up.

The very small stand sizes also affect the domestication of human excreta. According to the lecturer from University of Zimbabwe, the minimum stand sizes where septic tanks are allowed – which is in line with the provisions of Circular No. 70 of 2004 – only stand sizes with a minimum size of 2 000 m² are allowed to have septic tanks. The extract from an interview with Mamoyo,* a resident from Hopley, confirmed the problem of stand sizes. In her words she recounted that:

Stand sizes are small, hence it becomes difficult to have a septic tank and well on the stand because it is recommended that the two be at least 10 metres apart. But this is not possible in Hopley.

The same also applies to another respondent who stated:

Here we use a pit latrine which consists of a simple hole which we dig and cover with a concrete slab which we got from UNICEF. When the pit is full, we simply dig another one but the size of the stand is constraining as there is limited space to dig. The situation is dire during the rainy season when water levels rise and so does the material in the pits. Worms will be visible in the toilets and we make use of ashes to cover them but this is only a temporary measure.

Figure 7.19 shows an example of domestication of sewage in Hople where such a pit is filled up and faecal matter is exposed to the surface, posing a health hazard to the residents.



Source: Author's own (2018)

Figure 7.19 Sewage a pit filled up with faecal matter exposed to the surface

7.4.3 Open defecation and flying toilets

Open defecation by children and adults is common in Hopley, while there are some individuals who make use of flying toilets. Open defecation is mostly practised by adults at night. As illustrated by the extracts from the interviews below, the respondents expressed their concern

over open defecation in Hopley which is characterised by flying toilets disposed of in the streets as shown in Figure 7.20 and 7.21.

The respondents highlighted that:

The sanitation system here is in a sorry state. There are some kids who simply mess in the streets. Then there are some adults also engage in open defecation at night. The situation is then aggravated when it rains and all the excreta is washed into the wells, it's also how the wells get to be contaminated.

Hopley haiite, vari kumusha vatori kumafuramhepo havo. Kamuraramiro kedu kuno kakatooma nokuti tsvina inongooneka pose pose kunyanyisira vana vadoko havatoshandisi zvimbuzi. [Living in Hopley is not a pleasant thing. Those who are living in rural areas are actually blessed as they are living in clean environments. Here, life is tough because it's a common sight seeing faeces, especially for children resort to open defecation.]

It is spaces like these shown in Figure 7.20 that some residents use for open defecation. Children normally can be seen defecating during the day, while adults use the cover of the night. Areas such as these are thus characterised by the stench, and worse still, when it rains the excreta is washed and has been identified by some respondents as contaminating unprotected wells.



Source: Author's own (2018)

Figure 7.20 *Space used for open defecation*

The respondents also stressed that the disposal of children's faeces also poses a major challenge in Hopley. The major challenge was among those who used disposable diapers. These diapers are dumped along with any other waste, yet these have to be disposed of in an environmentally friendly manner (Figure 7.21).



Source: Author's own (2018)

Figure 7.21 *Dumping site in Hopley*

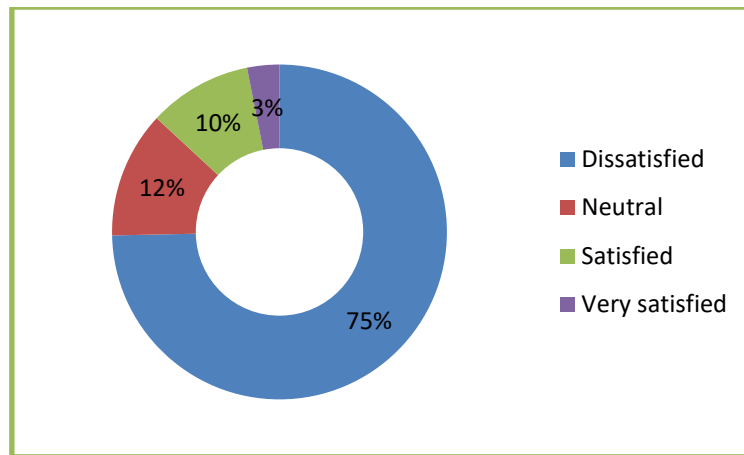
Privacy is an issue associated with sanitation facilities. As adequate sanitation infrastructure is characterised by privacy which allows the users to use the system without being exposed to elements of weather such as rain, or without fear of losing their dignity. However, it emerged that some sanitation facilities in Hopley do not provide the users with the much-needed privacy, as they are constructed with makeshift materials which in some cases include a simple cloth. Such facilities expose the users to adverse weather elements such as rain, as well as lacking privacy (Figure 7.22).



Source: Author's own (2018)

Figure 7.22 *Material used to make a toilet more private*

The respondents' satisfaction with the sanitation facilities they use in Hopley is presented in Figure 7.23.



Source: Author's own (2018)

Figure 7.23 Citizen's level of satisfaction with sanitation facilities in Hopley settlement

It was indicated that 75% (N=336) of the respondents were not satisfied with the sanitation facilities they had access to. This situation confirmed my observations of the state of sanitation in Hopley. I observed that in most instances wastewater would be flowing in the streets as well as sewage from ill-constructed septic tanks. The decentralised sanitation systems are far from ideal in Hopley as it was evident of the nuisances, including the odour and stench which could be overpowering.

7.5 TRANSPORTATION CHALLENGES AND INSIGHTS FROM HOPLEY

Transportation is very critical in enabling mobility within settlements. It is through this mobility that citizens are able to access goods and services outside of the settlement, for example, going to work, school or even to the market place. The public transport system ought to be flexible, convenient and safe for users. However, this is not the case with Hopley where residents experience various challenges associated with public transport.

7.5.1 Kombis as means for public transport

As explained in Chapter 2, the public transportation system is composed of three components, namely vehicles, guideway and operations plan (Dumba 2018:273). With regard to the vehicles, residents in Hopley make use of different means which include commuter

minibuses¹⁷, cycling and walking. The results from the survey showed that most of the respondents (94%, n=423) indicated that they used minibuses as a means of transport. The remaining 6% used other alternative means of transport which included cycling and walking, as well as 1.33% (n=6) who confirmed that they used their private cars. The situation in this settlement shows that the residents are heavily dependent on private transport services. The heavy dependence on motorised vehicles is also attributed to the location of Hopley which is approximately 15 km from the CBD, thus making it difficult for residents working in the city centre to walk or cycle to and from work. Figure 7.24 shows a minibus as the major vehicle used to support the public transport system in most urban areas across Zimbabwe.



Source: Author's own (2018)

Figure 7.24 A commuter minibus locally referred to as a kombi

Inasmuch as the majority of the residents indicated that they used minibuses, these were not readily available as residents first have to walk to Chitungwiza Road for the nearest bus stop. The respondents indicated that, on average, it takes them 25 minutes to get to the nearest point where they can board a minibus, with a standard deviation of 10 minutes. The respondents also commented that they have to wait for around 45 minutes before they can board. This was explained by the fact that most of the minibuses will be coming from Chitungwiza and the residents from Hopley will be hiking and at times the minibus will be full. In this instance, productive time is lost as residents wait for public transport. Gogo Kunaka* highlighted that the state of the roads in Hopley makes it difficult for the minibuses to get into the settlement

¹⁷ Minibuses (a 15-passenger-seater vehicle) were popularised in Zimbabwe during the mid-1990s, following the deregulation of the public transport sector in the country and the entry of private players (Mbara, Dumba & Mukwashi 2014).

as drivers complain about the narrow and unsurfaced pot-holed roads. Such a situation contradicts the ideals of the RTCPA which envisages accessible human settlements as well as convenience to the commuters.

7.5.2 The guideway in Hopley

In addition to the minibuses, the transport infrastructure in Hopley is in a sorry state and it was identified as the major limiting factor to the provision of a public transport service to the residents in the settlement. The first challenge with regard to public transport in Hopley is the guideway which is characterised by roads which are not serviced and, in some areas, there are mere lanes which are not suitable for any vehicle to pass through. In explaining the state of the roads in Hopley, a town planning expert who I interviewed, stated that at one point while undertaking a research in the settlement, he had to park his car and instead navigate the greater part of the settlement on foot as most of the roads were similar to pedestrian lanes or too narrow and inaccessible. An extract from an interview with a planning professional from an NGO who have worked in Hopley explains the situation:

When we profiled Hopley, we identified that the roads are one of the biggest challenges in Hopley. This is what the residents were saying. It surprised us because we thought water and sanitation would be a priority for them. We reached the conclusion that roads were prioritised maybe because roads are critical for connectivity and rarely do they have an alternative besides being disconnected from other services and amenities. Roads are connected to a number of issues, for example, health facilities, fire, schools, safety, etc. hence it becomes a priority to access the areas and its hinterland. However, it does not mean that water and sanitation issues were not critical for them. They also showed a great need for such services in their settlement.

The success of human settlements is attributed to the provision of infrastructure, which include roads. This is stipulated in the SDG 9 which commits to promoting the development of requisite infrastructure in urban and rural areas. Likewise, the city of Harare has made similar commitments for investing in road infrastructure across the country. However, it seems that much efforts and priority have been given to certain parts of the city, while other sections of the city remain marginalised. Hopley is one such settlement where the local authority seems to be failing to invest in road infrastructure development. The marginalisation of settlements such as Hopley shows a lack of priority on the part of the council in servicing some settlements, as Young (1990) observed that marginalisation of certain groups of society is prevalent. Likewise, Harvey (2018) identified such situations as the alienation of some communities.

