Urban regeneration: an integrated city approach

E Malan

Dissertation submitted in fulfilment of the requirements for the degree Master of Science in Urban and Regional Planning at the North-West University

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Graduation May 2019
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ABSTRACT

The urban fabric of South African cities continues to illustrate segregation patterns and growing levels of inequality as a result of apartheid planning. Apartheid planning has conceived the pattern of the city within an extensive framework of spatial and social controls distinctly structured to achieve economic and social design. This study aims to investigate possible mitigation measures in the form of regeneration and integration that will improve the functionality of South African cities. The study is focused in an identified study area i.e. a selected area of the George Municipality in the Western Cape Province of South Africa. Segregated urban patterns are familiar in many parts of the world, however, most research has failed to propose substantial solutions for the regeneration of segregated settlements. In the attainment of the aim of the study, the subjects of land use planning and land use management are investigated as foundation for evaluating the level of control over stressors and enhancers of the urban environment. A comparative case study analysis, consisting of two international case studies, respectively in a developed and developing country, and one local case study, serve as foundation on which the recommendations of the study are based. The study concludes with recommendations, grouped into four categories: physical, economic, social and environmental, to encompass the results of a series of programmes for action and strategies for change.

Key terms: regeneration; integration; segregation, apartheid planning.
OPSOMMING

Die gevolge van apartheidsbeplanning seëvier steeds in Suid-Afrikaanse stede, wat gekenmerk word deur segregasiepatrone en toenemende vlakke van ongelykheid. Apartheidsbeplanning het stede laat ontwikkel in 'n uitgebreide raamwerk van ruimtelike en sosiale (maatskaplike) beheer wat doelbewus gestructureer was om 'n sekere vorm van ekonomiese en sosiale (maatskaplike) struktuur te bereik. Hierdie studie het ten doel gestel om moontlike versagtingsmaatreëls in die vorm van regenerasie (herskepping) en integrasie te ondersoek, ten einde stede se funksionaliteit te verbeter. Die studie is gebaseer op 'n geïdentifiseerde studie area, nl. 'n geselekteerde area van George Munisipaliteit in die Wes-Kaap Provinsie van Suid Afrika. Gesegregeerde stedelike patrone is internasionaal redelike algemeen, die meeste navorsing versuim egter om wesenlike voorstelle vir die herstel van gesegregeerde nedersettings te formuleer. Die doel van die studie word bereik deur vakke van grondgebruiksbeplanning en grondgebruikbestuur te ondersoek as basis om die vlak van beheer oor stressors en versterkers van die stedelike omgewing te evalueer. 'n Vergelykende gevallestudie-analise, bestaande uit twee internasionale gevallestudies, een van 'n ontwikkelde en een van 'n ontwikkelende land, en een plaaslike gevallestudie, dien as basis waarop die aanbevelings van die studie berus. Die studie sluit af met aanbevelings, gegroepeer in vier kategorieë: fisiese, ekonomiese, sosiale en omgewingsaangeleenthede, om die resultate van 'n reeks programme vir aksie en strategieë vir verandering in te sluit.

Sleutel terme: hernuwing; integrasie; segregasie, apartheidsbeplanning.
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CHAPTER 1

INTRODUCTION

1.1 RESEARCH ORIENTATION

This study was initiated to identify a growing problem that occurs in most urban fabrics of South African cities and to point out that though urban settlements are facing a growing problem, little has been done to address the disparities. This study therefore aims to measure the level of inequality in an identified urban settlement by making use of the Gini coefficient. The level of inequality will be measured against the current conditions of two identified areas of increased activities and reasons for the inequality will be investigated. Thereafter, measurement to attempt to improve the level of inequality will be proposed by means of urban regeneration. Roberts and Sykes (2000:7) state that urban regeneration entails an integrated and comparative vision and action that lead to the resolution of problems occurring in the urban environment and that seek to offer lasting improvement in the physical, economic, environmental and social conditions of the area that has been subject to change.

1.2 PROBLEM STATEMENT AND MOTIVATION

Every city is affected by the process of change and the inclination to bring about transformation. The term decline, in the context of the urban environment, is used to delineate undesirable changes. In some cases, however, it is not change that causes a level of undesirability, but rather the history that forms the mosaic of urbanised patterns. Adapting to and mitigating climate change, alleviating food scarcity, initiating economic growth while at the same time protecting biodiversity, dealing with settlement and preventing land conflicts are a few of the numerous challenges that developing countries are facing at present.

Urban form is defined as the spatial configuration of established elements included in a metropolitan region that comprises spatial patterns of land and their densities, as well as spatial design of communication infrastructure and transport. Urban form is a result of decisions on the locale of firms, thousands of households and public-sector agencies in free-market economies.

The urban form of a majority of South African cities reflects segregation patterns; this is the foremost problem discussed throughout this research. The segregation of ethnic groups and race has historically been a principal characteristic of the economic, spatial and social organisation of
South African cities. It is a behavioural pattern of society that pervades all aspects of urban living and cannot be escaped by any South African inhabitant.

The segregated settlement’s response to adverse spatial demands that emanated from an increasingly complex array of social regulations within class groups and expanding urbanisation was one of compromise and pragmatism. Urban segregation evolved as a natural response to high levels of social allotment generated by supremacy-dependent relationships that came into being from ethnic and cultural pluralism and differential degrees of technological development, as well as class-forming mechanisms in the political economy. Both voluntary and imposed residential segregation were present in spatial formulation. Apartheid planning conceived the pattern of the city within an extensive framework of spatial and social controls distinctly structured to achieve economic and social design.

Distinct types of urban segregation prevail, depending on the urban context, ethnic or racial segregation and differences in income classes. The active relation between social exclusion and income classification creates a continual downward spiral: segregation promoting exclusion and exclusion promoting segregation. Urban segregation has distinct effects and meanings depending on the specific form of cities, as well as their historical and cultural context. Moreover, segregated urban areas have always been associated with increased exposure to diseases, violence, inadequate accessibility, increased trips to school or work, inadequate public transport and an overall low quality of natural and built environment.

1.3 RESEARCH GOALS AND OBJECTIVES

The research will aim to evaluate the implications of land use planning and land use management for segregated communities. Concurrently, it will examine how regeneration and integration policies might establish competitive places that are liveable, fiscally sound and socially inclusive. However, the matter of land use is both complex and broad; therefore, stressors and enhancers of the urban environment will be discussed. These are made up of increasing population growth, industrialisation, urbanisation, urban sprawl, segregation, land degradation, spatial conflicts, and on the other hand, compactness, regeneration, mixed land use and economic drivers. The discussion of stressors of the urban environment is important, for a problem must first be identified before a solution can be properly formulated. The literature describing the stressors will also help indicate the target areas in the study area later in the research. The enhancers of the urban environment are of the utmost importance, as these will create a foundation from which principles are built to propose a better quality of life for segregated urban settlements.

The detailed objectives of the study are the following:
1. To explore models of urban structure and the corresponding theories of urban spaces;
2. To identify problems arising as a result of urban form, land use planning and land use management;
3. To determine stressors and enhancers of the urban environment;
4. To establish the level of segregation experienced and the causes that led to segregated development in the study area;
5. To review regeneration and integration policies in different urban environments and on different scales in the case studies; and
6. To apply regeneration and integration policies in the specified urban context.

1.4 GLOSSARY OF TERMS AND ABBREVIATIONS

The following table contains the terms and abbreviations used throughout this research.

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>ANC</td>
<td>African National Congress</td>
</tr>
<tr>
<td>BIP</td>
<td>Bustee Improvement Programme</td>
</tr>
<tr>
<td>CBD</td>
<td>Central Business District</td>
</tr>
<tr>
<td>CJIDPR</td>
<td>City of Johannesburg Integrated Development Plan Review</td>
</tr>
<tr>
<td>DCOGTA</td>
<td>Department of Cooperative Governance and Traditional Affairs</td>
</tr>
<tr>
<td>DLA</td>
<td>Department of Land Affairs</td>
</tr>
<tr>
<td>DRDLR</td>
<td>Department of Rural Development and Land Reform</td>
</tr>
<tr>
<td>EDPGM</td>
<td>Economic Development Profile for George Municipality</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GDPR</td>
<td>Gross Domestic Product Per Region</td>
</tr>
<tr>
<td>GDS</td>
<td>Growth and Development Strategy</td>
</tr>
<tr>
<td>GEAR</td>
<td>Growth, Employment and Redistribution</td>
</tr>
<tr>
<td>GIPTN</td>
<td>George Integrated Public Transportation Network</td>
</tr>
<tr>
<td>GMSDF</td>
<td>George Municipal Spatial Development Framework</td>
</tr>
<tr>
<td>GPSDF</td>
<td>Gauteng Provincial Spatial Development Framework</td>
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<tr>
<td>IDC</td>
<td>Industrial Development Corporation</td>
</tr>
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<td>IDP</td>
<td>Integrated Development Plan</td>
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<td>IUDF</td>
<td>Integrated Urban Development Framework</td>
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<tr>
<td>JMSDF</td>
<td>Johannesburg Municipality Spatial Development Framework</td>
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<td>LSDF</td>
<td>Local Spatial Development Framework</td>
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<td>LUPA</td>
<td>Land Use Planning Act</td>
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<td>LUPBLGGM</td>
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<td>NDP</td>
<td>National Development Plan</td>
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<td>NSDP</td>
<td>National Spatial Development Perspective</td>
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<td>PLSDF</td>
<td>Paalalstorp Local Spatial Development Framework</td>
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<td>PSDF</td>
<td>Provincial Spatial Development Framework</td>
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<tr>
<td>RDP</td>
<td>Reconstruction and Development Programme</td>
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<td>SACN</td>
<td>South African Cities Network</td>
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<tr>
<td>SDF</td>
<td>Spatial Development Framework</td>
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<td>SPLUMA</td>
<td>Spatial Planning and Land Use Management Act</td>
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<tr>
<td>TOD</td>
<td>Transit-Orientated Development</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNWCR</td>
<td>United Nations World Cities Report</td>
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<td>Western Cape Government Inclusionary Housing Discussion</td>
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<td>WCGSEP</td>
<td>Western Cape Government Socio-economic Profile</td>
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<td>WCPSDF</td>
<td>Western Cape Provincial Spatial Development Framework</td>
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</table>

**Table 1-1: Terms and abbreviations**

**Source:** Own creation
1.5 STRUCTURE OF RESEARCH

The research is structured as follows:

**Introduction**
- Research orientation
- Problem statement and motivation
- Research goals and objectives
- Glossary of terms and abbreviations

**Chapter 1**
Introduction

**Chapter 2**
Research framework and design
- Qualitative and quantitative research
- Research design
- “Triangulation” of data
- Research methodology

**Chapter 3**
Urban structure and models
- A history of modelling and theories of urban spaces
- Models in geography
- Models of urban growth

**Chapter 4**
Land use planning and land use management
- Functions of a land use planning programme
- Urban land use planning
- Land use planning
- Land use management

**Chapter 5**
Urban dynamics
- Stressors of the urban environment
- Enhancers of the urban environment

**Chapter 6**
Legal and policy framework
- South Africa’s urban form
- Legislative framework

**Chapter 7**
A relative case study analysis
- International case study: Developed country
- International case study: Developing country
- Local case study

**Chapter 8**
The case of Pacaltsdorp - George
- The urban function of George
- Urban form of Pacaltsdorp and George
- Problems arising from land use
- Land use planning and land use management in George
- Stressors of the George urban environment
- Enhancers of the George urban environment

**Chapter 9**
Synthesis and recommendations
- Synthesis
- Recommendation
- Conclusion
- Limitation of research
- Areas of future research

Figure 1-1: Document structure
Chapter Two will clarify the methodological reasoning of the study. Research studies in the built environment have been reproached for their anecdotal method when interpreting real-world phenomena. The approach that will be followed to conduct the research will be both quantitative and qualitative. Chapter 2 aims to provide a clear indication of the research design that will be followed throughout the dissertation. The triangulation of data will also be elaborated on, as it is a collective word for the formulation of methodologies within a single study of the same phenomenon. It ultimately denotes a reference to a grouping of research methods, which is powerful for acquiring results and insights, and for drawing conclusions and making inferences.

Chapter Three will illustrate an overview of the history of various urban structures and models that contributed to the urban settlements that we know today. The history of urban models is of importance, as it forms the background of the study of urban morphology, urban segregation and urban regeneration. Models in geography will also be evaluated, as models of urban growth are essential when establishing a linkage between theoretical and observational levels. The implications of land use planning and land use management will also be explored, as the process of urban expansion influences all human and natural systems. Multiple models in urban geography have pursued numerous models conceptualising the process.

Chapter Four will be dedicated to expanding on the concept of land use planning and land use management. The functions of a land use planning programme will be discussed in relation to services that are essential to achieve a more desirable outlook and to improve decisions on land use. An elaboration of the concept of land use planning as a tool in regulating the activities of community development is formulated and guided by the necessity of using the tool when making recommendations. The components of managing changed land use planning by means of structural analogy are also discussed, as well as the origin, principles, different levels and components of land use planning. Lastly, the principle of land use management is clarified through a discussion of the objectives and the application of different tools available for managing land use.

Chapter Five will explore the stressors arising from the urban environment and subsequently the enhancers of the urban environment. The discussion of stressors of the urban environment is relevant, for a problem must first be identified before a solution can be properly formulated. The literature describing the stressors will help indicate the target areas later in the study. The enhancers of the urban environment are of the utmost importance, as these will create a foundation from which principles are built to propose a better quality of life for segregated urban settlements in secondary cities. Sustainable urban areas are dependent on lasting improvement in the economic, physical, social and environmental sectors of an area that has been subject to
change. Therefore, the formulation of a sustainable urban area is what is sought and the establishment of enhancers to help reach the goal is the second objective of this chapter.

In Chapter Six, the legal and policy framework will be elucidated. The study area, located in South Africa, poses its own set of challenges, as South African settlements are still spatially segregated, with a high degree of exclusion. This is reflected in the application of law enforcement, as well as the nature of the management of land use. Concurrently, an overview of South Africa’s urban form will be provided, the starting point of which is a historical overview, followed by a description of the emergence of urban South Africa. The growing problem of a racially divided country will be discussed, considering five problems.

Chapter Seven will aim to provide a case study analysis by making use of two international regeneration projects, one from a developing and the other from a developed country, as well as a local South African case study. Urban regeneration and integration principles and methods will be examined to determine what might be applied locally. This case study analysis will ultimately form the foundation on which subsequent recommendations will be based.

Chapter Eight will evaluate the urban fabric of the current built environment of George, and more specifically Pacaltsdorp. The topography of the existing built environment exhibits a pattern of social sciences and not merely a pattern of natural sciences. Therefore, a number of factors will be discussed, not merely the physical structure. The economic as well as socio-economic composition of the settlements will be portrayed. The urban form of Pacaltsdorp and George will be evaluated, together with the land use planning and land use management that gave rise to the current urban form. Both the stressors and the enhancers of the settlement will be explored, as well as the existing policy guidance and legislation.

Chapter Nine, the final chapter, will be devoted to synthesising the analytical and theoretical framework provided in the preceding chapters. Synthesising will commence by breaking up the study into three most candid versions; (1) urban form; (2) theories of spaces; and (3) land use planning and land use management. Though these concepts closely correlate with one another, each will be elaborated on individually to explain the relationship between theory, empirical research and findings. The recommendations will be examined on the grounds of four categories of urban regeneration: the physical, economic, social and environmental categories. A final conclusion will be drawn before the limitations of the research and areas for future research will be listed.
CHAPTER 2

RESEARCH FRAMEWORK AND DESIGN

2.1 INTRODUCTION

This chapter aims to clarify the methodological reasoning of the study. Numerous factors should be considered when selecting the appropriate research methodology (Amaratunga et al., 2002:18). The disciplines of the built environment are principally applied sciences (Knight & Turnbull, 2008:73), which conventionally concentrate more on the practice of existing knowledge rather on engendering new knowledge (Klosterman, 1983:216). Research studies in the built environment have been reproached for their anecdotal method when interpreting real-world phenomena (Amaratunga et al., 2002:17). The approach followed to conduct the research will be both quantitative and qualitative, as elaborated on in 2.2. The research design consists of various core logistics, the most significant of which is the meta-research that will be conducted, which rests on the research design of literature reviews, research synthesis, model/theory/typology construction, conceptual analysis, case studies and logical/philosophical/normative argumentation (Du Toit and Mouton, 2013:128). This chapter will provide a clear indication of the research design that will be followed throughout the dissertation.

2.2 QUALITATIVE AND QUANTITATIVE RESEARCH

There are essential differences between the qualitative and quantitative research approaches. It is clear, however, that both methods encompass differing weaknesses and strengths (Amaratunga et al., 2002:20). Quantitative research is usually expressed by statistics, numbers and proportions. As a result, it is less valuable for measuring people’s attitudes, emotions, philosophies or behavioural states. Quantitative research is consequently less flexible, as research will usually be conducted by questionnaires and statistics, where participants are asked identical questions, leaving little or no room for flexibility (Mack et al., 2005:3).

Qualitative research, on the other hand, is more pliable and makes provision for significant spontaneity and adaption for interaction between the participant and the researcher or the studied area. Accordingly, qualitative research methods consist of more open-minded questions that permit more receptive and progressive answers from the participants (Le Roux, 2015:75). These answers also tend to be more comprehensive than one-word answers, which sets them apart from quantitative research methods. A qualitative approach is said to be more powerful than a quantitative research method, since the data is usually gathered over a period of time, making
the qualitative approach more holistic than quantitative research (Miles et al., 2014:12). A summary of a comparison between qualitative and quantitative research approaches is illustrated below in Figure 2-1.
Comparison: qualitative and quantitative research

**Qualitative research** is rooted in the philosophy of empiricism and follows a flexible, open and unstructured approach. The aim is to explore diversity rather than to quantify. The emphasis is directed at describing and narrating perceptions, experiences and feelings rather than the communicator’s findings in a narrative and descriptive rather than analytical manner, placing little or no emphasis on generalisations.

**Quantitative research** is rooted in rationalism and follows a structured, predetermined and rigid set of procedures. The aim is to quantify the range of variation within the phenomenon. The emphasis is on the measurement of objectivity and the variables of the process. The findings of research are substantiated by larger sample sizes, which gives importance to cogency and the reliability of findings. The communicator’s findings are arranged in an aggregated and analytical manner. Inferences and conclusions that can be generalised are drawn.

**Analytical objectives:**
- To explain relationships
- To describe variation
- To describe individual experiences
- To describe group norms

**Methods:**
- Case studies
- Interviews
- Observations
- Focus groups

**Analytical objectives:**
- To predict casual relationships
- To quantify variation
- To describe characteristics of a population

**Methods:**
- Tests
- Surveys
- Behavioural checklists
- Scales

Figure 2-1: Comparison between qualitative and quantitative approaches in researches

Source: Adapted and constructed from Mack *et al.* (2005:3) and Kumar (2014:343)
When comparing the qualitative and quantitative approaches in Figure 2-1, the approach that is deemed most fit for this study is a qualitative approach. Though certain aspects of a quantitative approach are being considered, the foremost method remains qualitative, as this study is explorative in nature and explores regeneration approaches and their success or failure, as well as the possibility of their implementation in South African cities. The case study approach will be used to explore three different regeneration policies: one of a developed country, one of an international developing country and one local case study. Qualitative research offers an opportunity for more in-depth focus and is a more descriptive method of research for this specific study. Furthermore, qualitative research offers the possibility of eliminating unwanted data, case studies or information. The implication of that is that in this case, three case studies are identified, rather than ten, through which thorough values, data and information can be obtained (Creswell, 2007:74).

2.3 RESEARCH DESIGN

A clear definition of strategy for research, according to Amaratunga et al. (2002:18), is necessary and a fundamental requirement for a consistent empirical study. In the field of the built environment, research has progressed to a stage that requires the substantiation of its heuristic philosophies within other “real world” circumstances in order to integrate and refine the philosophies. Buckley et al. (1976:26) propose that an operational research strategy requires the following conditions; (1) gathering of representative and adequate evidence; (2) use of appropriate scientific methods; (3) an orderly investigation with a clearly defined problem statement; (4) logical reasoning, untainted by biased opinions, demonstrated in the conclusions about evidence; (5) a demonstration of reasonableness in the conclusions; and (6) production of laws or principles that might be applied in similar conditions in the future on the basis of the cumulative outcomes in a given field.

Zainal (2007:1) states that case study research might be considered a powerful research method, especially when in-depth, holistic investigation is required. Accepted as a tool in numerous social sciences, the function of the case study method in research becomes more pertinent when issues with regard to sociology (Gräßel & Schirmer, 2006:217), education (Gulsecen & Kubat, 2006:100) and community-based problems (Johnson, 2006:396), such as unemployment, poverty, lack of basic services, illiteracy, drug addiction, etc. are raised. One of the primary reasons for the acknowledgement of case studies as viable research methods is researchers’ concern about the restrictions of quantitative methods in the provision of in-depth and holistic explanations of behavioural and social problems (Zainal, 2007:1). A researcher is able to move beyond quantitative statistical results and comprehend the behavioural comportment conditions as perceived from the actor’s perspective when analysing case study methods. By including both
qualitative and quantitative data, the case study aids in explaining both the process and the outcome of the phenomenon through unmitigated observation, analysis and reconstruction of the cases under investigation (Tellis, 1997:38).

Case study research, according to Rowley (2002:17), is favourable for contemporary events when the applicable behaviour cannot be manipulated. Generally, case study research makes use of a variety of evidence emanating from different sources, such as artefacts, documents, observation and interviews, stretching beyond the scope of resources of evidence that may be available in a historical study. Yin (1994:9) summarises that a case study approach is useful, as “a how or why question is being asked about a contemporary set of events over which the investigator has little or no control.”

2.4 “TRIANGULATION” OF DATA

Debate in the research community has led to the conclusion that research methods, whether qualitative or quantitative, are best regarded as complementary and should consequently be combined (Amaratunga et al., 2002:23). This is confirmed by Das (1983:311): “… qualitative and quantitative methodologies are not divergent or antithetic, they rather focus on different dimensions of a similar phenomenon. Often these dimensions might appear to be confluent; even in these instances, where dimensions diverge, the underlying unity might become visible upon deeper investigation. The situational objectives and contingencies of the researcher appears to play a decisive role in the execution, as well as the design, of the study.”

This view has grown more popular, with growing attention directed at “triangulation” in research (Yin, 1994:48). Triangulation is a collective word for the formulation of methodologies in a single study to examine the same phenomenon. The term triangulation assumes that the efficiency of the term rests on the principle that the weaknesses in every individual method will be compensated for by the strengths of others. Triangulation is further taken to refer to a comprehensive approach that combines theoretical perspectives, multiple observers and methodologies and is usually used interchangeably to delineate research strategies that integrate a combination of qualitative and quantitative methods (Amaratunga et al., 2002:23). It mostly denotes a reference to a grouping of research methods, which is powerful for acquiring results and insights, and for drawing conclusions and making inferences, as illustrated in Figure 2-2.
Though the use of a single methodology has been supported by numerous authors (Yin, 1994:48; Miles et al., 2014:9), several of the supporting opinions are distinctly pragmatic, such as the need to limit the scope of the study and time constraints. Rossman and Wilson (1994:320) claim that the reasons why qualitative and quantitative data should be linked are: (1) to develop or elaborate analysis and therefore provide richer details; (2) to enable corroboration of each method via triangulation; and (3) to initiate new ways of thinking through attention to paradoxes by providing fresh insights.

2.5 RESEARCH METHODOLOGY

Urban renewal processes are uncertain and complex; uncertain because planning aims to change the future and the future is predominantly unknown, and complex because various parties are involved, which introduces a wide range of divergent interests. Therefore, planning entails
managing and understanding uncertainty. The following two sub-sections aim to elaborate on the method of investigation.

2.5.1 Literature study

Numerous publications related to urban form, theory of urban spaces, models of urban growth, models in geography, the functions of a land use planning programme, land use management, stressors and enhancers of the urban environment were included and contributed to the conclusions that were drawn.

Relevant policies and legislation were also investigated: the Spatial Planning and Land Use Management Act (SPLUMA) (no. 16 of 2013), the Integrated Urban Development Framework (IUDF), National Development Plan (NDP), Western Cape Provincial Spatial Development Framework, George Municipal Spatial Development Framework (GMSDF) and Pacaltsdorp Local Spatial Development Framework (PLSDF). The legislative framework provided insight into all levels of government’s approach to urban regeneration and urban integration.

2.5.2 Empirical investigation

The approach to conducting the research will be both quantitative and qualitative, ranging from interviews to the evaluation of international and local case studies.

Case study research might be considered a powerful research method, especially when in-depth, holistic investigation is required. Accepted as a tool in numerous social sciences, the function of the case study method in research becomes more pertinent when issues with regard to sociology, education, and community-based problems are raised. A researcher is able to move beyond quantitative statistical results and comprehend the behavioural comportment conditions as perceived from the actor’s perspective when analysing case study methods. By including both qualitative and quantitative data, the case study aids in explaining both the process and the outcome of the phenomenon through unmitigated observation, analysis and reconstruction of the cases under investigation.

Three case studies are investigated in this research: two international case studies, examining one developed and one developing country, and one local case study;

- Rotterdam, Netherlands. A developed country in the international community was chosen for this case study because of its planning principles and methods that can be used as a measurement tool for South African policies to strive towards. The extent of the regeneration project is on a scale that might not be reached in South Africa. However,
the principles and the methods can be examined to determine what might be applied locally.

- Kolkata, India. This developing country was chosen to evaluate regeneration projects of similar nature. Though the scale of both the project and the problem differs immensely, the project’s governmental and economic guidance can be examined to determine what can be expected in a country of the same nature.

- Johannesburg, South Africa. The local case study is explored to determine what has been achieved in the country. The inner-city regeneration project has made substantial progress by addressing issues related to inner-city decline. The study of Johannesburg is relevant, for though the scale of the project and the size of the population differ, the national legislation, most procedures, the history of the urban fabric, and to a certain extent the problems experienced and planning principles to be taken into consideration correlate with numerous settlements throughout the country.

The study area of George, Western Cape, and the area of Pacaltsdorp in relation with George will be closely examined. The area is chosen because George Municipality recognises the significant role it fulfils in enabling and ensuring an environment for economic development in order to produce sustainable livelihoods for its inhabitants. A cross-sectoral, multi-faceted, participatory approach will be followed in competitively pursuing economic growth. On the other hand, Pacaltsdorp started as a self-sufficient, independent town conducting its own administration during the apartheid years. Pacaltsdorp has, however, not developed to its full potential, as indispensable business opportunities and developments were directed primarily towards George central business district (CBD) and the developments occurring at the Garden Route Mall towards the east of George. The residential areas of Pacaltsdorp, as well as the CBD, have experienced little development and, as a result, the inhabitants of Pacaltsdorp are required to travel to George for the services they need.

2.6 SUMMARY

This chapter indicated that though certain aspects of a quantitative approach are being followed, the foremost method remains qualitative, as this study is explorative in nature and explores regeneration approaches and their success or failure, as well as the possibility of implementing such approaches in South African cities. The research method of case studies was evaluated and it was found that the primary reasons for the acceptance of case studies as viable research methods was that researchers raised concern about the restrictions of quantitative methods in the provision of in-depth and holistic explanations of behavioural and social problems. Triangulation of data, as a collective word for the formulation of methodologies within a single
study of the same phenomenon, was explained to support the notion of qualitative and quantitative data analysis.
CHAPTER 3

URBAN STRUCTURE AND MODELS

3.1 INTRODUCTION

This chapter aims to illustrate the history of urban structures and models that contributed to the urban settlements that we know today. The history of urban models is of importance, as it forms the foundation that is being built upon throughout the study of urban morphology, urban segregation and urban regeneration (as indicated in Objective 1, sub-section 1.3). The implications of land use planning and land use management will also be elaborated on, more specifically, their origin, components, objectives and application.

3.2 THEORIES OF URBAN MODELS AND SPACE

Numerous models have been formulated to be implemented as a tool for growth management and organisms of predictive planning. Urbanism is complex. It is a multidisciplinary trait with abundant influences, making the task of modelling arduous. The challenge is the ever-evolving nature of cities. Cities undergo fundamental structural transformations and consequently their style and character change as well. The problem is not only the modelling of the multidisciplinary theory, but also capturing the process of variation in a single model that will permit researchers to comprehend it (White, 1989:43). A brief history of models apposite to this study is elaborated on in this sub-section. Attention first needs to be paid to several theories to understand the fundamental influences of city structures.

The location theory can be applied to the reciprocal action of economic activities against the sphere and service area of industries. Economic forces are illustrated metaphorically by Weber and Friedrich (1929:3) as iron chains. They make a corresponding noteworthy statement: “It may be that the enormous agglomerations of today are nothing but inevitable results of a certain stage of economic and technical development; or perhaps they are [the] consequence of the social organization of our economic system.”

The economic system is then described as an interrelated phenomenon of different spheres. The spheres are made up of consumption, production and distribution. Each of these spheres is contingent on the remaining spheres. Simultaneously, every portion of production positions itself geographically whilst bearing consumption in mind (Weber and Friedrich, 1929:5).
3.2.1 Central place theory

*Understanding of regional structure and order*

The central place theory, with the key element of the scope of produce, is well known in the field of regional planning. The primary question that drove research is whether a general elucidation can be found for distribution, numbers and sizes of towns.

An economic approach is mentioned in the introduction of Christaller’s work (1966:3), where a significant assertion mentions that the topography of the existing built environment is an arrangement of a pattern of social sciences and not merely a pattern of natural sciences. Evidently, demand is the determinant that predominantly formulates the degree to which towns are established, augmented or, on the other hand, neglected and abandoned. Therefore, economic constituents are the *ipso facto* and unwavering determinant for the existence of towns. It is concluded that each economic relationship is directly related to space, while the spatial relationship is additionally an inherent component of these correspondences.

Christaller (1966:6) divulges that in the event of these aforesaid spatial correspondences being irradiated by the fundamental principles of the economic theory, with consequent expositions of the spatial laws, the outcome would prove to be favourable, not only for the economic aspect but also for the geographical aspect.

The rudiment of Christaller’s (1966:14) findings is a centralistic order; the configuration of accretion that is initiated from a nucleus is a fundamental paragon of the order of groupings that belong together, in organic as well as inorganic nature. The pattern of centralisation is not merely a human form of thinking, compiled and developed because of humanity demanding order; it prevails as a consequence of the immanent pattern of matter. Preference is given to every place that is defined, rather imprecisely, where the physical size of the settlement is measured by the spatial dimensions in height and area. The number of inhabitants is used as a measurement tool for the size of a town. Neither population nor area clearly demonstrates the importance of the town. Therefore, Christaller concluded that the importance of centrality (1966:18) may be based on the extent of the region that is supplied from the town. Centrality thus signifies the relative importance of a settlement with reference to the region encompassing the settlement.

The distribution of inhabitants and the magnitude of agglomeration in the centre itself have a direct influence on the consumption of central goods. Naturally, the demand for goods directly affects the consumption of these goods, which is determined by the social and professional structure, and more importantly, the income structure of the inhabitants. The development of central places
depends on numerous factors; as aforementioned, the most decisive factor is the net income that the residents of the central places procure.

The range of central goods is influenced by three determining factors (Christaller, 1966:52):

1. The location where the central good is offered in relation to the intervals between the individuals who require it. The distance, measured in whichever units, is economically insignificant in this instance.
2. The type of central good. This factor is a crucial component of the determination of central goods. A central good for which there is a feeble demand that might easily be replaced with another equivalent good has a smaller service area than an irreplaceable good or service for which there is a pressing demand.
3. The range, which is subject to ephemeral fluctuations because of population migrations or a change in price. These fluctuations include the type, price and quantity of the good at the central place, the price-willingness of the purchaser, the importance and size of the central place and the distribution of the population, as well as the subjective economic distance.

When examining the factors determining the range of central goods, spatially, the range forms a ring encircling the core of the goods. However, it should be noted that each type of central good has a unique typical range. Spatially, this range forms a circle around the central place (Christaller, 1966:54). When a higher order good is offered it will result in trade within a larger region.

Christaller’s analysis determined the interrelationships among the positions of sellers of various goods. In the analysis the market areas formed hexagonal spheres where the goods were offered in the central places of order. Eaton and Lipsey (1982:57) described the formation of new hexagonal market areas best by considering several central places located in the centre of each of the triangles formed by the central places of order (Voelker et al., 1978:3). These newly formed locations, together with the original central places of order, expounded a supplementary network of new hexagonal market areas. These hexagonal market areas are illustrated in Figure 3-1.
There is no official analysis of the economic force that gives rise to firms in diverse industries to agglomerate in this manner. The hierarchical principle and the pattern of central places are productions of Christaller’s geometric argument. Figure 3-1 illustrates that the number of places of lower order will always be proportionally smaller than the larger places (Christaller, 1966:66), i.e. as the sphere of influence of a place increases, the place (B-place) will be surrounded by correspondingly smaller places with smaller spheres of influence (A-place/M-place) (Keßler, 2014:1).

The elements of the lattice illustration, shown in Figure 3-1, were constructed on the assumption of a surface that is isotropic (Storbeck, 2010:8). This is, however, subject to the following assumptions listed by Kamil (2015:1): the purchasing power is distributed uniformly, the terrain is even, the population is distributed uniformly, consumers make use of the nearest central place, as it minimises the travelling distance, there are similar transportation facilities in all directions and the resource location is uniform. In ideal situations, as seen in Figure 3-1, the features of the horizontal arrangement are systematically spaced and ultimately form a triangular grid where the A-place is centrally located and surrounded by the hexagonal trade areas (Boundary of the A-region) (Christaller, 1966:67).
Organisations in the central places theory rest on the assumption that the higher order places supply all the goods to the lower order settlements, together with a portion of higher order goods and services that differentiates them from central places of lower order.