The poor state of the roads in Hopley has a direct bearing on public transport in that it results in commuter minibuses not operating within the settlement. Rather, commuters are dropped off or picked along Chitungwiza Road. As explained by Dumba (2018), the guideway has a bearing on the vehicles, hence the nature of the roads in Hopley makes it difficult for motorised vehicles to navigate around the settlement. The result is that the first mile/last mile which the commuters have to travel are often by foot as commuters have no option or other means of transport to connect them from Chitungwiza Road to their homes. Figure 7.25 shows part of the road in Hopley settlement during the rains with water filling the potholes in the streets.



Source: Author's own (2018)

Figure 7.25 The state of the roads in Hopley

The road hierarchy in Hopley poses a challenge in that the access roads in certain areas are directly connected to the primary road, Chitungwiza Road. The challenge is experienced by motorists who then find it very difficult to connect to the main road. Interestingly, this issue was mentioned in one of the memorandums from the Director of the DPP to the Director of Works, City of Harare, stressing the need to avoid access roads which connect directly into primary distributor roads (DPP 1995). The memo indicated that:

- Some residential stands were identified as being directly accessible from the 40 m road discussed earlier on. This was considered as being not ideal; hence, they proposed the use of side roads for access to stands.

- There was a need for a functional hierarchy of shops and roads where there needs to be a systematic gradation of road servitude.

Clearly, such provisions show careful consideration of the accessibility of the settlement and the need for a functional road hierarchy. Sadly, such provisions seem to have been neglected in the development of settlements in their present state. During the stakeholder workshop, one of the participants stated that they often have a challenge when they visit their relatives in Hopley as there are no systematic gradations of the roads; hence connecting to the primary road takes time and is also very risky.

From the survey, 72.44% (n=326) of the respondents indicated that their transport needs are compromised by the nature of roads within the settlement. The poor state of the roads is therefore associated with a number of problems which negatively affects the vitality of the settlement. There is a lack of accessibility within the settlement.

7.5.3 Public transport issues in Hopley Settlement

The main dilemma experienced by the residents in accessing public transport has been threats to their safety. The responses from the survey and in-depth interviews brought out the following issues:

Due to the poor road system, people go to the highway (Chitungwiza Road) and there is now a high level of accidents and people are continuously being hit by cars.

People are continuously being hit by cars by the roadside; therefore, kombis should be accessible within the community.

The above quotation confirms the studies by Knights (1996) and Shi, Yang and Gao (2016), that have shown the relationship between compact development and transport challenges which include road accidents. As the settlements emerge, there is a need to seriously consider how mobility may be addressed such that the settlements are made to be sustainable. In addition to the threat from road accidents, residents also complained that they are at risk from robbers and thieves. Women are usually the targets. The respondents mostly commented that:

Due to poor roads, commuter omnibuses are no longer operating around Hopley and people are dropped along Chitungwiza Road which is not safe, especially at night and early hours of the morning because of murder and robbery.

The importance of a road system in settlement planning and development is thus demonstrated here where transport operators end up ignoring the areas which are not serviced and rather operate in areas which have serviced roads. On the other hand, the negligence of the Council to service Hopley may be attributed to the proposals of urban containment espoused in the HCMP where the Council does not finance infrastructure development beyond a certain radius.

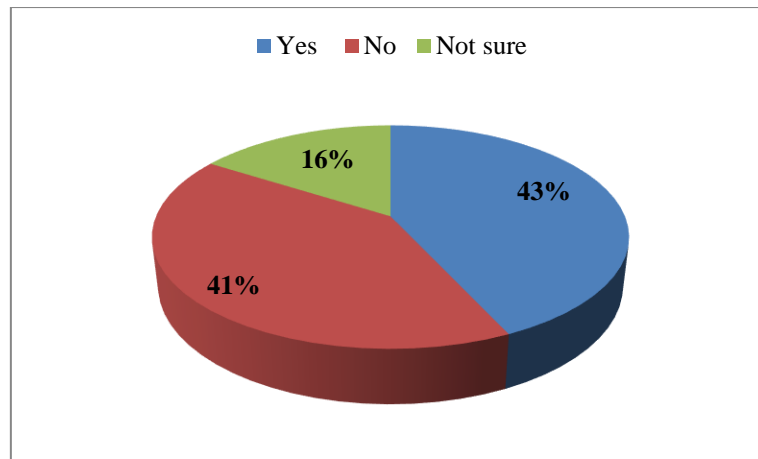
7.6 SAFETY: EVERYDAY EXPERIENCES OF HOPLEY RESIDENTS

Safety has been identified as an intricate component which aids the functionality of human settlements. However, not all settlements are safe. The safety of a settlement is also a product of the built environment where the ultimate form of the settlement tends to have a bearing on the residents' ability to feel safe and comfortable (Bonnetts, Soebarto, Oakley & Babie, 2017:401). The respondents' opinions towards safety in Hopley are presented in Table 7.6.

Table 7.6 Residents' perception towards safety in Hopley Settlement

Safety	Frequency	Percentage
Not safe at all	293	65.11
Somewhat safe	123	27.33
Safe	31	6.89
Very safe	3	0.67
Total	450	100

The data presented in Table 7.6 indicates that 65.11% (n=293) of the respondents did not feel safe at all in Hopley, while 27.33% (n=123) showed that they felt somewhat safe in the settlement. A further 6.89% of the respondents reported that they felt safe in the settlement, with a mere 0.67% (n=3) stating that Hopley is a very safe settlement. In this regard, the respondents' sense of the settlement, as described by Lynch (1981), is associated with a lack of safety, a situation which is perpetuated by a number of factors. Figure 7.26 presents the perceptions of the respondents with regard to their views on safety in Hopley.



Source: Author's own (2018)

Figure 7.26 Responses to the question on the experiences in which the respondents felt unsafe in the neighbourhood

From Figure 7.26 it is clear that 43% (n=194) of the respondents had at some point felt unsafe in Hopley. However, almost the same percentage (41%; n=184) indicated that they had never experienced a moment when they felt threatened in the settlement. The remaining 16% (n=72) commented that they were not sure if they had ever felt safe or unsafe at some point in Hopley. In explaining their experiences in which they felt unsafe, respondents mentioned a number of issues and events which showed the perpetration of crime and violence in the settlement and ultimately, the absence of safety. The implication is that residents live in fear, as elucidated from the following quotations:

A man who used to rent a room at my house was murdered at Chitungwiza Road recently and the incident has made me to feel extremely unsafe in Hopley.

When a thief broke into our house, the experience was traumatising as they exposed the lack of security in the neighbourhood as well as in my house.

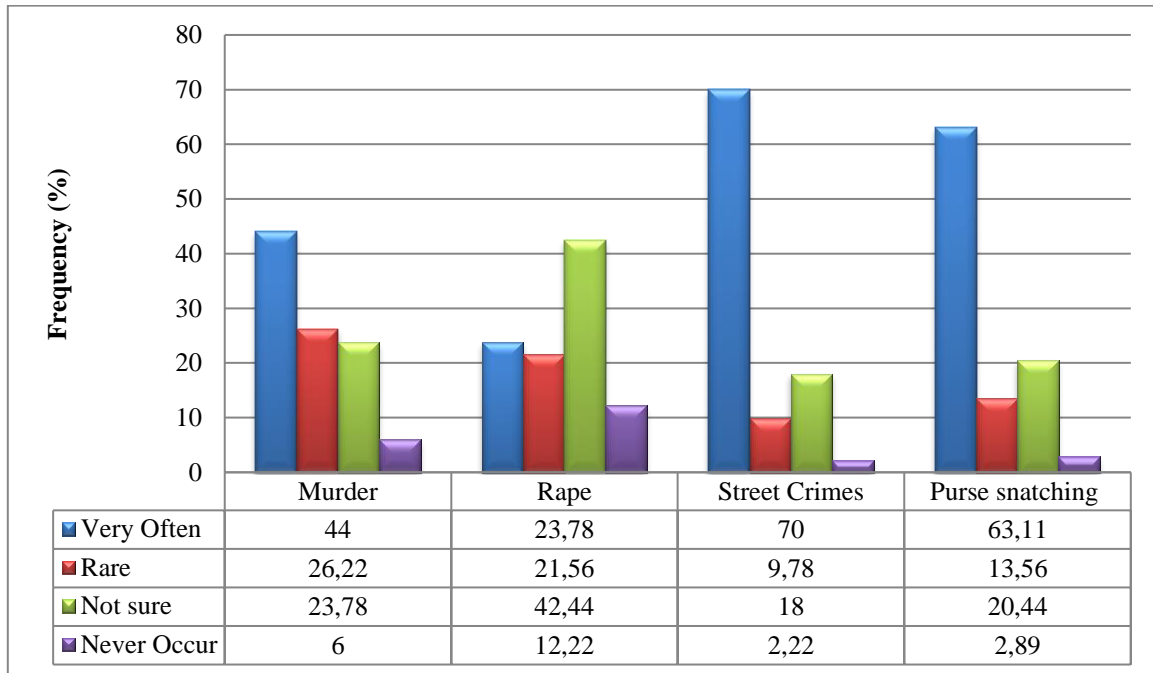
The incident when a young girl was murdered at a nearby dam was too much for me to handle as a woman and the experience always makes me feel like I am prey and they are vultures out there watching me.

There are too many rape cases which go unreported and I always feel that I can be raped at any time.

Someone was found dead near Antony Shops and it was a very distracting scene.

Figure 7.27 presents the survey results in relation to the frequency of rape and murder in Hopley as provided by the respondents. It emerged that 44% (n=198) of the respondents indicated that

murder occurs very often in Hopley. On the other hand, 26.22% (n=118) argued that murder rarely occurs, while 23.78% were not sure and 6% (n=27) said it never occurred. Similarly, street crimes and purse snatching were also identified as occurring very often in Hopley as indicated in Figure 7.27, which shows that 70% (n=315) and 63.11% (n=284) represented street crimes and purse snatching, respectively.



Source: Author's own (2018)

Figure 7.27 *The nature and frequency of crimes in Hopley*

For some respondents, the prevalence of insecurity in Hopley has been attributed to the form of the settlement as discussed in sections 7.3 and 7.4. First, the distance that resident have to travel from Chitungwiza Road to access public transport exposes them to thieves and thugs, especially for those coming from work at night or going to work early in the morning. The cases of murder which have been reported by the residents during the interviews were mainly concentrated along Chitungwiza Road where minibuses drop commuters off at night.

7.6.1 Hotspots in Hopley

From the survey, it emerged that 72.89% (n=328) of the respondents identified specific locations, or hotspots, in Hopley where they felt unsafe or uncomfortable. However, most of the respondents confirmed that the whole of Hopley is not safe at night and it is best to be indoors once it gets dark. Although some areas were singled out as high crime zones, for

example, Zone 2 because of overcrowding and the high rates of poverty which characterise the area.

It is not safe to walk in Hopley at night because you will be robbed.

At night the whole of Hopley becomes a danger zone and women are the major victims.

Hopley is dangerous, especially at night anything can happen.

The absence of lighting and police surveillance makes the settlement unsafe at night. Moreover, overcrowding due to the compactness of the stands was also held responsible for the absence of safety in Hopley Settlement. This was explained by some respondents who cited that poverty in the settlement was responsible for the crimes and violence as people become desperate and try to find a means of surviving, even if it means harming others.

7.7 DISCUSSION OF THE URBAN DILEMMAS AND SETTLEMENT FORM NEXUS

7.7.1 Accessing water and Hopley's settlement form nexus: Challenges and insights

In relation to water, it has emerged that the sprawling settlement has limited the citizens' access to water because the settlement is too far from the existing developments and the settlement has thus remained not serviced with reticulated water and sewer, as well as access roads. Therefore, the dilemmas emanating from this lack of reticulated water system in Hopley Settlement include compromised water quality, resulting from the use of unprotected water sources which include shallow wells as shown in Figure 7.7 the study also established that the dilemmas also include the financial cost of accessing water, water scarcity, safety issues, public health issues as well as productive time that is lost in fetching the water. The burden of water scarcity was overwhelming on women who had to make efforts to access water for the households.

Figure 7.28 shows that the dense settlement form is influenced by natural population growth and immigration. It illustrates that the increased population directly results in the increase of consumers of water within the settlement which increases the water consumption. On the other hand, the increased number of consumers might signify that there could be a stream of funding coming from the residents but this has not been the case in Hopley where the poverty levels

are high, as illustrated in section 7.2.6, where the modal income earned by the residents was US\$1.67 per day, which falls short of the US\$1.90 or more per day representing those not poor.

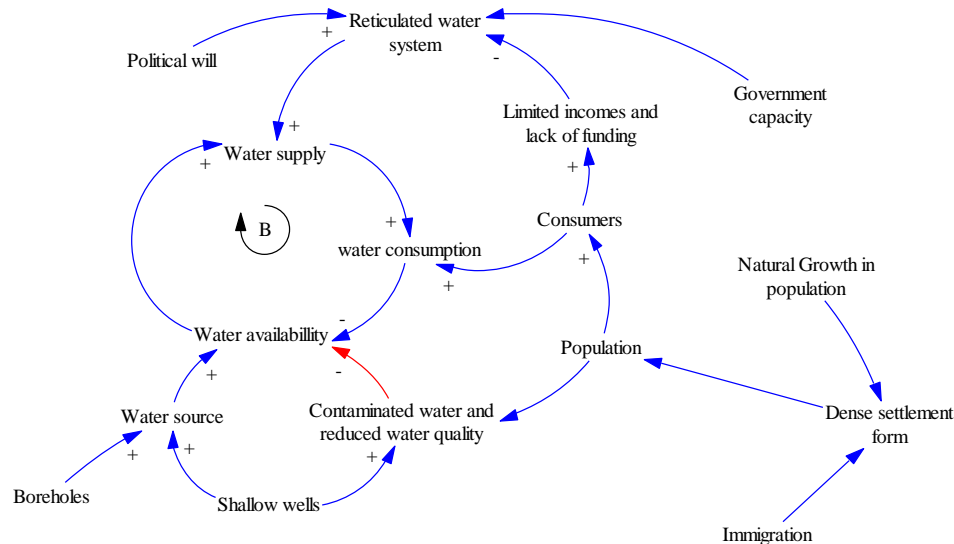


Figure 7.28 Causal loop diagram for the water system

Figure 7.28 shows that if funding is available, it would be used to develop a reticulated water system which would then increase the water supply and consequently water availability. The capacity of the central government and political will are two factors which could eventually facilitate the development of a reticulated water system which would thus promote water supply.

7.7.2 Challenges and insights on the sanitation and settlement form nexus

It emerged that there is no connection to a bulk sewerage system in Hopley Settlement. As a result, residents have resorted to the use of different forms and types of decentralised sanitation facilities. The study noted that open defecation is normal practice in Hopley, while flying toilets are also disposed in the streets. The accumulation of human excreta is common in Hopley Settlement and this is attributed to the use of septic tanks on small stand sizes which ought to be serviced with a reticulated sewerage system. This is mainly ascribed to the densification of the settlement and maximisation of land for residential space while paying little attention to the sanitation facilities. Residents were thus complaining of odours from the pits and septic tanks, and health problems such as dysentery mentioned by some residents during the in-depth

interviews. Respondents from Hopley also narrated that the toilets at times lacked privacy and exposed especially women to attacks if they wanted to use the facilities at night.

The other challenge highlighted by the study was that there seemed to be no organisation when it comes to the arrangement of housing units and the sanitation facilities. In most instances, the people use pit latrines where a hole is dug in the ground. Households do not make efforts to align their toilet facilities. As a result of this misalignment, there were instances where shallow wells and toilet facilities would be side by side, thus increasing the chances of contamination of the water in the well. Moreover, there is little planning which can be undertaken in designing and strategically positioning sanitation facilities on a 200 m² residential stand.

Figure 7.29 presents the causal loop diagram for the sanitation system in Hopley. The diagram has been prepared using the findings presented in section 7.4, which shows that there is a deficiency of reticulated sanitation systems in Hopley Settlement. It emerged that the current sanitation system is compromised by a lack of reticulated water, as well as the absence of a bulk off-site system which would transport sewage and wastewater from the settlement. In this way, the sanitation facility has implications on public health as residents in the settlement are exposed to human excreta which is localised and not disposed appropriately as shown in section 7.4.

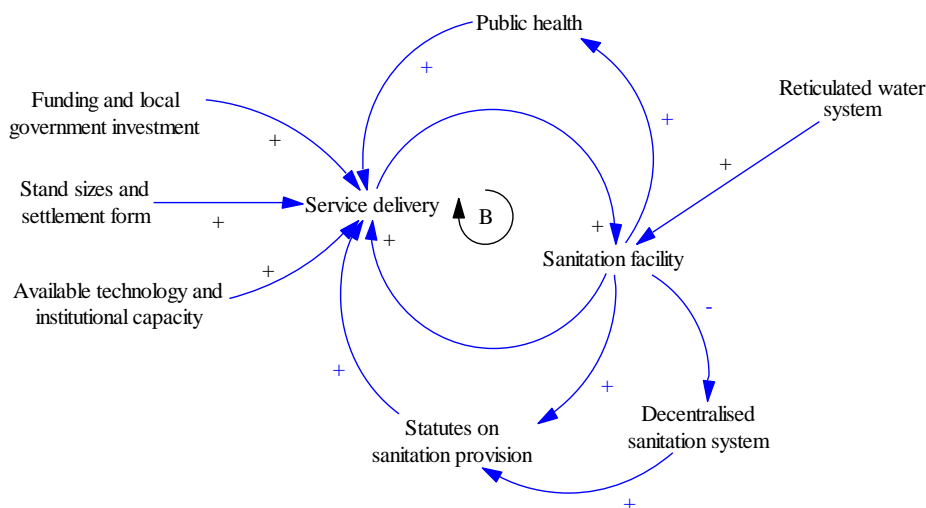


Figure 7.29 Causal loop diagram for the sanitation system

It is illustrated in Figure 7.29 that the delivery of sanitation may thus be improved through the provision of funding, adoption of alternative technologies, institutional capacity of the City of Harare as well as the stand sizes. The provision of funding enables the City of Harare to invest

in the construction of a sewerage system. However, the status on sanitation provision also play a role in service delivery as they may be restrictive and rigid as is the case in Zimbabwe where decentralised systems are not permitted in urban areas – a situation which compromises service delivery.