The model illustrated in Figure 3-1 is constructed on what Christaller called the market principle. The nesting pattern and hierarchy thereof result in the number of central places being maximised. This is a condition that might be considered necessary when the supply of goods located in central places is as near as possible to the purchaser, in agreement with the concept of the minimisation of movement. The system is known as the K-3 network and is also illustrated in Figure 3-1. There are three orders, according to Christaller (1966:67), within the hierarchy, which are revealed in the following three ways:

1. Places like hamlets that are the lowest order places. These developments are illustrated with circles with small dots in the centre (K-place);
2. Settlements such as villages are the intermediate order places. The settlements are illustrated with small dots in the centre and a thick outline (B-place); and
3. Towns and cities that are the higher order places. The cities are illustrated with large dots in the centre, a thick outline and bigger overall circles (G-place).

Based on the model and elaborated on by Christaller (1966:69), the K-value is the number of settlements at any given level of the hierarchy that is served by the corresponding central place. For example, each G-place (city) serves three B-places (villages); the cities will provide city-level goods to the three villages and the process follows the geometry of the trade areas (hexagonal), which will serve nine hamlets (Voelker et al., 1978:3).

Christaller (1966:308) presumed that when the K-value was accepted in any region, it would be absorbed within the regular progression. Therefore, it would be relevant to the interaction between hamlets and villages, villages and cities, and continue its way up through the hierarchy. Because of this rigid layout, the total number of settlements should follow a consistent progression. For example, in a case where the K-value equals 3, the progression would be 1; 3; 9; 27; 81..., and it would naturally start with the highest order place throughout the region (Sonis, 2005:5).

3.2.2 The economics of location

Our existence in time is determined for us, but we are largely free to select our location. This is influenced, though not dictated, by our place of origin. Finding the right location is essential to successful life, but it is essential also to a successful enterprise, to the establishment of a lasting settlement – in short, to group survival. In addition, a suitable location must be a location for the right
Lösch (1954:5) argues that the proposition of a logical choice of location varies according to whether it is viewed from the standpoint of an individual, or an entrepreneur or as a whole. When considering the influences on the essence of economic activity, the object of utilisation (whether a good or a product) is regarded as a function of distance. Lösch proposed overlapping hexagons of different sizes based upon the central place theory in economic geography by Christaller (Ikeda et al., 2017:3). Each product’s consummation depends solely on the distance from its origin.

The general pattern of hexagons is explained as market areas for different classes of goods that are simulated throughout different meshed nets of hexagons. To avoid confusion, the nets are placed to ensure that all of them have a minimum of one communal centre. This centre will form the metropolis and will benefit from all the advantages of the wide-reaching local demand. The nets are turned so as to create six sectors with abundant production sites, and six with only a small number (Sonis, 2005:5). This arrangement ultimately facilitates the greatest number of local purchases. The sum of the minimum distances in industrial locations is lowest, the best arrangement of locations coincide, and as a result, all transport lines, as well as shipments, are diminished to a minimum (Lösch, 1954:124). As Lloyd et al. (1974:49) stated, Lösch’s spatial arrangement of city centres is consistent with what he interpreted to be a fundamental element in the organisations of inhabitants; the convention of least effort.

There are various ways in which hierarchies of settlements can be organised, as seen in Figure 3-2, each with a unique geometrical arrangement of trade area boundaries and central places. Lösch elaborated on Christaller’s hexagonal-based model, developing it into a more multifaceted model that approximates more closely the patterns in the physical world. This flexible model is made probable by regarding the $K$-value as being authorised to vary. It is the superposition of every probable cover-up by a plane of hexagons where the centres coincide with the size of market areas (as the indicators; $K= 1, 3, 4, 7, 9, 12, 13, 16, 19...$) and the vertices of a triangular lattice (Sonis, 2005:5). In other words, the static $K$-assumptions of the traffic, separation and marketing principles of Christaller’s model are now regarded as part of special instances of a greater number of likely settlement distributions and hexagonal systems.

The smallest attainable hexagonal distributions that are associated with the distinct $K$-values are shown in Figure 3-2. These distributions are obtained by fluctuating the size and orientation of the hexagon. The higher order places are illustrated with a double circle. The reliant places of
lower order are illustrated with open circles when they are located within the area of trade of the higher order and they are filled if they are located on the periphery of the area of trade (Chorley and Hagget, 1977:315).

Figure 3-2: The smallest attainable hexagonal distributions in a Löschian landscape

Source: Lösch, 1954:117

The nine smallest arrangements, as seen in Figure 3-2, illustrate different spatial patterns of market areas around a shared central point. This point will be the metropolis, according to Lösch (1954:118), which will form the largest order of central place in his system. The shaded sectors consist of several centres. The points represent the original settlements and the numbers adjacent to the points illustrate the sphere of influence of the trade areas.

3.3 GEOGRAPHIC MODELS

Models in geography are fundamental when establishing a linkage between theoretical and observational levels. The functions of models are affected by reduction, action, simplification, concentration, experimentation, globalisation, extension and theory explanation and formulation (Apostel, 1961:128). Chorley and Hagget (1977:24) stated that the most valuable function of models is psychological, by enabling a collection of data or phenomena to be comprehended and
visualised. Such comprehension might not have been possible otherwise, owing to the complexity or magnitude of the situation.

The findings of Chorley and Hagget (1977) consider the more technical aspects of model formulation, whereafter an elaboration upon different categories of models follows: models in geomorphology, models in hydrology, models in climatology and meteorology, sociological models, etc. Most of these typologies of models are irrelevant to this study. However, the three model types relevant to this dissertation are briefly explained below.

3.3.1 Demographic models

The distribution of population has repeatedly figured distinctly in geography. Consideration of the density and distribution of the populace has been the origin of numerous studies, while being a finishing point in others. Researchers are often referred to maps that illustrate general population distribution models in the practice first established by Christaller (see sub-section 3.2.1), to determine the different populations and their relative growth against the market orientation of industries.

In the narrow sense, demographic models manage the interaction between mortality, fertility and nuptiality (Chorley & Hagget, 1977:189). If these factors were to be measured precisely, these models would be able to establish what the constant age compilation of a populace will be, assuming that existing attributes are preserved, and taking into account the rate of growth or decline, and so forth. However, in a more relaxed sense, demographic models may encompass models of which the framework can include features of economic activity of the populace in question or its political and social activity (Sauvy, 1952:54). For example, the relationship between marriage customs and a system of land tenure may be hypothesised where the demographic and economic consequences may be interpreted by assembling a model in which the relationships of the considerable variables are conveyed.

3.3.2 Models of economic development and settlement distribution

At the time of the publication of models in geography, a remarkable lack of interest was illustrated between geographers in the field of economic development. Hirschman (1959:144) asserted that economists had only recently deviated from their fixation with materialistic variations considering economic development to acknowledge further spatial variations. From there on, however, the manufacturing and testing of spatial distribution models of economic development had advanced expeditiously (Chorley & Hagget, 1977:257).
Economic development is rarely spread evenly throughout a subject area. More often than not, the development is concentrated around a point of interest that produces a mosaic of areas at diverse levels of economic development (Paauw, 1961:181; Vinsky, 1962:130; Hemming, 1963:42). However, an important facet of economic development, as stated by Klaassen et al. (1963:77), is that the scope of spatial deviation in the level of development will largely depend on the extent of regional sub-division adopted.

A traditional portion of human geography is made up of settlement studies. Traditionally studies have accentuated tenacious linkages between distinct facets of occupancy of regions and the physical environment; patterns of morphology and the distribution of settlements were too regularly regarded as part of physical features. This realisation swiftly contributed to the “townscape” becoming the equivalent of the urban landscape, which resulted in attention being drawn to microscopic differences in the sense of place of assorted portions of urban areas (Chorley & Hagget, 1977:303).

One settlement’s functional importance might surpass that of another, despite the population number. As illustrated throughout this sub-section, as well as sub-sections 3.2.1 and 3.2.2 regarding Christaller and Lösch, the theories propose that a relationship be formulated between the functions of each settlement. The function corresponds to spatial locations with orderliness within the urban system regarding the distribution pattern (Kamil, 2015:1).

Settlement patterns exist simply because activities are more efficient when they are clustered rather than dispersed. These activities may be regarded as services that are not necessarily provided for the settlements themselves, but rather for the residents in adjacent, secondary areas. Seeing that settlements are physically separated from one another, the linkages connecting the settlements are of the utmost importance and a framework of observing is to view the settlements as focal point or nodes in a transport network. The models of the city’s internal structure, according to Chorley and Hagget (1977:335), can be branched into two basic divisions:

1. Partial models. These models comprise the location of a particularised array of activities such as land uses. These activities are based on assumptions regarding the characteristics of locations and all the activities occurring in the urban area.
2. Comprehensive models. These models deal with the urban area as one entity that is made up of all the collective activities, as the name indicates.

Both these models stress the importance of transport when determining land use patterns, either in terms of the replacement of rent with the cost of transportation, or essentially in terms of the relationships of accessibility and land values.
Chorley and Hagget (1977:335) then continue to elaborate on the urban land market by explaining that patterns of land use are a result of aggregation of a series of decisions made about location. They believe, however, that no matter what the fundamental considerations are, the decisions are managed in several ways by economic processes that operate throughout society. Prior to Chorley and Hagget’s work, Ratcliff (1949:54) first elaborated on this idea by stating that “the locational patterns of land use in urban areas result from basic economic forces, and the arrangements of activities at strategic points on the web of transportation is a part of economic mechanism of society.”

The germane aspects of this mechanism referred to by Ratcliff relates to generations of patterns of land use that are concisely summarised as follows: most of these activities have the capability to derive utility from each site of the urban network. The utility of each site is calculated by the rent that the activity is able and willing to disburse to use the site. The interaction then follows; the greater the specific derivable utility, the greater the amount payable for rent will be (Ratcliff, 1949:56).

Figure 3-3 indicates the distinctive levels of internal structures for three orders of business (shopping) centres in cities. Garner (1966:19) suggests that contests within functions of separate threshold sizes bring about controlled arrangements of land use, with the noticeable features being shown in the levels of the centre. The threshold is related to the minimum size of agglomeration of inhabitants necessary for a function (Forbes, 1962:16). For any given level of city centre, the core area of high land value is determined by functions that place the core above the level of other land in the hierarchy and is encompassed by functions of lower level on successively lower land values.
As illustrated in Figure 3-3, the sketches indicated with A are typical regional centres where the core entails a high threshold with correspondingly expensive rent for the regional level functions. The regional centres are encompassed by lower levels of threshold, community level marked with B and neighbourhood level marked with C. Competition throughout the urban land use specifically for available sites results in the occupation of sites by the best and highest uses. This mechanism then allocates the greatest utility to the best sites, which are then, naturally, willing and able to pay most to occupy the site (Ratcliff, 1949:71).

Source: Garner, 1966:19
3.4 MODELS OF URBAN STRUCTURE

Cities have undergone significant changes since the models of urban growth were developed. However, a common pattern can be traced throughout the three models, even taking into consideration the array of distinct land uses. The concentric zone model, sector model and multiple nuclei model were developed to clarify the urban morphology of industrial cities in the twentieth century. These models are essential when elaborating on the basic foundations of spatial patterns formulated by the distribution of activities, buildings, growth and the distribution of people (Bansal, 2004:2; Schwirian, 2007:3).

The urban expansion process influences all human and natural systems of all extent and numerous multiple models in urban geography have been pursued to conceptualise the process (Dietzel et al., 2005:231). The concentric zone model was the first of these. It was created by Burgess in 1925, based upon Chicago. The sector model (Hoyt, 1939) and multiple nuclei model (Harris & Ullman, 1945) were presented at a later stage as alternatives to Burgess’s work. According to Schwirian (2007:5), these three modes have become intellectually linked and are widely regarded as the classic models of urban land use. Although these three theories, together with their variations, form a platform for successive work, they are, according to Dietzer et al. (2005:231), principally descriptive models based on the assumption that cities expand in a linear or uniform manner.

3.4.1 The concentric zone model

A city, as characterised by Park et al. (1925:1), is more than mere structures and constellations. It is a product of nature, predominantly of human nature. It is a creation of the critical procedures that collaborate, ultimately to form a physical settlement; a frame of mind and an order of inclinations are inherent in this. In other words, the city consists not only of ecological and geographical units; it is also an economic unit. The importance of the economic component was made evident in the findings of Christaller and Lösch’s work, as elaborated on in sub-sections 3.2.1 and 3.2.2.

The city has its own ideologies, as stated by Spengler (1922:105): “What his house is to the peasant, the city is to civilised man. As the house has its household gods, so has the city its protecting Deity, its local saint. The city also, like the peasant’s hut, has its roots in the soil.”

The expansion of the city is expressed as a process and is demonstrated as a sequence of homocentric circles by Park et al. (1925:50). The concept of the model is based on a settlement expanding centrifugally from the CBD and the apportionment of the following five sections (as displayed in Figure 3-4):
I. The loop. This area represents the CBD, the commercial and business centre of the city. It can also be seen as the focal point of the city. Land uses in the loop are non-residential and restricted to business-related uses. The area is called “downtown” and is made up of skyscrapers, government institutions, restaurants, stadiums and businesses.

II. Zone of transition. This comprises light business and manufacturing sites. The transition is between the commercial hub and the homes of the workers. This area is regarded as the area of deterioration. The light businesses found in this area contribute to the so-called “slum” that can be found in this zone of transition. This area is usually created by subdividing larger houses into poorer-quality apartments.

III. Zone of working homes. This area is populated by the workforce of the industries who have managed to escape the area of transition but who still wish to live in close proximity to the working area. This area contains modest older houses occupied by stable, working-class families. A majority of the families residing in this area rent their properties.

IV. Residential zone: This comprises a section consisting of upper-class apartment buildings or confined areas for single residential zones. This zone contains newer and more spacious homes. The middle-class family typically resides in the zone of working homes.

V. Commuter’s zone: This section typically comprises satellite cities or suburban areas, usually within an hour’s travel to and from the CBD. This area is located beyond the built-up area of the city and consists of typically upper-class residences.

Figure 3-4: The expansion of the city

Source: Park et al., 1925:51
This model indicates that every separate zone has the tendency to extend its sphere of influence towards the successive outer zone. The city’s expansion deals with the expansion of technical services that contribute to making a city comfortable and desirable, together with the physical growth of the settlement (Park et al., 1925:52). It is also important to note that this expansion of urbanised growth includes the complementary process of decentralisation and concentration.

The assumptions of this model are explained best by Chorley and Hagget (1977:339), as the models, during the creation phase, are created in the belief that the values of land, and accessibility by implication, decline in all directions with equal regularity from a communal central point in the city. Since no account is taken of the exaggeration due to differential accessibility, these patterns of land use are assumed and therefore arranged in constant concentric zones that originate from the centre.

Park et al. (1925:53) demonstrate that the expansion of the city should be studied together with the consequent differences in social organisation, i.e. how the physical growth of a city correlates with the natural reconstruction in social organisation. A correlation is made between the natural acquisition of culture through the birth of a human being into a specific family and the social environment of the modern city. The average natural growth rate of a settlement is applied to measure any disturbances, i.e. unusual influxes or effluxes.

Park et al. (1925:142) argued that the neighbourhood cannot be based on science. The reasons were based on two principles. Firstly, sociology had little to bring to the table in terms of a scientific root for social work. Secondly, neighbourhood workers made insufficient use, if any, of what the social sciences had accrued at the time. The movement of social reality was argued to be the first phase in establishing a scientific basis for the tendency of neighbourhood work. It was, however, soon found that intimate contacts and compassionate understanding failed to solve most of the actual problems occurring in neighbourhood work. Recalcitrant behaviour in coteries, inevitable cultural conflict and competition related to commercialised recreation are some of the numerous perplexing circumstances of neighbourhood life in areas that withstood the nature of the good will of settlement workers.

Park et al. (1925:143) continue this notion by stating that science is not concerned with factors but rather with forces. The distinction between these two are hardly clearly drawn. Factors are elements that contribute to create a given situation and forces are the type-factors effective in distinctive situations. In addition, factors are regarded as a concrete source or reason for an event where a force is formulated to contribute as an abstract cause of events.

In the event of analysing a community, the study of social forces is a result of three main types of determining influences: cultural forces that comprise a locality that is indigenous and continual
concerning the social condition; political forces that comprise a more formal manner of control over the public in terms of law, opinion and behaviour; and ecological forces that concern the progression of opposition. The results of the social forces are likely to be disposition, and consequently segregation, by occupation and residence (Park et al., 1925:154).

The answer to the initial question, “Can the neighbourhood be based on science?”, is then argued and supported by Park et al. (1925:154) as the following: the neighbourhood can be based on a scientific foundation in the event of basing the city’s activities upon the study of social forces. Park et al. (1925:157) then claim that their studies show that the city’s social forces seem to be abolishing the neighbourhood. The derivation of the numerous contributing factors from a process that can be analysed by the normal person has proven to be a difficult task. The sentiment of a neighbourhood brings about a dimension of the occasion than is untouchable by any scientific formula or process. Figure 3-5 below is a visual representation of the land uses (densities, land use intensities, coverage etc.) that can be anticipated in the five zones of the concentric model.

Figure 3-5: A visual representation of the concentric zone model

Source: Rubenstein et al., 2013:312

According to Park et al. (1925:91), the value of land decreases with increasing distance from the CBD irrespective of space and time. The highest land value is in the city centre because of the competition in the area (Garner, 1966:7). An illustration of the value of land can be seen in Figure 3-3 under the models of settlement location.
3.4.2 The sector model

The sector model was formulated by Hoyt, based on the work of Burgess, after finding that the structure of cities had changed (Bansal, 2004:6). The primary concerns driving the formulation of the model are the location of residential settlements in urban areas; business location is only mentioned in an indirect fashion (Torrens, 2000:14). Emphasis is placed on ribbons of development that stretch along commercial strips outwards from the CBD. The tendency is that industrial settlements are concentrated alongside rivers and railroads and that low- and middle-income housing is located along the edges of the high-income residential areas on the peripheries of the cities (Mayer, 1969:33; Chapin & Kaiser, 1995:34; Bansal, 2004:6; Pacoine, 2005:143). In other words, activities expand outwards as the city grows in a sector or axis or wedge from the centre, as illustrated in Figure 3-6. This illustration shows the social groups that are arranged around an array of sectors that radiate from the CBD and that are centred on important transportation routes. Different classes (areas) attract different activities by a cluster of land uses, environmental factors and chance or agglomeration benefits.

Figure 3-6: Visual representation of the sector model

Source: Rubenstein et al., 2013:314

Hoyt followed the same principles as Burgess, apart from the following three principles (Chaplin & Kaiser, 1995:35; Waugh, 2002:422): higher-income inhabitants are more likely to own private vehicles or make use of public transport and are situated closer to main roads and further from the industry; wealthy inhabitants choose the best sites, which leads to competition driven by the ability to pay; analogous land uses attract similar land uses, leading to a concentration of functions in an area and the repulsion of others. This tendency is what ultimately leads to sectoral development.
Johnson (1967:165) argues that this model’s purpose is not to replace Burgess’s model, but rather to refine and extend it by adding to the notion of expansion from within the CBD. The acknowledgement of the relevance of transport as a function of the city is an augmentation of the theory of Burgess. Shapes and patterns are formed within settlements and the tendency affects the manner of distribution with respect to industrial and commercial districts. Hoyt (1939:27) asks the vital question whether a pattern has been established according to which mansions are segregated from poor residences, to place houses of similar rental range and similar type in closer proximity, or whether there is an undiscriminating combination of palaces and shacks on the same block. Can the “rich man, poor man, beggar man, thief” live together side by side?

The question in the study of city dynamics is the pattern and direction of neighbourhood and city growth. What shape becomes evident with the motion of expanding communities? The general direction in which the city expands not only affect the areas, but also the property owners, inhabitants and mortgage investors. According to Hoyt (1939:96), the generation of a so-called “building boom” leads to an increase in the supply of dwelling units:

1. Vertical expansion in areas previously established through the replacement of single-family by multi-family constructions;
2. Infill of the interstices in the existing built-up area, i.e. use of vacant lots in previously developed blocks; and
3. Extension of the existing settled area on the periphery of the city by the erection of new homes on newly subdivided land.

The lateral extension of settlements occurred. It should be noted that various types of occurrences are not mutually exclusive (Hoyt, 1939:101):

1. The increase of insulated nuclei of dwelling units outside the periphery of the principal metropolitan area;
2. The development of insulated nuclei until the point of integration with each other and/or the principal body of the city; and
3. Axial growth; the expansion of buildings in stellate lines starting from the CBD along fast-paced transportation networks to such an extent that the settlement acquires a star-shaped manifestation.

Hoyt stated that residential expansion is anticipated to develop along entrenched travel nodes, but also assumed that real-estate speculators might curve the general direction of growth by means of proficient promotion (Johnson, 1976:171). As stated by Mayer (1969:33), the sector model relates to the segregation phenomenon (both voluntary and involuntary), which is apparent in numerous cities throughout the world.
3.4.3 The multiple nuclei model

Harris and Ullman (1945:7) suggested that cities are paradoxes; while their large size and expeditious growth assert their dominance as a method for the exploitation of land, through their success and large size they often supply a poor environment for man. The predicament is being able to build future cities in such a manner that the benefits of urban concentration may be preserved to benefit the common man; at the same time disadvantages should be minimised.

What makes these urban settlements appealing is that each is distinctively unique in detail, while still resembling others in patterns and functions. What is learnt in one assists in studying another. Different nuclei were theorised to support one another; business districts were developed to support the suburbs and other districts were developed to be further away from one another (Harris and Ullman, 1945:9).

In numerous cities the pattern of land use is not built around a distinct city centre, but rather around various discrete nuclei (see The concentric zone model and The sector model, also elaborated on in sub-sections 3.4.1 and 3.4.2). In some cases, cities’ nuclei have been in existence since the initial construction of the city. In others, the nuclei have developed as the expansion of the city stimulated specialisation and migration.

The rise of multiple nuclei and distinctive districts demonstrates a combination of these factors (Harris and Ullman, 1945:11; Chapin et al., 1995:37):

1. Various activities cluster together because of the benefits of cohesion, with the exception of service-type establishments such as petrol stations and grocery stores etc. Retail stores benefit from agglomeration owing to the possibility of comparing shopping goods and the increase in potential customers.
2. Various activities that are unlike are detrimental to one another. The opposition between high-standard residential development and factory development is a classic example.
3. Some activities cannot afford the most desirable sites (see Figure 3-3). This factor is supported by the foregoing factor. Examples of this are storing activities that require ample room and bulk wholesaling.
4. A few activities demand facilities that are rather specified. For example, the retail district is typically linked to the greatest accessibility networks.

The location and number of nuclei evident in a settlement are consequences of historical development, together with the comprehensive structure and the size of the city. Naturally, larger settlements tend to comprise a greater number and more specialised nuclei than smaller settlements (Harris and Ullman, 1945:13).
An assumption of the multiple nuclei model is that the marked differences in different types of residential land uses should be structured around numerous business nuclei throughout the city. Marble and Garrison (1957:138) recommended a number of models based upon the selection of sites for residential purposes and measured by land values, on the following hypothesis: the function of location is placed within a city in respect to the CBD and other main business nuclei. Figure 3-7 illustrates the different land uses of the multiple nuclei model and the extent thereof.

![Figure 3-7: Visual representation of the multiple nuclei model](source: Rubenstein et al., 2013:319)

Harris and Ullman (1945:12) stated that the multiple nuclei model developed in reaction to the demand for maximum accessibility of the city centre. Chapin and Kaiser (1995:37) argued, in addition, that multiple nuclei developed because of differences in land value, to separate certain land uses from others and, more recently, to decentralise. The model of multiple nuclei recognises the consequences of social and economic forces, together with the attributes of certain sites, for land use development (Johnson, 1967:170).

### 3.4.4 The African city

O’Connor’s (1983:6) work explores the change occurring in the post-independence period in tropical African cities; more particularly, the geographical study of diversity regarding urban form and economics. However, Becker et al. (1986:121) state that the work of O’Connor attempts to formulate a representation of what an African city is perceived to be, and the reason for that,
rather than to make a precise economic analysis. A distinguishing aspect of African cities is the
depth and large number of ethnic divisions. Divisions of income or class, as well as ethnic division,
often determine the structure of a city (O’Connor, 1983:39). Broto (2014:11) argues that the view
of African cities as “in the making” emphasises the importance of perceiving the city as an open
experience and one in which the urban settlement’s actor is constantly experimenting. O’Connor
makes use of six different models, describing in each the effects of different cultural and historical
backgrounds on spatial distribution, to explain the existing types of African cities. The six types
of African cities, as identified by O’Connor (1983), are listed and elaborated on below.

_The indigenous city._ In this city an array of indigenous urban traditions prevails in tropical Africa,
but the most noteworthy traditions are those of south-western Nigeria. Literature on the origins of
the earliest cities of this area is basically non-existent, but these cities are thought to date back
as early as the tenth century. Urbanism was established on the basis of divine kingship and is
thought to have spread northwards from where it originated. Throughout the nineteenth century,
warfare forced the abandonment of certain settlements and the establishment of others. The lack
of an acute cultural distinction between the rural and urban population has led observers to
question whether urban settlements existed at all. Provided the term ‘urban’ is not construed in
an ethnocentric manner, it represented a form of urbanised development in the past. In contrast,
today no individual making his/her way through Ibadan, for example, could question whether it is
an urban centre. Mabogunje (1968:78) found that most towns’ origins were hubs of political power
and therefore of administration. Both trades and crafts were crucial to their growth and survival.
Distinctive other regions hold evidence of the impetuous development of urbanism throughout
past centuries, but are not representative of traditional urbanism (O’Connor, 1983:3). However,
the kingdoms of mid-eighteenth century central Africa have disappeared completely, even before
the development of colonial cities such as Brazzaville and Kinshasa.

_The Islamic city._ The Islamic city is a term generally used to label the ‘traditional’ cities of the
Middle East and owes much to Islam (Costello, 1979:32). The question arises to what extent
these cities might be regarded as indigenous to central Africa and to what extent they represent
the urban tradition that arose from the Sahara. A few of these cities flourished as empires, as
noted by Flanagan and Gugler (1977:280), while others thrived only partly as terminals in trans-
Saharan trade and others as religious centres. The Islamic cities display ample cultural continuity
with regard to the surrounding rural areas. Freund (2007:33) mentions that the following features
recur frequently where African towns have been profoundly influenced by Islam: a distinguishing
urban cultural ethic, internal ethic that takes able governing to hold together, an urban economy
that could easily be separated from the state, and a distinctive imprint of Islam architecture, albeit
with numerous variations over space and time.
**The Colonial city.** Most tropical Africa’s urban centres had colonial origins in the late nineteenth century. These cities were built by the Europeans to benefit their trade and administration. The cities played a critical role during colonial political domination and, naturally, the colonial business enterprises’ profits (O’Connor, 1983:32). The majority that have prospered are ports (shown in Figure 3-8) that were developed at the fundamental points of connection between the local population and the colonial powers.

![Diagram of Dakar](image)

**Figure 3-8: Example of a colonial city: Dakar**

**Source:** O’Connor, 1983:33

Generally, immigration ensured an African majority among the other populations; however, in some cases, the new settlement absorbed one, or sometimes more, traditional African settlements.

**The European city.** Notable findings from King (2007:69) have shown that cities such as Bulawayo, Harare (formerly Salisbury), Nairobi and Bulawayo were inaugurated by Europeans with little regard for the pre-existing settlement, primarily to serve as places for Europeans to reside and to administer urban services for perennial European settlers throughout the surrounding rural areas.

Trade and administration were the leading functions, but in these instances more manufacturing was permitted, again predominantly to meet the desires of the European settlers. Numerous Africans quickly assembled upon these new settlements, though generally for a temporary stay.
While the Africans soon constituted the larger part of the population, the areas set out for residential use only accommodated a small number of the total population. In fact, towns such as Kinshasa or Lagos were designed as replicas of some towns in Europe. By the 1950s a number of these settlements had developed into substantial cities, as illustrated in Figure 3-9. The inhabitants, however, were still people who had arrived from overseas and the African inhabitants there were subject to the Europeans’ terms. When Zambia and Kenya attained independence during the early 1960s, it brought about drastic changes in these cities. The impact of these changes was so substantial that O’Connor (1983:37) claims that many facets of these cities are not likely to be understood without reference to the circumstances in which they were constructed.

Figure 3-9: Physical settlements of the ‘European’ city: Harare/Salisbury

Source: O’Connor, 1983:36

The dual city. The perfect example of a dual city is Greater Khartoum, Figure 3-10, were the indigenous city, Omdurman, developed on the western bank of the Nile River practically simultaneously with Khartoum, a colonial city on the opposite bank (El-Bushra, 1976:22). These two cities are comparable in size, although Khartoum includes an extension called Khartoum North, separated by the Blue Nile. Two or more cities are combined in the case of a dual city, as
in the case of Kano, where the walled Islamic city is enclosed by a contemporary colonial-type city (Marful, 2014:5).

Figure 3-10: The dual city of Greater Khartoum

Source: O’Connor, 1983:38

These dual cities are characterised by physically separate objectives, each developing at its own pace and in its own way, each with a complete field of urban functions and each with its own degree of self-respect and interdependence. Brookfield (1975:69) claimed that as long as the theory of dualism is not interpreted to convey absence of relationships, and is not seen as differentiating between classes of wealth, but alternatively as the juxtaposition between cultural traditions, its existence can rarely be doubted.

The hybrid city. The foundations of a hybrid city are combinations of alien and indigenous elements in approximately equivalent proportions, but they are to a certain extent integrated, instead of purely juxtaposed as in the case of the dual city (O’Connor, 1983:36). A hybrid city encompasses alien and indigenous elements in approximately equal portions (like the dual city), but these portions are integrated. This urban form has become more popular since decolonisation, as cities became more integrated and expanded (Marful, 2014:5). Examples include Kumasi, Lagos and Accra. Pacione (2005:464) argues that a hybrid settlement system is represented by
rural regions of high population density, which is a result of bottom-up development and is created by a progression of “urbanisation by implosion”. The hybrid settlement typically represents a literal urban space, but the social, economic and institutional aspects are agrarian/rural. The hybrid city represents a ruralopolis, which is a rural region that is created by the process of urbanisation by implosion, with a population density above or equal to the urban threshold (Pacione, 2005:682).

3.5 CONCLUSION

This chapter aimed to review the history of urban structures and models that contributed to the urban settlements that we know today. The history of urban models is of importance, as it forms the foundation that is being built upon throughout the study of urban morphology, urban segregation and urban regeneration. The models and the theories that formed them will form part of the foundation on which the recommendations of this research will rest. It is necessary to examine the ideas and knowledge that influence urban-planning practices.

The central place theory is an attempt to explain spatial arrangement, the reasoning behind the distribution, size, patterns, and number of towns or cities. The economics of location consider the influences on the essence of economic activity; the object of utilisation is viewed as a function of distance. The concentric zone model portrays how cities’ inhabitants are spatially arranged in a series of rings. The sizes of the rings might vary; however, the order always remains unchanged. The sector model is a model of the internal structure of cities; inhabitants are arranged in a series of wedges or sectors radiating from the CBD. This model also stresses the significance of transportation corridors and recognises growth of numerous urban activities that expand along roads, train routes or rivers. The multiple nuclei model illustrates that cities expand from several independent points rather than from one central point of interest (such as the CBD). Multiple nodes of activity are stressed, as airports, universities, ports and businesses attract some users while repelling others.

The motives behind the formulation of the theories examined in this chapter might differ in each urban context. The basic principles, however, are what will be used when evaluating the urban context of the case study at hand, as well as when recommendations are made.

The subsequent chapter aims to investigate the functions of land use management and land use planning, an elaboration of “the process being guided by the plan”. The use and management of land plays a decisive role in how spaces are being used and how the space will continue to function in the future, as it is essential for governing the growth of activities. Adequate utilisation of land helps the balancing act of activities to avoid excess of a specific activity. When land is planned and managed efficiently, the number of spatial conflicts will decrease drastically.
CHAPTER 4

LAND USE PLANNING AND MANAGEMENT

4.1 INTRODUCTION

“The best way to predict the future is to invent it.”

~Immanuel Kant

Land uses are classifications that refer to different socioeconomic activities that occur in particular areas, their effects on the environment and the human behaviour patterns that they create (Kunaka & Carruthers, 2014:86). The manner in which land is used contributes to global processes. Therefore, by suitably defining land uses and adequately establishing how and where they occur, as well as efficiently controlling their interrelationship and performance, governments might actively participate in controlling and preventing the detrimental effects of development (Siek, 2015:40).

This chapter aims to give an overview of the concept of land use planning, as well as land use management. Firstly, the functions of a land use planning programme will be discussed at the hand of services that are essential to achieve a more desirable outlook and to improve decisions on land use. This chapter, secondly, aims to elaborate on the concept of land use planning as a tool in regulating the activities of community development. The components of managing change in land use planning by means of structural analogy are discussed. Thirdly, the origin, principles, different levels and components of land use planning are examined. Lastly, the principle of land use management is clarified through a discussion of the objectives, their application and different tools for managing land use.

The purpose of this chapter is to formulate a foundation of principles followed in planning that regulates the use of land. If the concept of land use regulation and the reasoning behind it are understood comprehensively, it becomes evident how the regulation of land use might contribute to more sustainable settlements that are more integrated and that might offer more opportunities for local residents (research study Objective 2, listed under sub-section 1.3).

4.2 FUNCTIONS OF LAND USE PLANNING

Land use planning facilitates four functions, according to Chapin et al. (1995:61), through the community’s oversight of change; advanced planning, problem solving, intelligence and the
operation of the community’s system of development management. These four services are essential to achieve a more desirable outlook and to improve land use decisions and should be communicated to both private and public decision-makers.