7.7.3 Public transport and sprawl nexus: Challenges and insights

Dilemmas experienced by Hopley’s residents with regard to public transport needs, include lack of public transport which operates within the settlement. This has been found from the literature that sprawling settlements are associated with transport challenges owing to the roads which may not be well developed, as well as the long distance which makes it unprofitable for transport operators to operate along such routes (Ewing et al. 2016:249; Yeo et al. 2015:397). The residents have to find ways to travel the first mile/last mile as the road network within the settlement is very bad (Kenworthy 2006). The study found that the uncoordinated developments in the settlement have also resulted in encroachments into some land reserved for roads and this has limited mobility in the settlement such that vehicles cannot pass through some areas. The concentration of residential land uses and the distance from economic opportunities make it difficult for the residents to use alternative forms of transport such as cycling and walking.

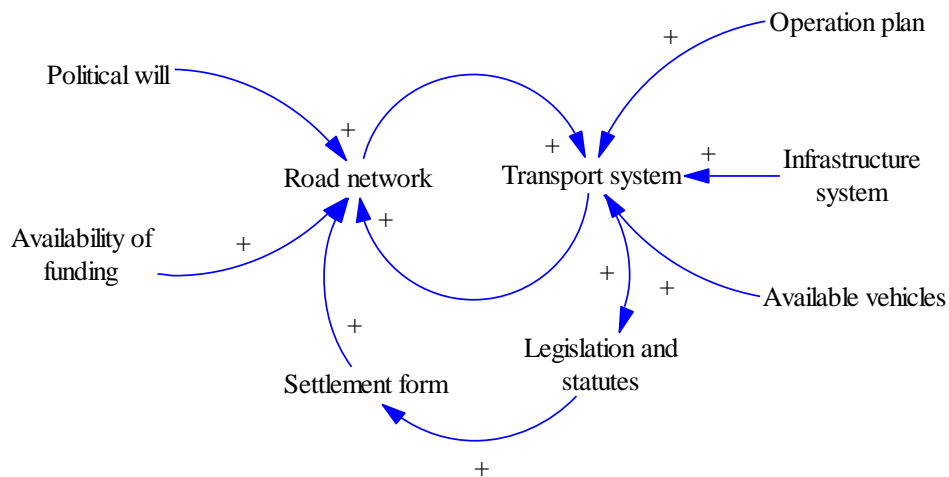


Figure 7.30 Causal loop diagram for the transport system in Hopley Settlement

Figure 7.30 shows that there is a direct relationship between the road network and transport system for Hopley Settlement. The existing road network in Hopley is a product of the settlement form which was envisaged by the City of Harare. Furthermore, the evolution of the

settlement has resulted in some land reserved for roads being occupied for residential developments and this has had a bearing on the transport system where the vehicles fail to get through some areas. The result is a road network that fails to support vehicle movement, considering that private commuter minibuses are the main source of transport used by the residents in Hopley. The challenge is that of walking the first mile/last mile, a situation which is complicated for those who travel to and from work either early in the morning or late at night. Safety issues then become a problem in this context.

As illustrated in Figure 7.30 availability of funding and political will to invest in a road network and development are critical elements which could positively impact on the transport infrastructure and consequently enhancing transport services in the settlement. This may be explained by the fact that funds enable the construction of a vibrant road network as well as investments in vehicles which would then ease the existing public transport dilemmas in Hopley Settlement.

7.7.4 Safety scape of Hopley and settlement form nexus

Lastly, safety is an overarching issue which is largely a product of the existing settlement form of Hopley. It emerges that the absence of a police station made the area susceptible to crime as there were no police officers to monitor the neighbourhood. The isolation of the settlement also contributes to safety issues in that women indicated that they are at risk when fetching water early in the morning. Most of the residents also highlighted that the whole of Hopley Settlement is not safe at night.

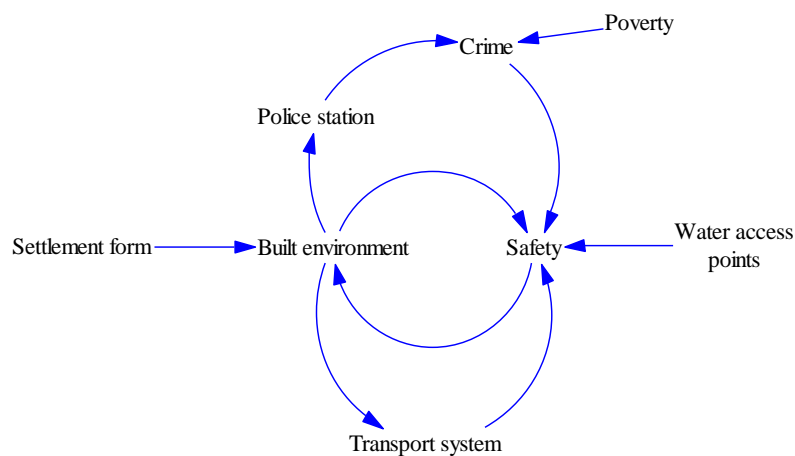


Figure 7.31 Causal loop diagram for safety landscape

I established that safety is an overarching issue which manifests in the provision of the other basic services. In section 7.3, I found that the scarcity of drinking water forces women and girls to go out to access water at points which compromise their safety since the water is fetched a distance from the households. Figure 7.31 shows that there is a direct relationship in the settlement form and built environment in that the settlement form designates the land uses which are then translated into the built environment. Such land uses include a police station which helps to enhance the surveillance within the neighbourhood due to the presence of policemen, thus crime is likely to be reduced resulting in safety in the environment.

On the other hand, it is illustrated in Figure 7.31 that the built environment have an impact on transport system which also directly impacts safety. This is explained by the fact that the absence of an efficient public transport system exposes the residents at risk to crime when they have to travel the first mile/last mile. I also established that poverty is an external factor which is not related to the settlement form but has a bearing on crime and ultimately compromising safety within the neighbourhood.

7.8 THE THEORY OF GOOD CITY FORM IN LIGHT OF THE LIVED EXPERIENCES OF HOPLEY'S RESIDENTS

As indicated in Chapter 3, section 3.2. Lynch's theory of a good city form is employed in explaining the lived experiences of the residents in Hopley in relation to the five dimensions of performance of a human settlement: vitality, sense, fit, access and control which he proposed. In addition, there are two meta-criteria dimensions which operate on all the other five dimensions efficiency and justice. As earlier highlighted in Chapter 3, the theory searches for universal rules that comprehensively consider the interaction of human purpose and city form (Lynch 1981:37). Table 7.7 presents the performance dimensions of the theory of good city form as postulated by Lynch (1981) alongside the realities from Hopley Settlement. The table illustrates the performance dimension as well as presenting a brief description as presented by Lynch (1981).

Table 7.7 Putting the theory of good city form to task

Performance Dimension	Lynch's description	Realities and remarks from Hopley Settlement
Vitality	To what extent does the settlement encourage liveability through provision of vital services?	It is difficult to measure this performance dimension for Hopley Settlement. Everything in Hopley seems to be in a mess, but still the residents have managed to devise ways to get by and create liveable spaces, despite the negligence of the City of Harare and government of Zimbabwe.
Fit	Does the settlement do what it is intended to do and conform to certain standards or regulations, for example density and stand size?	From the key informants I found that Hopley Settlement was not doing what it was supposed to be doing with regard to meeting the human settlements standards, hence they described it as not fit for human habitation. Yet, the residents have improvised some strategies to get by and make the settlement fit for their needs. It is thus important to identify what makes a settlement fit from the perspective of the inhabitants, instead of only the technocratic views which sets unrealistic yardsticks.
Sense	Refers to how the inhabitants of the settlement perceive of it.	The residents have a sense of the settlement and they have areas where they do not feel safe to navigate, especially at night. They are also oriented with regard to the areas where they can access water during different times of the years.
Access	Access means the ability and degree to which residents within a particular settlement are able to reach services.	The access of basic services in Hopley Settlement is greatly compromised owing to the form of the settlement.
Control	Explains who has the responsibility to control the place as well as their motives, information and power issues.	<p>The control of Hopley Settlement and basic services is the responsibility of party officials who have somehow taken over from the council. It emerges that politicians are now in full control of the settlement and even the City of Harare fails to penetrate the structures in the settlement.</p> <p>I found that when the institutions fail to undertake their mandate, certain individuals take matters into their own hands and assume the responsibility of managing the place and the resources. However, in the case of Hopley, the control of the settlement has been based on fear and victimisation from the politicians.</p>

Performance Dimension	Lynch's description	Realities and remarks from Hopley Settlement
Efficiency and justice	How functional is the settlement with regard to bringing to the fore the key elements of the settlement	It is very difficult to talk of efficiency in Hopley Settlement, despite the fact that residents get to access basic services from alternative sources. This is explained by the fact that there is no balance in the settlement as the mechanisms used by the residents to access basic services threaten their safety, health and well-being. On the other hand, there are gross human rights violations in Hopley Settlement in relation to accessing basic services which shows that there is no justice to talk about.

7.9 CONCLUSION

In this chapter, the lived experiences of Hopley's residents in accessing water, sanitation, public transport and safety have been presented. The realities facing Hopley's residents in accessing water were outlined and it has emerged that initially there was abundant groundwater in Hopley which provided a source of water for the residents. There are some areas which have granite bedrock making access to groundwater in such areas quite impossible. Despite the abundance of groundwater, the growing population in Hopley has put a strain on this supply, a situation which has resulted in water challenges during the summer season. Moreover, the quality of the water is compromised because of contamination. Consequently, residents were left with no other option but to seek safe water from other sources which are difficult as they have to travel more than the maximum recommended 500 m to get water and spending a lot of time fetching the water.