*Intelligence* is the accumulation, coordination, determination and dissemination of information to stakeholders. Intelligence informs decision-makers of trends, conditions and projections, as well as alternative decisions.

*Advanced planning* is the most conventional function within the land use programme and is made up of the construction of intermediate-range and long-range plans. These plans include the conception of action programmes and policies and the formulation of goals that define favourable land use patterns for future development that balance ecological values, the market and social use.

*Problem solving* aids the community in attending to issues that are not frequently anticipated in advanced planning. Contrary to *advanced planning*, problem solving is reactive instead of anticipatory and confines itself to the principal features of individual complications rather than regulating solutions of numerous issues throughout the community.

*Managing development* is a function that facilitates the everyday enforcement, administration, regulation, revision of policies and public investments that comprise the actual system of development management. This includes activities such as bargaining arrangements to permit procedures, controlling and administering permits, ensuring the availability of funds, selection of the site and the planning thereof to provide facilities to the community. It can be argued that this function encompasses all remaining aspects after adoption.

### 4.3 URBAN LAND USE PLANNING

One of the bases of the work by Chapin *et al.* (1995:6) is that land use planning is a crucial tool in regulating the activities of community development. Land use planning is seen as a process that is guided by a plan. The plan fulfills diverse responsibilities throughout the process:

1. It ensures that the interest goals of the public are exhaustively considered in order to observe the narrower aims, thus preventing unbridled self-interest throughout planning.
2. It conceives collective gains that are shared by assorted interest groups together with the community.
3. It keeps a record of the array of agreements concluded among the stakeholders regarding the methods of handling the different objectives. Correspondingly, the proses serves as a mechanism to resolve disputes in society.
4. With the necessary preparation, the process turns opponents into collaborators.
5. The process enables the layout of the vision of the future of the area and a game plan for achieving the vision.
6. The process is the platform on which the application of technical and analytical studies commences.

The comprehensive principle of land use planning is simplified by Chapin et al. (1995:8) as the influence over the effect of the process of land development by which neighbourhoods, cities and projects are built. A further simplification is summarised in one sentence; “A ‘good’ land use plan with ‘good’ implementation produces a ‘good’ built environment.” Where it is built, what is built and how and when it is built are critical questions, of which the answers are reliant on several actors, each with contrasting definitions of what is good. The purpose of the planner is not merely to adapt market demand to facilitate development, but rather to mentor the market fronting the production of quality environments and communities.

Chapin et al. (1995:52) constructed a visual representation of the management of change in land use by means of a straightforward structural analogy; see Figure 4-1. The land use change management might be visualised as the main integrating framework or the seat of a stool, with the corresponding three legs of ecological values, market and social use. The overarching concept of sustainability in development joins the three components.

Each of these components, or legs, is essential. If the ecological values are not accounted for, then the development cannot be maintained, as elucidated by resource conservation. If the market values are not accounted for, then construction cannot take place, as elucidated by the profit-seeking property development. If social uses are not accounted for, then the inhabitants will not accept the planning, as elucidated by activity patterns and neighbourhoods. If there is no integrating structure supporting the three legs, it will be futile to resolve their divergent claims through the process of land use change management. Sustainable development is seen as an integral management principle when balancing the three compartments.
Figure 4-1: Three-legged stool illustrating the components of land use change management

Source: Chapin et al., 1995:52

The integrating structure of change in land use management also serves as a social learning procedure for the inhabitants, and bigger adjacent community, to comprehend the opportunities, pitfalls and impacts of change. Planning provides a sense of continuity that connects the present, past and future, and helps the community to interpret the patterns of development.

The contradictions and complexities ingrained in the environmental aspect of development challenge the planner to pursue a functioning balance between productive land uses and natural resources, the protection of property and people from natural disasters and the maintenance of ecological functions. The aim is economic growth that is both environmentally and socially sustainable and that balances the ecology and the economy (Chapin et al., 1995:172).

A land use planner, being the manager of urban growth and change, is compelled to look at a portion of land, wherever the area, from several perspectives. Four perspectives, indicated by Chapin et al. (1995:192), ought to be recognised when creating an information model for land use. These perspectives, when taken together, circumscribe a number of concerns (such as avoiding urban sprawl) and values (such as conserving neighbourhoods), aiding the process of land use. Also considering information on the economy, population, infrastructure and environment, land use provides understanding of the dynamics of change in a community:
1. Land used as a functional space dedicated to assorted uses or functions. Various dimensions of land use can be recognised and recorded. Land use accommodates the need for growth that is a result of economic and population expansion (Fujita, 1988:87; Helsley & Strange, 1990:192; Glaeser, 1999:259; Duranton & Puga, 2001:1454; Duranton & Puga, 2013:2). It also meets the demand within settlements. When considering these variables, the equation is rather simple when determining future land use; it counts the number of households projected for the area and multiplies this by the number of square metres required by households. However, urban expansion is not the only factor in this equation; land should be allocated to agricultural activities, environmental services etc.

The concept of land use is not one-dimensional; it is a rather intricate mix of different characteristics of structures, ownership, space use and physical environment (White, 1989:43; Cutsinger et al., 2005:235; Verhey, 2009:2; Siek, 2015:47; Ioanuidis, 2016:115; Nasri & Zhang, 2018:50). The planning process is broken down into units of ownership, whereafter each parcel receives specific data about its zoning, size, slope, buildings, value, existing uses and proposed uses (Chapin et al., 1995:195).

2. Land viewed as a commodity still to be developed and its dimensions to be put to urban use. Developable land is underused or vacant land that is planned for more intense use and has adequate access to necessary urban services, without severe physical constraints (Chapin et al., 1995:197).

3. Land as aesthetic resource or perceptual image. The imageability is the ability of urban landscapers to make data available for aesthetic appeal, orientation and social symbolism (Chapin et al., 1995:197). As De Neufville (1981:35) eloquently put it, “The distinctive uses of land provide one of the lenses through which people interpret and evaluate the social milieu, and thus help to define and reinforce the social order”. Imageability might be used for both the illustration of alternative scenarios for future development and for evaluation of existing urban settlements.

4. Land as the facilitator for activity systems. Activity corridors entail the manner in which firms, institutions and households manage their daily concerns in the urban settlements. Land use data, on the other hand, describes steady characteristics, such as capital investment, patterns of the built environment, patterns of commuting etc. The most pertinent urban activity is commuting from home to work (Bhat, 1995:2; Kuzmyak, 2012:23; Kung et al., 2014:2; Fan et al., 2017:435). Knowledge of these activity systems empowers the planner to better understand business and household locational problems and decisions within prevailing arrangements of land use.
Life-sustaining and social activities impose demands on land use types, locations and amounts. The arrangements of land use regulate economic opportunity, social access, habitat survival and patterns of travel. The change of existing land use patterns should make provision for both potential disturbance of current activities and the creation of new activities. Unsophisticated interventions in the arrangement of urban activity have been seen to do more harm than good if not carefully planned (Chapin et al., 1995:198).

These four perspectives should be taken into consideration when constructing an urban land use model. The four principles, when viewed together, offer an analysis of concerns and illustrate the values that regulate the process of land use planning. In addition, they consider the information on the population, infrastructure, environment and economy that affects the planning of land use directly.

4.4 LAND USE PLANNING

Adapting and to mitigating climate change, dealing with food scarcity and initiating economic growth while at the same time protecting biodiversity and settlements and preventing land conflicts are a few of the numerous challenges that developing countries are facing at present. One of the tools to help facilitate these developments is land use planning. It helps planners to focus on and negotiate future land use and the allocation of resources (Engel & Pickardt, 2011:11).

All human activities require a place to be realised. While the demand for land keeps increasing, the supply is fixed (Waddel & Moore, 2001:493). Therefore, land becomes progressively scarce (Songoro, 2014:50). The result of this conundrum is an increase in the number of land conflicts (Bergstrom et al., 2005:25). To avoid these conflicts, consensus on land use should be negotiated by all conflicting parties at an early stage and be approved by the correspondent institution by making it legally binding (Engel & Pickardt, 2011:11).

4.4.1 The origin of land use planning

The importance of land use policies becomes evident when considering the involvement of interdependencies among communities and individuals and the corresponding impact on social and economic well-being. One person’s change in land use affects other individuals. Examples are a farm located on the periphery of a town or city that is adversely affected by the encroachment of housing developments, low-income inhabitants who are forced out of their dwellings by newcomers who cause an increase in property tax, a green open space on a property
that adds to adjoining properties’ enjoyment, a new subdivision that hinders a scenic view and increased density that affects the traffic flow of the neighbouring areas (Bergstrom et al., 2005:11). Human-induced land use cover and changes have compelling effects on the functions of assorted cycles, such as carbon, hydrological and nutrient cycles, on a regional as well as global scale (Klaus, 2002:1).

The objective of land use planning is formulated by Amler et al. (1991:9): “Land use planning creates the preconditions required to achieve a type of land use that is environmentally sustainable, socially just and desirable and economically sound. It hereby activates social processes of decision making and consensus building concerning the utilization and protection of private, communal or public areas.”

It should further be noted that land use planning is adaptive and flexible, for its methodology can be altered to conform to appropriate circumstances. There is no definite approach and no set blueprint approach with specific procedures. Land use planning is designed according to the demands, needs and capacities, as well as the institutional structures and rules in place, with correlation to the principles (as listed under 4.4.2) of land use planning (Engel & Pickardt, 2011:35).

During the 1890s, several civic leaders, urban reformers, government groups and architects in New York recommended that limitations be enforced on the height of the buildings. The business of real estate was well established and strongly opposed to these restrictions. Regardless of numerous legislative efforts, the dispute carried on for nearly two decades without any palpable results. The size and number of bulky commercial buildings in central Manhattan progressively increased, blocking natural sunlight from walkways and windows, eradicating open space in the sky and on the ground, and causing congestion in corridors, on sidewalks, in elevators, subways and streets (Goldberger, 1983:162; Bacon, 1986:7; Fenske, 1988:11; Gilmartin et al., 1995:34).

According to Weiss (1992:201), the Fifth Avenue Association was one of the foremost propulsions behind the 1916 zoning resolution. The association acted as a group of chief hotel operators, retail merchants, investors, lenders, real estate brokers and property owners trying to reinforce and stabilise the image of Fifth Avenue as an elite shopping district.

By the 1960s and 1970s land use planning had developed from an expert-driven, top-down concept to one of land suitability. This concept shifted from the 1980s onwards towards a more delicate and integrated approach that involved decision-makers, planning experts and everyday citizens. The shift also included an increased linkage with financial planning and the integration of national organisations. The traditional concept of land use planning has evolved in such a
manner that it now includes the evaluation of aspects related to social impacts and sustainability (Metternicht, 2017:9).

In the 1700s, land was directly correlated with wealth; it was subsequently understood by means of a more comprehensive conception of a commodity. The way in which land was seen shifted again to that of a limited resource. However, from the 1980s onwards, land has broadly been regarded as a limited community resource representing both wealth and a commodity.

4.4.2 Principles of land use planning

Land use planning has derived from a relatively top-down planning approach by professionals outside the existent organisations towards a more participatory planning approach that is integrated with national institutions and is furthermore becoming increasingly intertwined with financial planning. Land use planning can vary in levels of complexity, ranging from inclusive spatial planning procedures at different levels to the elementary inclusion of spatial aspects (Engel & Pickardt, 2011:54). The following principles have been identified over the years as vital components of any land use planning process.

Land use planning should be approached as a dialogue. A principal component of land use planning is the initiation of communication processes that permit all stakeholders to disclose their interests and empower them to conform to future land uses that consider all positions in a fair way (Amler et al., 1991:8; Engel & Pickardt, 2011:32). The process is seen as comprehensive, where all stakeholder groups should be represented: indirect and local users, private investors, public authorities, community-based organisations and non-governmental organisations (Haub, 2009:22). Amler et al. (1991:8) further argue that land use planning is an iterative process both in method and in principle.

Correspondingly, the planning process advocates a civic environment. Inhabitants should ardently engage in land use planning processes. The implementation of the measures and the results of planning can only be feasible if the plans are made jointly with the people. Therefore, planning is not just a profession for experts, but should be viewed in conjunction with the inhabitants that are affected by planning (Haub, 2009:8). Land use planning requires sector coordination and is built upon inter-disciplinary cooperation (Verheye, 2009:7). The disparate functions and (probable) uses of land results in applying a multidisciplinary technique involving all sectors that have an interest in that area (Verheye 2009:2). This largely necessitates improving cooperation between different sector ministries/agencies and support in institution building. However, land use necessitates transparency. If decisions on future land use are not made on a transparent basis, the risk is high that future land use will not be sustainable and/or that some inhabitants will be deprived of their rights (Amler et al., 1991:9; Engel & Pickardt, 2011:34).
Land use planning relates to places and spaces. It is a common phenomenon that most forms of planning in most countries lack a relation to space. The focus of land use planning is on spatial differences and relations (Engel & Pickardt, 2011:34). According to Haub (2009:8), the spatial adaptions of planning assure the most acceptable use of any place, refrain from land use conflicts and ensure the optimum distribution of investments. The process is furthermore future-oriented, as it is not merely about current land use, but about a degree of regulation on land use in the future (Amler et al., 1991:10). Furthermore, the practice of land use planning considers how the solutions identified are to be implemented. Planning is not completed with the approval of a land use plan. The application of limited measures during the initiation phase of the process plays a valuable role in establishing inhabitants’ belief in the planning process (Amler et al., 1991:8). Land use planning ultimately results in legally binding rules. Formal recognition of a land use plan or land use rules is crucial for the implementation thereof (Amler et al., 1991:85; Haub, 2009:4; Engel & Pickardt, 2011:32; Hailu, 2016:41).

### 4.4.3 Levels of land use planning

Land use planning can be practised on three extensive levels: national, district and local. The decisions made on each level, as well as the approaches to planning and the variety thereof, differ. Notwithstanding this, every level requires operational planning, policies indicating priorities, projects to deal with the priorities and land use strategies to perform the work (Young, 1993:7).

Participation on all levels is essential, as it increases acceptance and prevents conflicts (Engel & Pickardt, 2011:72). In addition, Young (1993:8) pointed out that greater interplay among the different levels is likely to result in a better outcome. Young (1993:8) further stated that information is shared in both directions, as illustrated in Figure 4-2 (a). However, Engel and Pickardt (2011:121) argue that a gap develops between necessary preconditions and existing conditions for land use planning. Absence of co-operation is frequently seen not only between different levels but also within a certain sector at different levels, as illustrated in Figure 4-2 (b) and weighed up against Young’s (1993:8) national planning systems in Figure 4-2 (a).
Engel and Pickardt (2011:187) describe the concept of flow of information, as illustrated in Figure 4-2 (a), as derived from the “counter-flow principle”. However, in reality, the flow of information is disparate. An idealised figure of the vertical and horizontal links in land use planning is shown in Figure 4-3.
Figure 4-3: An idealised representation of the vertical and horizontal links in land use planning

Source: Engel & Pickardt, 2011:188

Important criteria of “horizontal planning” were revealed upon completion of the idealised representation of the confining nature of existing plans and their impact on future planning, a clear allocation of responsibilities, instruments negotiating conflicts between sectors where one is typically more authoritative than the other and instruments for mandatory coordination and cooperation (Engel & Pickardt, 2011:188).

Governments are divided into administrative levels: national, regional (often referred to as provincial or district) and local (municipal), on the grounds of their responsibilities and roles (Engel & Pickardt, 2011:189). While the national transport network is a responsibility on national level, authority for building regulations rests with municipal authorities. These responsibilities might be complementary or separate, depending on the degree of decentralisation in a place. The government’s part in systems influencing land use is organised by land use planning by means of considering the effect and force of both market and political processes to conduct development (Chapin & Kaiser, 1995:60). Although problems differing in magnitude and nature are dealt with on different levels, the decision-makers at any given level ought to bear decisions, directives, demands, etc. in mind in order to apply these to other levels. Alternatively stated, the national level should consider district and local constraints and needs when formulating regulations and policies. On the other hand, district and local levels are bound by regulations and policies established by national government (Engel & Pickardt, 2011:190).
4.4.4 Components of land use planning

The components of land use planning will be explained based upon two distinctly different opinions. Amler et al. (1991:21) considered the numerous components of land use planning to influence and control land use. The components largely include policies on credit, infrastructure, import, export, development and environmental issues. The point of convergence establishes the framework for long- to medium-term visions for planning. However, the basis of land use is established at local level. Thus, national decrees require processing into planning that can be implemented at local level.

Countries that rely on centralised administration are inclined to coordinate land use policies based upon a top-down approach (Young, 1993:1; Engel & Pickardt, 2011:43; Metternicht, 2017:9). Contrary to centralised administration, decentralised models of planning make use of land use planning models that are agreed upon by the land users themselves. This approach to land use planning is linked with other administrators at regional level and, in some cases, it coordinates with projects at national level. A condition for national coordination is that the stakeholders should have the capacity to collaborate in order to generate appropriate co-ordination instruments related to land use (Engel & Pickardt, 2011:190).

Verheye (2009:2) considers the influence of only three major components in land use planning: land, the manner in which land is used and the rational organisation of land use in the future. The most primitive form of land use is the essence of human existence. Land offers shelter and food, filters and stores water, provides space for urban development, leisure and several other social activities. Land (property) is also seen as an expression of wealth and power, especially in predominantly rural settlements.

However, land is restricted in extent and so is the amount of arable land (Nagdeve, 2004: 1; Anseeuw, 2013:1). Concurrently, the pressure on land provision is increasing exponentially, both as a result of the increasing number of functions related to land use and the growing population (Batty & Longly, 1994:44; Cruz, 1999:1; Madulu, 2004:90; Nagdeve, 2004: 2; Emiru, 2014: 1; Wenban-Smith, 2015:1; Garg, 2017:138). Land use requires regulation and innovation for alternative options, as well as firm agreements on by whom and how the available land will be used. These options may depend on both social and technical criteria, or in some cases, a combination of both (Verheye, 2009:6). The regulation of land use will avoid the above-mentioned conflict. Land use planning is an instrument that supports the restrained use of land and its occupation to avoid unfavourable developments. It generally depends on an assessment of the potential of land, as well as alternate patterns of land use, including the economic, social and physical conditions that influence that use (Batty & Longly, 1994:1), solely with the intention of selecting the most suitable use (Wenban-Smith, 2015:3).
4.4.5 Problems arising from land use planning

Land use changes, their causes, control and consequences have become topics of immense importance in modern society (Bergstrom et al., 2005:1). Apprehension is possibly most evident in the scrutiny of urban sprawl and the explicit desire for “smart growth”. Land uses in rural settlements are of similar noteworthy interest. Rural difficulties include desertification of agricultural land, abandonment, the loss of wetlands, destruction of forests, the intensification of the production of extensive circumscribed animal feeding enterprises, appropriate multiple-use management of range lands and public forests and the fragmentation of rural settlements by second home developments and roads (Bergstrom et al., 2005:1). Use of undeveloped land such as parks, green space, open space and other natural areas, according to Kozloff (2015:4), is generally said to produce environmental, economic and social benefits, strengthening the communal and individual quality of life, though this relationship is often misunderstood and overlooked.

The repercussions of problems arising from land use are immeasurable; the impact of some problems is greater than that of others. However, only problems relevant to this study will be elaborated on.

Gentrification, as defined by Kennedy and Leonard (2001:5), is the process through which higher income families force families with a lower income out of a neighbourhood, the result of which is a change in the essential flavour and character of a neighbourhood. Slater (2011:572) argues that gentrification usually occurs in settlements where prior disinvestment in urban infrastructure generates opportunities for favourable or profitable development, where the concerns and needs of policy elites and business are met at the expense of residents afflicted by unemployment, work instability or stigmatisation. Gentrification might be a by-product if not a clear intention of a settlement’s effort to redevelop, especially in settlements with few unoccupied buildings or limited vacant land (Kennedy & Leonard, 2001:5).

Frictions of growth are the single phenomenon that arguably has the greatest effect on stress at the urban-rural interface in low-density, unplanned residential development (Bergstrom et al., 2005:10). Incentives inherent in organisational financing systems accommodate, even encourage, development at the urban edge or beyond rather than at the city centre or in higher density suburbs, the result of which is predictable scattered developments. Rusk (1999:86) mentions the “sprawl machine” as urban renewal strategies that substitute residential developments with high-rise office buildings, the design of subsidised mortgages for new single-family dwelling units and service connections that open new land for possible development. In a more direct approach, Richmond (2000:10) states that urban sprawl is the law of land through which housing subsidies benefit single families above multiple housing units and local land use
planning policies yield to any form of development, with insufficient attention being paid to guiding growth. The result of the dispute about land is often friction points for growth

*Congestion* affecting busy arterial roadways (of any order) is related to the density and type of activities alongside the roadway. The reality is that patterns of travel are intricate; transport is a “derived demand” that is necessitated by the requirements of customers and households to carry out daily activities (Kuzmyak, 2012:17). The spatial distribution of working, housing, leisure, shopping and other activities establishes average travel distances in urban transport. A mixture of land uses for distinct economic and social activities, as well as high population density, maintains minimum distances between destinations and origins of trips within a city. On the contrary, low-density development results in an increase in average trip lengths (Petersen, 2004:2). Shay and Khattak (2005:19) argue that transportation plays an ever-diminishing role in the locational determination of businesses and households within established settlement patterns that promote and support the automobile. Numerous studies have indicated that land use entails considerably more than just density. Reducing travelling distances between activities and households and maintaining compact development enhance the accessibility of modes of travel; automobile trips are shortened by the reality of local opportunities (Kuzmyak, 2012:21). Land use planning can support a high transit share and contribute to a reduction in travelling distance by influencing the spatial structure of locations. Mixed-use and dense developments help to keep cycling and walking attractive (Petersen, 2004:3).

4.5 LAND USE MANAGEMENT

The most powerful tool that the planning practice possesses to reconstruct urban form is land use management. Notwithstanding the potential of this planning tool, it has been overlooked to a large degree, both in terms of legislative reform and in terms of academic enquiry (Görgens & Denoon-Stevens, 2012:1). Overlooking the planning tool has resulted in it operating as an unwieldy and undesirable tool that preserves the modernist principles of sprawling suburbia and land use segregation. This statement is supported by the UN-Habitat Global Report on Human Settlements (2009:65), which explains and summarises it: “... regulation and land use management are the most powerful aspect of urban planning; yet most difficult to change because of entrenched legal rights and interests; but without reform in this sphere it will be extremely difficult to use planning to promote urban inclusion and sustainability.”

Land use management is regarded as multifaceted, according to Verheye (2009:2). In the past, land use management primarily referred to crop production and arable farming. Nowadays land use management refers to housing, nature conservation, mining, infrastructure and roads, urban and industrial development, recreation and leisure and landscaping. In simpler terms, land use
management is the progression in which land resources are set into good effect (Enemark, 2005:1). Land use management comprises all the activities connected with the governance of land that are needed to accomplish sustainable development. The land notion includes natural resources as well as properties and thus includes the entire built and natural environment.

The bureaucratic network for management of land diverges immensely between regions and countries throughout the world and imitates judicial and local cultural settings. Good governance and the implementation of land policies are better supported over time, as institutional arrangements may change to offer better support (Beinat & Nijkamp, 1998:313; Enemark, 2005:2, K’Akumu & Oyugi, 2007:100; Parrott et al., 2009:273; Jettou & Karis, 2013:25; Werntze & Weith, 2014:53).

4.5.1 The objectives of land use management

Land use management is a multi-faceted discipline that aids municipalities to legislate zoning ordinances, enforce building requirements, regulate subdivisions, designate historical districts, regulate the use of wetlands, floodplains and other sensitive areas and control signs (Siek, 2015:47). Land use management forms part of a national policy that promotes objectives of social justice, economic development, political stability and equity. These objectives are associated with control of land use and the sustainable management thereof, environmental and natural resources, real property taxation, provision of land and housing for the poor, management of land disputes and measures to prevent land speculation (Enemark, 2005:3).

Verheye (2009:3) compares land use management with the principles of wisdom. Land use management facilitates the output of traditional transmissible knowledge while concurrently necessitating the incorporation of new-age technical expertise. Land use management, according to Verheye (2009:4), has four key objectives;

1. It grasps an objective for conservation to maintain the obtainable properties, outputs and potentials.
2. It has a production or economic target that focusses on optimisation in the light of a sustainable maximisation of outputs.
3. It includes an aspect of reclamation with the goal to avoid degradation, eliminate constraints and restore or improve the use potential and land properties.
4. It requires competent management that ensures good practices are upheld over time, and that the practices are prepared to adjust to ever changing conditions.
4.5.2 Application of land use management

Land use management relies on some guidance from land administration infrastructure that facilitates the intricate range of restrictions, responsibilities and rights to be acknowledged, mapped and managed as a foundation for the implementation of the policy. The application of land management can be any one, or a combination, of the following (Enemark, 2005:12):

- Management of land use, contributing to the development of self-assessment procedures that identify the scope of needs of a settlement and establish the relevant measures of capacity development in terms of legal framework, policies, human resources and skills and institutional infrastructure;
- Establishment of distinct responsibilities within local and national government. It also ensures that the principles of fair governance apply when dealing with regulations, responsibilities and rights regarding land development and land resources;
- Advocacy of the formation and implementation of policy in land development and creation of a basis for a holistic approach that combines the topographic mapping function with the land registration function/cadastre/land administration;
- Promotion of the comprehension of land use management as an interdisciplinary approach that comprises a range of economic, social, judicial, environmental and organisational policy measures; and
- Authentication of competent professional bodies that are responsible for development and regulation of professional ethics and standards.

4.5.3 Tools for managing land use

Various tools for the implementation of land use exists throughout the world, of which the following four play a pertinent role in successful land use management: zoning, mixed land use, densification and corridor development.

4.5.3.1 Zoning

Zoning has ancient roots where the public health concerns that infiltrated industrial cities in the early nineteenth century, safety hazards and escalating pollution levels were addressed by the United States with the ratification of zoning ordinances. The purpose of the regulations was to detach land uses that were considered incompatible when protecting the public’s safety, health, general welfare and morals (Herndon & Drummond, 2011:6). This practice was corroborated by the Supreme Court's milestone 1926 decision in “Village of Euclid versus Ambler Realty Co.” to advocate the practice (Mandelker et al., 1993:19). The legal concept originated in Germany and was accepted with boundless enthusiasm by Europe and the United States during the twentieth
century. The zoning concept was justified on the grounds of the analytical need for the separation of conflicting uses of land. The concept of zoning was welcomed particularly by the high- and middle-income classes, who were able to use zoning as a manner to maintain property values and to prevent the encroachment of less desirable land uses, traders, ethnic minorities and low-income residents (UN-Habitat Global Report on Human Settlements, 2009:10). Herndon and Drummond (2011:6) argued that the intent of the zoning ordinances was to separate uses of land that were deemed incompatible merely to protect the safety, general welfare, morals and health of the public.

Through the compartmentalisation of uses of land into similar functions, residential extensions were separated from the hustle and bustle of business areas, as well as the pollution and noise of the industrial area. Consequently, while previously specialised extensions evolved within settlements owing to the advantages of agglomeration, for the first time, settlements were purposely separated into enclaves of land uses that were segregated from one another (Herndon & Drummond, 2011:8). Even though undeniable public benefits initially arose from the application of the separation of uses of land, the rigidity of the zoning ordinances virtually interdicted mixed-use development and had widespread implications for the arrangement of the built environment (Grant, 2007:63).

4.5.3.2 Mixed land use

Mixed land use, as defined by the principles of smart growth (2015:1), enables a wide variety of land uses such as commercial, industrial and residential, to be co-located in a united way that assists sustainable modes of transport such as cycling, walking and public transport and increases neighbourhood amenity coherently. The perceived security and economic vitality can be enhanced in mixed land use developments by increasing the number of people in public spaces and on the street.

Jones (2009:2) states that a mixed land use neighbourhood typically includes a distinct combination of land uses such as various dwelling types, child care centres, home businesses, medical centres, public open spaces and schools. This promotes cycling or walking in the neighbourhood. The ideal settlement would include an array of education, recreation, retail and employment opportunities and regional transportation connections within an appropriate walking or cycling distance of a densified population base (see sub-section 4.5.3.3). The ideal neighbourhood would also incorporate a mixture of civic, commercial and institutional facilities, housing types and affordability to cater for a diversity of needs (Bowe, 2004:1; Jones, 2009:2).

Research has shown that mixed land use, sometimes referred to as the presence of multiple destinations) is a crucial factor influencing fuel use, walkability and travel costs (Newman &
Kenworthy, 1998:26). In lower density neighbourhoods that incorporate few local destinations, there are fewer pedestrians and an increased number of vehicles. In other words, lower density developments result in widespread activities that lead to dependence on vehicles and geographic inequality (Frank et al., 2004:89; Wen et al., 2006:782; Jones, 2009:2).

A model for mixed-use development created by Alan Rowley is based upon mixed-use development as an aspect of the internal character of settlements (Rowley, 1996:86). The model focuses on mixed land use within the horizontal dimension, separated by adjoining buildings, and suggests that the physical arrangement of a mixed land use development is made up of functions of urban texture, location and setting (Herndon & Drummond, 2011:16). The need to consider the vertical dimension and the combination of uses in a single structure, as well as different land uses over space and a period of time, was recognised by Hoppenbrouwer and Louw (2005:969). Mixed-use development is, however, hardly a standardised product (Rabianski & Clements, 2007:4). Mixed land use can differ according to the dimension in which the land uses are mixed, the combination and nature of uses, the urban patterns that are created within the development, as well as the surrounding area and the scale at which the mixed uses of land is occurring (Herndon & Drummond, 2011:16).

### 4.5.3.3 Densification

The concept of densification is discussed in literature as a manner in which to achieve compact cities and does not have an accepted definition. It is generally associated with urban intensification and this, as Williams et al. (1996:6) formulated it, “relates to the range of processes which make an area more compact.” The densification strategy promotes an urban structure that reduces car dependency and energy consumption, preserves green areas and revitalises the inner city (Cereda, 2009:4). The salience of mixed land use and densification is a broadly discussed topic (Jabareen, 2006:39; Norman et al., 2006:12; Jenks, 2010:4; Schmidt-Thomé et al., 2013:6).

Dantzig and Saaty (1974:19) were some of the first to attempt to define a compact city by explaining densification characteristics through a demonstration of the features associated with three components, as follows: (1) spatial characteristics typically portray the diversity of life with a clear identity and a mixture of land uses; (2) urban form consists of higher density settlements with lower dependence on automobiles and a clear boundary from surrounding areas; and (3) social functions are represented by self-sufficiency of daily life, social fairness and independence from the government.

Furthermore, Goodchild and Chamberlain (1999:8) suggested that intensification of urban uses lead to settlements that are better suitable for pedestrian movement, energy efficiency by means
of public transport and a smaller scale of utilisation of rural areas for urban development. A possible route towards the achievement of densification is re-using the existing urban spaces within the urban settlement (Pedraza et al., 2013:2).

4.5.3.4 Corridor development

Economic corridors, as stated by Brunner (2013:1), connect economic forces along delineated geography. They are usually centred urban landscapes where large numbers of economic actors and great resources are concentrated, and they provide a connection between economic nodes. They, furthermore, connect the supply and demand margins of markets. A crucial factor in the economic growth of developing countries has been the improvement of accessibility through the development of internal transportation networks. From the beginning, this expansion has been a continuous process of irregular, sporadic progress and spatial differentiation influenced by numerous political, economic and social forces (Taaffe et al., 1963:503). Kunaka and Carruthers (2014:14), however, stated that the foremost objective of corridor development is to create and facilitate development opportunities to enhance private sector competitiveness or to trade. Therefore, corridors can emerge not only as products of calculated local-level planning, but as a necessity to advocate trade.

On a more particular level, Gagnon and Walker (2007:4) describe the role of corridor development in the community as often overlooked, since it inclines to be qualitative. Corridors aid in establishing the community’s identity through serving economic needs, accommodating certain community needs (such as public open spaces) and linking key sectors of the community. Corridors are also said to link numerous components of a community (businesses, residences and institutions) to form an economic spine for a community.

Srivastava (2011:1) notes that a corridor commences with physical connectivity, with a road that connects two or more nodes. It is practical and useful to view the road as a means of transport. However, the corridor comprises not solely the road, but more importantly, the areas around it. Therefore, the relationship between the areas around the connective infrastructure and the development of connectivity is not always direct concerning causality; the interest in connectivity might emanate from developed areas that are already in existence, or the connectivity might contribute to further development (De & Iyengar, 2014:16).

4.5.3.5 Strategic forward planning

Section seven of SPLUMA identifies five principal development principles: (1) spatial justice; (2) spatial sustainability; (3) efficiency; (4) spatial resilience; and (5) good administration. These principles are applied to land use management systems, spatial development frameworks (SDFs) and land development applications and are functionally pertinent in all the spheres of government
(Laubser et al., 2017:63). The principles must be read in conjunction with the IUDF (refer to subsection 6.3.2), the government’s official document on urban development. While all the identified development principles play a critical role in development, the first principle, spatial justice, will be discussed in more depth, since it correlates directly with the study at hand.

Although a normative approach to spatial planning has been adopted by South Africa (Laubser et al., 2017:65), distinct types of urban segregation prevail, depending on the urban context, ethnic or racial segregation and differences in income classes (Feitosa & Brasilien, 2010:1). The principle of spatial justice is applied on different levels for national, regional and provincial SDFs that have an impact on the integration of previous homeland areas (Laubser et al., 2017:65). The importance of spatial justice in this study is illustrated under the objective of the principle in SPLUMA: “… spatial development framework and policies at all spheres of government must address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterised by widespread poverty and deprivation” (Republic of South Africa, 2013:18).