There is no reticulated sewer system in Hopley Settlement and residents make use of decentralised sanitation facilities which include pit latrines, and in some instances, open defecation and 'flying toilets' are used. The use of these sanitation facilities is associated with a number of problems, the most important being the contamination of groundwater and odours. The contamination of groundwater is mainly attributed to the close proximity of shallow wells and pit latrines on residential plots which are very small and do not allow additional space for separating the wells and pit latrines.

Commuter transportation is largely compromised by the nature of the roads which makes it difficult for the minibuses to access the commuters. The public transportation system is informal, constitutes of pot-holed roads with no operation plans, hence making accessibility a challenge to residents in Hopley. The waiting time for commuters is also another difficulty, while the first mile/last mile presents challenges which include public safety, especially for women and those travelling at night. Lastly, safety is an issue of concern in Hopley as evident from the lack of surveillance in the settlement. Safety is associated with most of the issues in the settlement as it includes the safety of women and girls when they go to fetch water, and the safety of the commuters on their first mile/last mile. The next chapter will conclude the study by presenting a summary of the results, implications for urban planning in relation to the emerging human settlement forms and the urban dilemmas nexus, recommendations and areas for further research.

Chapter 8

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

8.1 INTRODUCTION

This chapter concludes the thesis. Explored in the foregoing chapters are the emerging human settlement forms and urban dilemmas nexus with regard to the challenges and insights in accessing water, sanitation, public transport and safety.

I formulated the study based on three claims presented in Chapter 1, section 1.1:

1. The absence of institutional and legislative capability to address issues in human settlement planning and provision of basic services such as water, sanitation, public transport and security in cities of the Global South is pervasive.
2. This institutional and legislative incapability has been stagnated by modernist urban planning rooted in colonial systems that subsequently produce unintended settlement forms.
3. Political tensions and power struggles present in the city of Harare also have multifaceted implications on the emerging human settlement forms and urban dilemmas nexus. Ultimately, the lived experiences of citizens are compromised since they are forced to improvise on accessing basic services.

8.2 SUMMARY OF THE STUDY

This section presents the summary of the study and its focus is on stating the objectives which guided the study, the methodology that I used, a synopsis of the significance of the study as well as an outline of the structure of this chapter.

The objectives which guided the study included:

1. To characterise the extant human settlement forms and associated dilemmas in Hopley, Harare.
2. To analyse the official land use scheme in Hopley, Harare in relation to the emergent human settlement forms of the area.

3. To explore the dilemmas experienced by Hopley's residents in accessing basic services such as water, sanitation, public transportation and safety.
4. To draw out the implications of the emergent human settlement forms and dilemmas nexus for effective planning.

In addressing the objectives, answering the research questions and testing the claims of the thesis, I used the sequential mixed method design inclined towards the qualitative approach (see Chapter 4, section 4.2.2; Hesse-Biber 2010). The data collected from both primary and secondary sources was analysed through qualitative and quantitative methods which also include the applied systems analysis. Based on the empirical information from the findings and analysed data, I then applied the systems analysis methodology to identify the causal relationships between the dilemmas experienced by the residents and settlement forms of Hopley Settlement. Furthermore, the applied systems analysis methodology involved the development of causal loop diagrams which also enabled me to identify strategies for addressing the identified urban dilemmas relating to residents' access to basic services.

As outlined in Chapter 1, in seeking to understand the connections and relationship between the emerging settlement forms and urban dilemmas in Hopley Settlement, this study illustrated how such an exploration is important and a positive step towards the creation of liveable, sustainable and just cities as espoused in the country's legislative and institutional framework and agenda. It also highlighted the significance of focusing on human settlements from a broader perspective instead of analysing issues from a linear or silos perspective such that only the physical issues relating to the settlement are examined. The study was also undertaken to identify the planning ideologies and approaches which guide human settlement development and planning.

In this chapter, I reflect on the key findings from the preceding chapters in relation to the research objectives, research questions and claims presented in Chapter 1. The major focus is to address the fourth objective which sought to draw out the implications of the emergent human settlement forms and dilemmas nexus for effective planning. This is achieved through the four sections which include a summary of the findings. The summary of the findings reflect on the key findings relating to the challenges and insights of the emergent human settlement forms and dilemmas nexus. It also focuses on the contributions of the study, recommendations and areas for further research.

8.3 SUMMARY OF THE FINDINGS

This summary of the findings of the study in this section focuses on the emerging settlement form of Hopley Settlement which was achieved through the mapping process. The challenges and insights with regard to the residents' dilemmas in accessing basic services is then presented through a discussion on the causal relationship between the emerging human settlement form and access to water, sanitation, public transport and safety. Causal loop diagrams are used to illustrate the challenges and insights of the emerging human settlement form and urban dilemmas nexus. Lastly, the implications of the planning approaches and ideologies which guide human settlements are highlighted and the theory of good city form is also used to facilitate this discussion.

8.3.1 Hopley's emerging settlement form

The literature review presented in Chapter 2 and 3 showed that human settlements are complex systems. They are constantly evolving, therefore theorising them is not easy. Five major settlement forms, which include sprawl, urban containment, compact, eco-city and neo-traditional, are located in various pieces of literature (Besussi et al. 2010; Davies & Townshend 2015; Frey 1999; Jabareen 2006; Lata et al. 2001; Nasar 2003; OECD 2014). Each of these settlement forms impacts on basic service delivery in different ways and has its own shortcomings as presented in Chapter 2, section 2.5. However, it has emerged that the sprawl settlement form is greatly undesirable as it is associated with a multiplicity of urban dilemmas (see Chapter 2, section 2.5.1).

□ Challenges of the emerging settlement form

The study established that Hopley is characterised by a hybrid settlement form that is typified by sprawl, compactness and containment. The existing settlement form is in contrast to the proposed compact settlement form which was envisaged by the City of Harare through the HCMP and LDP31 as described in Chapter 6, section 6.2.1 and 6.2.2. Moreover, it was also a challenge to access the layout plan for Hopley which I eventually obtained from the Department of Physical Planning (see Chapter 6, Section 6.2.3, Figure 6.2). This quandary in accessing the plan which depicts the land uses of Hopley Settlement, as well as its divergence from the realities, confirms the findings by Watson (2014:215) who indicated that:

The urban plans for Africa's larger cities, if they exist at all, are usually to be found in dilapidated condition, perhaps pinned to the wall in a central government ministry or folded into a large technical report ... and they usually bear little relationship to what is actually on the ground.

□ **Insights from the emerging settlement form of Hopley**

From this finding I established that plans are being drafted but it becomes a different story to implement it, because an operational plan has to be easily accessible and ought to be guiding the developments in the settlement. Rather, I drew the conclusion that plans are simply prepared to fulfil some statutory mandates and are hardly used in the actual implementation. On the other hand, it could be that there is limited capacity within the City of Harare to monitor the execution of the plans. I also found out that the limited use of technology such as GIS within the City of Harare also poses a challenge when it comes to monitoring developments in the settlement.

I also established that the urban dilemmas experienced by residents in Hopley Settlement are a result of the existing sprawl settlement form. This finding confirms previous studies which concluded that sprawl is an undesirable settlement form that is associated with challenges such as residents' access to basic services (Bhatta 2010; Morote & Hernandez 2015:358-359). Furthermore, the literature indicated that the 'scattered nature' of the development in sprawl makes it costly to provide infrastructure (RTPI 2015:4). Similarly, I found that this also applied to Hopley Settlement where the proximity of the settlement from existing services makes it costly to connect the settlement without disrupting services in other settlements. In this regard, it becomes critical to consider the sustainable densities which apply when compact forms are being proposed. This is so because Harare has been failing to serve the city since the mid-1990s, yet the City of Harare continued to envisage that this infrastructure would sustain the emerging settlements.

8.3.2 Emergent settlement form and urban dilemmas nexus in Hopley

I found that there are multiplicities of urban dilemmas which relate to citizens' access to water, sanitation, public transport and safety in Hopley Settlement as presented and discussed in Chapter 7, section 7.2 to 7.5. I established that these dilemmas experienced by residents in Hopley in accessing basic services are associated with the existing form of Hopley Settlement which has some characteristics of a sprawling settlement as discussed in Chapter 6, section

6.4.3. This existing settlement form consists of single land use which is predominantly residential and the encroachment of residential developments into sites reserved for schools, hospitals, a police station and open space. The literature reviewed in Chapter 2, section 2.5.1 indicated that the monolithic structure implies inappropriate planning, rapid rates of urbanisation and demand for cheaper land. In turn, such settlement forms result in a plethora of challenges which range from residents' lack of access to basic services, increased crime and violence, and high cost of living.

In light of this sprawling existing in Hopley Settlement, I established that there were a number of dilemmas which were evident from the challenges faced by the residents through their lives as presented in the preceding sections of this chapter.

8.4 IMPLICATIONS OF THE EMERGENT HUMAN SETTLEMENT FORMS AND URBAN DILEMMAS NEXUS FOR EFFECTIVE PLANNING

With regard to the fourth question on **the implications of the emergent human settlement forms and dilemmas nexus for effective planning**, it emerged that the theories and models presented in Chapter 3 were supported to guide urban planning generally and in particular in Zimbabwe. Section 8.4.1 outlines the challenges that have implications for the emergent human settlement forms and urban dilemmas nexus in Hopley for effective planning.