4.5.4 Policy framework

Distinct policy guidance is an essential requirement for sufficient land use management (De Wrachien, 2001:9; Metternicht, 2017:42). This is regularly given in the form of a comprehensive settlement or land policy statements. A policy statement typically identifies the goals of an area and the corresponding strategies for achieving these goals. These statements also help guide management institutions to perform their duties and to deliver an instrument for the evaluation of their performance (Strategic Land Policy and Legislation Branch and Integrated Land Management Bureau, 2008:4; Metternicht, 2017:21).

Garba (1993:5) states that land legislation often comprises vague objectives with inadequately defined policy guidance to ensure sufficient development of land. On the contrary, according to Metternicht (2017:23), it often happens that good guidance is poorly enforced or applied. It may also happen that there are no defined approaches to assure the master plans for the urban area are correctly implemented.

Inadequate administration. The governance of land use and its management is captured in the general principles in numerous constitutions, acts, by-laws, codes, etc. However, as stated by K’Akumu and Oyugi (2007:100), the paucity of clarity in numerous clauses throughout the regulations, absence of adequate co-ordination and political pressure lead to spontaneous development, with little attempt at provision of infrastructure. Masore (2011:52) stated that the prevalence of poorly integrated development plans and inadequate coordination might easily result in changes in land use that lead to conflict in land use.
4.6 CONCLUSION

The preceding chapter attempted to investigate the principles of land use planning and land use management, to establish the reasons for land use and to establish how and where changes occur, as well as efficiently controlling the interrelation and performance of different land uses. The chapter aimed to provide an overview of the concept of land use planning and land use management through the functions of a land use planning programme and the services that are essential to achieve a more desirable outlook and to improve decisions on land use. The four functions of a land use planning programme are the cornerstones from which development commences. This chapter indicated the critical importance of intelligence in planning, planning in advance, problem solving and the management of development.

This chapter aimed to elaborate on the concept of land use planning as a tool in regulating the activities of community development. The perspectives of the use of land were discussed, as the perspectives, when taken together, circumscribe a number of concerns and values that aid the process of land use.

This chapter subsequently expatiated on the origin, principles, different levels and components of land use planning. The importance of the use of land is stressed, for the supply is fixed while the demand keeps increasing. It also became evident that the implementation of measures and the results of planning can only be feasible if the plans are made jointly with people. Moreover, the importance of land use policies became evident when evaluating the involvement of interdependencies among communities and individuals and the corresponding impacts on social and economic well-being. It is clear that planning for land is an intricate and delicate operation, as its impact is extensive and it affects people on various scales.

The principle of land use management was said to be the most powerful tool that the planning practice has to reconstruct urban form. The management of land is what led to the segregation of communities in the first place, though this has been overlooked both in terms of legislation reform and in terms of academic enquiry. Evidently, the management of land use is currently not being optimised and the implications thereof might result in extreme difficulty in promoting and including spatial reform and sustainability. The management of land will form a key principle in further discussion of this research, as integration cannot commence without adequate land use management.

The chapter focussed on the implications of land use planning and land use management in order to formulate a foundation and a clear scope for a way forward, to indicate what policies and strategies to follow in planning for the future.
Land use both determines and affects where economic activities occur, and how and where communities develop. Land use directly affects the current and future built environment in which members of society work, live and relax. Land use also affects the quality of the comprehensive natural environment, which affects the water supply, water quality and quantity, the functioning of aquatic and terrestrial ecosystems and the possibility of natural hazards and cost implications when these do occur.

The motives for policy intervention in the pace and pattern of rural land use change are disparate. It is often argued that policies have negligible appreciable impact on the prominent categories of land use. However, they have a profound impact on the difference of quality of life at the interface between rural and urban land uses.
CHAPTER 5

URBAN DYNAMICS

5.1 INTRODUCTION

The matter of land use is both complex and broad. A long list of perceived and actual controversies that are linked to land use decisions is evidence of the breadth of the subject (Bergstrom et al., 2005:1). For instance, the conversion of land that secures food production to land that supports housing developments raises concerns regarding domestic food security in the long term.

In the previous chapter, attention was paid to the planning and management of land use and its implications. Small patterns of urban fabric, consisting of a multitude of land uses, intertwine to formulate an urban settlement. The urban transition, through which cities have progressively absorbed the greater part of the human population, has transformed the manner in which the planet is inhabited and it is globally understood through socio-economic rationales, but is less frequently questioned than the spatio-temporal process (Pumain & Reuillon, 2017:2).

This chapter aims to elaborate on the stressors arising from the urban environment (see sub-section 5.2), and the subsequent enhancers of the urban environment (listed as Objective 3, indicated in sub-section 1.3). The stressors that are discussed consist of increasing population growth, industrialisation, urbanisation, urban sprawl, segregation, land degradation and spatial conflicts. The first objective of this chapter is to assess the perceived urban stressors. These stressors will be evaluated at a later stage in terms of the study area. The urban environment’s enhancers that are elaborated on are compactness, regeneration, mixed land uses and economic drivers.

The discussion of stressors of the urban environment is important, for a problem must first be identified before a solution can be properly formulated. The literature on the stressors will help indicate the target areas in the study area later in the paper. The enhancers of the urban environment are of the utmost importance, as these will create a foundation from which principles are built to propose a better quality of life for segregated urban settlements in secondary cities. Sustainable urban areas strive for lasting improvement in economic, physical, social and environmental sectors of an area that has been subject to change. Therefore, the formulation of a sustainable urban area is what is sought, and the establishment of enhancers help reach the goal as stated in the objectives of this chapter (listed as Objective 3, indicated in sub-section 1.3).
5.2 STRESSORS ON THE URBAN ENVIRONMENT

Anderson et al. (1996:9) define urban form as the spatial configuration of established elements included in a metropolitan region. This comprises spatial patterns of land and their densities, as well as spatial design of communication infrastructure and transport. Urban interaction is the flow of people, goods and information throughout different locations in the city and urban form is the result of cultural, economic, environmental and social processes.

The spatial structure of an urban settlement is a more extensive concept. An urban spatial structure, according to Bourne (1982:6), comprises three aspects: urban interactions, urban form and a series of organising principles that distinguish the relation between the two.

Urban form is a result of locale decisions of firms, thousands of households and public-sector agencies in free-market economies. Therefore, a number of policy instruments can be used to alter the progression of urban form towards reduced environmental emissions and energy, as the built area is primarily affected by land use and transportation policies (Anderson et al., 1996:7). The Governance of Land Use Policy (2017:5) states that since 1850, one-third of all man-made carbon dioxide emissions have been a result of changing land use.

As stated in the introduction, the matter of land use is both complex and broad (Bergstrom et al., 2005:1). Moreover, the location of land use and its corresponding implications have to be carefully evaluated. For example, the placement of toxic waste sites or industrial activities or enclosed animal feeding operations encourages the “not-in-my-backyard” mentality (Joshi & Ahmed, 2016:1). In the interim, concern should also be raised about the ecological and environmental impact of land use. Such concern includes the reservation of endangered species, the filtration of groundwater, invasive species and possibilities for flooding and surface runoff from urbanised parking spaces (Bergstrom et al., 2005:1).

It should be noted that however small a parking space might seem, it is nevertheless a hardened, impermeable surface formed over what once was a natural ground area. No matter how small the impact of the impermeable surface, a certain degree of disturbance in the natural geochemical processes is taking place. It would be illogical to suggest the relinquishment of parking spaces (Barnes et al., 2001:3). Instead, incentives could be put in place to create a rehabilitation system to balance the extent of parking spaces, such as policies to create permeable pavement parking lots, urban landscaping, sufficient planning for the runoff etc. (Bergstrom et al., 2005:65).

The complexity of land use deepens with the competing interaction between private and public interests. Superimposed on the physical and socio-economic land use attributes of a land unit are the regulatory environment and the land ownership and tenure characteristics that govern land
use, as well as the diverse tools that local and state governments use to assess land use
decisions. Every level of government formulates land use and spatial plans as an apparatus to
regulate land use (The Governance of Land Use, 2017:11). These measures include easements,
transfer of purchase of development rights, zoning and preferred taxation. In some cases, one
branch of the government promotes certain activities (for instance industrial contracting with
attendant increments in pollution) that are contrary to the objectives of another branch of the
government (environmental) (Bergstrom et al., 2005:2).

5.2.1 Population growth

One of the more significant problems of the twenty-first century is the rapid population growth and
concurrent urban expansion. Hara et al. (2003:1) state that the exponential growth in the
population will result in environmental degradation, food crises and energy problems. However,
the most serious problem is seen as extreme urbanisation, especially in developing countries.
Further elaboration on population growth can be found in sub-section 5.2.2.

The world’s urban population has been increasing rapidly from 751 million since 1950 to 4.2 billion
in 2018, as opposed to the rural population that has slowly increased since 1950, but is expected
to reach its pinnacle in a few years. The rural population, globally, numbers close to 3.4 billion
and is anticipated to increase marginally and then diminish to approximately 3.1 billion in 2050
(United Nations, 2018:1). Figure 5-1 indicates the percentage of the urban population of the world
from 1960 to 2017. The urban population refers to inhabitants of urban areas as defined by the
national statistics offices. The explosive growth of cities throughout the world illustrates the
demographic transition from rural areas to urbanised areas, which is associated with changes
from an agriculture-based economy to technology, mass industry and service (UN, 2018:1).
The world’s population is increasing exponentially; it was 2.5 billion in 1950, is currently 7.6 billion and is predicted to reach 9.8 billion by 2050 and 11.2 billion by 2100 (Jettou & Karis, 2013:12). Figure 5-2 below indicates the human population (in billions) from 1050 to 2050.

**Figure 5-1: Global urban population (% of total) from 1960 to 2017**

*Source: UN, 2018:1*

**Figure 5-2: Human population in billions from 1050 – 2050**

*Source: United Nations, Department of Economic and Social Affairs, Population Division, 2017:2*
The increase in urban population is driven by a general universal increase in the population, as well as an increase in the populace residing in urbanised areas. It is estimated that these two collective factors will add an additional 2.5 billion to the urban population of the world by 2050, with nearly 90% of this growth occurring in Africa and Asia (UN, 2018:1).

5.2.2 Industrialisation

Simandani (2009:419) describes industrialisation as a common title for an array of social and economic processes associated with the discovery of more effective approaches for the creation of value. The more effective approaches are lumped together under one label of the “secondary sector” or “industry” (the primary economic sector referring to resource extraction, agriculture, fishing and hunting, whereas the tertiary sector refers to services). In simpler terms, industrialisation refers to the fundamental alteration that countries encounter during their process of development from an agricultural to an industrial economy, including the deeply rooted changes in society. In this regard, development is subject to the development of labour in the capitalist sector (Kuznets, 1973:247).

It is generally acknowledged that industrialisation, predetermined as the alteration from agriculture to manufacturing, is indispensable for development, to such an extent that few countries have been known to develop without industrialising (Guadagno, 2011:1). This anomaly has been astonishing, leading economists to theorise that the secondary sector is the driving force behind economic growth, the supposed “engine of growth argument” (Kaldor, 1967:27; Cornwall, 1977:44).

5.2.3 Urbanisation

Urbanisation is generally regarded as the process in which a growing portion of the national population resides in urban settlements (Potts, 2012:1383). Investments in human capital and accelerated urbanisation appear to be modifying the order of economic growth. Governments frequently tried to influence the location or pace of urbanisation. Urbanisation increases the urban population on account of three components: (1) urban natural increase; (2) urban net migration; and (3) rural areas being classified as urban (van Zyl, 2017:4). Commonly, developments entailed shifting resources from primarily agriculture to finances, the more rapidly expanding productive and modern sectors, which were all concentrated in cities (Arouri et al., 2014:2).

Typically, urbanisation relies on a model that is, in many ways, unsustainable; socially, the model produces various forms of exclusion, deprivation and inequality, which lead to divided cities and spatial inequalities that are generally characterised by slum areas and gated communities. Environmentally, the present model brings about low-density suburbanisation that is generally
driven by private interest (rather than public interest) and facilitated by dependence on cars. **Economically**, the current model is unsustainable by virtue of extensive unemployment. Typically seen among younger people and in low-paying and unstable jobs, unemployment leads to unequal access to urban-related amenities and services, poor quality of life and economic hardship (UNWCR, 2016:5). Furthermore, Runde (2015:11) argues that the rate of urbanisation causes an extensive range of problems, relating among others to water, energy and food consumption.

More people reside in urban areas than in rural areas. For the first time in history, in 2007, the global urban population surpassed the global rural population. Since then, the global population has predominantly been urban, as seen in Figure 5-3 (Peng *et al.*, 2009:3; United Nations World Urbanisation Prospects, 2014:7). Over the past six decades, the world has been urbanised rapidly. The urbanisation level increased from 29% to 49% between 1950 and 2005 (UNWCR, 2016:16). Further acceleration in urbanisation is expected to increase the urban portion of the global population to 75% by 2050, considerably higher than the 10% in 1900 (Peng *et al.*, 2009:3).

![Figure 5-3: The global urban and rural population from 1950 to 2050](image)

**Source:** United Nations World Urbanisation Prospects, 2014:7

Urbanisation fosters economic and social improvement of quality of life when well managed. It is furthermore associated with greater opportunities and productivity (UNWCR, 2016:1). Urbanisation influences all settlements, service centres and rural villages, small-sized towns, medium-sized towns, cities and megacities. Each of these settlements assists in various ways to sustain development and national growth (UNWCR, 2016:25). Although urbanisation has the
potential to create prosperous cities and make counties more developed, numerous cities around the world are unprepared for the multi-faceted challenges that are associated with urbanisation (UNWCR, 2016:5). Realising the advantages of urbanisation depends on the manner in which urban growth is managed and planned, and the extent to which the advantages accumulating from urbanisation are equitably distributed (UNWCR, 2016:27).

5.2.4 Urban sprawl

Urban sprawl signifies an exceptional transformation of urban form. According to Habibi and Asadi (2011:134), urban sprawl is characterised by:

- An expansion of the boundary surrounding the metropolitan area that separates rural land uses from urban land uses;
- Higher intensity transportation networks that connect areas throughout the city, even the peripheral area; and
- Segregation of residential areas from other land uses, with a greater number of residential communities located in the peripheral areas.

The rapid expansion of urban sprawl is generally associated with the extensive adoption of the automobile from the 1950s. However, significant urban expansion began to occur in the nineteenth century as a result of the ability of railroad transport supporting corridor developments (Warner, 1978:33; Muller, 1986:1 and Lewis, 1991:68). A more comprehensive definition is given by Hayden and Wark (2006:8), who describe urban sprawl as a process of development of large-scale real estate that usually results in scattered, low-density, intermittent car-dependent construction that usually occurs on the periphery of shrinking city centres and declining older suburbs.

5.2.5 Urban segregation

In the modern world, the topic of segregation has become one of the most notorious concepts posited in various disciplines, including governmental policies and debates. Segregation in cities, however, is not a new phenomenon. It has occurred since prehistoric times (Caner & Bolen, 2013:154). The word 'segregation' first originated in the 1890s to describe techniques to isolate Bombay and Hong Kong racially, and from there was dispersed worldwide (Nightingale, 2012:9). Planning techniques that were aimed at zone separation based on racial differences reached their peak in 1948 under 'apartheid' in South African cities. As soon as racial dynamics entered the real estate market, urban divisions were rendered longer-lasting. The effect of developments that occurred under this regime persist in the current South Africa. Segregation has however also
become a phenomenon in settlements globally and cities have become acutely divided by race, class and ethnicity (Caner & Bolen, 2013:154).

5.2.5.1 Causes of segregation

The morphological causes of segregation have been portrayed as a function of institutional practices, large migrations, explicit public interventions and policies and private behaviour (Denton & Massey, 1993:331). Growing structural changes and income disparities are said to have an influence on the bifurcation of the middle class, the employment mismatch and the correlation between the housing and labour markets (Staley, 1989:319; Massey & Eggers, 1990:1157). Global literature has more recently stressed a substantial relationship between spatial polarisations and economic restructuring (Ruiz-Tagle, 2012:389). In larger cities this has been expressed by an increased concentration of minorities, growth of exclusionary areas and the expansion of new forms of poverty (Sassen, 1990:472). Segregation has also been depicted in relation to more intricate sociological characteristics, which are classified by Ruiz-Tagle (2012:389) into six themes: (1) resistance in defensible spaces, (2) metropolitan mindsets, (3) the culture of fear and perception of disorder, (4) the paradox of identity differentiation, (5) dynamic factors, and (6) individual actions that relate to aggregated results.

First, segregation that occurs as resistance in the form of sensible spaces refers to the repudiation by communities of interference of subordinate status groups (Burgess, 1928:109). People become connected to their homes as a secular form of the old spiritual refuges and investigate new ideals for family life (Sennet, 1970:31). Second, metropolitan mindsets originate from the work of Simmel and relate to an indifferent attitude in the money economy and individuality (Simmel, 2005:17). The urban fabric creates a ‘schizoid’ personage that is distanced from expression and social relationships as a result of multiplied competition, interaction, aggrandisement and mutual exploitation (Wirth, 1938:8). The attitude is known to cause tension between paranoia and trust, between trust in the maintenance of social order and doubt grounded on perceived risks (Karp et al., 1991:56). Third, as regards fear and disorder, one of the principal ideas is the ‘broken windows’ theory, which points out that small forms of public disorder might lead to a downward spiral of city decay and grievous crimes (Sampson & Raudenbush, 2004:321). The culture of fear and the concept of disorder are said to be greater than reality and might grow without limits (Ruiz-Tagle, 2012:390). This limitless exaggeration often brings about an ensuing exodus of residents of upper status (Sampson & Raudenbush, 2004:326).

Fourth, the urban adolescence or the paradox of identity differentiation poses one of the more interesting descriptions of the actions of particular communities. When a community’s identity is frail, and relationships are erratic, levels of insecurity increase, and identity is built opposed to an “other” in order to define a form of separation and a corresponding self-affirmation of superiority.
More simply stated, a dialectical relationship evolves that leads to exclusion or belongingness (Sennet, 1970:46). Fifth, the segregation phenomenon has been understood from ever-changing perspectives. Investment decisions and the mobility of groups play a foremost role in this regard. The dynamic transformations of neighbourhoods are illustrated and explained by two models, the tipping-point model and the invasion-succession model. The tipping-point model involves a lower minimum of demographic arrangement in which diversity is no longer accepted for established residents and the invasion-succession model illustrates the arrival of lower-status groups that cause the departure of groups with upper status (Wolf, 1963:219; Schelling, 1971:156; Schwirian, 1983:91; Gotham, 2002:851). Finally, some contentions challenge the unequivocal relationship between individual behaviour and aggregate results and, therefore, the inherent character of segregation (Ruiz-Tagle, 2012:390). Schelling (1971:158) has been sympathetic in affirming that there is no parallelism between individual behaviour and the accumulated results of segregation. The consequences are accumulated but the choices are individual. The opinion that segregation is a normal occurrence (Park, 1925:36; Burgess, 1928:107), a mere incident of urban growth (Ruiz-Tagle, 2013:2), overlooks the intentional comportment of private and public institutions, and has been extensively criticised (Gotttdiener & Hutchison, 1994:46).

5.2.5.2 Consequences of segregation

Urban segregation has distinct effects and meanings, depending on the specific form of cities, as well as their historical and cultural context (Feitosa & Brasilien, 2010:11). Segregated urban areas have continuously been associated with increased exposure to diseases, violence, inadequate accessibility, increased trips to school or work, inadequate public transport and an overall low quality of the natural and built environment.

To realise the possible role of cities in promoting development, it is crucial to eliminate the barriers that restrict the development of inclusive cities or settlements that are capable of advancing growth with equity. Urban segregation constitutes one of these barriers, the impacts of which have been strengthening social exclusion in cities, especially in the developing world (UN-Habitat, 2001:29). Distinct types of urban segregation prevail, depending on the urban context, among others ethnical or racial segregation and differences in income classes. The active relation between social exclusion and income classification has created a continual downward spiral: segregation promoting exclusion and exclusion promoting segregation (Feitosa & Brasilien, 2010:1).

The dimensional separation of minorities such as health care facilities, jobs, local public goods and economic activities is a dominant cause of ethnic and racial differences in countless social, economic and health related outcomes (Denton & Massey, 1988:289; Borjas, 1995:380; Cutler & Glaeser, 1997:230; Collins & Williams, 1999:499; Almond et al., 2006:15). The relocation of
residents is the behavioural mechanism that alters ethnic and racial segregation in urbanised areas (Waldorf, 1992:1151). There are many forces that contribute to segregation: economic discrepancies between racial groups, racial differences and preferences, discriminatory constraints on obtaining housing and information biases (Clark, 1986:101; Galster, 1987:22; Clark, 1989:193; Clark, 1991:7). Urban segregation is a phenomenon that occurs on macro-scale, but it surfaces from numerous individuals' residential choices at micro-scale (Schelling, 1971:145). This phenomenon results in a coherent urbanised form, with definite patterns, that organises and adapts itself over time without a singular entity intentionally controlling or managing it (Holland, 1998:63). The dynamics of segregation, as a complex system, are distinguished by interdependencies, scale dependencies, emergence and feedback loops (Feitosa & Brasilien, 2010:6).

Numerous studies affiliate segregation with the surge of social dislocations such as alcohol and drug abuse, school dropouts, lower attachment to work and welfare dependency (Staley, 1987:319; Jargowsky, 1997:986). Other authors accentuate problems such as lack of political participation, economic disadvantage, unequal access to education, lack of social mobility, lack of spatial mobility, activity segregation and lack of spatial mobility (Denton & Massey, 1993:346; Bolt et al., 1998:88). A concentration of poverty in neighbourhoods is said to endure from the amplification of poverty as a result of its concentration, as well as cyclical decay and abandonment (Jargowsky, 1997:991; Adelman & Gocker, 2007:416). Jargowsky (1997:994), contends that these neighbourhoods represent a form of immunity to certain policy interventions, a tendency that accentuates short-term goals, underfunded schools, lack of stabilising institutions and role models and reduced access to job opportunities at metropolitan level.

5.2.6 Land degradation

Land is a finite resource with considerable, growing demands placed on it. As a consequence of increasingly substantial pressure on land resources, the quality and quantity of land depreciates, there is growing competition for access to land and agricultural production deteriorates (Brinkman et al., 1999:23).

The overexploitation of land resources and the pressure on land resulted in different forms of degradation: loss of biodiversity, land degradation, desertification, deforestation, etc. Land degradation resulting from human activity is sabotaging the prosperity of two fifths of mankind by aggravating climate change and contributing to the extinction of species. Land degradation is furthermore a key contributor to increased conflict and mass urbanisation. According to The Economic Times (2018:1), the negative impacts of land degradation are currently affecting at least 3.2 billion people. According to the most recent study of the Food and Agriculture Organisation, the status of water for food and agriculture, as well as the status of land resources in the world,
is at concerning levels (Jettou & Karis, 2013:12). The portion of degraded land has increased to 25%; in 1997, the portion of degraded land was 16% (Brinkman et al., 1999:13). The effects of degradation of land stretch further than the physical deterioration of portions of land; plants, wildlife and people suffer under land degradation, as causes loss of arable land and might contribute to flooding.

5.2.7 Spatial conflicts

Conflict about land use is a common phenomenon that could occur at any place or time between different stakeholders, primarily as a result of different land expectations (Torre et al., 2014:2406; Wehrmann, 2008:34). During the twentieth century numerous changes have occurred regarding agricultural land around the world, mostly owing to continuous pressure of urban sprawl and population growth. These factors accentuated the demand for increased infrastructural developments, particularly in developing countries (Bergstrom et al., 2005:10; Singhal, 2009:1; Wang et al., 2014:47). These important changes might appear as incompatibilities between the expectations of the affected population and the development projects (Magsi, 2017:19).

In theory, conflicts about land use are the result of the absence of recognised rights and social justice (Brady & Ostrom, 1993:9), which place noteworthy problems in front of planners and researchers to advocate the consideration of contemporary approaches. When considering the social welfare theory and the welfare economic prospects of conflicts in land use, according to Cheshire and Vermeulen (2009:167), “the decisions of superposition of lands must not depend on one use to another, but must be limited to its efficient distribution with respect to the economic activities.”

More simply stated, Mohamed and Ventura (2000:230) explained that spatial conflict is a consequence of controversy in communities, such as land use disputes, boundary line disputes and disagreements about the use of resources. The implication is that spatial conflicts are associated with antagonistic interests concerning land uses, unclear boundary delineation, unclear ownership and limited use and access. Poverty and population pressure are the essence of most spatial conflicts. Furthermore, Torre et al. (2014:2412) illustrated that the growing problem demands more public utilities, housing, schools, parks, sports arenas, hospitals, prisons, airports, cemeteries, offices and retail areas for infrastructural projects. The demand for increased facilities is a key contributor to the development process, but incidentally it is being partly opposed by local inhabitants and classified as semi-desired or undesired infrastructure projects.
5.3 ENHANCERS OF THE URBAN ENVIRONMENT

Sustainable communities are the urban fabric that supports livelihoods with the aim of economic and environmental sustainability. Urban sustainability might be observed in areas where inhabitants want to work and live, not only at present but also in the future. Sustainable urban and (or) municipal infrastructure are expected by sustainable communities. According to Kaklauskas et al. (2007:50), communities expect a sustainable number of land uses (see sub-section 4.4) that include a safe and clean environment, good public transport, schools, hospitals and shops. Public open space is an intricate role-player, as it offers a space where inhabitants can interact and relax.

Communities have always been a key concern for all the relevant political parties throughout the history of urban regeneration (Maliene et al., 2009:53). Newly formed communities can be a catalyst for urban regeneration, since sustainable communities are an imperative component of any given regeneration scheme. Sustainable urban areas strive for lasting improvement in economic, physical, social and environmental sectors of an area that has been subject to change (Tsenkova, 2002:1; Goksin & Muderrisoglu, 2005:7; Adair et al., 2009:12; Hassan, 2012:230; Czischke et al., 2015:6; Alsubeh, 2017:129). The resulting improvements, in return, facilitate new opportunities and investments as the urban environment becomes full of enterprise and life.

5.3.1 Compactness

Growing concern and awareness about the development of urban form subsists throughout settlements of all sizes. Particularly outward expansions, low-density developments, urban sprawl, leapfrog developments and segregated land uses (some of which have been elaborated on in sub-section 5.2) are considered unfavourable for good quality urban life (Burchell et al., 2000:839). It is clear that a strategic factor establishing sustainability is urban form, the shape of patterns in settlements of all sizes: cities, towns and villages (Brehey, 1996:16; Gar-On Yeh, 2002:1). If a settlement has vast empty spaces (consisting of parking lots, wastelands and less developed areas) and few dense centres, it becomes more expensive and difficult to maintain infrastructure and to manage accessibility, overcrowding and increased traffic volumes. A more supportive solution would bring about scattered cities with less intense land use to encourage accessibility and decentralised regeneration by urban regeneration and infill developments that are led by carefully planned strategies (Krenz, 2001:3).

Diverse and dense urban patterns are favoured at all levels by urban development policies (Lim & Kain, 2016:96). Compact urban developments are supported by the advocates of the agglomeration effects (Glaeser, 2011:67) that are rendered by the distance of disparate urban components, resulting in diversity of scales, mixed use of land and diverse demographics. Quigley
(1998:130) claims that such qualities offer better economic output, together with higher invention rates through the provision of fertile ground for comprehension spill-over (Carlino et al., 2006:396; Glaeser, 2011:114). It is further argued by Bettencourt and West (2010:912) that diverse and dense urban patterns are more resilient urban structures that provide a plethora of functions.

Evidence indicates a strong linkage between sustainable development and urban form, though it is not straightforward or simple (Gar-On Yeh, 2002:1). Compact developments will, according to Gar-On Yeh (2002:2), reduce transportation cost as well as the cost of providing infrastructure to a new site. Compact urban settlements might be significant means in guiding development towards sustainable development, particularly in reducing the detrimental effects of the current dispersed development prevailing in the majority of developing countries (Williams et al., 1996:11).

5.3.2 Regeneration

In essence, urban regeneration intends to alter the character of a settlement by including stakeholders and inhabitants, embracing numerous activities and objectives, thus leading to a functioning partnership among different stakeholders (Turok, 2004:58). While some facets of urban sustainability are addressed by means of citywide infrastructure and systems, interventions through urban regeneration are by nature more responsive and localised to context (Czischke et al., 2015:4).

5.3.2.1 Definition and characteristics

Urban regeneration is dynamic and defining it is complex, as the concept means different things to different people. One definition that has received general acceptance was given in the 1990s by the British Urban Regeneration Association and was adopted by Smith (2005:1) as “a process of reversing economic, social and physical decay in town and cities where market forces alone will not suffice.” Couch (1990:2) defines urban regeneration as the process in which the local community or the state seeks to bring back employment, investment and consumption and improve the overall quality of life in an urban area. A more comprehensive definition has emerged in the works of Granger et al. (2017:9); it states that urban regeneration is an integrated vision and action to redress urban complications by means of permanent improvement in the physical, social, environmental and economic conditions of an area.

Urban regeneration is regarded as a strategic activity that is engrossed in short-term solutions for instantaneous problems and long-term solutions to avert possible future problems (Goksin & Muderrisoglu, 2005:6). Urban regeneration is concerned with an urban environment's totality, with the focus of the strategic activity on achieving and developing a definite vision of the purpose. It
is an interventionist approach that intends to benefit numerous organisations, communities and agencies and is best achieved through partnership. Urban regeneration can be adjusted, measured and reviewed and it relates to explicit needs in individual neighbourhoods, towns, cities or regions (Granger et al., 2017:9).

5.3.2.2 Challenges in urban regeneration

**Social justice, health and inequality.** According to Czischke et al. (2015:4), socio-economic disparities are regarded as a crucial challenge in sustainable urban regeneration. The increasing competition for resources and energy are likely to have a disproportionate impact on the most vulnerable and poorest. This is seen in cities with intensified inequalities owing to a number of economic and demographic drivers. Rapid population growth (as elaborated on in sub-section 5.2.1) and industrialisation (as elaborated on in sub-section 5.2.2) increase the risk inequalities in health owing to proliferation of impoverished areas where services and infrastructure are insufficient (Serrano et al., 2016:1). Urban regeneration is a key factor in supporting socio-economic measures. Urban regeneration approaches should mitigate or avoid the influences of certain area-based approaches, such as loss of employment opportunities, gentrification and displacement of residential populations. Numerous determinants, all of which might be subject to urban regeneration, such as urban safety, employment, education and health services, affordable housing, public transport, walkability, green areas and social coherence, converge to influence the well-being and health status of city dwellers (United Nations World Health Organisation, 2010:12).

**Megatrends.** Urban regeneration policies need to be understood in the setting of major shifts in economies, which are beyond the governance of specific localities. The sectoral changes are fuelled by a swift decline in employment of semi-skilled workers and manufacturing activity and contrasted by an increase in business and financial services (Tsenkova, 2002:4). The result of sectoral changes is a “two-speed economy” that results in an extensive impact on the spatial and social fabric of cities, involving expeditious social and economic differentiation, together with devaluation of the urban fabric in poorer communities and acceleration of the spiral of urban decay. Consequently, the evolution of strategies and policies to address the urban problems is associated with alterations of urban governance and political regimes (El-Barmelgy et al., 2012:206).

**Reaction to the challenges.** The challenges that arise from urban regeneration differ over time and from place to place; each settlement has a unique set of opportunities that interprets different strategies and policies for change. Despite the differences, some challenges are likely to emerge in most settlements. These remain the foremost challenges of urban regeneration and include unemployment, economic restructuring, environmental pollution, contaminated land and social
exclusion and deprivation (Tsenkova, 2002:4). The multifaceted nature of the challenges requires interventionist activity of urban regeneration that incorporates a series of programmes for action and strategies for change. The immediate results can be arranged into four categories: physical, environmental, economic and social (Tsenkova, 2002:1; Goksin & Muderrisoglu, 2005:7; Adair et al., 2009:12; Hassan, 2012:230; Czischke et al., 2015:6; Alsubeh, 2017:129). The most crucial outputs that determine the success of urban regeneration efforts are the provision of new employment opportunities, homes, transportation, improved health care services and education and a higher quality of life in environmentally sustainable urban areas (Tsenkova, 2002:4).

Geographical disparities and governance. Sufficient urban governance is regarded as a prerequisite to attain sustainable urban development (Evans et al., 2006:855) and is defined as the intersection of politics, power and institutions (Leach et al., 2010:51). More precisely, sufficient urban governance is seen as a balancing act set in motion by an intricate set of actors and institutions that are drawn from, and also beyond, the government (Stoker, 1998:19). Geographic disparities play a crucial role in the process of cities' consideration of environmentally sustainable urban regeneration (Czischke et al., 2015:13). Social elements of health, the circumstances in which people are born, live, grow, age and work, are primarily responsible for health disparities. The geographical environment provides fundamental places to assist people's social and physical activities. Geographic disparities thus result in lack of assistance for inhabitants' well-being, since deprived neighbourhoods are often characterised as having low income levels or low educational attainment and as experiencing increased morbidity or mortality. Neighbourhood context has singularly predicted outcomes of health, beyond their impact on individual behaviours (Dai et al., 2017:417).

5.3.2.3 General responses to urban regeneration

An analytical framework has been created to guide the comparative analysis as well as to capture the dynamics of the substantial diversity of regeneration approaches and initiatives. It is explained in Figure 5-4.
The four identified categories, social, environmental, economic and physical, encompass the results of a series of programmes for action and strategies for change (Tsenkova, 2002:1; Goksin, 2002:3).

**Figure 5-4: The process of urban regeneration**

Source: Adapted and constructed from Tsenkova, 2002:3
& Muderrisoglu, 2005:7; Adair et al., 2009:12; Hassan, 2012:230; Czischke et al., 2015:6; Alsubeh, 2017:129). The success of urban regeneration efforts is determined by the outputs, which entails the provision of new employment opportunities, homes, transportation, improved health care services and education and a higher quality of life in environmentally sustainable urban areas (Tsenkova, 2002:4). Therefore, the process of urban regeneration, more specifically the outputs of the process, is of the utmost importance when evaluating the urban context of the study area.

5.3.3 Mixed land use

Mixed land use development is seen as an integral component of urban regeneration and has been earnestly encouraged through planning processes by the government (Adair et al., 2009:24). The topic of mixed land use has become increasingly popular. Developments of mixed-use nature have never been more enticing than they currently are, variously employed by policy writers as the solution to matters of housing supply and quality, as well as the foundation for the regeneration of cities and towns (Adair et al., 2009:25). One foremost trait of mixed land use is that it creates conditions that enable individuals from diverse socio-economic backgrounds to live together (Moos et al., 2018:7).

Mixed-use developments are supported by a confluence of economic, political and social pressures. Consequently, mixed-use developments present unique encounters for investors and do not comply with conventional development principles. The advantages range from the benefits of diversification achieved by combining land uses that have numerous property cycles to the pragmatic recognition that mixed-use developments gain planning consent (Adair et al., 2009:25). In theory, mixed land use is implementable at several scales, ranging from an erf, to a neighbourhood to citywide. In practice, however, local governments generally focus on the specific property as well as neighbourhood levels, because mixed land use is implemented by means of zoning codes that usually operate on these scales (Moos et al., 2018:8). Furthermore, planning scholars argue that mixing land use is a conceivably powerful tool that might achieve increased transit use, improved walkability, social diversity, and intensified land use (Grant, 2002:76; Hoppenbrouwer & Louw, 2005:968; Rabianski et al., 2009:210; Tallen, 2015:125). Mixed land use proposes a manner, at least in theory, to abolish the unintentional consequences of segregated development, such as overreliance on the private automobile (Stevens, 2017:8).

Mixed land use developments have never been more attractive and desirable than they are at present, diversely employed by policy makers as the vital element in the regeneration of cities and the solution to housing quality and supply problems. Different from conventional single-use developments, which are driven by occupier demand or investors, mixed land use developments
are driven by a confluence of economic, social and political pressure (Adair et al., 2009:25), as seen in Figure 5-5.

![Diagram of mixed land use developments]

**Figure 5-5: The drivers of mixed land use developments**

**Source: Adair et al., 2009:25**

The positive prospects of mixed land use development are broadly recognised by both investors and developers and range from the diversification benefits obtained by combining uses that encompass various property cycles, through to the pragmatic acknowledgement that mixed land use developments help obtain planning consent (LaSalle, 2005:19). Equally important, from an urban regeneration perspective, is that increased densities of mixed land use development empower the formation of a “sense of place” (Adair et al., 2009:25).

### 5.3.4 Economic drivers

Cities play a crucial role in identifying investments and structuring incentives to support and facilitate sustainability objectives (Czischke et al., 2015:18; Kulenovic & Cech, 2015:6; State of South African Cities Report, 2016:84). Furthermore, Hassan (2012:229) states that urban regeneration has progressed from an elementary form of rehabilitation or renovation to targeting the renewal and restructuring of the urban economy and pursuing social equity and interaction.

To improve sequencing and integration of spatial development strategies and national, provincial and local economic development strategies in cities, spatial and economic teams must work
closely together. The collaboration will empower the strategies of economic development, not only to inform, but also to drive spatial development investment and incentives, such as public transportation routes and zoning regulations. Correspondingly, spatial objectives and considerations should influence the manner in which cities conduct their economic development strategies (State of South African Cities Report, 2016:90). One of the core principles in urban regeneration is advancing the economic competitiveness of business performance in order to create more prosperity and local jobs. To attract both business and people, urban regeneration aims to enhance the general appeal of a place (Hassan, 2012:232).

Examples of incentives and investment in urban regeneration include infrastructure and housing provision for the purpose of mass occurrences such as international sport events. These events are usually funded by the public sector and philanthropic sponsors and act as leverage to attract private funding (Czischke et al., 2015:18). There is substantial potential in building local economic capacity and managing urban problems in terms of delineating local problems experienced by the community and coherently handling them by making use of local resources rather than through subsidies or government (Hembree et al., 2005:150). Given this impact, local governments should focus increased attention on promoting corporations with disparate programmes and initiatives. Examples of these include sustainable urban regeneration initiatives and community enterprises (Czischke et al., 2015:18). Moreover, the State of South African Cities Report (2016:91) emphasises that cities should understand and know their economic metrics on both city level and functional economic level. By understanding and knowing “the numbers”, cities will be enabled to target more favourable infrastructure investments and spatial economic interventions and to improve their economic performance.

5.4 CONCLUSION

This chapter concludes the study of the physical urban environment, the factors that exert strain on the urban environment and the enhancers of the urban environment. Ever-increasing population growth, urbanisation and urban sprawl all contribute to a cumulative amount of pressure on cities. Improved and appropriate management of land and services would facilitate development and develop the urban environment.

It was proposed that four categories, the social, environmental, economic and physical, encompass the results of a series of programmes for action and strategies for change. The outputs, which entail the provision of new employment opportunities, homes, transportation, improved health care services and education and a higher quality of life in environmentally sustainable urban areas, determine the success of urban regeneration efforts. The outputs of the process of urban regeneration are a key factor when evaluating the urban context of the study.
area. These consist of sustainable places that are competitive and liveable, but also fiscally sound and socially inclusive. The theory of stressors on the urban environment forms the basis on which the study will be evaluated. A clear indication of the causes of stress and the implications thereof will guide the recommendations on integration and regeneration principles. Policies that guide development, as previously discussed, must align with enhancers of urban development in order to establish a proposal for successful integration.

This chapter concluded a theoretical study that confirms that urban regeneration moves beyond the aspirations, achievements and aims of urban renewal, which is generally regarded as a process of principally urban development and physical change. Its main objective is urban rehabilitation, which, while proposing the need for action, neglects to specify an exact method of approach. This connects with the multi-faceted nature of urban dynamics, particularly when taking into consideration the abundance of influences that make the task of a “single fix” arduous.
6.1 INTRODUCTION

The study area is located in South Africa (see Chapter 8), which presents its own set of challenges, as South African settlements are still spatially segregated, with a high degree of exclusion (Steedley, 2014:6; Harrison & Todes, 2015:149). This is portrayed in the application of law enforcement, as well as the nature of the management of land use. Most areas under traditional authorities have been secluded from municipal management of land use, as have previous informal settlements (Parnell & Pieterse, 1999:61; Charlton, 2008:9; Nel, 2015:92). As stated by Simon (1989:198), the intention of South Africa's apartheid design was practically complete racial segregation within all geographical scales. The segregation of ethnic groups and race has historically been a principal characteristic of economic, spatial and social organisation of South African cities. It is a behavioural pattern of society that pervades all aspects of urban living and cannot be escaped by any South African inhabitant (Davies, 1981:59).

As stated by De Beer (2016:2), South African cities are beacons for depth, or the lack thereof, of the national spatial-socio-economic transformation from 1994. They were built upon the back of slaves, indigenous labourers and foreign and rural migrants who never enjoyed the fruit of their labour. These cities were built from the worst kind of structural violence that segregated people, not only economically, but also spatially and socially.

The aim of Chapter 6 is to provide an overview of South Africa’s urban form. The starting point of discussion is a historical overview, followed by the emergence of urban South Africa. The topic of South African urban areas is further expounded by means of discussing the apartheid city, as well as the post-apartheid city. The implications of South Africa’s history are encumbrances when looking at modern-day spatial, social and economic patterns. The growing problem of the racially divided country is elaborated on by examining five problems (indicated as Objective 4, listed under sub-section 1.3). The national legislative framework is explained, as it forms a critical part of urban integration, as planning laws aim to embrace transformational objectives aimed at satisfying the need for mobility and access, inclusivity and economic development that urge the national and local prospects.
6.2 SOUTH AFRICA’S URBAN FORM

The triumph in 1994 over the state of apartheid set all spheres of policy makers the task of overhauling the political, social, cultural and economic institutions of South Africa to align them with the new democratic order (Asmal, 2001:6). The post-apartheid urban structure left politicians and urban planners with the arduous task of reconstructing a highly fragmented, mono-functional and spatially segregated urban society. Pertinent challenges in the field of spatial planning arose in terms of transforming, reconstructing, restructuring and integration (Donaldson, 2001:1). South Africa has one of the highest rates of urbanisation in the world, with approximately 70% of the population expected to live and work in urbanised areas by 2030 (Naude & Krugell, 2003:479).

The South African urban structure prevails as a radical example of urban social engineering. Though urban segregation is pervasive in colonial settlements, numerous settlements were subject to restrictions on urbanisation and forced removal (Freund, 2001: 528; Burton, 2005:3). The apartheid city, however, was distinctive. According to Seekings (2010:3), controls on urbanisation were severe and residential segregation was particularly thorough. The Group Areas Act (as elaborated on in sub-section 6.2.3) ensured that settlements were mercilessly divided and segregation was linked to methodical regulation of social interaction.

This sub-section aims to elaborate on the political background of South Africa and the fact that circumstances that led to segregation are still prominent today. The historical spatial from is regarded as one of the main reasons for the fragmented and segregated city of today, and links to the main problem statement of this study, as discussed in Chapter 2. Thereafter, the urban structure and the growth patterns of urban development in South African cities will be discussed. Lastly, the legislation that enforced urban segregation to the point that South Africans know and live with today will be listed.

6.2.1 A historical overview

An agreement was reached between the British colonising streams and the Africans in 1910 as a result of the Anglo-Boer War (1899 – 1902) that led to the formation of the Union of South Africa. The resolution commenced by uniting the independent Boer republics and the former British colonies. The colonial ruling power of that time, Great Britain, integrated South Africa’s space polity and formally brought colonialism to a close (Davies, 1981:60).

Racial separation was legally introduced in 1948 following the National Party’s election victory. Apartheid not only advocated racial separation, but white supremacy and the corresponding repression of the black African majority (Smith, 1992:12). Restraints occurred in numerous different forms. While black Africans have been subject to acute margins of unemployment and
constraints on labour organisations, white workers were protected from competition with black African labour and received higher wages. The institutionalisation and maintenance of controls on the selective contract labour system and African mobility contained African urbanisation and led to an unavoidable trend that the black Africans remained economically subservient (Davies, 1981:61). The result of these processes led to ascribing employment levels to separate population groups. The occupation hierarchy was strongly underpinned by internal barriers to mobility and by ethnic divisions. Figure 6-1 suggests the extent to which higher status employment classification was concentrated to empower the white population.

![Figure 6-1: The hierarchy of South African employment](image)

**Source:** Davies, 1981:61

Only in the clerical classification, service-orientated professions and sales employment sectors was black African progression notably evident. Differential access to training, education and other important social services further hindered the attainment of economic mobility and skills of the majority of black Africans that were fixed on subservient levels of participation. Apart from ceilings imposed by low capacity for saving and poverty, the growth of urban black African capital was limited by constraints imposed during the establishment of industrial undertakings and trading. These constraints included licencing regulations and limitations and credit restrictions in areas in which such enterprises had been established (Davies, 1981:62).

During 1973 and 1974, massive strikes over low wages may be elucidated as addressing the growing problems of inadequate sources for urban dwellers without a considerable rural
reproductive base. With an increase in domestic recruitment of mine labour, numerous former farm residents resorted to joining the intensive migrant labour in the mines. While the labour demand declined towards the end of the decade, the rural labour bureaux terminated all substantial recruiting functions, which resulted in a situation where “for Black Africans in the rural area there is no labour market” (Greenberg & Giliomee, 1985:72). For survival, rural inhabitants were forced to find access to urban economies. An important, yet subtle change was occurring in the economy during the 1970s. Whereas apartheid was previously used as an instrument in promoting capital accruement by facilitating the exploitation of inexpensive back African labour and restricting skill procurement largely to whites, during the late 1970s this racial classification of labour became a notable constraint on the progressively capital-intensive and sophisticated economy, with markedly higher skill requirements (Simon, 1989:190).

The history as described in this sub-section reflects exploitation and dispossession. According to Smith (1992:21), rural dispossession lies behind virtually every form of urbanisation, while the new urban regime implies profound problems for the individuals engaged in the struggle for a democratic, environmentally liveable and humane urban future. The magnitude of the consequences South Africans are facing is best described by Simkins (1983:90): “… new developments in South African urbanisation would depend to a degree on struggles over the de facto ability (and right) to live, work or enjoy facilities in particular places; on struggles over access to urban life, rather than merely on policies from above.”

Nelson Mandela was released from prison in 1990, the African National Congress (ANC) was unbanned (together with other organisations) and negotiations over political change commenced. In 1994, the country’s first democratic election was held and it was won by the ANC. Almost all legislation that discriminated on racial grounds has since been obliterated and new legislation has been instated to counteract previous discriminatory legislation.

6.2.2 The emergence of urban South Africa

European colonisation was inaugurated with the formation of a commercial Dutch settlement at the Cape in 1652. The British colonial rule and permanent settlement the Cape followed in 1806. The colony slowly grew through the importation of slaves, the growth of a mixed population and immigration (Davies, 1981:59). From the 1850s onward, according to Jeeves (1985:8), a revolution in the urban pattern took place because of economic changes. The economic changes were threefold, namely immense development of economic activity, an inundation of foreign investment and the export of diamonds, which briskly grew to the status of the principal staple, exceeding wool exports by the late 1870s.
By the 1870s, not only Kimberley, the town associated with diamonds, but also commercial agricultural centres that supplied produce to Kimberley, the harbours and the roads that linked them had begun to develop in both character and size. Moreover, the opportunity for rural communities to become part of a small urban economy was added to the phenomenon, leading to construction, recruitment for mining, retail and other urban activities. The development of nodes of increased urban activity led to a dramatic increase in rural-to-urban migration. The changes that formed the South African society prior to 1880 were substantial, though private companies initiated a revolution during the 1880s. In anticipation of the influx of investments and the corresponding depression, mining companies had merged and centralised so quickly that De Beers Mines monopolised the diamond mining industry by 1889 (Smith, 1992:14).

According to Cilliers and Groenewald (1982:12), during World War II (1935 – 1945), two-thirds of whites and Indians were living in urban areas, nearly half of coloureds and only one-fifth of Africans. Two subsequent, inter-related, phases of development in the South African spatial organisation might be identified in the development of the urban structure from its colonial origins. Davies (1981:63) states that the separation of the phases is apparent from the formal introduction of legislation in 1948 and distinguishes the apartheid city on the one hand and the segregated city on the other.

By the 1960s a system existed which, for that period, provided for the genuine labour necessities of employers, while effecting forced migration off the farms to closer settlements. At that time, closer settlements were scarce. According to Simkins (1983:8), by 1980 these settlements contained a mere 3.7 million residents. These distinctive landscape features gave rise to the view that conscious and specific state actions supported by the apartheid ideology contained African urbanisation, or, in more recent views, displaced urbanisation (Fair & Schmidt, 1974:159; Letsoalo, 1983:33; Murray, 1987:86).

Struggling to get by and to gain greater access to the benefits the cities had to offer, African people began to re-create the nature of urbanism in the rural settlements. According to Smith (1992:19), the movement assumed intense forms in the Western Cape; African establishments had a limited base in the Bantustans, or were absent altogether, so they fought fiercely to generate urban spaces for themselves. Both the Unibel and Modderdam settlements were demolished by the state in 1977–1978. The Crossroads settlement survived, developed, and cultivated an uncontrolled and recalcitrant culture that challenged the foundations of the earlier urbanised regime.

The segregated settlement’s response to adverse spatial demands that emanated from an increasingly complex array of social regulations within class groups and expanding urbanisation was one of compromise and pragmatism. Urban segregation evolved as a natural response to
high levels of social allotment generated by supremacy-dependant relationships that came into being from ethnic and cultural pluralism and differential degrees of technological development, as well as class-forming mechanisms in the political economy. Both voluntary and imposed residential segregation were present within a spatial formulation. Apartheid planning conceived the pattern of the city within an extensive framework of spatial and social controls distinctly structured to achieve an economic and social design (Davies, 1981:63).

A considerable historical event is that informality became an ingrained feature in cities throughout South Africa mainly because of affluence regulatory mechanisms that were aimed at keeping black Africans out of cities (Mkhize, 2013:15). As Njoh (2009:305) describes it: “colonial authorities did everything in their powers to discourage migration by Africans to the towns”. Black Africans were cast out and domiciled temporarily in highly segregated urban settlements (Maylam, 1990:66; Christopher, 2005:2310).

A theoretical model delineating a mono-centred, commercially and industrially segregated city is shown in Figure 6-2. The imperative structural elements illustrated in the model, as interpreted by Davies (1981:64), are as follows: a predominantly white CBD with a distinctive frame surrounded by a peripheral and subordinate Chinese and/or Indian CBD. Industrial zones constituted collective employment opportunities in the possession of whites. A white residential nucleus was linked to suburban developments in an attractive environment, differentiated by socio-economic status. Coloured, Chinese and Indian residential enclaves were centrally located in older inner residential areas. Single quarters in compounds and garrisons were reserved for the African workforce. Peripheral settlements for coloureds, Indians and Africans formed small patches or townships and larger informal housing settlements, exhibiting highly mixed qualities of privately developed housing. Domestic African quarters were widely distributed throughout the city and mixing zones of black African diffusion into residential areas of whites.
The framework of the city was determined by the dominant white host group that determined the distribution of other ethnic groups. Essentially, societal dominance-dependency interactions were repeated in the core-peripheral relationship in intra-urban spaces. Whites were centrally located on land strategically related to the social, political and economic functions of the city. Subsequently, low-density suburbanisation occurred as transportation modes permitted and as the demand for space progressively grew (Davies, 1981:64). The location of white suburbanisation, the directional trends and expansion of high-rated residential sectors evident in the segregated city model reflects the fundamental theory of Hoyt’s sector model, as discussed in sub-section 3.4.2. Though subject to a permissive development process and complex in structure, the segregated city’s residential organisation was nevertheless immensely segregated and distinctly conveyed a core-periphery relationship between class and racial groups that were consistent with social formation (Davies, 1981:69).
6.2.3 The apartheid city

The apartheid city is discussed as one of the urban models in Chapter 3, as this urban model is unique to South Africa and cannot be regarded as a worldwide norm. The apartheid city further relates to the urban fabric, more specifically the physical form of the relative case study analysis discussed in Chapter 7.

These restless broken streets where definitions fail – the houses the outhouses of White suburbs, two-windows-one-door, multiplied in institutional rows; the hovels with tin lean-tos sheltering huge old American cars blowzy with gadgets; the fancy suburban burglars bars on mean windows of tiny cabins; the roaming children, wolverine dogs, hobbled donkeys, fat naked babies, vagabond chickens and drunks weaving, old men staring, authoritative women shouting, boys in rags, tarts in finery, the smell of offal cooking, the neat patches of mealies between shebeen yards stinking of beer and urine, the litter of twice-discarded possessions, first thrown out by the White man and then picked over by the Black African – is this conglomerate urban or rural? No electricity in the houses, a telephone an almost impossible luxury: is this a suburb or a strange kind of junk yard? The enormous backyard of the whole White city, where categories and functions lose their ordination and logic. (Gordimer 1979:148)

The spatial organisation of African cities was drastically influenced by an early established, and deep-seated, notion that urban areas were preserved for whites. Thus, the provision of permanent accommodation for Africans was defined as unsatisfactorily. Inadequate integration and poor housing qualities that prevailed in African areas were frequently associated with poverty. Africans were a landless class that was politically mute and management of their residences was exercised through municipal by-laws. Restrictions on urbanisation disrupted urban family life, leading to a trend of single male migrant labourers. Africans were predominantly housed in single residences attached to public institutions and private businesses, in barracks, hostels and compounds in the working zones of the city. Others resided in domestic quarters on privately owned residential properties (Davies, 1981:65).

In its progression, the South African urban fabric has been buttressed by a national politically driven economy that produced mechanisms actively favouring the composition of a class-like system and institutionalised supremacy-dependency relationships of social organisation (Davies, 1981:59).

Apartheid ideology recognised urban society within the expanding segregated city in conflicting terms. The conflict was blatantly identified by the reigning National Afrikaner government in racial
or pluralistic terms. It was postulated that cultural and racial differences in societies are incompatible and that connection between ethnic groups would result in disputation. In principle, harmonious interactions between ethnic groups might be secured by a reduction in the number of points of contact. Though lacking a sociological context, this theory is action-orientated and subsequently became the primary dynamic that guided the spatial and functional organisation of urban society (Davies, 1981:69).

By the 1950s, several local systems of segregation had been codified into a single national policy framework by the individuals in control of central government. According to Smith (1992:27), Prime Minister Verwoerd was the instigator who established a geopolitical foundation for the policy framework. The framework was based upon two principal political-geographical concepts. The first was the ‘group areas’ concept, which regulated residence, trading and political rights, and the second the ‘homelands’ concept that separated economic and political development.

Superimposed on these segregation interfaces were the regional and local political structures, as encompassed in terms of the provisions of the 1913 and 1936 Land Acts, as well as the 1910 Constitution. These structures comprised roughly three-quarters of the rural areas and practically all the urbanised areas. The local government, through its by-laws, had enforced a supreme level of rural and urban segregation (Smith, 1992:27). On the contrary, the Urban Bantu Councils, inaugurated for townships, had limited control over services and planning within the townships, which were, obviously, regulated by white administrators.

The Group Areas Act of 1950 was the legal mechanism that imposed designed and planned segregation on all urban areas and all population groups. The act includes the reformist element of retroactive planning, which subordinates orthodox rights and the practice of ownership to progressive zoning (Kuper et al., 1987:36). Group areas were designed to be separated by strong man-made or physical barriers or, in the absence thereof, by sterile land or buffer zones. These separations served to inhibit interaction and contact between groups. Where possible, major lines of movement, controlled by public transport, formed part of planning for lower income areas. Each group was given direct access to places of work, as far as possible, to avoid filtering through other areas that were set aside for different groups. Work zones were regarded as common areas, but the establishment of industries and businesses and property acquisition were subject to racial control and zoning (Davies, 1981:69).

From 1965 to 1985, over 860 400 people, mainly Indians and coloureds, but only a few whites, were coercively relocated in terms of the Group Areas Act, resulting in the formation of apartheid towns and cities countrywide (Platzky & Walker, 1985:84).
The enactment was one of white administrators with black African patronage, and the former required compliance from the latter’s ‘representatives’ in return for compensation regarding allocation of resources. Figure 6-3 illustrates the escalating shortage of housing, sorted by race, from 1982 to 1987. This representation, according to Smith (1992:55), suggests that the government had not sufficiently addressed the pressing problem of the provision of adequate housing.

![Figure 6-3: The housing shortage between 1982 and 1987 by race](image)

**Source:** Smith, 1992:56

There was a clear decline in the number of housing units built for whites. The supply of housing for urban Africans remained relatively constant, while construction for Indian and coloured occupation increased regularly throughout the decade (Smith, 1992:56).

Figure 6-4 demonstrates the structural elements of the apartheid city model. The spatial structure of the apartheid city, in theory, takes the form of a proportionate divided sectoral design. The apartheid model provides for impartial access to industrial zones and to the city centre and residential space related to the size of individual population groups. Where the Group Areas Act was applied to existing cities, recognition for the existing balance of forces in the formation of existing society and spatial patterns was demanded. Naturally, design was necessary, which stabilised these social relations; therefore, apartheid cities were inclined to display sectoral organisation to catalyse movement separation; they deviated from an equity form (Davies, 1981:70).
The apartheid city’s urban structure, with its racially unequal and exclusive residential segments, health and recreational and educational facilities, was intentionally designed in a manner to keep interracial contact to a minimum. This happened even when taking into account that future growth would be forced to occur outwards in each segment, thus preserving the pattern, as illustrated in Figure 6-4. Furthermore, the urban structure, where white control was predominant and where the circumstances of different races imitated their socio-political situations, both reinforced and reflected the social configuration by white domination (Simon, 1989:191). The overcrowded and appalling townships that developed under the Urban Areas Act were designed to accommodate, at minimum cost, the “temporary urban pilgrim” whose cheap labour was indispensable.

Figure 6-4: An apartheid city model

Source: Davies, 1981:69

Apartheid’s urban legacy still prevails today. Drone images of areas in Cape Town clearly capture the colour lines still absolute in South African cities. Figure 6-5 and Figure 6-6 below illustrate
segregation prominent in Cape Town and how radically different an urban experience might be, depending on what side of the line one is (Misra, 2016:2).

Figure 6-5: Lake Michelle and the settlement of Masiphumelele in Cape Town

Source: Misra, 2016:18

Figure 6-6: An aerial image of the Strand and Nomzamo neighbourhoods in Cape Town

Source: Misra, 2016:14
Although Africans have obviously been most affected by apartheid, according to Simon (1989:190), no classes or groups were immune. With a black African unemployment rate of 20% and white unemployment and working-class poverty emerging for the first time since 1930, instability increased apace. Thus, the state was confronted with unknown, yet conflicting, pressures for political, social and economic change by antagonistic class and racial interests.

6.2.4 Post-apartheid city

During the 1990s, South Africa’s urban geography, according to McCarthy and Rogerson (1992:2), entered a “phase of undertaking new geographies of post-apartheid reconstruction”. Numerous researchers of the urban environment became consultants to the government as policy makers. As Seekings (2000:833) suggested, this unavoidably resulted in a decline in scholarship, as researchers’ engagement with policy design tended to be isolated from theoretical work in various disciples. However, notwithstanding these concerns, some post-apartheid challenges have been the motivation for scholarly analysis. These include development, reconstruction and planning, class-race segregation and inner-city decline.

Development, reconstruction and planning. The Reconstruction and Development Programme (RDP) was the first driving force behind post-apartheid planning. The RDP was built upon a strong social justice and basic needs orientation and surfaced as the preferred strategy to address economic and social inequalities carried over from the apartheid era (Maharaj & Narsiah, 2002:91). There was, however, concern that the RDP attempted to diminish poverty without addressing the economic practices and policies that ultimately produce inequality and poverty (Marais, 1998:193). The RDP influenced the Urban Development Strategy (UDS), which came into effect during 1995, and intended to integrate segregated cities by focussing on restoring the townships, providing urban amenities, providing housing, creating employment opportunities, introducing policies for urban management that were environmentally sensitive and reducing commuting distances (Maharaj & Narsiah, 2002:91). The second notion of post-apartheid planning was affected by the adoption of the Growth, Employment and Redistribution (GEAR strategy) and the modifications of the government’s macro-economic policy during 1996. The fundamentals of the GEAR strategy are based upon economic development led by the private sector. Planning was that regulations on exchange control would be relaxed, government expenditure would be reduced, state-owned enterprises would be privatised, and the labour market would be freer (Parnell & Pieterse, 1999:75).

Class versus race segregation. After apartheid transformed urban areas into contested terrains and battlegrounds for struggles that used to be considered economic or political, new modes of organisation, regulation and spatial management came into existence in South Africa. What emerged from the ‘new South Africa’ (post-1994), was positional warfare that revolved around
uses and meanings of private and public spaces. This was warfare where the battle lines were
drawn not only between rich and poor, but also the aspiring middle-class and the less prosperous
layer of the working-class, against the poor and the homeless, transient work-seekers, internal
migrants and children and women (Murray, 2001:1). A new urban fabric was formulated to desist
from crime and violence. The new spatial divider was no longer primarily based upon race, but
on class (Dewar, 2001:50; Kotze & Donaldson, 1998:467; Christopher, 2001:453; Czeglédy, A.
2004:63). Class warfare is waged in the reconstruction of urban spaces, while public spaces are
progressively appropriated and pervaded with overt class texture (Maharaj & Narsiah, 2002:93).

Residential patterns are also changing, as the middle classes retreat into highly securocrat, self-
contained complexes, known today as gated communities. Urban spaces and residential patterns
thus embrace a sharper class character as resources and prime real estate are inhabited and
controlled by a privileged minority (Maharaj & Narsiah, 2002:93). Consequently, the progress of
racial integration remains gradual and segregation and fragmentation continues as class and race
persist to overlap markedly. Moreover, as stated by Seekings (2000:834), the “social structure of
post-apartheid cities remains a largely neglected subject.”

*Inner-city decline.* Inner-city problems have intermittently been associated with changing social,
economic and political forces on local, national as well as international levels (Diamond,
1991:229). The situation experienced in South Africa is hardly different, where racial tensions,
overcrowding and reduced maintenance expenditure resulted in inner-city ghettos. These
tendencies unavoidably led to reforming financial institutions and a decline in property value that
initiated a ferocious downward spiral in terms of services and maintenance in the CBD (Khosa &
Naidoo, 1998:231). Inner-city decline became evident when black Africans began to relocate into
mainly white inner-city areas during the late 1980s. Notwithstanding this, to attribute inner-city
decline to the presence of a racial group is racist and unfair. It was the landholders who were
primarily responsible for diminishing standards owing to their reluctance to invest in the upkeep
and maintenance of premises that were largely occupied by black Africans (Maharaj & Mpungose,

The previously described apprehension is not due to the built environment, but according to
Czeglédy (2004:88), rather to the manner in which the urbanities display highly fragmented and
thus segregated physical traits. As seen in South African cities, the urban fabric is characterised
by decades of policies aimed at racial segregation. However, while one would anticipate the
segregation to have changed during the post-apartheid era, the cityscape has in fact become
more segregated by means of public planning (public transportation and roads) and by private
initiatives such as fencing/gating of neighbourhoods and homes. Gated neighbourhoods’ contact
with encompassing streets is minimal, while the impact of enclosure is great because of the
interruption of movement throughout the gated area (Arbaci & Vaughan, 2011:135). These
developments have amounted to a two-tiered transportation system, as noted by Kuppinger (2004:7), where the upper-class travel by means of private cars, while the majority is left with a deficient system of public transportation.

The settlements we know today are segregated and fragmented because of racially segregated suburbs, monofunctional land uses, buffer zones that separate suburbs, racially divided urban growth patterns and low-density urban sprawl. The urbanisation rate of 55% in 1997 (Donaldson, 2001:1) and the prevalence of poverty and inequality can be added to the list. According to the United Nations (UN) (2018:1), the world’s urbanisation rate in 2018 remains unchanged at 55%, but is predicted to increase to 68% by 2050. Predictions further show that the overall growth of the world’s population, combined with the gradual shift in residence from rural to urban areas, would add an additional 2.5 billion people in urban areas by 2050, with nearly 90% of the increase taking place in Africa and in Asia.

The four factors contributing to the existing economic, spatial and social patterns, according to the Department of Cooperative Governance and Traditional Affairs (DCOGTA) (IUDF, 2016:15-16), are: (1) existing land use and property markets; the land use and property status quo subvert urban opportunities and strengthen the inefficient nature of urban sprawl; (2) unsustainable consumption patterns and infrastructure networks. Urban areas throughout South Africa are profoundly resource-intensive, wasteful and highly polluted. Typical metropolitan areas encompass extraordinary ecological footprints, resulting in dependence on cars; (3) a continually segregated urban fabric. South African urban areas remain characterised by social divisions that are deeply rooted in apartheid planning; and (4) unequal access to services and income levels. The levels of inequality in respect of opportunities, access to services and income are a legacy of the employment system and apartheid education. Even after democracy, income inequality remained obstinately high as a result of the growing wage gap and the strikingly high unemployment rate between unskilled and skilled labour.

6.2.5 A growing problem

The implications of South African history are tremendous encumbrances when looking at modern-day spatial, social and economic patterns. The apartheid city stands out as an excessive example of settlement social engineering (Seekings, 2010:1). Morare (2016:1) stated at the Southern African Catholic Bishops’ Conference that their most recent survey found that South Africa is still a persistently racially divided country. When the divided society of South Africa is evaluated, the assertion in the NDP (The Presidency, National Planning Commission, 2015) is generally agreed upon: “South African society remains divided. Many schools, suburbs and places of worship are integrated, but many are not. South Africa remains one of the most unequal economies in the world.” South Africa is currently referred to as a fragmented geographical and statistical
environment where apartheid has left a devastating spatial legacy. After a great number of years of democracy, South Africa’s cities and towns are still inefficient and divided, imposing high costs on the economy and on households (Morare, 2016:1). Some of the challenges faced in South African cities are discussed in sub-section 6.2.5. All of these are urban-morphology related, i.e. related to this study.

6.2.5.1 Segregated urban form

The apartheid city was ordered spatially to a significant extent, as illustrated in the archetypal model by Davies (Figure 6-4). The purpose of segregating races was not merely to divide racial groups, but also to assure a definite racial hierarchy through which ‘poor whites’ might be lifted, socially and economically, above practically all non-white people. The result of the separation was South African cities’ inequality levels forming a caste-like pattern, with predominantly permeable boundaries separating the castes (Seekings, 2010:3).

Segregated urban areas also necessitated ghettoisation. White South Africans resided in comparatively prosperous neighbourhoods with adequate municipal infrastructure and lucrative pockets of mercantile activity. Expeditious economic growth during apartheid led to suburbanisation. South Africans classified as Indian or coloured were relocated to neighbourhoods that were less serviced and where poverty, gangs and drugs were prevalent. Townships for African residents had nominal infrastructure on the basis that African people were merely temporarily inhabiting ‘white’ South Africa and were required to relocate to rural areas in due course. African people were not authorised to own their homes (Seekings, 2010:3). Moreover, from the 1970s onwards, restrictions on construction for housing in African, coloured and Indian neighbourhoods resulted in severely overcrowded settlements, as well as a dramatically increased number of shacks in backyards (Swilling et al., 1991:52).