8.4.1 Implications for urban planning approaches and ideologies in Hopley

It has emerged that the theories and models analysed in Chapter 3 form the basis which then guide the urban planning approaches which are adopted to inform the emerging human settlements. Moreover, the literature I reviewed in Chapter 2, section 2.2, shows that urban planning plays a significant role in guiding and informing the future development of settlements. As presented in Chapter 5, section 5.3.1, I established that different approaches are thus used but, in most instances, statutory planning is adopted which emerges as a top-down approach. The literature also showed that there is significant influence from politicians and the elite who use their power to drive their agendas albeit contradicting the envisaged plans (Castells 1977; 1979; Harvey 2012; Muchadenyika 2015).

I found that the City of Harare also takes a reactive approach to addressing issues in human settlements and engages a fire fighting approach which relates with the machine model as described in Chapter 3, section 3.2.3.1. I concluded that the power dynamics that manifest in the context of Harare are centred on the political parties seeking to gain the electorate, hence they take advantage of the shortcomings of the City of Harare and control the development of the settlements through allocation of stands that are not serviced with reticulated water and sewers.

In relation to the planning of Hopley Settlement, it emerged that the use of prescriptive and rigid planning approaches is prominent, such as master planning which fails to integrate the concerns of the residents as well as to make an informed decision on how to fund the infrastructure development projects. In this regard, the planning tends to be prescriptive and fails to capture the needs of the beneficiaries. The current planning practices and legislation simply emerge as an appendage of the colonial planning system which envisaged African cities as spaces where the elite and commoners has to be separated so as to maintain certain identities (Anderson & Rathbone 2000:7).

Through this approach, zoning of land uses helped in designating where each social class would be accommodated in the city. It is through this same approach and thinking that Hopley Settlement was identified from the onset as a residential settlement for the poor, which brings issues of social planning to the fore since the government of Zimbabwe commits to providing for the poor. Therefore, the situation of Hopley Settlement is an indication of how the poor remain marginalised as Young (1990) called it, while Harvey (2018) referred to this situation as alienation of certain groups in society. It is through this alienation that the poor tends to take matters in their own hands and engage in their own human settlement development.

This is explained by the fact that the plans are a replication of Western models and theories which do not mirror the realities in the Zimbabwean context. I established that these models and approaches used, for example master planning, have a fetish on order, aesthetics and often fail to integrate the concerns of the underprivileged. From this finding, it tallies with what Harvey (1982) referred to as the production of capital that when there are no economic opportunities then no one will be interested to invest in such projects. Consequently, the envisaged plans are in stark contrast of the realities on the ground.

8.4.2 Implications for theory: Insights from the theory of good city form

Chapter 3 discussed various models and theories which have been postulated by different scholars in trying to understand the morphology of human settlements and the provision of basic services in these settlements so as to satisfy human well-being. I presented three broad categories of these theories which include classical theories, normative and functional theories. The theory of a 'good city' form by Kelvin Lynch and the systems theory have been central in this study. Overall, I found that most of the settlements are products of Western scholars who place importance on issues such as aesthetics, order and equality. This is evident from models such as smart growth, new urbanism and eco-city.

The literature also indicated that the production of these envisaged settlement forms is capital intensive and requires large sums of money. The example of Masdar City in the United Arab Emirates whose budget of US\$22 billion was way more than the US\$5.74 national budget of Zimbabwe for the 2018 fiscal year, confirms this (Goldenberg 2016; Government of Zimbabwe 2018b). The same is also true for the envisaged plans by the City of Harare which have been stifled due to a lack of funding and a depressed national economy such that the local authority has been struggling to fund capital projects. It is in this way that the envisaged plans and proposals never materialised and have remained an utopia.

I established that the theory of good city form postulated by Lynch (1981) describes the performance of human settlements through the interrogation of human issues and the built environment. Although the theory was postulated long back, it still remains somewhat useful in explaining the issues in human settlements. The use of the performance dimensions helps in articulating what is important for residents within a particular settlement. In this regard, the theory sets out to describe the key issues which include vitality, access, fit, control and sense. The importance of these performance dimensions in Hopley Settlement is that they help in showing what is critical for the residents or how they access what is important for them. However, the challenge with this dimension is that it has been difficult to measure because the poverty levels in Hopley Settlement were such that what would be considered as vital in some other settlement across the city, for example flush toilets, were such a major priority for someone who lives from hand to mouth and struggles to find the next meal.

The theory by Lynch, when applied in the context of Hopley, is restricted by the fact that there is no equality in the settlement. It is more relevant in contexts where there is freedom and equity

where the citizens have a voice and there is no element of marginalisation. From the manner in which residents in Hopley are marginalised, it becomes difficult for one to bring in the aspect of justice as espoused by Lynch (1981). The following are some of the shortcomings with regards to the adoption of planning models and theories from the Global North with a special reference to the theory of good city form postulated by Lynch.

- ❑ **Context:** With respect to context many proponents have found that the theories and models used in Africa are usually not intended for the local context (Watson 2014). I found that the theory of good city form was conceptualised with no relationship to any particular city. Rather, it seems to be too western as it pays too much attention to some issues which may not be so much important to residents from settlements such as Hopley where there is no freedom, and equality is not that prominent. Therefore, the theory does not operate when there are complexities associated with the settlement and this is the case in most African cities and not only with Hopley in Harare.
- ❑ **Citizen participation:** The literature has acknowledged the significance of citizen participation in the planning and management of human settlements (Freestone 2012; Healey 2010). The theory of good city form does not consider the issue of citizen participation, yet participation has been described as fundamental to the success of a settlement. I established that Lynch (1981) simply focused on prescribing certain parameters, yet there is always a need to integrate the concerns of the communities. This has been evident from the morphology of Hopley Settlement, which was largely a product of prescriptive planning, with technocrats assuming they knew what is vital and fit for the inhabitants of the settlement.
- ❑ **Political economy:** Regarding political economy, it was noted that it plays a significant role in basic service delivery in human settlements where proponents such as Muchadenyika and Williams (2017) illustrated the influence of politics in human settlements development, while Harvey (1982) noted how capital is used in the development of a settlement. Its absence will simply mean that the settlement will be marginalised as argued by Young (1990). As a result, I noted that the absence of discussion on the political economy is a limiting factor with the theory as it does not look at the broader issues beyond the built environment. Inasmuch as the social issues are factored in through an analysis of the human issues, there is no explanation pertaining to the political economy, which is an important element in explaining the functioning of settlements.

❑ **Technology:** The issue of technology is increasingly becoming a force to reckon with in promoting the efficiency of human settlements (Musakwa 2017; Musakwa & Van Niekerk 2014:150). Yet, Lynch (1981) did not pay attention to other external factors, such as technology, which are instrumental in planning, development and management of human settlements. I found that in the case of Hopley Settlement, technology is a significant element which may help to promote the function of the settlement through provision of basic services. For example, the city of Harare could have used technology to monitor encroachments into undesignated sites, as well as in the provision of water and sanitation technologies. The role of technology in transforming the function of human settlements is another shortcoming with the theory of good city form.

8.5 CONTRIBUTIONS OF THE STUDY

The area of urban growth and settlement forms in Africa is increasingly becoming a contested area and increasingly receiving attention from scholars. First, the study makes a methodological contribution to the field of urban and regional planning. In this regard, the study has provided a methodological approach which may be used by other urban planning scholars who intend to undertake similar studies in politically sensitive urban environments, with special focus to human settlement and citizens' access to basic services. Most of the existing work undertaken on how to navigate contested spaces has been from a sociological or anthropological perspective; hence, this study provides planners with a template of how they may carry out research work relating to human settlements and service delivery in urban contexts. This study demonstrates how researchers enter the study area, create rapport, get on with the research work and consequently exit the field at the end of the research process.

Second, in relation to the methodological contribution, the study illustrates how causal loop diagrams may be used to analyse and understand the complexity of the issues relating to emerging human settlements and citizens' access to basic services. The causal loop diagrams developed helped in the analysis of the findings as well as showing the connections and leverage points in the planning and development of human settlements.

Third, the study also makes a theoretical contribution upon which it introduces the systems theory as an approach that may help urban planners to understand the complexity of human settlements. The application of the systems theory facilitated a multidisciplinary approach to human settlement exploration which enabled the researcher to draw connections between urban

planning, development studies and sociology. In this regard, the researcher somewhat shifted away from the understanding of urban and regional planning issues from a ‘silo’ approach to one which conceives the human settlement and the discipline as an open system which is complex and composed of different systems and elements. Therefore, the study contributed to the field of urban and regional planning in that I considered the levels of organising emerging human settlements through a connection of various systems of the city, which in this case included the physical infrastructure and social infrastructure of the city.

Lastly, the insights emerging from the findings of the study which extend beyond the usual focus on water and sanitation issues to include safety and public transport in emerging settlements, have provided a contribution to urban scholarly work. Therefore, this study has explored the kinds of conceptual and policy frameworks which could work for urban planning, development and management of human settlements in the Zimbabwean context. This contribution focused on the need for the formulation and implementation of frameworks and plans which relate to the local realities instead of being a perpetuation of the colonial or Western ideologies to urban and regional planning in the country.

8.6 RECOMMENDATIONS

In relation to the study findings and discussion presented in the foregoing sections, the following recommendations are critical in addressing issues in human settlement development and provision of basic services in Zimbabwe.

- There is a need for the City of Harare, as well as the private sector, to adopt alternative water sources beyond the use of a reticulated water supply system. In this regard, innovative technologies may be used to facilitate the provision of basic services instead of relying on the conventional ways of service delivery which in most instances place a heavy financial burden on the local authorities.
- Local authorities must be guided by local realities and formulate strategic and integrated planning approaches such as strategic planning and integrated development planning. These planning approaches should be aimed at holistically considering the local context through examination of issues on the ground, rather than the master planning approach which is cumbersome and stifles development due to too much processes, as indicated by Toriro (2008).