The most impecunious ghettoes during apartheid were located not within the city, but in the presumed rural areas, i.e. the apparently self-governing, paradoxically independent ‘homelands’ set apart for African people in order to build a more defensible case for the denial of South African citizenship. According to Simkins (1983:90) and Murray (1987:27), urbanisation was displaced into slums, the populations of which grew rapidly. A number of these slums were within commuting distance from the ‘white’ cities of South Africa (Seekings, 2010:4).

The apartheid urban planning model, as previously discussed, was a model of concentric circles, with centrally located white residential and commercial areas, coloured and Indian areas surrounding the city centre, with areas of open space and diverse topographies used as buffer zones, and lastly, African residential areas on the outskirts (Schensul, 2009:3). Apartheid’s effectiveness did not rest solely on the segregation of racial groups, but in assuring maximum
geographical distance and distinctiveness from one another, it established entirely different paths of economic, social and political development within shared urban boundaries. Apartheid fabricated urban areas of the most excessive economic and racial exclusion in the world. There is no other place in the world where economic, racial, spatial and social structures are so deeply interwoven, with such deterministic and unequal consequences for its residents (Schensul, 2009:3).

During the late apartheid years, spatial forms began to change, as weakening apartheid controls and rapid urbanisation led to the enormous growth of informal settlements located on cities' peripheries (Todes, 1998:618). Growing class differentiation, overcrowding and violence also underpinned “decompression” into newly formed middle-class settlement areas, as well as informal settlements located on the fringes of older African township areas (Morris & Hindson, 1997:105). A number of informal settlements surfaced within central urban areas as political instability continuously undermined regulations on settlement (Hindson et al., 1994:331). Statistics South Africa has published a series of maps indicating the patterns of segregation throughout South Africa’s largest municipalities. The population data available through the 2011 census was used to indicate where people of different races resided. Lehohl (2014:25) made use of the data available from Statistics South Africa to create a scale from zero to one to score South Africa’s six largest cities’ level of segregation. The results of this are illustrated on a sliding scale in Figure 6-7 below.

The level of segregation, indicated by a fraction between zero and one, is quite difficult to comprehend. Therefore, a visual representation of the level of segregation of South Africa’s most segregated municipality is illustrated in Figure 6-7. The social tapestry of Nelson Mandela Bay, according to Lehohl (2014:31), is represented by means of different colours representing different racial groups; one dot equals one individual.
Figure 6-7: Level of segregation of South Africa’s six largest cities

Source: Lehohl, 2014:25
Figure 6-8: Racial clustering in Nelson Mandela Bay

Source: Lehohl, 2014:31

Figure 6-8 illustrates the racial clustering of Nelson Mandela Bay. Despite some form of residential mixing, Nelson Mandela Bay was the most segregated municipality in South Africa, as indicated by Figure 6-7. The spatial planning imperatives during apartheid were formulated in a political context that was intended to separate racial groups and, by default, to effect socio-economic separation as well. Moreover, this manner of planning frequently located black African inhabitants on urban settlements’ peripheries, thus far from work opportunities (Lehohl, 2014:25).

6.2.5.2 Persistence of segregation

Since 1994, nearly all legislation related to discrimination on unequivocally racial foundations has been eradicated. However, inequalities remained; “the legacy of the past could not be undone overnight” (Seekings, 2010:4). The Institute for Justice and Reconciliation’s 2015 Reconciliation Barometer Survey published somewhat depressing and disappointing findings about the current level of segregation in South African society (Morare, 2016:2). The survey notes that although institutional racial discrimination has been expunged, the apartheid geography of the country’s towns and cities, as well as the patterns of distribution of the economy, has primarily remained
unchanged in order to sustain what was created by the constructors of apartheid. All the more unsettling is that “legislation is no longer required to sustain apartheid. It has evolved in ways that allow it to sustain itself up to the present day” (Hofmeyr & Govender, 2015:9).

A crucial issue, according to Harrison (2003:12), in urban studies of contemporary South Africa, is the continuance of fragmentation after the halt of apartheid. Market (economic) apartheid is seen to have replaced racial apartheid. In almost all urban case studies relating to South Africa, it is found that patterns of urban segregation are persevering, though by means of class-based modalities of social exclusion rather than pure racial discrimination (Duminy, 2007:35). The perseverance of South African segregation is supported by Murray (2004:140), “new kinds of segregation – whether social or spatial, semiotic or symbolic – have become the visible signs of South African postmodern urbanism”. This inclination towards economic and socio-spatial fragmentation has become clear notwithstanding the formulation of numerous policies intended to integrate the apartheid city (Duminy, 2007:35). The apartheid city remains spatially highly ordered, with the quintessential design unchanged (Seekings, 2010:2; De Beer, 2016:3), as illustrated by Davies in Figure 6-4.

The conversion to democracy, signified by the 1994 democratic elections, was accompanied by high hopes that inequality and poverty would be reduced. The ballots of poor South Africans aided in ensuring victory for the ANC, which campaigned the promise of a “better life for all”. The RDP (elaborated on in sub-section 6.2.4), the ANC’s election manifesto, identified attacking deprivation and poverty as the first priority of the democratic government, as all South Africans ought to enjoy economic security and a decent living standard (O’Malley, 1994:48). Income inequality and poverty occurred disproportionately in South African cities, as the middle classes and urban elite prospered, while rising unemployment rates, combined with expeditious rural-to-urban migration, surged through the ranks of the urban poor (Seekings, 2010:6). However, in the early 2000s, income inequality was claimed to have decreased, mainly because of the extension of public welfare programmes, but also because of a slight decline in unemployment (van der Berg et al., 2008:61; Leibbrandt et al., 2009:277).

While numerous official attempts propose definite progression towards the essential reformation of segregated South African urban spaces, the experimental effect on apartheid practices/space is arguably too tentative, too incidental and too flimsy to announce the demise of the apartheid city. Constitutionally, apartheid has been obscured, but in practice, given the inertness of geographic spaces as locational determinant, the existential reality of racialised space still mainly dictates where South Africans work, live and play (Williams, 2000:171). The reason for this aberration is three-fold. First, the available land in or in a close proximity to the city is too costly for the state to obtain for lower-income residential purposes. Second, there is insufficient available vacant land to accommodate homeless people in cities. Third, a general tendency of “not-in-my-
“backyard” prevails in instances where it is possible for residential densities to be increased. Consequently, it might be suggested that South Africa’s urban transformation is constantly confronted with multiple contradictions, tensions, struggles and conflicts (Williams, 2000:171).

6.2.5.3 Economic growth inequality

Investment, and enhanced productivity in many cities, have improved local economies, but the wealth has a tendency not to filter through to the growing lower-income population. Instead, the wealth is recycled within the elite class.

The trends in income inequality, according to Bhorat and van der Westhuizen (2012:3), illustrate that one of the world’s most unequal societies has possibly become the most unequal. The inequality between race groups is the main driver of this increase. Moreover, despite positive economic growth post-1995, the individuals at the top end of the dispersion had most to gain from this lopsided distribution. The country’s current demographic model is facilitated by supporting bottom-end incomes through widespread social transfer programmes, while making feeble attempts for those in the middle layer. An important issue is then raised: “It is not evident, as South Africa enters its first post-1994 recession, with declining tax revenues and rising fiscal deficits, whether such growth model is indeed desirable or sustainable” (Bhorat and van der Westhuizen, 2012:1).

While a decline in national poverty levels is evident after the first decade of democracy, the trends of income inequality are more troubling. Using the Gini coefficient as measure of inequality, the basis of per capita expenditure, the data suggests a rise in income inequality over the period 1995 to 2005. The Gini coefficient increased from 0.64 to 0.69 (Bhorat & van der Westhuizen 2012:8). The Gini coefficient index is the most common measure of inequality, mainly because of clear economic interpretation and intuitive geometric interpretation. A society’s inequality level is represented by an income vector of between 0 and 1, where the representation of maximum equality is 0 and 1 is perfect inequality (Thomas, 2000:6; van de Ven, 2000:3; McKay, 2002:3; Heshmati, 2004:3; Bosch et al., 2010:3; Charles-Coll, 2011:24; Jantzen & Volpret, 2012:828; Tao et al., 2014:3; Mirzaei et al., 2017:207; Greselin & Zitiikis, 2018:6).

6.2.5.4 Population growth inequality and urbanisation

Urbanisation involves an increasing portion of the national population migrating to urban areas. Populations throughout urban settlements across South Africa are growing at such a rate that maintenance, planning and infrastructure development cannot meet the demand, resulting in disproportionate access to available services in cities (Department: Cooperative Governance and Traditional Affairs, 2016:10; Karuri-Sebina et al., 2016:25). According to the UN (2018:1), more people reside in urbanised areas globally than in rural areas. In 2018, 55% of the world’s
population resided in urban areas, whereas in 1950 only 30% of the world’s population resided in urbanised areas. A projected 68% of the world’s population will be urbanised by 2050.

The Urban Development Framework of the Department of Cooperative Government of Traditional Affairs (2016:14) indicated that 63% of South Africans reside in metropolitan municipalities, with a prediction of 71% of the populace residing in cities by 2030 and 80% by 2050. These statistics raise a number of concerns regarding added pressure on housing, infrastructure and services. The most rapid urbanisation occurs in metropolitan areas. Between 2001 and 2011, the metropolitan population grew by 25%, compared to 10% throughout the rest of the country (Turok & Borel-Saladin, 2013:3).

During the State of the Nation Address in February 2013, President Jacob Zuma advocated the intercession of the national government to aid municipalities with their development frameworks (2013:3):

> We should also remain mindful of rapid urbanisation that is taking place. The Census Statistics reveal that 63% of the population are living in urban areas. This is likely to increase to over 70% by 2030. Apartheid spatial patterns still persist in our towns and cities. Municipalities alone cannot deal with the challenges. We need a national approach. While rural development remains a priority of government, it is crucial that we also develop a national integrated urban development framework to assist municipalities to effectively manage rapid urbanisation. As part of implementing the National Development Plan, all three spheres of government need to manage the new wave of urbanisation in ways that also contribute to rural development.

6.2.5.5 The challenges of providing housing and basic services

During the apartheid era, transport facilities were designed to access urban areas to enable movement for individuals who were located on the peripheral edges of settlement. The government then invested in road infrastructure for the primary use of private motor vehicles and neglected public transport, which led to rapid growth in the minibus taxi industry (Barret, 2003:6). In addition, negligible investments were made in infrastructure for non-motorised transport, particularly in poorer locations further away from settlements where, ironically, walking is the dominant mode of transport (Karuri-Sebina et al., 2016:49).

As for the housing conundrum, credit should be given for the impressive more than 3.4 million housing units that have been provided since 1994. However, the housing backlog remains at nearly 2.8 million (Department of Cooperative Governance and Traditional Affairs, 2016:22). The rate at which the structures can be provided is simply not fast enough to address the current backlog.
6.3 LEGISLATIVE FRAMEWORK

Multiple institutions, laws and parallel processes were instituted by pre-1994 pieces of legislation (Ogunronbi 2014:2). In a country such as South Africa with a history of segregatory and fragmented laws, a transformative planning law was imperative. The planning profession in South Africa is subject to an array of policies and legislation (e.g. National Environmental Management Act, no. 107 of 1998, Subdivision of Agricultural Land Act, no. 70 of 1970, Municipal Systems Act, no. 32 of 2000, and Promotion of Administrative Justice Act, no. 3 of 2000.). The most prominent and applicable (to this study) legislation and policies that have an effect on everyday planning policies and that correlate directly with the implementation of land use planning will be elaborated on in this sub-section.

Planning law ought to embrace transformational objectives aimed at satisfying the need for mobility and access, inclusivity and economic development that urges the national and local prospects. Thus, SPLUMA was initiated as a spatial transformational planning law for South Africa (Turok, 2014:80). The annual South African Local Government Association report (2013:138) stated that SPLUMA had the potential to transform the bequest of apartheid spatial planning.

6.3.1 Spatial Planning and Land Use Management Act

Despite the Development Facilitation Act’s (no. 67 of 1997) good intentions, as well as earlier policies such as the Urban Development Framework (1997), it was only in 2015 that the SPLUMA (Act no. 16 of 2013) came into force (Nel, 2015:80). It is a national act that regulates land use management and spatial planning; more specifically, the relationship between these two aspects (Republic of South Africa, 2013:2), that was promulgated to supersede the Development Facilitation Act (no. 67 of 1995) (Manyike, 2015:2). SPLUMA entails a framework for a planning system for the country Section 2(2)), development principles (Section 7), policies and legislation (Section 6), spatial development planning and frameworks (Chapter 4), land use management through schemes (Chapter 5) and land development management (Chapter 6) (Ogunronbi 2014:7).

SPLUMA regulates all three spheres of government (national, provincial and local) by prescribing effective, comprehensive and uniform systems of land use management and spatial planning (Republic of South Africa, 2013:2; Bassa, 2015:19; Manyike, 2015:3). The body of the act is made up of the following sections: intergovernmental support; development norms, standards and principles; land development management; land use management; SDF and general provisions (Republic of South Africa, 2013:1 – 74). The intention of SPLUMA is therefore to establish a single land use management and spatial planning system that deals with the challenges of access, efficiency and justice facing South Africa (Nel, 2015:92).
In its preamble SPLUMA addresses past spatial and regulatory imbalances, as numerous South Africans continue to reside and work in areas that were influenced and designed by past practices, laws and spatial planning, which were grounded on segregation, racial inequality and unsustainable settlement patterns (Republic of South Africa, 2013:2). These goals are portrayed in the development principles, namely spatial resilience, spatial sustainability, spatial justice, good administration and efficiency (Nel, 2015:80). SPLUMA strives to achieve the following objectives: (1) promotion of economic and social inclusion in spatial planning and land use management system; (2) a comprehensive, effective and uniform system of spatial planning and land use management system; (3) sustainable use of land; (4) provision of development norms, standard and principles; and (5) cooperative intergovernmental correspondence in the different governmental spheres (Republic of South Africa, 2013:14).

The objectives of the Act (Republic of South Africa, 2013:14) are to (1) supply development norms, standards and principles; (2) ensure that the procedure of land use management and spatial planning promotes economies and social inclusion; (3) make an effective, comprehensive and uniform system of land use management and spatial planning available to South Africans; (4) redress past imbalances and assure that there is fairness in the application of land use management and spatial planning systems; (5) ensure the efficient and sustainable use of land; and (6) supply cooperative intergovernmental and government relations in all spheres of government.

The custodian department of SPLUMA, the Department of Rural Development and Land Reform, stated that the enactment of SPLUMA effected seven elementary changes to land use management and spatial planning (Ogunronbi, 2014:7):

- The development of a single, inclusive land use scheme for the whole of a municipality with emphasis on the municipal differentiated approach;
- The composition and establishment of municipal planning tribunals, as well as appeal structures to determine land use development applications. In addition, it provided municipalities with additional tribunal and appeal structures that vary, depending on capacity;
- Development of spatial development frameworks in all spheres of government, with standards and norms guided by development principles;
- Reiteration of sole mandate municipalities as far as municipal planning is concerned;
- Where necessary, alignment of authorisation processes for legislation and policies influencing decision making and land use development applications;
- Strengthened intergovernmental assistance through compliance, enforcement and monitoring processes; and
• Development of the regional spatial development framework, if required.

Section seven of SPLUMA identifies five development principles; (1) spatial justice; (2) spatial sustainability; (3) efficiency; (4) spatial resilience; and (5) good administration. Although a normative approach to spatial planning has been adopted by South Africa (Laubser et al., 2017:65), distinct types of urban segregation prevails, depending on the urban context; ethnic or racial segregation and differences in income classes (Feitosa & Brasilien, 2010:1). The principle of spatial justice, understood as the correction of past spatial and other development imbalances through improved use of, and access to, land (Republic of South Africa, 2013:18), is singled out as a guiding principle for this study. This principle is unique in terms of the spatial planning context of South Africa and should thus be interpreted as such (Laubser et al., 2017:65).

Section 21 of SPLUMA, establishing the content of municipal spatial development frameworks, formed part of the strategic planning principle for the first time since 1994. This section of SPLUMA aims to identify current and future important structuring and restructuring elements that contribute to the spatial form of the municipality. It includes economic spines, development corridors and economic corridors where private and public investments will be facilitated and prioritised by means of SDFs and precinct plans (Republic of South Africa, 2013:32).

6.3.2 Integrated Urban Development Framework

The IUDF outlines a conception with four all-encompassing goals and eight policy levers or priorities to overcome the legacy of apartheid through comprehensive strategic urban-rural linkages and spatial restructuring. The IUDF was fabricated as a ‘new deal’ for South African towns and cities (De Beer, 2016:1).

The IUDF’s four strategic goals to achieve transformative vision, according to DCOGTA (IUDF, 2016:29), are: (1) growth; to control urban dynamism for sustainable and inclusive economic development and growth; (2) access, to ensure that citizens have access to economic and social opportunities, services and choices; (3) spatial transformation, to fabricate new spatial forms in transport, settlement, economic and social areas; and (4) governance, to improve the capacity of the state and its inhabitants to work together to accomplish social integration.

These goals relate to the main objectives of eight levers. These levers are postulated on the understanding that spatial planning shapes the foundation for attaining integrated urban development that follows a set sequence of actions for urban policy, desegregated transport that supports goal-orientated investments for integrated human settlements, which are underpinned by an integrated network of infrastructure and sufficient land governance. All these together can
trigger economic inclusion and diversification and employment opportunities, which will, in turn, demand governance reform to sustain and permit the above.

The IUDF must be read and implemented with SPLUMA (Laubser et al., 2017:64). The IUDF clearly states that all spheres of government (IUDF, 2016:59); “must embrace the integrated development framework and use its principles when developing plans, programs or approving projects. All policies and legislative frameworks that have an impact on the urban space must consider principles outlined in the Integrated Urban Development Framework.”

6.3.3 National Development Plan

In 2012/2013, the South African Government and the ANC adopted the NDP as a foundation of a future socioeconomic and economic development strategy for South Africa. The NDP has important implications for numerous economic communities in the country (Zarenda, 2013:3).

The NDP is a plan that includes the entire country. Government will work with all sectors to implement planning, and especially to identify any impediments to the sectors that keep them from making an effective contribution. The NDP establishes ambitious goals for economic growth, poverty reduction, job creation and economic transformation (Manuel & Chabane, 2013:5).

The strategic viewpoint of the NDP offers a lasting vision, until 2030, for the country and intends to ensure that all South Africans achieve a respectable standard of living through the reduction and eventually the elimination of poverty. The essence of a respectable standard of living, as identified in the plan, according to Manuel and Chabane (2013:1), is skills development and quality education, water, housing, electricity and sanitation, safety and security, employment, reliable and safe public transport, social protection, quality health care, a clean environment, leisure and recreation and adequate nutrition.

There are four principal implementation objectives of the NDP, as stipulated by the post-State of the Nation media briefing (2013:1):

1. To formulate goals to be achieved by 2030;
2. To agree on the most important obstacles to accomplishing these goals and to identify what must be done to overcome these obstacles;
3. To provide an open long-term strategic framework through which more planning can be done to progress the long-term goals as set out by the NDP; and
4. To create a foundation for making choices regarding the utilisation of limited resources.

A series of cycles occurring in five-year stages have been envisaged, starting after 2013 (2014-2019, 2019-2024 and 2024-2029), with continual review of the progress or failure of individual
cycles to meet the stipulated objectives of the NDP goals that inform the formulation and process of the subsequent plan (Zarenda, 2013:6). The National Planning Commission identified nine important challenges to South Africa and suggested approaches to respond to the challenges, as indicated in Table 6-1.

<table>
<thead>
<tr>
<th>NATIONAL DEVELOPMENT CHALLENGES</th>
<th>RESPONSE</th>
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<tbody>
<tr>
<td>Unemployment</td>
<td>Create jobs and livelihoods</td>
</tr>
<tr>
<td>Infrastructure poorly located and inadequate</td>
<td>Expand infrastructure</td>
</tr>
<tr>
<td>Exclusive spatial patterns</td>
<td>Transform urban and rural spaces</td>
</tr>
<tr>
<td>Resource consumptive economy</td>
<td>Transition to a low carbon economy</td>
</tr>
<tr>
<td>Poor quality education</td>
<td>Improve education and training</td>
</tr>
<tr>
<td>Widespread disease burden and poor services</td>
<td>Provide quality health care</td>
</tr>
<tr>
<td>Poor quality public service</td>
<td>Build capable state</td>
</tr>
<tr>
<td>Corruption</td>
<td>Fight corruption and increase accountability</td>
</tr>
<tr>
<td>Divided society</td>
<td>Nation building</td>
</tr>
</tbody>
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Table 6-1: National development challenges and responses

Source: WCPSDF, 2014:19

Given the NDP’s extensive coverage, almost every ministry and government department would become involved throughout all spheres of government (Manuel & Chabane, 2013:3). Effective implementation requires a persistent desire for improvement (Manuel & Chabane, 2013:10).

Chapter eight of the NDP is dedicated to transforming human settlements by addressing the apartheid geography to supply more humane conditions that are sustainable environmentally and in the living and working environment. Functionally balanced, integrated and vibrant urban settlements are envisioned (NDP, 2013:260). The NDP also addresses the five spatial development principles discussed in sub-section 6.3.1, as all spatial development should conform to these normative principles and explicitly indicate how these requirements will be met (NDP, 2013:277). The NDP further necessitates the development of a national spatial development framework to coordinate and connect decisions that shape places to improve their function. The importance of the development of social compacts as a way of facilitating interest and providing a foundation for future action is also illustrated (NDP, 2013:282).

6.4 CONCLUSION

The preceding chapter attempted to provide an overview of the urban fabric of South Africa. The starting point of the discussion is a historical overview, followed by comments on the emergence of urban South Africa. The country’s rich history introduces a different set of challenges of
reconstructing a highly fragmented, monofunctional and spatially segregated urban society. It was made evident that the political background of South Africa and the circumstances that led to segregation are still prominent today.

The discussion of the apartheid city revealed that the current urban structure, throughout the entire country, is racially unequal; exclusive residential segments, as well as health, recreational and educational facilities, were intentionally designed in such a manner as to keep interracial contact to a minimum. It is clear that the reality of the cities stretches further than segregation. Therefore, the implications of the identified problem (segregation) are more deeply rooted than the physical urban settlements. The historic notion, that urban areas were preserved for whites, prevails to this day, as it is evident in urban settlements. This constitutes the key problem of this research.

The legislative framework is explained on a national level. It is, however, important to evaluate the legislative framework of all spheres of government. Provincial and local legislation will be elaborated on in Chapter 8, as it is unique to the study area, is comprehensive and should be discussed in more detail than national legislation.

The segregation of ethnic groups and race has historically been characteristic of the economic, spatial and social organisation of South African cities, linking to the main problem statement of this study (refer to section 1.2). It is a behavioural pattern of society that pervades all aspects of urban living and cannot be escaped by any inhabitant of South Africa. The current urban fabric cannot be evaded. However, with the correct principles, policies and leadership, the future of cities might bring about more desirable, sustainable and liveable settlements, as elaborated on in the following chapters.
CHAPTER 7

A RELATIVE CASE STUDY ANALYSIS

7.1 INTRODUCTION

Urban renewal processes are uncertain and complex; uncertain because planning aims to change the future and the future is predominantly unknown, and complex because various parties are involved, introducing a wide range of divergent interests (van Bemmel, 2006:1). Therefore, planning entails managing and understanding uncertainty (Abbott, 2005:239).

The chapter focuses on investigating two international regeneration projects; one from a developing and the other from a developed country, as well as a local South African case study in direct relation to Objective 5 (refer to Section 1.3). The three subjects were chosen following a convenience sampling method for specific reasons. The international case study on a developed country was chosen for its planning principles and methods that can be used as a measurement tool for South African policies to strive towards. The regeneration project is on a scale that might not be reached in South Africa in the near future. However, the principles and methods can be examined to determine what might be applied locally. The international developing country was chosen to evaluate regeneration projects of similar nature. Though the scale of both the project and the problem at hand differs immensely, the project’s governmental and economic guidance can be examined to determine what can be expected in a country of the same nature. The local case study is explored to determine what has been achieved in South Africa. Some of these projects have received raise and international recognition. These studies formulate the foundation on which the recommendations of the case study will be based.

The main focus of this chapter is to highlight the key lessons and challenges that emerge from each case study and to understand the multi-faceted role of regeneration of cities. The relevance of case study as research method has been pointed out in sub-section 2.3 and is applicable to this chapter.

7.2 INTERNATIONAL CASE STUDY: DEVELOPED COUNTRY

Rotterdam is the Netherland’s second biggest city, with about 600 000 inhabitants. The main economic activities are located in close proximity to the port, which is the largest port in Europe (Bakker, 1997:1). The current population, according to Tersteeg (2017:10), is about 620 000. Rotterdam’s unemployment rate is 14.3%, which is the highest among the four largest cities in
Moreover, the educational level of the labour force and income per capita are lower than in the three largest cities, Amsterdam, Den Haag and Utrecht (Bakker, 1997:1).

### 7.2.1 The urban form of Rotterdam, Netherlands

Rotterdam, the second largest city in the Netherlands, is located in the Randstad, which is the densely populated western Netherlands (Tersteeg, 2017:21).

**Figure 7-1: The city of Rotterdam and its three primary nuclei**

**Source: Laurijsen, 2001:45**

Rotterdam is classified as a gateway city, according to Hübner (2007:63), which is a larger city with a dedicated port infrastructure that handles immense flows of international passengers and goods. Rotterdam can be seen as a multiple nuclei urban model (refer to sub-section 3.4.3). The three areas identified in Figure 7-1 are the (1) Alexander area, a regional core that developed within the past 60 years; (2) Rotterdam CBD; and (3) Rotterdam Airport, Zestienhoven, each of
which is regarded as a regional centre of growth (Laurijsen 2001:45). The three identified nuclei are merely regional centres; numerous other nuclei exist in the city of Rotterdam, but will not be discussed in this study. Cities of this nature are platforms for transport, freight, distribution and related services and industries. The city of Rotterdam houses a moderately high number of low-skilled workers. Some success has been achieved in diversifying the economy by attracting local and international businesses; it houses a broad work force. However, the city still has high levels of income segregation, unemployment and poor households in comparison with other Dutch cities (Tersteeg, 2017:10).

As seen in many post-industrial cities, the transition towards a post-modern economy and deindustrialisation caused detachment between the city’s blue-collar labour force and the growing demand for service sector workers. In comparison with other larger cities in the Randstad, Rotterdam is perceived as relatively poor in this regard (Tersteeg, 2017:21). According to Oswalt (2006:5), the population of Rotterdam declined by 21% between 1960 and 1988. When the decline in population was worst, in 1984, the city had 555 000 residents, whereas the number of inhabitants in 2017 was 623 000, as the population had been increasing steadily since 2008. However, the surrounding municipalities are not growing (Tersteeg, 2017:22).

According to a report by the Social and Cultural Planning Agency (SCPA) and statistics monitoring poverty, Rotterdam tops the poverty ranking in the Netherlands (SCPA, 2014:65). In 2012, 17,2% of Rotterdam households were living on a low income, a mere 0,2% higher than number two on the list, Amsterdam. In spite of this, there is a considerable difference in the structure of the regional economy between the two cities. The pace of deindustrialisation in Rotterdam has been slower, while the share of employment in producer services is notably higher than in Amsterdam (Burgers & Musterd, 2002:405).

A significant challenge for the city of Rotterdam is strengthening its economic base. Though the city has achieved some success in diversifying its economy and attracting national and international business, it is still far behind other cities in the Netherlands. The portion of producer services remains comparatively small and the entrepreneurship rate is the lowest found in Dutch cities. As a result, Rotterdam has poor households, relatively high levels of unemployment and low property prices (Tersteeg, 2017:32).

7.2.2 Land use planning and land use management in Rotterdam

According to Lagendijk (2001:145), mixed land use has become a highly popular concept in discourses on spatial planning. Governmental bodies directly dominate the allocation of land and the distribution of diverse land use functions by means of pro-active land policy and zoning regulations (van Meerkerk, 2015:8). In the Netherlands, cities comprehensively apply the strategy
for public land development. Some governmental organisations, such as municipalities, first purchase developable land and resolve what purpose it should be used for before the land is sold again, at a profit, to a suitable party, usually in the private sector, which ultimately carries out the actual development (van der Krabben & Jacobs, 2013:776).

Because of an increasing number of weather-related disasters that occurred over the past few years, climate change is an aspect that has received notable attention in spatial planning in Rotterdam (Pei-Wen, 2010:1). The subject of resilience has, correspondingly, also received increased attention, as resilience is viewed as “a key idea to tackle risk, particularly in an uncertain arena” (White, 2010:61).

Although spatial planning is deemed to be one of the structurally effective systems in Europe, national zoning plans stipulate permitted land uses at local level (Koster & Rouwendal, 2013:357). In practice the system of planning is moderately non-restrictive (Levkovich & Rouwendal, 2015:5). While strategic spatial planning is governed at provincial and national level, the Dutch system’s only legally binding plan at municipal level (the “bestemmingplan”) is also subject to judicial flexibility, but is seldom overruled by administrative authorities (Hajer & Zonneveld, 2000:340; Louw et al., 2003:343; de Vor & de Groot, 2001:611).

7.2.3 Stressors in the urban environment of Rotterdam

Since the 1970s significant changes in the urban planning sector in the Netherlands, including the doldrums of land revenue, have been the result of a shift from urban expansion towards city regeneration. At present, Rotterdam’s municipality, like other Dutch municipalities, is prioritising public investments based on economic value development (Mak & Stouten, 2014:101). Urban renewal and urban regeneration projects have been and are still accompanied by disputes about gentrification. Jones and Evans (2013:382) define gentrification as the procedure by which residential areas or buildings are improved, which leads to an influx of wealthier residents and an increase in house prices that ultimately forces out the poorer population. In most Dutch cities, local and national policies have supported the repopulation of the city centre, demonstrated by brownfield development, urban renaissance and mixed-use development (Mak & Stouten, 2014:104). These strategies’ connection to gentrification varies greatly and is accompanied by displacement of people and an increase in land prices (Porter & Shaw, 2008:12). The most heavily state-sponsored gentrification is a heterogeneous and multi-faceted process that influences neighbourhoods in and around the city centre (Tallon, 2010:4).

*Industrialisation.* Rotterdam was praised during the 1830s for keeping the Dutch mercantile character of the 17th and 18th century. As van der Laar (1998:222) stated, the mercantile town not only nominated a city focused on trade alone but also implied an ideal image of the city. However,
the ideal image of the city began to disintegrate under the pressures of reality during the second half of the 19th century. Mainly as a result of investments in infrastructure, innovations in transportation technology and rapid industrialisation, Rotterdam grew fiercely, and the port developed into one of the largest ports in Europe (Thissen, 2005:310).

Urbanisation. The reaction to the development of the port in Rotterdam and the growing demand for bulk industries was an increase in the urban population to 430,000 in 1900, reaching nearly four times the figure of 1830 (Diem, 1967:10). The Dutch national state strongly intervened in infrastructure and urbanisation. The necessary connections between urbanisation and the transport system were guaranteed partially through urbanisation contracts concluded in 1990 on regional, state and local level. According to van Remmen and van der Burg (2008:1), concentrated developments have supported sustainable urbanisation in three manners: (1) limiting travelling distance; (2) encouraging higher housing densities; and (3) encouraging low-energy transportation modes such as public transport, walking and cycling.

Urban segregation. After its establishment as a regional harbour, large-scale expansion of the harbour took place between 1880 and 1925, increasing the total area of the port from 200 ha to nearly 1800 ha. In the context of rapid geographic and economic expansion, the idyllic settlement, where trade and industry harmoniously mixed with social functions, gave way to an urban model that separated the city from industrial activities (van der Laar, 1998:225). During the 1900s and onwards, growing spatial division was apparent between the working and living areas, as well as a process of decentralisation, during which the harbour labourers relocated towards the western outskirts of the settlement, towards the sea (Thissen, 2005:312).

Social cohesion. As inhabitants became increasingly mobile, they correspondingly became less reliant on their neighbourhood for their social interactions. However, some scholars have cautioned that the fading role of the neighbourhood might result in lack of interaction and social cohesion between inhabitants (Forrest & Kearns, 2001:2126). The implication might manifest itself in less support and solidarity and reduced trust (Bolt & van Kempen, 2013:395; Tasan-Kok et al., 2013:8).

7.2.4 Enhancers in the urban environment of Rotterdam

The enhancers of Rotterdam, as identified based upon measures and policies applicable to this study, comprise compactness, mixed land use and economic drivers.

Compactness. As discussed under stressors, the population grew from 5.5 million to 9 million in the Randstad from the 1960s to 2000. A policy, “Tweede Nota over de Ruimtelijke Ordening”, was implemented as a measure against urban sprawl. The policy was developed based upon
garden cities that comprise high-rise buildings. During 1967, 75% of newly constructed houses were in the form of apartment buildings, identified as growth centres, that consisted of six storeys or more (Laurijsen, 2001:39). Half a million inhabitants relocated to the assigned growth centres and urban sprawl was put to an end (Dieleman et al., 1999:610). The main spatial concept, agreed upon by all levels of government during the 1990s as a measure against urbanisation, was (and is) “concentrated deconcentration” or compactness. Arguments supporting the concept are to keep undeveloped areas undeveloped, supporting amenities and limiting the use of cars (van Remmen and van der Burg, 2008:1).

**Mixed land use.** In the Netherlands, “where land is seen as scarce and the need is felt to improve spatial quality, mixed land use has become a highly popular concept in discourses of spatial planning” (Lagendijk, 2001:145). Urban policies that aim to foster social mobility frequently presume that living in an ethnically and socio-economically mixed neighbourhood enriches the socio-economic related opportunities of residents, especially residents from lower social classes (Tersteeg, 2017:95). Kleinhans argues (2004:370) that the middle and upper classes are presumed to act as role models for the lower classes. It is further argued that mixed neighbourhoods foster mixed social networks, by which lower social classes might improve their socio-economic position (Bolt & van Kempen, 2013:395). A functional way of approaching mixed land use, according to van Meerkerk (2015:13), is looking at facilities and functions that buildings supply and contain.

**Economic drivers.** For the city as a whole, a foremost challenge is to attract middle- and high-income groups. In Rotterdam’s housing policy, the city government aims for a comprehensive approach to improve the overall living quality of citizens in low as well as high income brackets (van Meerkerk, 2015:9, Tersteeg, 2017:33). Rotterdam seeks to attract inhabitants with a higher social-economic status by means of investment in architectural projects and cultural facilities (Doucet et al., 2011:1440; Kloosterman & Rath, 2001:195). The essence of attracting high-income residents, according to Tersteeg (2017:33), is diversifying the economy. Without augmentation of high-end jobs, the city will be unable to attract the group of residents that is desired.

### 7.2.5 Urban regeneration policies

Urban regeneration, as a combined venture of gentrification and urban design, has been established throughout numerous districts of the city of Rotterdam. The conversion from industrial to post-industrial economy concerned settlements enclosed by former port developments that were altered to urban facilities and residential areas (Stouten, 2017:92).

The attraction of high-income groups has been a persistent goal of Dutch urban renewal policies since the 1980s. Since the 1980s, larger cities in the Netherlands have replaced their programme
of ‘building for the neighbourhood’, which accentuated building for low-income groups, to social mixing strategies (Bolt & van Kempen, 2013:393). As a result, a considerable portion of housing stock in Dutch neighbourhoods has been sold or demolished, which led to a substantial enlargement of the owner-occupied sector, which increased from 22% in 2000 to 35% in 2015 Tersteeg (2017:33).

Urban regeneration in the Netherlands is a primary task for municipalities, as well as other local players such as welfare institutions and housing associations. To receive money for urban regeneration from the investment budget, local partners must first reach an agreement on the composition of a development programme and then work together to facilitate the implementation of the programme (van Bemmel, 2006:3). Two such regeneration areas are subsequently discussed.

7.2.5.1 Vertical city: De Rotterdam mixed-use building

"De Rotterdam is an exercise in formal interpretation that is at once reminiscent of an imported mid-century American skyscraper but epitomises the off-center experimentalism of modern Dutch art of the foregoing century. The nighttime twinkling of the lights indicating different programs throughout the day lends dynamism and contributes to the humanization of the monoliths."

Council on Tall Buildings and Urban Habitat announcement of the prize Best Tall Building Europe, July 2014

The problems raised by immense urbanisation, together with economic and social challenges, implies that in terms of sustainable development, the implementation of planning strategies becomes progressively more complex and continually merges the subjects of urbanism and architecture (Échelle, 2014:1). De Rotterdam is conceived as a vertical city that accommodates a variety of land uses, such as apartments, offices, conference facilities, a four-star hotel, restaurants, cafes and shops. This tower cluster does not emanate solely from a density scenario; instead it triggers density within a logic of polarisation, becoming a developmental cluster in the old harbour district (Échelle, 2014:10).

The three towers of 44 floors reach 150 m high and span a width of over 100 m. The gross floor area of roughly 162 000 m² makes De Rotterdam the largest structure in The Netherlands. De Rotterdam’s stacked towers are organised in a subtly irregular cluster and afford intriguing new views from different perspectives. Likewise, the definition of the building changes according to its multiple uses internally (Maier, 2013:6).
7.2.5.2 Hoogvliet

Hoogvliet, a borough in the southwestern part of the city of Rotterdam, was constructed after World War II to provide housing for the increasing demand of harbour labourers. What started out as a small dike town soon developed into the first satellite town with 35 000 inhabitants (van der Graaf, 2009:179). Employment was booming, and various new employers were attracted to the newly constructed maisonette houses, set in a profusion of open green space (van der Graaf, 2009:179; Kleinhans et al., 2014:7). However, the opulence shifted in the 1970s and 1980s as a result of large-scale computerisation and automation of the industry and an economic crisis. Unemployment prevailed and close vicinity to the industry was no longer discerned as an advantage, but as a threat; light and air pollution by the industry gave the area an atrocious reputation (van der Graaf, 2009:180). Nearly 6 000 inhabitants left Hoogvliet between 1976 and 1985 and the borough became known as the “sewer (waste pipe) of the regional housing market” (van der Graaf, 2009:180). Heeger and van der Zon (1988:29) stated that the area was distinguished by an aggregation of social deprivation problems and an enormous number of empty properties.

During 1998, the city council, together with two local housing associations, composed a strategy for large-scale demolition and regeneration of housing stock, an urban restructuring project that commenced in 1999 (Veldboer et al. et al., 2007:6). According to Kleinhans et al. (2014:4), Hoogvliet has been subject to the Netherland’s third largest urban regeneration programme. The renewal plan will transfigure the housing stock by demolishing approximately 5 000 social-housing rented units, replacing them with more expensive owner-occupied and rental properties and selling 1500 social-housing rented units (Taylor et al., 2006:7). The goal was that 60% of the residents should own their properties in 2012, in comparison with the 20% of owner-occupiers in 1998 (van der Graaf, 2009:180). The essential principles of the renewal project were structured in terms of enhancing collective (social cohesion, local economy in the district, public open spaces, housing stock, reputation and civic involvement) and individual goals, such as the improvement of the inhabitants’ socio-economic position (van der Hoek, 1999:2; Taylor et al. 2006:18).

7.3 INTERNATIONAL CASE STUDY: DEVELOPING COUNTRY

Founded in 1960, Culcutta, now Kolkata, at the pinnacle of its power, was regarded as the most important settlement in the British Empire (Mansfield, 2011:8). Located on the east bank of the Hooghly River, Kolkata is the capital of West Bengal. In 2011, Kolkata had a population of 14.1 million, which made it the third-most packed metropolitan location in India. Its gross domestic product (GDP) in 2008 was the third highest among Indian urban areas (Bhowmik, 2017:2).
According to Hoda et al. (2010:25), Kolkata is the most densely populated area in India. Kolkata, the main city, is populated with 4.5 million people spread over an area of 200 km² (Mukherjee et al., 2018:2).

7.3.1 The urban form of Kolkata, India

The city of Kolkata, the state capital of West Bengal, is the main commercial, business and financial hub of the north-eastern states and eastern India. The challenges of Kolkata, one of the largest metropolitan regions in the world, serve as a perfect example of problems facing megacities in developing countries (Ronita et al., 2011:4). The Kolkata Municipal Corporation stretches linearly in a north-south direction along the banks of the Hooghly River, as illustrated in Figure 7-2.

Figure 7-2: The national, regional and local setting of Kolkata

Source: Ronita et al., 2011:4
The inner city of Kolkata is home to a high-density urban form of 24,760 km², greatly exceeding the recommendation by the World Health Organisation of 2,500 km² (Ronita et al., 2011:5). Unlike other cities in developing countries, planning policies since the 1960s have been constructed around the multiple nuclei model (Ronita et al., 2011:5), as opposed to strengthening the city centre. (The theory of multiple nuclei is discussed in sub-section 3.4.3.)

According to Chaudhuri (1990:16), throughout the history of humanity, Kolkata has been the only city “with incredibly meagre resources” to have absorbed the biggest mass migration. The oppressive geographic limitations, together with rapid population growth, resulted in innumerable economic, environmental and social problems, urban blight and extreme congestion that burden the city with insuperable obstacles (Ronita et al., 2011:5). Kolkata has high population growth rates, which have not been matched by the pace of urban services (Lakshmanan, 2008:3). Distributional inefficiencies, limited resources and lack of growth in income opportunities has left a fundamental gap in service provision (Ronita et al., 2011:4).

Downton (2000:8) claims that Kolkata is seen as a city of contrasts between poverty and wealth, helplessness and power, “with the legacy of both indigenous colonial practices”. Furthermore, Kundu (2013:2) explains that inequality of income has led to the disintegration of living standards of the urban people. Kolkata is also currently facing problems such as pollution and traffic congestion (Ramachandra et al., 2014:4).

Urban growth in metropolitan areas has been chaotic and exploitive. The result is squatting in teeming slums, unemployment, congestion, low productivity work-sharing in the informal sector, deterioration of services and infrastructure, air and water pollution, encroachment on public space and, most importantly, overall deterioration of the living standards of a portion of the inhabitants (Kundu, 2013:2). About a third of the population of the Kolkata municipal area resides in slums. A total of 2,011 slums are registered and 3,500 are unregistered (Kundu, 2013:4).

7.3.2 Land use planning and land use management in Kolkata

The West Bengal Town and Country (Planning and Development) Act (no. 13 of 1979) makes provision for planned development of urban and rural areas in western Bengal. The board, through provisions in the Act, advises the state government on development, planning and the use and coordination of urban and rural land (Act 13 of 1979, 1979:8).

Despite the existence of designated municipalities, improvement trusts were established as autonomous institutions subject to their own corpus of funding. Notwithstanding the apparent problem of displacement, housing remained a secondary concern; the construction of a systematic and larger network of roads remained a priority. The Bustee Improvement Programme
(BIP) (sub-section 7.3.5.2) was set up at a time when the town planning profession was establishing itself, demonstrated in the emergence of professional societies, planning journals and pressure groups. The improvement trusts provided intellectual challenges and employment for an array of technical specialists, including engineers, town planners and architects, whose fields of expertise usually overlapped (Datta, 2013:140).

7.3.3 Stressors in the urban environment of Kolkata

*Population growth.* Kolkata is the third most populous city in India and the 13th most populous city in the world, with a population of approximately 14.11 million in 2011. The population density increased from 2039/km² in 1971 to 3879/km² in 2011 (Ramachandra *et al.*, 2014:4). In slums, however, the population densities are enormously high, averaging around 2812 people per hectare (Kundu, 2013:7).

![Figure 7-3: Population growth of Kolkata between 1901 and 2011](image)

*Source: Ramachandra *et al.*, 2014:3*

*Industrialisation.* The presence of a substantial portion of slum dwellers can be attributed to the industrialisation process. The flow of British capital fuelled the development of the engineering and jute industries. As a result of rapid urbanisation and industrial growth, workers for northern and eastern India relocated to Kolkata in search of income and employment (Kundu, 2013:7).

*Urbanisation and urban sprawl.* The urbanisation process gained momentum during the last two decades as a result of globalisation and its concurrent accelerated economic activities. Sprawl occurring on the peripheries of cities, classified as the most serious problem resulting from urbanisation, and dispersed growth are consequences of intense urbanisation in core regions. Moreover, owing to rapid urbanisation, Kolkata is now facing problems such as pollution and traffic
congestion (Ramachandra et al., 2014:2). Figure 7-4 below indicates the pattern of urbanisation and sprawl in Kolkata from 1980 to 2010.

Figure 7-4: Pattern of urbanisation and sprawl in Kolkata from 1980 to 2010

Source: Ramachandra et al., 2014:9

Sprawl usually occurs at urban peripheries, along highways or urban fringes. Sprawl generally changes regions by resulting in highly fragmented settlements and by disturbing open spaces, agricultural lands and ecologically sensitive areas in the process. A land use analysis (Ramachandra et al., 2014:1) for Kolkata indicated a decline in vegetation from 33.6% in 1980 to 7.36% in 2010. This indicates that urbanisation drastically alters the growth rate of urban areas and leads to increased complexity in suburban regions (Ramachandra et al., 2014:2).

Urban segregation. Numerous displacements and comprehensive colonial territorialisations occurred, whereafter inflexible policies of segregation were implemented. The “white” and “black” towns that developed in Kolkata illustrated the intense level of segregation. These towns were far from the autonomous landscapes and the political, social and economic conditions of the colonial culture (Beattie, 2003:7).
7.3.4 Enhancers in the urban environment of Kolkata

**Compactness.** A study of spatial patterns conducted by Ramachandra *et al.* (2014:1) indicated simple, structured growth at the centre and a complex shape within the buffer region. The results further indicated that the city is on the verge of transforming into a single, large, urbanised patch. According to Ronita *et al.* (2011:10), the facet of compact development should be tailored in the given context; in the case of Kolkata, the “compact city”, when viewed merely in terms of compactness, is perfect. However, the population density has reached a level that surpasses the World Health Organisation’s standards and is becoming a major concern for the inhabitants of the area.

**Regeneration.** Unlike other cities in developing countries, planning policies since the 1960s have been constructed around the multiple nuclei model (Ronita *et al.*, 2011:5), as opposed to strengthening the city centre. The establishment and development of new towns served as a catalyst in that direction. Moreover, urban-related problems such as the explosive population growth and scarcity of space have been accepted by the central and state governments, resulting in a number of regeneration projects being implemented to upgrade the overall structure of the city (Ghosh, 1987:3).

**Mixed land use.** Kolkata has received waves of re-settlers, immigrants and refugees during the last 50 years, often neglecting existing neighbourhoods and invading new space. This has undoubtedly resulted in overcrowding, but has also produced the most remarkable social mix. Everyday Kolkata mixes barbers and managers, shoe-cleaners and lawyers, rickshaws and limousines (Cremaschi, 2012:4).

7.3.5 Urban regeneration policies

Throughout history, Indian cities have had two primary characteristics: high population densities with limited space and principally non-agricultural, especially non-cultivating occupations of the inhabitants (Hawley, 1971:17). In the context of Kolkata, regeneration typically entails “the phenomenon of bustees as providing ameliorative measures” (Onkar *et al.*, 2008:46). The following two regeneration policies will be evaluated: post-industrial urban restructuring and the BIP.

7.3.5.1 Post-industrial urban restructuring

The formidable industrial production economy of Kolkata declined sharply between 1950 and 1970 as a result of several disruptive socio-political events, industrial unrest, radical leftist insurgency, militant trade unionism, the national government’s strategies of freight equalisation
that deprived Kolkata of its locational advantages in the engineering industries and finally, the loss of the jute-producing hinterland due to the partition of India during 1947. This led to the closing down of industries and an effect on the supply chain network of the smaller industries, as well as large-scale unemployment (Raychaudhuri and Basu, 2007:11).

The Left Front coalition, which came into power in the West Bengal state in 1977, directed its energies towards rural areas and thus neglected the infrastructural needs of the urban centre. Industrial peripheries had to endure transportation delays due to congested rail and road networks and lower power outages. The Left Front initiated a new economic policy in 1994 that encouraged private investments. This policy did not revitalise industrial manufacturing; however, service sector industries, such as software development, real estate, retail and healthcare, underwent rapid growth. The growth of the export-orientated information technology business process outsourcing was astonishing and generated numerous new employment opportunities for the educated middle class (Roy & Chatterji, 2015:5).

7.3.5.2 BIP

During 1950 national programmes from the government of India began to emphasise the necessity for policy approaches to address the national slum problem. National policies were formulated to take place every five years. The first three of the five-year plans emphasised the removal and eradication of slums, borrowing lessons learnt from developing countries (Kundu, 2013:15).

The Kolkata BIP is unique when compared to other cities, as Kolkata's policy considered the slum problem in its entirety by improving the environment and considering employment generation, whereas in most cities the slum problem was targeted through a sanitation justification, providing living facilities, but not livelihoods for the slum inhabitants (Kundu, 2013:17). The BIP did show an improvement in overall health and in addition attempted to build a community that could withstand changes and provided access to amenities (Schenk, 2010:108).

The BIP was developed in 1964 and was Kolkata's most expansive slum-improvement programme. The objective was to improve the situation of 400 000 slum dwellers within five years (Schenk, 2010:104). However, Schenk (2010:108) argues that despite the BIP, slum dwellers still live under conditions that are not suitable for human habitation. Moreover, to effect the amelioration of slum conditions, the slums’ economic, social and physical characteristics must first be fully understood.
7.4 LOCAL CASE STUDY

The city of Johannesburg, once the most important centre of gold production globally and today the financial capital of South Africa (GPSDF, 2016:3), houses 8% of the population of South Africa and 36% of the population of Gauteng (CJIDPR, 2018:19). The size of the city is 1 644 km² with a population density of 2 696 people per square kilometre in 2011 (SSACR, 2016:344). The average unemployment rate for 2001 was 37% and 25% for 2011. The economy is growing steadily with gross value added of 86 billion rand in 1996 to 548 billion rand in 2013; however, unemployment remains a growing challenge, while living expenses in the city are becoming unaffordable for many (SSACR, 2016:345).

7.4.1 The urban form of Johannesburg, South Africa

The urban form of Johannesburg is characterised by a low-density, sprawling and polycentric nature. The form was driven by apartheid planning, racial segregation (see sub-section 6.2.3), the availability of cars and the freeway building programme that has been implemented since the 1960s. After the apartheid era, it is still evident that state-subsidised housing continues to be developed in the peripheral areas (CJIDPR, 2018:109). Moreover, spatial inequality remains a salient characteristic of Johannesburg’s settlement pattern. The concentration and location of jobs does not correlate with where people reside. The mismatch of job-housing notably contributes to the city’s inequality as, for a majority of residents, access to economic opportunities is suppressed by distant and costly commuting (JMSDF, 2016:11).

The urban form of Johannesburg remains inefficient, as Johannesburg is a divided and sprawling city characterised by inequality (CJIDPR, 2018:38). Figure 7-5 illustrates the spatial framework of the city of Johannesburg.
Figure 7-5: The city of Johannesburg’s spatial framework

Source: JMSDF, 2016:16
The present urban form of Johannesburg displays the inverse of a polycentric urban model, with land uses that are separated and great distances between residential areas and work opportunities, as illustrated in Figure 7-6. The metropolitan CBD is not currently performing as the structuring, strong centre that it should be. Higher-density residential areas are separated from movement structures and the economic centres of the city.

![Figure 7-6: The current metropolitan structure of the city of Johannesburg](image)

Source: JMSDF, 2016:13

This development pattern results in high economic, social and environmental costs (JMSDF, 2016:13). A more compact polycentric pattern with inclusive urban logic is demonstrated in Figure 7-9. The most efficient urban form is compact, with densification along well-serviced public transport routes, with a miscellany of land uses within corridors as well as in the nodes along them (CJIDPR, 2018:110).

The functions that exist in many neighbourhood nodes tend to be directed solely at retail use, with little diversification, predominantly in terms of community and social functions. Numerous neighbourhood nodes developed incrementally, frequently resulting in unsuitable zonings and land uses. Consequently, land use control, management of the scale of development and law enforcement limit integration opportunities and the sustainability of the nodes in which they are located (JMSDF, 2016:157).

The city of Johannesburg is experiencing noteworthy problems: gentrification and fragmented pockets of development, limited affordable housing, crime, poorly designed buildings, limited
The Johannesburg Municipality Spatial Development Framework (JMSDF) identified five dominant problems of the built environment that the SDF seeks to address within the spatial and social landscape of the city of Johannesburg (JMSDF, 2016:11): (1) urban fragmentation and sprawl; (2) increasing pressure on green infrastructure and on the natural environment; (3) the job-housing mismatch and spatial inequalities; (4) inefficient land use diversity and residential densities; and (5) disconnection and exclusion emanating from gated developments, under-used areas with high potential and disconnected street networks (low intersection densities and high cul-de-sac ratios).

The city of Johannesburg is also tussling with various developmental and spatial issues (JMSDF, 2016:36): (1) high levels of unemployment and poverty; (2) a growing population; (3) economic and spatial fragmentation; (4) a backlog of adequate housing; (5) inequality; and (6) disconnection. These issues become progressively challenging (JMSDF, 2016:36) in the light of the irreplaceable and unique natural environment that has already been degenerated by mining activities, and past development and industry that are progressively threatened by urban growth patterns.

7.4.2 Land use planning and land use management in Johannesburg

The JMSDF was adopted by council in 2016. SDFs are described as a component of an integrated development plan (IDP) for municipalities by the Municipal Systems Act (South Africa, Act 32 of 2000). More recently, SDFs have been mandated by SPLUMA (CJIDPR, 2018:42). The SDF is, however, “not a strategic master plan; it is rather a dynamic model of strategic planning that will be cyclically reviewed, adjusting its focus and direction based on city transformation that takes place on the ground” (JMSDF, 2016:12). The Growth and Development Strategy (GDS) influences and directs the JMSDF and the IDP within a broader package of planning policies, as summarised in Figure 7-7.
Figure 7-7: The hierarchy of spatial plans

Source: JMSDF, 2016:24

The JMSDF is read in conjunction with localised policies such as precinct plans and urban development frameworks, as well as regional SDFs that have been approved by council (JMSDF, 2016:23).

7.4.3 Stressors in the urban environment of Johannesburg

*Population growth*. According to population data from censuses conducted in 1996, 2001 and 2011, Johannesburg is experiencing growth, albeit at a decelerating rate. From 1996 to 2001 the population grew at a rate of 4.1% per annum, while from 2001 to 2011 the population grew by 3.2% per annum (GPSDF, 2016:32). A continual deceleration in growth is predicted by the UN, to 2% growth per annum for the period from 2015 to 2020, 1.3% for the period between 2020 and 2025 and 1% between 2025 and 2030 (JMSDF, 2016:38), as illustrated in Figure 7-8. It should be noted that a decrease in population declassifies the category of population growth from the
stressors of the Johannesburg urban environment. However, for the purposes of a comprehensive overview, this matter is still included.

Figure 7-8: Growth rates for the city of Johannesburg from 1975 to 2030


According to the JMSDF (2016:41), population growth is certain; however, the rate at which it will occur is less clear. Everett (2014:68) claims that 75% of future growth will be a result of natural growth and the remaining 25% will be made up of immigration (both international and domestic).

**Industrialisation.** The city of Johannesburg’s IDP report suggests that an industrial transformation is needed to prevent the de-industrialisation of the economy and to initiate new industries. Important potential in broadening Johannesburg’s economic base and lending better resilience to the economy could be found in the development of economic linkages and implicit employment multipliers in the manufacturing and industrial sector development (CJIDPR, 2018:68).

**Urbanisation.** Various measures were used to suppress levels of urbanisation in South Africa during apartheid, the result being a repressed demand for access to urban areas. Urbanisation surged at the end of apartheid to meet the repressed demand (Harrison et al., 2014:7). Most of the growth occurred in metropolitan municipalities, including Johannesburg. However, data released by the UN suggests that the post-apartheid surge in population for Johannesburg is declining (see Figure 7-8) (JMSDF, 2016:38).

**Urban sprawl.** Apartheid spatial design generated inefficient cities that sustain spatially entrenched segregation and sprawl. Poorer communities reside on the peripheries of cities, away
from social, educational and economic opportunities, and thus spend an unduly high share of their time and disposable income on transport (Urban LandMark, 2012:4; SSACR, 2016:346).

_Urban segregation_. A major spatial discontinuity in the city structure is the mining belt, which has become a symbol of segregation between northern and southern Johannesburg. Furthermore, post-apartheid housing delivery has dis disputably exacerbated apartheid development patterns by allocating housing far from economic activity. The private sector has further exacerbated spatial segregation though car-orientated developments (JMSDF, 2016:11).

### 7.4.4 Enhancers in the urban environment of Johannesburg

_Compactness_. The most efficient urban form is compact, with densification along well-serviced public transport routes, with a miscellany of land uses within corridors as well as the nodes along them (CJIDPR, 2018:110).

The JMSDF proposes a shift towards a more inclusive and efficient urban logic constructed of compact polycentricity, as seen in Figure 7-9. The primary focus is on transforming the CBD as the core node of Johannesburg that is surrounded by nodes of mixed use and various intensities, which are connected by effective public transport and a more efficient and logical density gradient diverging outward from the nodes (JMSDF, 2016:14).

![Figure 7-9: The future city of model of Johannesburg with a compact polycentric urban form](image)

Source: JMSDF, 2016:14
The future city model will relocate job opportunities to residential areas as opposed to simply transporting people between the two. Complete nodes will be established that are sufficiently serviced by public transport and where people can work, live and play. This model will bridge social and spatial behaviours and construct a framework for an unprejudiced city (JMSDF, 2016:14).

**Regeneration.** Urban regeneration that activates new economic development corridors and stimulates existing ones and growth nodes will contribute to a better quality of life and improved economic activity. Economic growth and urban regeneration will also eventually result in higher property values and sustainability for city authorities, as well as higher revenue (CJIDPR, 2018:68).

**Mixed land use.** One of the strategies to accomplish the future city model of Johannesburg (illustrated in Figure 7-9) is to intensify mixed use as well as high-density residential development in and around economic nodes in the city (JMSDF, 2016:70). By creating mixed use areas of higher density, cities can ensure that land is being utilised in accordance with demand and accommodate population growth without compromising the natural assets of the city (JMSDF, 2016:71). Moreover, a key imperative that supports a more inclusive city is the planning of mixed use areas and to make use of legal, regulatory and financial frameworks to bring jobs and opportunities to people (JMSDF, 2016:75).

**Economic drivers.** Three activity clusters are targeted in the period of 2017 to 2021 as the primary economic drivers to accelerate city economic growth: inner city development, financial services and tourism. Each of the clusters links to a number of sectors, which collectively and individually hold the potential for multiplier and catalytic effects for the economy of the city. These effects are in terms of job creation, investment attraction, enterprise development, higher growth and sustainable economic output (CJIDPR, 2018:71).

### 7.4.5 Urban regeneration policies

Apartheid spatial design generated inefficient cities that sustain spatially entrenched segregation and sprawl (Urban LandMark, 2012:4). The NDP has recognised the burden that inefficient spatial arrangements place on the poor and claims that “new spatial arrangements could fundamentally transform job and livelihood prospects for the poor” (NDP, 2012:28), thereby reducing inequality and poverty (SSACR, 2016:346). The subsequent discussions highlight two of the most prominent and successful urban regeneration approaches followed in the city of Johannesburg.
7.4.5.1 Corridors of freedom

The corridors of freedom programme is the city of Johannesburg’s spatial vision that was launched in 2013. The programme intends to offer the inhabitants of Johannesburg increased economic freedom, as well as freedom of movement. Furthermore, it aims to enable people to reside closer to their place of learning or work (thereby reducing private car use and travelling time), bring learners closer to schools and provide increased access to job opportunities (SSACR, 2016:346).

The programme is a transit-orientated development (TOD) that envisions bringing commerce hubs closer through expanded public transport systems and improved transport infrastructure, as well as mixed use developments and affordable high-density housing within these corridors, and the development of services and infrastructure designated to improving the overall quality of life for inhabitants (Allison, 2014:2). The safe neighbourhoods will be designed for walking and cycling and will have limited parking and sufficient public transport, with catalytic economic initiatives planned for every corridor based upon non-specific economic strengths and characteristics (SSACR, 2016:347). The first identified corridors were the Empire/Perth corridor, Turffontein corridor and the Louis Botha corridor (SSACR, 2016:347), as illustrated in Figure 7-10.

Figure 7-10: The proposed interventions of the corridors of freedom programme

Source: SACN: Conference, 2015:8
Having led the country’s first bus rapid transit system, the city of Johannesburg is now taking TOD a step further, with a view “to forever changing the urban landscape of Johannesburg and eradicating the legacy of apartheid spatial planning” (Allison, 2014:3).

7.4.5.2 Inner city regeneration

Inner-city deterioration began during the mid-1980s when poor inhabitants found that they could obtain affordable accommodation in inner-city buildings without maintaining them. This led to circumstances where nearby properties lost their value and owners decided to relocate their capital elsewhere, primarily to the northern suburbs, which also aggravated the situation. Inner-city regeneration attempts to address the problem by renewing inner-city buildings and reincorporating beauty and cleanliness (Mapetla, 2006:10). As Goga (2014:72) confirms, between 1975 and 1992 owners of business properties in the Johannesburg CBD began investing in decentralised locations. By 1993, the number of approved building plans in the CBD and A-grade spaces’ vacancy rates began to diverge from those in Midrand and Sandton, where decentralisation was occurring.

The stated objective of the inner-city regeneration project, according to Lipietz (2004:2), is to “raise and sustain private investment leading to steady rise in property values”. A foremost strategy of the inner-city regeneration of Johannesburg is the clearance of approximately 235 buildings, regarded as cradles of crime and degeneration. The elimination of socio-economic degeneration will increase private sector investment and property values (Mapetla, 2006:14).

According to Joburg 2040 GDS (2017:76), the inner-city regeneration project has made substantial progress in addressing issues relating to inner-city decline. However, affordable rental remains a challenge for the city of Johannesburg.

7.5 CONCLUSION

This chapter aimed to examine some regeneration and renewal projects from three entirely different categories of urban settlements. Different categories were discussed to determine what might be achieved in circumstances where governmental funding, areas of available resources (in both professional bodies and capable guidance), levels of adaptability and willingness to change are evident and to estimate the number of projects of similar nature ranges.

It was established that the nature of the regeneration projects in Rotterdam was on a scale that might not be reached in South Africa. The need for and desirability of a single building of 162 000 m², the vertical city, might not fit into South Africa’s current context. The principles of mixed land use and densification, however, might be applied on a smaller scale in a number of
smaller buildings applicable to the current context. Another important observation is pro-active interceding projects that envisage the creation of better opportunities and liveability for all residents, as opposed to projects that are necessitated by inhuman living circumstances.

In Kolkata, the pressing problems of inadequate living space, unhealthy densities and limited employment opportunities prevail in the slums. The severity of these problems is also not experienced on such a scale in South Africa. Cognisance of Kolkata’s strategy not only to improve health standards, but to provide an array of urban facilities to improve the overall living experience, might be applied in a majority of circumstances in the South African context. The strategy to develop along polycentric nodes of interest rather than reinvesting in the already over-populated central city area might also prove beneficial in certain local circumstances.

Urban regeneration projects in the city of Johannesburg have received international recognition; investments initially started with public sector projects and were followed closely by private sector initiatives. From a business as well as a residential viewpoint, there are clear indicators of renewed interest in the inner city. According to these indicators, it might be safe to assume that the projects were, and still are, to some extent, successful. The study of Johannesburg is relevant, for though the scale and populace differ from other cities, national legislation, most procedures, the history of the urban fabric, some of the problems experienced and planning principles that are to be taken into consideration correlate with numerous settlements throughout the country.

The key lessons and challenges that emerged from each case study will be used to examine the context of the city to be discussed, as well as the recommendations that will be formulated during the closure phase of the study. It is remarked that the role of cities, the problems experienced, and the possible solutions depend wholly on the context of the city, as no two situations will align perfectly.
CHAPTER 8

CASE STUDY: PACALTSDORP - GEORGE

8.1 INTRODUCTION

The Western Cape province makes up 10.6% of the surface of South Africa and occupies an area of 129,462 km². The province consists of five district municipalities and 24 local municipalities (WCPSDF, 2014:16). The Eden District Municipality, the area that is the subject of this study, consist of seven local municipalities, of which George Municipality is one. The George municipal area is 4,170 km² (GMSDF, 2018:13) in extent, straddles the Little Karoo and the Southern Cape regions of the province of the Western Cape and is located roughly halfway between the two metropolitan areas of Port Elizabeth and Cape Town. The Eden District Municipality’s headquarters are also situated in George (SACN, 2014:1). Figure 8-1 below indicates the Western Cape province, together with the district and local municipalities, and Figure 8-2 indicates the municipal area of George.

Figure 8-1: The Western Cape province and the municipal jurisdictions

Source: WCPSDF, 2014:16
The George municipal area is economically one of the higher performing areas of the Western Cape province (GMSDF, 2018:16). Three important national roads traverse the area: the N2, N9 and N12, and the George National Airport serves the Little Karoo as well as the Southern Cape and the neighbouring towns. The city area of George is the primary urban centre of the municipal jurisdiction, as 81,3% of the municipal area’s population is located there. The remaining urban population is mainly divided between Wilderness, Haarlem and Uniondale (GMSDF, 2018:13).

When considering the central place theory (sub-section 3.2.1), more specifically an economic approach, Christaller’s assertion is relevant: the topography of the existing built environment is an organization of a pattern of social sciences and not merely a pattern of natural sciences. The second consideration is that the pattern of centralisation is not merely a human form of thinking, compiled and developed because of humanity demanding order; it prevails as a consequence of the immanent pattern of matter. These two considerations justify the motive behind the urban form of the inner-city area of George.
Moreover, George fulfils an important role as a regional hub. The city’s contribution to the regional economy and agriculture is noted (EDPGM, 2015:13). The George municipal area is economically one of the higher performing areas of the Western Cape province (GMSDF, 2018:16). Therefore, George, as a prominent central place, fulfils an unescapable role, not only within the George municipal area, but within the greater region.

8.2 THE URBAN FUNCTION OF GEORGE MUNICIPALITY

The George Municipality recognises the significant role it fulfils in enabling and ensuring an environment for economic development in order to support sustainable livelihoods for its inhabitants. A cross-sectoral, multi-faceted, participatory approach will be followed in competitively pursuing economic growth. The foundation of the strategy is the building and maintenance of productive and lasting relationships with businesses, non-governmental organisations, civil society and other stakeholders in the pursuit of collective goals. Notwithstanding the ideal of a structured approach, adequate flexibility ought to be incorporated to allow identification and pursuance of ad hoc opportunities (SACN, 2014:61).

A study of the growth potential of towns undertaken by the Western Cape government in 2014 found that George Municipality had high potential for growth in relation to other settlements in the province (see Figure 8-13). The WCPSDF also argued that more robust infrastructure in George and Mossel Bay would be best positioned to absorb settlement growth more sustainably in the district than in neighbouring municipalities in the region (GMSDF, 2018:16).

8.2.1 The economic importance of the municipality of George

A significantly larger population resides in the George municipal area than in neighbouring municipalities. Employment data constituted during 2015 proposes that George is the principal contributor to employment in the district (36%), by contributing 39.8% of the district’s GDP. George is therefore responsible for 3.7% of growth in the district, which is higher than the 3.3% provincial growth within the same period (WCG, 2017:3). The George Municipality’s economy is interrelated with the regional economy. George presides in the regional economy and has the ability to maintain better performance and to create more jobs. It is also dependent on the region, in its role as a service centre, to generate a demand for goods and services and for beneficiation that will result in stimulating growth (GMSDF, 2018:16).