- Improvement in local governance is required such that the administration of affairs relating to human settlement development is undertaken in a way that would promote the establishment of sustainable settlements where their well-being is prioritised. The City of Harare should engage various stakeholders who have a stake in settlement development as well as being firm with regard to their visions and plans, instead of letting politicians override their decisions and taking matters into their own hands. The best approach would be to embrace coordinated governance which involves establishing effective and accountable institutions to coordinate spatial planning and infrastructure investment in human settlements.
- The Government of Zimbabwe and the City of Harare must make efforts to promote the constitutional rights of the poor with regard to accessing basic services. The issue of social planning entails that government should provide services to the underprivileged where Hopley Settlement is one such typical case. Therefore, adopting a rights-based approach to planning which factors in the needs of the poor, is critical, instead of perceiving the city to be an economic engine in which surplus capital is always used in the production of human settlements.
- Residents must understand that a human settlement is a system which is much more than just the land. As an urban settlement there is a need to fund infrastructure development.

8.7 AREAS FOR FURTHER RESEARCH

There are a number of areas for further research in the context of emerging human settlement forms and citizens' access to basic services. Therefore, further research aimed at addressing the issues in emerging human settlement forms and citizens' dilemmas in accessing basic services nexus need to focus on the following areas:

- Explore the sustainable arrangements for funding infrastructure development projects in emerging human settlements.
- Examine the relationship between urban governance and provision of basic services in emerging human settlements.

- Gender dimensions in planning and development of emerging human settlements and the gendered implications on access to basic services.
- Political economy on the establishment of emerging human settlements, their proposed forms and the provision of basic services in these settlements.

8.8 CONCLUDING REMARKS

This chapter has presented an overview of the research as well as proffering a summary of the findings. The discussion presented in the chapter has assisted in the formulation of study recommendations and areas for further research. The study forms a critical component in urban and regional planning debates. It reveals fundamental contemporary challenges in emerging human settlements that are politically charged. The study established that there is a deficiency with regard to the institutions meant to address issues in human settlement development and provision of basic services. This has been evident from the poor governance and public administration which characterise institutions such as the City of Harare. I found that the incompetence of the institutions such as the City of Harare and the Government of Zimbabwe is manifested through the challenges in governance of issues such as water provision and supply. The situation is exacerbated by the use of out-dated legislation and planning approaches which do not conform to the realities of the Zimbabwean cities that are characterised by socio-economic challenges, political turmoil and increasing urban poverty.

The adoption of planning approaches which do not factor in the concerns of the citizens has also been identified as a shortcoming with the planning system which consequently resulted in the production of unintended settlement forms as has been the example with Hopley Settlement. In this regard, the local realities are ignored as the plans take a modernist approach which is centred on aesthetics and some strict standards without paying much attention to the local realities which are characterised by poverty, financial woes, politics of difference and poor governance. The adoption of prescriptive planning approaches has thus been limiting in Zimbabwe. I established that the result was the emergence of a sprawl settlement form when other forms such as compact have been envisaged. It is in this regard that the emerging human settlements contribute to the urban dilemmas, as settlements that emerge fall short of the intended forms.

It has also emerged from the study that beyond the settlement form, the urban dilemmas have resulted from politics and power issues where the essence of social planning ceases to be of prominence. Official roles seem to be undertaken by politicians who pay little or no attention to the fundamentals of human settlement development and citizens' access to basic services. Such occurrences are a perpetuation of power dimensions where the elite control decision-making and facilitate the implementation of issues which satisfy their agenda. Overall, the provisions of the Constitution of Zimbabwe, as well as some acts of parliament, for example the Public Health Act and Water Act, have been disregarded or failed to adequately address matters in human settlements such that human rights are compromised as residents are left to reside in environments where they do not have access to improved water for drinking as well as being exposed to faecal matter, which lead to health risks.

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APPENDIX 1

KEY INFORMANT INTERVIEW LIST

Key Informant	Affiliation	Date and Time
Mrs Khanda	City of Harare	8 September 2017
Mr Tapuwanashe	City of Harare – Department of GIS	12 September 2017
Mr Freeise	City of Harare	29 January 2018
Ms C. Muchoni	Private Planning Consultant	13 September 2017 1 March 2018
Mrs Gwenyambira	ZANU PF Hopley Councillor	10 September 2017
Mr Magaya	Department of Physical Planning	2 January 2018
Mrs A. Kwangwama	UDCORP and UZ	04 December 2017
Dr Sadomba	Centre for Applied Social Sciences (CASS)	01 December 2017
Dr K. Chatiza	Development Governance Institute (DEGI)	03 January 2018
Mr S. Mukoto	ARUP	28 November 2017 09 January 2018
Dr S. Jogi	ARUP	30 November 2017 3 March 2018
Mr T. Chiteka	ECOPLANET Design Group	20 September 2017 2 March 2018
Mr G.M Nyama	Dialogue on Shelter	5 January 2018
Mr Banana	Dialogue on Shelter	5 January 2018
Engineer Karenzi	City of Harare Department of Water and Sanitation	4 March 2018
Engineer Ruhakwa	City of Harare, Department of Water Production	4 March 2018
Transport Planning Officer	City of Harare, Department of Transport Planning	4 April 2018
Transport Planning Officer	City of Harare, Department of Transport Planning	4 April 2018
Mr Nyabeza	Deputy City Planner – City of Harare	4 April 2018
Mrs Charumbira	City Planner – City of Harare	09 April 2018

APPENDIX 2

HOUSEHOLD QUESTIONNAIRE

HOUSEHOLD AND SOCIO-ECONOMIC PROFILE

Sex

Age

Occupation

Education level

Marital status

Type of housing ownership

Average family income

HISTORICAL PROFILE

1. Where do you come from? Nationality?
2. Where did you grow up?
3. When did you come to Harare? Hopley?
4. What are you doing now?
5. Where do you think you are going with life?

WATER SUPPLY

6. What is the main source of household water supply?
7. How often do you access water?
8. How far is this main source of water from your house?
9. How long does it take to go there, get water and come back?
10. How is the water supply service in terms of the following?
Quality, colour, taste, pressure, reliability

SANITATION

11. What kind of toilet technology does members of your household use?
12. If 'flush' or 'pour flush' toilet technology is used, where does it flush to?
13. Is the toilet private (one household), shared (more than one household) or public?
14. Specifically, how do you dispose of the faeces of children (below 5 years)?

PUBLIC TRANSPORT

15. What mode of transport do you use?
16. How reliable and convenient is this mode of transport?
17. Do you have any alternative besides this mode of transport?
18. How long do you spend commuting per day?
19. How long do you take to get to the nearest bus stop?

SAFETY

20. How do you feel about the level of safety in the neighbourhood?
 21. Have you ever had an experience in the neighbourhood which you felt unsafe?
 22. Are there specific locations in Hopley where you feel unsafe or uncomfortable?
- What factors contribute to your feelings?

APPENDIX 3

INTERVIEW GUIDES

Guide A: LOCAL AUTHORITIES

1. What policies or plans have been instrumental in guiding the planning and development of Hopley Settlement?
2. Do you have a Land use planning scheme that covers Hopley?
3. What are the planned land uses in Hopley?
4. What policies, institutions, processes and factors have influenced the development of Hopley?
5. Explain the process for planning and developing emerging human settlements.
6. Who is responsible for basic service provision in Hopley, with special reference to water, sanitation, public transport and safety?
7. How are planned land uses implemented in Hopley?

Guide B: URBAN PLANNING EXPERTS

1. What explains the increase in emerging human settlements in Harare?
2. How are the current planning practices influencing the emerging settlement forms?
3. Comment on the process or forms of planning and managing emerging human settlements forms
4. How should the authorities address the current urban dilemmas with regard to citizens' access to water, sanitation, public transport and safety in emerging settlements?
5. In your opinion what are the policy gaps with regard to the planning of emerging human settlements?
6. Describe the role played by authorities, politicians and residents in planning emerging human settlements.
7. How can authorities enforce planning regulations in emerging human settlements in light of citizens' access to water, sanitation, public transport and safety?

Guide C: IN-DEPTH INTERVIEWS WITH RESIDENTS

1. Can you please provide a brief biography of yourself?
2. When did you come to Hopley?
3. Please take me through your lived experiences in accessing water, sanitation, public transport and safety since you moved to Hopley up to this day?
4. What challenges if any do you face in accessing water, sanitation, public transport and safety?
5. What are the most important characters that must be found in a settlement?
6. As a resident of Hopley, what do you expect from the local authority (City of Harare)?
7. Given everything you have shared, if you had the opportunity to talk with the local authorities, what is something you would want them to know?

Guide D: ENGINEERS FROM HARARE WATER

1. What is the role and mandate of your department in emerging settlements?
2. What role did the department play in the provision of basic services in Hopley?
3. How does the current planning system impact on the provision of basic services in emerging settlements?
4. What challenges does the local authority face in providing basic services in emerging settlements with special reference to Hopley?
5. What measures are put in places to ameliorate these challenges?

APPENDIX 4

WORKSHOP 1 PARTICIPANT LIST

Name	Area of Expertise
Professor I. Chirisa	Housing and shelter provision; Social Theory and Planning; Urban Policy and Governance
Doctor Chavhunduka	Research methods in urban planning; Planning of human settlements
Doctor T Marango	Local governance
Mrs A Kwangwama	Valuation and property development; Planning law
Mr B Dube	Regional Planning
Mr E Manjeya	Urban Design and human settlement development
Mr Zimunya	Urban Policy and Urban Management
Mr Murowe	Regional and Local economic development
Mr R Maruziva	GIS specialist
Ms C Gutsa	Regional development planning

APPENDIX 5

**APPROVAL LETTER FROM MINISTRY OF LOCAL
GOVERNMENT, PUBLIC WORKS AND NATIONAL
HOUSING**

**Ministry of Local Government, Public Works and
National Housing**

Telephone 263 4 707615

Fax 263 4 797706

REF: ADM/23/8

02 January 2018



ZIMBABWE

Office of The Secretary
P. Bag 7706
Causeway,
Harare

Mr Rajab Matamanda
11 Addison Road
Hatfield
Harare

**APPROVAL OF AUTHORITY TO UNDERTAKE ACADEMIC RESEARCH: MR
RAJAB MATAMANDA: UNIVERSITY OF THE FREE STATE STUDENT.**

The above subject matter refers;

It is my pleasure to advise you that the Head of Ministry in his memorandum dated 23 November 2017 has approved your application to undertake a field research.

Please be advised that the research findings should not be subject to external consumption and must be solely used for academic purposes only. You are mandated to complete the Official Secret Act before commencement of the research project. Moreover, the final copy of the research findings should be submitted to the Office of the Secretary upon completion.

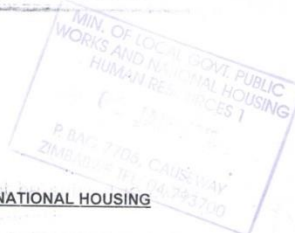
It is our hope that the research findings will help the Ministry in coming up with relevant strategies actions in the study area undertaken.



I. Chazuka

FOR: SECRETARY FOR LOCAL GOVERNMENT, PUBLIC WORKS AND NATIONAL HOUSING

Cc: The Principal Director, Physical Planning
The Director, Physical Planning



APPENDIX 6
OFFICIAL SECRECY DOCUMENT

- 2 -

v) allows any other person to have possession of any official document issued for his use alone, or communicates any secret official code word or pass word so issued, or, without lawful authority or excuse, has in his possession any official document or secret official code word or pass word issued for the use of some person other than himself, or on obtaining possession of any official documents by finding or otherwise neglects or fails to restore it to the person or authority by whom or for whose use it was issued;

shall be guilty of an offence.

c) Prevention of Corruption Act (Chapter 70)
Section 3 of this Act reads:

a) If any agent corruptly accepts or obtains, or agrees to accept, or attempts to obtain from any person, for himself or for any other person, any gift or consideration as an inducement or reward for doing or forbearing to do, or for having done or foreborne to do any act in relation to his principal's affairs or business, or for showing or forbearing to show favour or disfavour to any person in relation to his principal's affairs or business; or

b) any person corruptly gives or agrees to give, or offer any gift or consideration to any agent for himself or for any other person as an inducement or reward for doing or forbearing to do, or for having done or foreborne to do any act in relation to his principal's affairs or business; or

c) any person knowingly gives to any agent, or if any agent knowingly uses, with intent to deceive his principal, any receipt, account or other document in respect of which the principal is interested, and which contains any statement which is false or erroneous or defective in any material particular, and which to his knowledge is intended to mislead his principal; or

d) any agent, by collusive arrangement with the seller of goods or with any person engaging to render certain services, secretly offers any consideration to an agent in regard to the sale of the goods to the employment of his services;

he shall be guilty of corruption

I R.A. MATAMANDA..... acknowledge receipt of a copy of this paper on "Declaration of Secrecy".

SIGNED [Signature] 2/01/2018

WITNESS [Signature].....

064

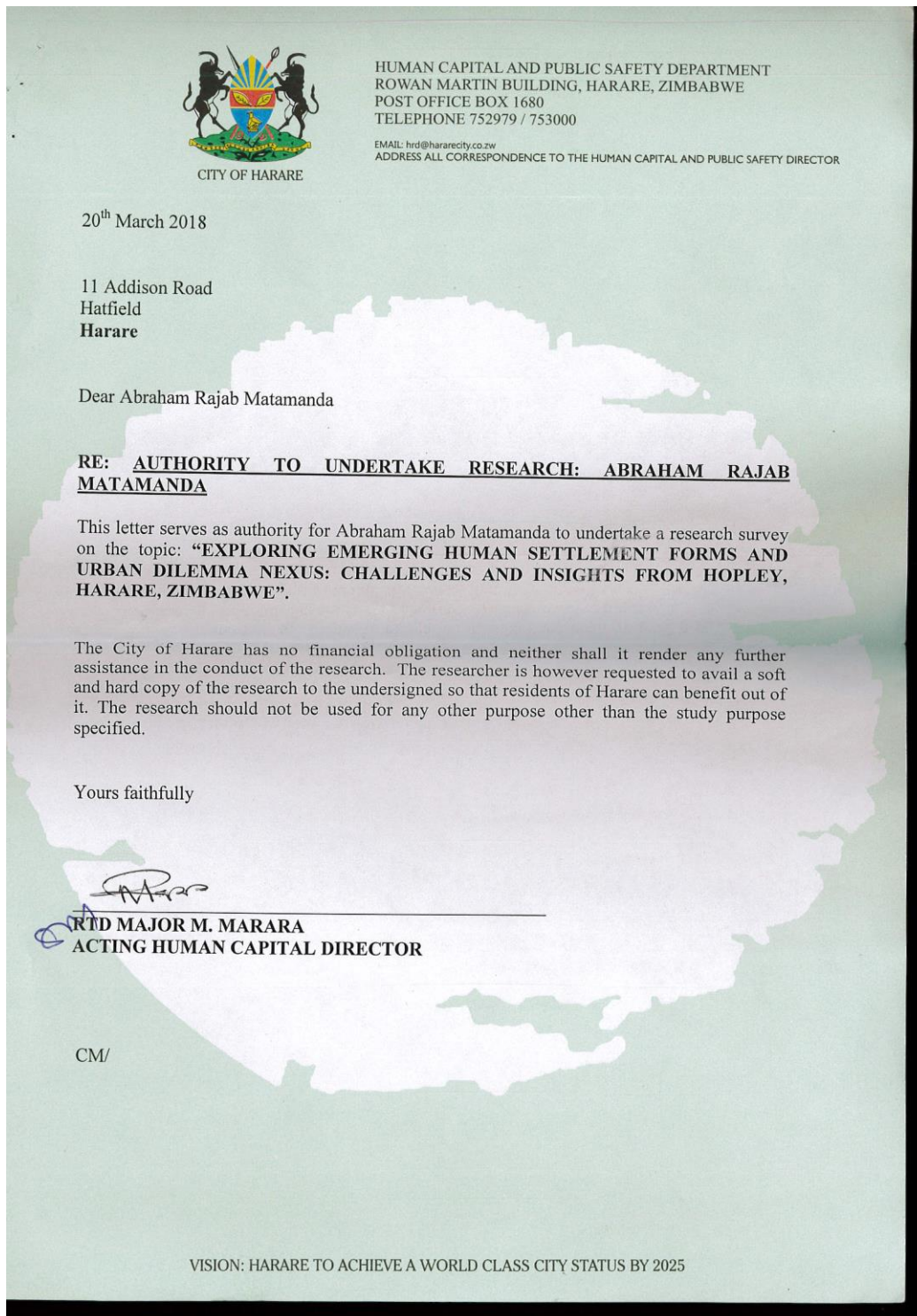
OF LOCAL GOV. PUBLIC WORKS AND NATIONAL HOUSING SERVICES 1

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APPENDIX 7

**ACCEPTANCE LETTER FROM CITY OF HARARE TO
UNDERTAKE RESEARCH**



APPENDIX 8

ETHICAL CLEARANCE LETTER FROM THE UNIVERSITY OF THE FREE STATE



Faculty of Natural and Agricultural Sciences

18-Aug-2017

Dear Mr Rajab Matamanda

Ethics Clearance: Exploring emerging human settlement forms and urban dilemma nexus: Challenges and Insights from Hopley, Harare, Zimbabwe

Principal Investigator: Mr Rajab Matamanda

Department: Urban and Regional Planning (Bloemfontein Campus)

APPLICATION APPROVED

This letter confirms that a research proposal with tracking number: **UFS-HSD2017/0808** and title: **'Exploring emerging human settlement forms and urban dilemma nexus: Challenges and Insights from Hopley, Harare, Zimbabwe'** was given ethical clearance by the Ethics Committee.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2017/0808**

Please ensure that the Ethics Committee is notified should any substantive change(s) be made, for whatever reason, during the research process. This includes changes in investigators. Please also ensure that a brief report is submitted to the Ethics Committee on completion of the research.

The purpose of this report is to indicate whether or not the research was conducted successfully, if any aspects could not be completed, or if any problems arose that the Ethics Committee should be aware of.

Note:

1. This clearance is valid from the date on this letter to the time of completion of data collection.
2. Progress reports should be submitted annually unless otherwise specified.

Yours Sincerely

Prof. RR (Robert) Bragg
Chairperson: Ethics Committee
Faculty of Natural and Agricultural Sciences

Natural and Agricultural Sciences Research Ethics Committee
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