The structure of the economy in George has shifted slightly in the long term from the primary and secondary sectors (forestry, manufacturing and agriculture) towards a more service-driven economy, more specifically insurance, finance, business services and real estate (EDPGM, 2015:20). Figure 8-3 illustrates the GDP per region (GDPR) growth per municipal area from 2006
to 2016. In only four of the ten years illustrated in the diagram, George’s GDPR was not the highest of the Eden District Municipality. Also substantiated in Figure 8-4, George Municipality’s contribution to the GDPR was more than double that of the second-best contributor.

Figure 8-3: GDPR growth per municipal area from 2006 to 2016

Source: GMSDF, 2018:16

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Contribution to GDPR (%)</th>
<th>Trend</th>
<th>Real GDPR growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kannaland</td>
<td>2.8</td>
<td>3.3</td>
<td>2.9</td>
</tr>
<tr>
<td>Hessequa</td>
<td>8.8</td>
<td>3.2</td>
<td>3.3</td>
</tr>
<tr>
<td>Mossel Bay</td>
<td>17.3</td>
<td>2.9</td>
<td>4.0</td>
</tr>
<tr>
<td>George</td>
<td>36.8</td>
<td>3.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Oudtshoom</td>
<td>12.7</td>
<td>3.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Bitou</td>
<td>7.4</td>
<td>3.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Knysna</td>
<td>11.2</td>
<td>2.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Total Eden District</td>
<td>100</td>
<td>3.2</td>
<td>3.7</td>
</tr>
<tr>
<td>Western Cape Province</td>
<td></td>
<td>3.0</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Figure 8-4: Eden District GDPR contribution and average growth rates per municipal area from 2005 to 2016

Source: GMSDF, 2018:16
During the post-recession recovery period, from 2010 to 2013, George had an average annual growth rate of 2.9%, which exceeds both the national and the provincial growth rate of the same period (EDPGM, 2015:18). The local economy further enjoyed some exposure to the global environment through tourism. Accommodation and catering services contributed 1.67% to gross value added in 2013; indirect contributors are, however, also captured in retail and services, conceivably transport, since George Airport is the only commercial airport in the Southern Cape (EDPGM, 2015:28).

8.2.2 The socio-economic composition of George Municipality

Informal employment in George is growing. Within the next 15 years, most economic growth will be a result of emerging economies. This economic energy should, therefore, be granted space in the structure of all cities and towns (GMSDF, 2018:90).

As previously indicated, a society’s inequality level is represented by an income vector of a number between 0 and 1, where the representation of maximum equality is 0 and 1 is perfect inequality. The NDP, as elaborated on in sub-section 6.3.3, set a target of reducing the South African income inequality from a Gini coefficient, as elaborated on in sub-section 6.2.5.3, of 0.7 to 0.6 by 2013 (EDPGM, 2015:13).

The Gini coefficient for George, in 2016, was 0.60 and the Human Development Index was 0.72 (EDPGM, 2015:1). To compare, Maree (2016:9) published the following Gini coefficients for 2013: East Rand, 0.65; Johannesburg, 0.65; East London, 0.64; Durban, 0.63; Port Elizabeth, 0.63; Pretoria, 0.63; Bloemfontein, 0.62; Cape Town, 0.61.

Though the income inequality of George has already met the NDP’s 2030 target, according to Tao et al. (2014:1), an alarming level of inequality is specified at a coefficient of 0.50 or larger. Therefore, George’s level of income inequality reflects better progress than that of other cities in the national context. However, compared with international standards, a Gini coefficient of 0.60 is alarming.

The three largest sectors contributing to the municipal GDP, in 2015, were: (1) finance, business services, real estate and insurance; 26.4%; (2) retail trade and wholesale, accommodation and catering; 18.5%; and (3) manufacturing; 14.7% (WCGSEP; 2017:1). Figure 8-5 below indicates the predicted population growth of the seven local municipalities of the Eden district from 2018 to 2023. Figure 8-5 illustrates the predicted growth of the seven municipalities that make up the Eden District Municipality from 2018 to 2023.
Figure 8-5: The population of the seven local municipalities of the Eden District Municipality from 2018 to 2023

Source: WCGSEP, 2017:2

Figure 8-5 clearly indicates George as the most densely populated local municipal area in the district; the second largest municipal area encompasses less than half of George’s population. However, it should be noted that when the percentage of growth is calculated for the predicted population of 2023, George is third in terms of predicted growth at 5.56%. Bitou Municipality is first, with a predicted growth of 8.44% and Mossel Bay second at 6.28%. Nevertheless, the estimated population growth rate of George is 1.06% higher than the estimated growth rate of Eden District Municipality at 4.59% (WCGSEP, 2017:2).

8.3 THE URBAN FORM OF PACALTSDORP AND GEORGE

The spatial configuration of George has been shaped by apartheid-based spatial planning. The severity of segregation varied, but in general it resulted in impoverished, under-resourced and marginalised urban areas and uneven distribution of opportunities and facilities. This has, in more recent times, been perpetuated by spatial fragmentation of shopping precincts in the town (IDP, 2017:16).

In 2000, during major municipal restructuring, a study was conducted to compare the spatial transformations of Pretoria, George and Cape Town. In the city of George, when considering socio-political transformation, according to Lanegran (2000:275), the apartheid landscape was
undoubtedly intact. Efficient urban form is, however, a major concern for the Western Cape government’s ability to sustain quality health services and education and to keep up with resultant demand and growth. At present, it is focused on catching up with historical and existing demand and rationalising services in order to sustain service delivery. Urban expansion is already overcommitted and failing to address backlogs (GMSDF, 2018:22).

Pacaltsdorp started as a self-sufficient, independent town subject to its own administration for a number of years. Pacaltsdorp has subsequently been incorporated into the greater George area and forms part of the administrative area of George Municipality. The Pacaltsdorp settlement has not developed to its full potential, as indispensable business opportunities and developments have been directed primarily at George CBD and the developments occurring at the Garden Route Mall towards the east of George. The residential areas of Pacaltsdorp and its CBD have been subject to little development and the inhabitants of Pacaltsdorp are consequently required to travel to George to obtain services (PLSDF, 2015:18).

Figure 8-6: The urban form of Pacaltsdorp and George

Source: Own creation
Figure 8-6 illustrates the urban form of Pacaltsdorp and George as study area and the focus is placed on the proposed regeneration initiatives (as discussed in Chapter 9). A clearer indication of each city centre’s zoning, coherence, and economic opportunities (in terms of business zoned properties) is shown in Figure 8-8 and Figure 8-9. The distance between Pacaltsdorp and any surrounding areas (and opportunities) should be noted as Pacaltsdorp is clearly alienated from surrounding opportunities.

When evaluating the location of businesses, higher density development and the residential area, a clear correlation can be drawn with a combination of urban models; Hoyt’s sector model (as discussed in sub-section 3.4.2) as well as Harris and Ullman’s multiple nuclei model (as elaborated on in sub-section 3.4.3). The CBD, in this case, however, is not indicated as a perfect circle, as in Hoyt’s model, but rather as linear development along the two primary corridor routes with sectoral high densities surrounding the CBD and the classes (high-class and low-class) of residential development radiating from the CBD. Given the urban context of George, a few natural barriers are present in the city, such as rivers and golf courses. These undevelopable areas also give rise to the similarity with the multiple nuclei model, as a golf course will form a distinct barrier between high-income residential development and a major transportation route.

Furthermore, a distinct pattern of similarity is seen when comparing the urban form of George and Pacaltsdorp (Figure 8-6) and the apartheid city model (Figure 6-4). The urban form of George and Pacaltsdorp confirms the early established, and deep-seated, notion that urban areas were preserved for whites. Inadequate integration and poor housing qualities that prevailed in African areas were frequently associated with poverty. The N2 (indicated in red in Figure 8-6) forms a major barrier between the better resourced neighbourhoods in the north and the poorer neighbourhoods towards the south. The difference between the apartheid city model and the George-Pacaltsdorp urban form is that in the apartheid model, the CBD is located in the centre of the city, where all ethnicities have equal access to the inner-city area. However, in this case, the CBD is located in the city and the area of Pacaltsdorp is located away from George, the CBD, and the opportunities it has to offer.

The problems arising from land use as a result of apartheid legislation, disparate urban areas and limited economic opportunities will subsequently be examined.

Apartheid legislation was premeditated to generate an altogether new landscape for cities in South Africa. Furthermore, in addition to apartheid, the whole of the country was divided into designated white areas, which amounted to approximately 90% of the territory, while the rest of the population, the black Africans, were restricted to the remaining 10%. The areas demarcated for black Africans were primarily rural areas that were separated by distance from centres of industry and commerce (Lanegran, 2000:271). The hard landscape prevailing as a result of
apartheid consists of major highways, extensive residential districts, freeways, irrigation ditches, railroads, industrial sites, golf courses, cemeteries, parks and natural landscape features. No matter how well-intentioned the leaders and residents of South Africa may be, the landscape cannot be undone with a simple stroke of a pen (Lanegran, 2000:271).

In the context of rapid growth, some smaller cities reshape themselves for the better. To some extent, George failed in this regard by merely imitating failed responses to urban integration strategies of metropolitan areas and bigger cities (SACN, 2014:98).

The GMSDF classifies the urban area as “disparate”, with the following spatial characteristics (GMSDF, 2018:26):

- The space economy is focussed within a triangle of opportunity that consists of the existing CBD node, the emerging developments towards the east comprising the mall and Kraaibosch, and Pacaltsdorp industrial node;
- A progressive transformation of commercial development from the CBD towards the mall-type developments and Courtenay Street;
- Areas of limited opportunities and growth encircling the CBD towards the south and south-east, primarily serving dormant settlements, namely the older settlements of Pacaltsdorp and Blanco, the newer Thembalethu area and George south-east (north of the N2);
- An increased number of gated community type of developments, especially in Kraaibosch, Herold’s Bay and Kingswood; and
- A major barrier formed by the N2 between better resourced neighbourhoods towards the north and poorer neighbourhoods towards the south (see the N2 indicated in red in Figure 8-6).

These five spatial characteristics identified by the GMSDF are portrayed in Figure 8-7 below.
Figure 8-7: The urban form of Pacaltsdorp and George

Source: Own creation

The following two figures (Figure 8-8 and Figure 8-9) should be compared with each other; more specifically, the available economic opportunities each urban centre has to offer.
Figure 8-8: Zonings in the George CBD

Source: Own creation
As illustrated, the number of economic opportunities offered in Pacaltsdorp is limited. The land use types are mainly restricted to residential, with a few exceptions of business and community zones. In contrast, George offers a multitude of business-zoned properties with a number of high residential and a few single residential properties. The result of these land uses is that the Pacaltsdorp inhabitants only reside in their area and travel elsewhere for other land uses apart from residential; Pacaltsdorp is typically functioning as a “sleeping town” for most of the residents without any economic value and capacity of its own.

As the chief centre of the municipality’s employment, services and population, the CBD area requires restructuring to enhance and integrate peripheral townships into the larger space economy. This restructuring will yield a function that is more efficient and equitable, with a foundation of all the opportunities that city living should offer (GMSDF, 2018:25).

The preceding discussion on the urban form of the study area reflects the problem statement of the study area (formulated in Chapter 1), i.e. deeply rooted segregated cities as a response to adverse spatial demands that emanated from an increasingly complex array of social regulations.
within class groups and expanding urbanisation during the apartheid period. As mentioned in Chapter 1, distinct types of urban segregation prevail, depending on the urban context, ethnic or racial segregation and differences in income classes. The active relation between social exclusion and income classification has created a continual downward spiral: segregation promoting exclusion and exclusion promoting segregation.

8.4 SPATIAL PLANNING AND LAND USE MANAGEMENT IN GEORGE

One of the purposes of the GMSDF is to guide development and planning decisions across all spheres of government, particularly the provincial and municipal government. This refers specifically to land use management and spatial planning decisions (GMSDF, 2018:7). Similar to internationally recognised land use planning mechanisms and tools (as discussed in sub-section 574.5.3), George regulated its land use management by means of various components.

Figure 8-11 illustrates central components of the land use planning and land use management system in which the GMSDF provides the municipality with overarching principles, structuring elements, spatial goals, policies and strategies to implement the service delivery and development agenda (SACN, 2014:83; GMSDF, 2018:8).

![Figure 8-10: The land use management system for George Municipality](source: GMSDF, 2018:8)
Within the land use planning and land use management system for the George municipal area, the GMSDF provides the all-encompassing spatial principles, goals, strategies and policies and structuring elements through which the municipality implements its service delivery and development agenda. Furthermore, it provides guidelines for the conservation of land and for development and does not take away rights of land use. This is the role of the zoning scheme by-law (sub-section 8.7.2.4), which standardises the regulations of land use in accordance with the GMSDF’s objectives (GMSDF, 2013:13).

8.5 STRESSORS OF THE GEORGE URBAN ENVIRONMENT

Population growth. George’s municipal population growth is discussed under sub-section 8.2.2. However, Figure 8-5 also indicates George as the most densely populated local municipal area in the district; the second largest municipal area encompasses less than half of George’s population. Its estimated growth rate of 5.56% from 2018 to 2023 is more than double the growth rate from 2001 to 2011, which was 2.36%, and nearly four times the national growth rate, which is 1.45% (EDPGM, 2015:1).

Urbanisation. The National Spatial Development Perspective (NSDP) identified the city of George as an area of national economic significance (SACN, 2014:97). However, dynamic and new strategies are required for handling the high urbanisation and fast growth rate of the area. There is increasing pressure for developable land; taking into account the area of sensitive biodiversity, a sustainable and comprehensive strategy is required (SACN, 2014:98). Urbanisation is regarded as a stressor not only on local level but also on provincial level, as the WCPSDF (2014:88) states that cities throughout the province continue to grow through urbanisation. The Western Cape was experiencing an urbanisation level of 69%, while the national level was 63%, in 2016. The predicted level of urbanisation for 2040 is an astounding 80% (van Zyl, 2017:4). Figure 8-11 below indicates the level of urbanisation in the Western Cape from 2015 to 2040. George experiences high urbanisation rates (EDPGM, 2015:6). The exact rate is not indicated in any of the legislative or policy guidance documents, which might be regarded as a void in available data.
The GMSDF (2018:25) has identified the key task of undoing the spatial patterns of segregation prevailing in George. This task is proving difficult, as settlements continue to expand as urbanisation continues and new demands must be met.

**Urban sprawl.** The GMSDF of 2013 (2013:24) was guided to “contain urban sprawl and the resultant loss of natural and agricultural assets, increased servicing costs, excessive movement between places of work and residence, and inadequate thresholds for smaller enterprises to develop”. The municipal SDF is revised every five years, in accordance with the IDP five-year cycle (DRDLR, 2014:16). Therefore, the GMSDF is currently in the process of public participation for final inputs before approval and implementation. The 2018 GMSDF, interestingly enough, does not address the matter of urban sprawl, as prescribed by SPLUMA.

**Urban segregation.** A general increase in gated developments that is in contrast with the overall open character is notable in the city of George. A study done in the Western Cape, excluding Cape Town, found that most gated security estates were situated in the municipalities of George (35), Overstrand (29), Mossel Bay (27) and Knysna (24) (Spocter, 2011:172). This development tendency has been criticised as encouraging spatial segregation and obstructing the spatial flow of a city (SACN, 2014:82). Furthermore, the level of residential desegregation of George is far below the majority of intermediate cities in South Africa, with the exception of intermediate cities located in the Western Cape (SACN, 2014:79). The 2011 census indicates that, according to
population group and residential area, racial segregation is pertinent in George, as indicated in Table 8-1. Only residential areas that are home to 93% or more of a certain population group are indicated, as areas of better integration are irrelevant to this study.

<table>
<thead>
<tr>
<th>Residential area</th>
<th>% of person weighted per population group</th>
<th>% inhabitants of total population per residential area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Black</td>
<td>Coloured</td>
</tr>
<tr>
<td>Heather Park</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Kingswood Golf Estate</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Denvar Park</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Conville</td>
<td>4</td>
<td>94</td>
</tr>
<tr>
<td>Parkdene</td>
<td>5</td>
<td>94</td>
</tr>
<tr>
<td>Pacaltsdorp</td>
<td>5</td>
<td>93</td>
</tr>
<tr>
<td>New Dawn City</td>
<td>6</td>
<td>93</td>
</tr>
<tr>
<td>Thembalethu</td>
<td>93</td>
<td>6</td>
</tr>
<tr>
<td>The remaining areas are home to less than 93% of a certain population group</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 8-1: Population group per residential area in George

Source: Own creation adapted from 2011 Census

The results of Table 8-1 indicating the level of segregation, weighed up against the percentage of the population residing in the area, were part of the reason why the study area of Pacaltsdorp was chosen. The number of residents in Pacaltsdorp (according to the 2011 census data), is 16 400, which is 8.468% of the total population of George. There are other areas with higher levels of segregation, such as Denvar Park and Kingswood Golf Estate; however, the number of residents does not amount to that of Pacaltsdorp. Another noteworthy area is Thembalethu, which might be considered in future research.

Thembalethu was excluded from this study as the area was not formed as a result of apartheid planning. Thembalethu was declared as a black African development area by the Black Communities Development Act (Act 4 of 1984) in 1989. All the existing farms were expropriated to accommodate, what was then, a very small black African population. The first subdivision, however, only occurred in 1991 – merely three years prior to the end of apartheid. Segregation is further discussed in sub-section 8.3.
Land degradation. Resource use and land activities that result in degradation include urbanisation, plantation forestry, intensive agriculture, development and infilling, water abstraction, invasion of alien plant species and waste water discharge. Table 8-2 below clearly indicates that George has less natural area remaining than two neighbouring municipalities, Knysna and Bitou (EDPGM, 2015:12). Table 8-2 below indicates a summary of the land-cover categories for three municipal areas of the Garden Route, namely George, Knysna and Bitou, as adjacent municipalities.

<table>
<thead>
<tr>
<th>Land-cover category</th>
<th>George</th>
<th>Knysna</th>
<th>Bitou</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ha</td>
<td>%</td>
<td>Ha</td>
</tr>
<tr>
<td>Natural</td>
<td>36 051,0</td>
<td>33,7</td>
<td>48 063,4</td>
</tr>
<tr>
<td>Degraded</td>
<td>25 506,5</td>
<td>23,9</td>
<td>16 289,4</td>
</tr>
<tr>
<td>Transformed;</td>
<td>52 904,2</td>
<td>49,5</td>
<td>44 293,9</td>
</tr>
<tr>
<td>Intensive agriculture</td>
<td>24 507,1</td>
<td>22,9</td>
<td>8 236,9</td>
</tr>
<tr>
<td>Plantations</td>
<td>15 129,2</td>
<td>14,2</td>
<td>30 176,3</td>
</tr>
<tr>
<td>Urban &amp; infrastructure</td>
<td>5 631,1</td>
<td>5,3</td>
<td>3 140,9</td>
</tr>
</tbody>
</table>

Table 8-2: A summary of the land-cover categories for the municipal areas of George, Knysna and Bitou

Source: Own creation adapted from Vromans et al., 2009:14

It should, however, be noted that the larger transformed area might be indicative of the more extensive urbanised area, as well as the role that the city of George fulfils as regional hub and by contributing to the local economy and agriculture (EDPGM, 2015:13).

Spatial conflicts. This matter is not addressed in local legislation or policies. Provincial legislation, the WCPSDF (2014:47), however, states that conflicting pressures for land development might be reconciled through proactive spatial planning, as well as the application of a system of land use management that protects resources, safeguards biodiversity and offers opportunities for improved jobs and livelihoods. In addition, national legislation states that the implementation of a national spatial framework and policy should resolve spatial conflicts as well as ensure that spatial outcomes of programmes and policies across the government are aligned with national objectives (NDP, 2012:290).

8.6 ENHANCERS IN THE GEORGE URBAN ENVIRONMENT

George, together with the N2 Garden Route Corridor including Mossel Bay and Knysna, is considered an area of considerable growth in the national context (EDPGM, 2015:3), as
discussed in the preceding section. This can mainly be ascribed to the principal economic sectors and the impact these have on the growth of the main settlements along this area of natural significance.

**Compactness.** The GMSDF (2018:25) indicates one of the primary levers of achieving the SPLUMA principles as growth management to achieve a compact urban form. Furthermore, a policy of the SDF is to maintain a compact settlement form to achieve improved efficiency in resource use and service delivery and to facilitate integration and inclusion (GMSDF, 2018:58). If compact neighbourhoods are pursued, diverse neighbourhoods will prevail that offer places to work, live and relax, all within close proximity, and that are served by streets that are scaled to people, so they feel comfortable to walk (GMSDF, 2018:91). A policy guideline of the GMSDF (2018:91) is that during the assessment of public sector developments, building applications and land use applications, these objectives should be pursued. A rather disconcerting realisation is that none of the following by-laws mentions compactness: the Land-Use Planning By-Law for George Municipality, George Integrated Zoning Scheme By-law (GIZSBL) or the Local SDF for Pacaltsdorp.

**Regeneration.** As previously mentioned, the most serious challenges regarding urban regeneration include unemployment, economic restructuring, environmental pollution, contaminated land and social exclusion and deprivation (Tsenkova, 2002:4). The unemployment rate of black Africans in George (during 2011) was 3.82% and an additional 1.13% were discouraged job seekers. For whites the corresponding figures were 0.36% and 0.11% respectively and for coloureds 4.23% and 1.38%. The unemployment rate for black Africans and whites was lower in George than in the rest of the Western Cape; however, it is evident that unemployment in especially the coloured and black African communities are a concern (SACN, 2014:37). Bennett (2008:11), states that one of the national economic drivers is economic restructuring. The GMSDF (2018:110) lists a priority investment area (restructuring zone) as the principal public transport corridors of activity, as well as the George CBD. As for Pacaltsdorp, the restructuring agenda is to support development of the Pacaltsdorp commercial centre actively and to facilitate infill development of approximately 70 ha of land with densities as high as 80 units/ha (GMSDF, 2018:119).

The National Treasury’s Cities Support Programme should be accepted as an important criterion for the allotment of national funding. National Treasury suggested using facilities strategically to facilitate integration and regeneration, as illustrated in Figure 8-12 (WCPSDF, 2014:101). The numbers in the figure indicate the order of nodes in the settlement. The more important the node, the higher the order of the transportation network that serves it.
Mixed land use. On a national level, a principle entrenched in three legislative frameworks, the Municipal Systems Act (Act 32, of 2000) and the Spatial Planning and Land Use Management Act, promotes compact cities, higher densities and mixed land use (DLA, 2007:4) (see sub-section 6.3).

According to the WCPSDF (2014:32), compact settlements and mixed land use are associated with social inclusion, competitiveness (by means of agglomeration economies), efficient delivery of affordable services, quality of life (i.e. access to amenities and liveability), and resilience to human safety and environmental hazards. Moreover, mixed use developments are likely to result in the best prospects for the generation of a response from the private sector on a scale that is commensurate with the intervention of the public sector (GMSDF, 2018:91). A noteworthy policy guideline of the (GMSDF, 2018:60) emphasises the importance of mixed land use developments along the area of interest applicable to this study: “Support the use of the underutilised land in proximity to the intersections off the N2 along the routes linking Pacaltsdorp and Thembalethu to the existing CBD for more intensive mixed-use development.”
**Economic drivers.** Since the 1980s the importance of George as a national development and economic role-player has been noted. George has been diversely identified as part of the decentralisation and development programme, as part of a strategy towards policy formulation for urbanisation as well as a growth point. Similarly, the NSDP identified George as an area of national economic significance during the 2000s (SACN, 2014:97).

The NDP does not refer to George specifically. However, on a national scale the NDP indicated the following key drivers of change (2015:199-121): (1) creating an environment for economic growth and sustainable employment; (2) promoting competitiveness and exports; (3) promoting employment in labour-absorbing economies; (4) demonstrating strategic leadership among stakeholders to mobilise a national vision; and (5) strengthening the capacity of the government to implement its economic policy.

A study on the growth potential of towns, conducted in 2012 by using quantitative data, commenced to model innovation potential and growth predictions in the Western Cape. The aim was not to prescribe where growth should occur, but where growth was likely to occur. Growth potential is indicated by two intermediate indices that are made up of five thematic indices: (1) growth preconditions; (1.1) economic issues; (1.2) physical conditions; and (1.3) infrastructure; (2) innovation potential; (2.1) institutional and (2.1) human capital (van Zyl, 2017:31). The outcome of the study is illustrated in Figure 8-13.
Figure 8-13: The growth potential of towns in Western Cape on municipal level

Source: van Zyl, 2017:31
Figure 8-13 is thus a representation of the results of the study of the growth potential of towns. The aim of the study was to model growth predictions in the Western Cape. The calculation of growth potential was mentioned prior to the illustration. Areas of growth are thus assigned a number between 0 – 100, 100 being the area with the best growth potential and 0 the worst. George, with a potential growth prediction of 88, is ranked as having the fourth greatest growth potential in the Western Cape.

As stated earlier, the outcome is not to prescribe where growth should occur, but in which city growth is likely to occur.

The form of settlements influences economic opportunity. It therefore forms part of the solution to transform George’s demographic challenges into demographic dividends. Thus, settlement forms are a priority informant as a mechanism to support economic growth and inclusion (GMSDF, 2018:26). The primary economic centre, however, remains the CBD. The strategy is to revitalise and redevelop the area into a prosperous city centre that embraces the principles of smart growth, with a high standard of public realm (GMSDF, 2018:33).

8.7 EXISTING POLICY GUIDANCE AND LEGISLATION

National legislation, namely SPLUMA (no. 16 of 2013), the IUDF and the NDP, has been discussed under sub-section 6.3. According to the Department of Land Affairs (2007:3), it is evident that governmental policies have been influenced by the need and desire for sustainable cities. Sustainable cities are characterised by compact design and reduced sprawl, mixed land uses and densified existing residential areas, as well as the restructuring of the urban fabric to enhance public transportation.

8.7.1 Provincial legislation

The policy for regulating land use on provincial level is regulated by two prominent legislative frameworks, the provincial SDF and the Land Use Planning Act.

8.7.1.1 Provincial Spatial Development Framework

The Constitution describes provincial planning as an exclusive responsibility of the provincial government. In terms of Section 4 of the Land Use Planning Act and Section 15 of SPLUMA, premiers are obliged to construct and publish an SDF for their province. The PSDF must align, integrate and coordinate provincial development strategies and plans with national government policies, development strategies, policies and plans of provincial departments and the development strategies, policies and plans of municipalities (WCPSDF, 2014:12). The PSDF
additionally conveys the spatial agenda of the Western Cape to municipalities so that their land use management systems and SDFs and IDPs do not deviate from the Western Cape government’s spatial agenda (WCPSDF, 2014:14).

One of the most important concepts related to policies of space-economy is regenerating and revitalising existing nodes of economy in the urban space-economy, such as CBDs, modal interchanges and township business centres (WCPSDF, 2014:71 and 73).

8.7.1.2 Land Use Planning Act

Much energy was expended on developing a provincial framework for land use planning that was aligned with the constitutional scheme set out for provincial, municipal and regional planning, as well as urban and rural development. The efforts eventually culminated in the promulgation of the Land Use Planning Act (LUPA) for the Western Cape (Act no. 3 of 2014).

The purpose of the LUPA is summarised as follows (2014:2):

- To consolidate legislation in the Western Cape relating to provincial planning, urban and rural development, regional planning and development, regulation, monitoring and support of municipal regulation and planning of public places, as well as municipal roads emerging from subdivisions;
- To prepare for provincial spatial development frameworks;
- To provide the efficient coordination of, and minimum standards for, spatial development frameworks;
- To formulate minimum standards and norms for effective management of municipal development;
- To govern provincial development management;
- To govern the effect of development on agriculture;
- To make provision for the principles of land use;
- To repeal some old-order laws; and
- To make provision for matters that are incidental thereto.

LUPA serves as background against which the legislation, together with SPLUMA (on national level, sub-section 6.3.1) facilitates, and ultimately adopts, the municipal SDF (sub-section 8.7.2.2). LUPA serves to replace the previous constitutional dispensation of the Land Use Planning Ordinance (Ord 15 of 1985). It gives effect to provincial purposes and has the power to regulate municipal planning. It is a law that sets precedents that do not encroach on the power of municipalities to draft their own law, in the form of municipal land use planning by-laws.
LUPA does not address urban regeneration principles, which might be seen as a deficiency when evaluating the Act in terms of this study. Spatially compact development is promoted, guided by SPLUMA’s second principle of spatial sustainability (refer to sub-section 6.3.1), and is described as follows (LUPA, 2014:29): “land use planning should promote land development that is spatially compact, resource-frugal and within the fiscal, institutional and administrative means of the relevant competent authority in terms of this Act or other relevant authority”.

8.7.2 Local policy and legislation

The purpose of local legislation is to interpret and represent the vision of spatial development that is informed by a long-term spatial development plan and vision statement and to guide all development and planning decisions across all spheres of government (GMSDF, 2018:7). The following local legislation will be discussed hereafter: Land Use Planning By-Law for George Municipality (LUPBLGM), George Municipality SDF, IDP and GiZSBL.

8.7.2.1 Land Use Planning By-Law for George

The purpose of the LUPBLGM is “to regulate and control municipal land-use planning within the jurisdictional boundaries of the George Municipality” (LUPBLGM, 2015:1).

This by-law standardises regulations in terms of land use throughout the municipal jurisdiction and is aligned to long-term spatial development outcomes sought by the GMSDF and its policies (SACN, 2014:8).

The LUPBLGM does not mention any components of segregation, urbanisation, sprawl or any other of the stressors identified throughout the study. The by-law further does not mention regeneration or a compact urban form or mixed land use, which might be regarded as a deficiency in the legislation.

8.7.2.2 George Municipality Spatial Development Framework

The GMSDF plays an important role in the more comprehensive municipal planning system. A municipal SDF is obligatory in terms of both the Municipal Systems Act (2000) and SPLUMA, which requires an SDF as an essential component of a municipality’s IDP (as elaborated on under sub-section 8.7.2.3). The GMSDF provides a spatial framework for the long term for decisions made in accordance with the GiZSBL (discussed in sub-section 8.7.2.4) and the LUPBLGM (discussed in sub-section 8.7.2.1).

The municipal SDF is a review of the SDF that George Municipality adopted in 2013, which was drafted under the Built Environment Support Programme that was re-adopted in 2017 in accordance with the IDP of 2017 to 2022. It is a five-year review that is associated with a new
term of office of the Council of Municipalities and its new IDP. The five-year term is to ensure coherent alignment with provincial and national legislation, LUPA (provincial) (described in sub-section 8.7.1.2) and SPLUMA (national) (discussed in sub-section 6.3.1). The IUDF (sub-section 6.3.2), whose implementation facilitated particular focus on intermediate cities such as George, is important to this review (GMSDF, 2018:9).

Figure 8-10 illustrates the principal components of the land use planning and land use management system of the municipality of George that assists in decision-making. In this system, the municipal SDF provides the inclusive principles, spatial vision, policies and strategies and structuring elements according to which the municipality effectuates its service delivery and development agenda (GMSDF, 2018:8).

An important development strategy contained in the SDF is the employment and services of the George city area, as the main centre of the municipality’s population needs to be regenerated to integrate and enhance peripheral development in the larger space economy to ensure that it functions more efficiently and equitably, exploiting all the opportunities that city living offers (GMSDF, 2018:25). The SDF also identifies some of the foremost levers to achieve the principles set out by SPLUMA as growth management and a compact urban form (GMSDF, 2018:24).

An investment opportunity identified by the SDF is a network of proposed and existing mixed-use nodal centres placed at strategic locations, which serve as points with high accessibility and opportunities for surrounding communities. These business activities and higher order facilities are concentrated and are supported by a high quality of public realm (GMSDF, 2018:33).

One of the policies identified by the framework, Policy C2, reads as follows: “Restructure settlement patterns through infill development of vacant and underutilized land in the settlements in the George Municipal Area.” One policy guideline identified for achieving this, which is of the utmost importance and in direct correlation with the objectives of this study, reads as follows (GMSDF, 2018:60): “Support the use of underutilised land in proximity to the intersections of the N2 and along the routes linking Pacaltsdorp and Thembalethu to the existing CBD for more intensive mixed-use development.”

8.7.2.3 Integrated Development Plan

The IDP is linked to a five-year implementation and planning timeframe that correlates with local government elections. The plan is, however, reviewed annually, together with the yearly budget cycle. The IDP is an instrument of both intergovernmental and intersectoral coordination that covers the local agenda. It is, therefore, viewed as the convergence of all budgeting, planning and investment for the George municipal area and is required to illustrate and incorporate all district, provincial and national policy directives. The IDP aims to balance and integrate the
ecological, economic and social aspects of sustainability without jeopardising effective service delivery (IDP, 2017:6).

The IDP drives budget allocation decisions as well as prioritisation. The decisions should be definite and work together with the strategies set out in the GMSDF to compile spatial strategies, realising the vision and plan. The municipal SDF is the spatial expression of the IDP at municipal scale within a long-term vision that aspires to drive through the principles, vision and policy directives as formulated in provincial and national legislation, plans, policies and strategies (GMSDF, 2018:7).

The IDP, like the LUPBLGM, does not mention any components of segregation, urbanisation, sprawl or any other of the stressors identified in the study. The development plan furthermore does not mention regeneration or a compact urban form or mixed land use; neither does the budget within the IDP directly identify relevant regeneration or integration projects.

8.7.2.4 George Integrated Zoning Scheme By-Law

The GIZSBL is promulgated to control and regulate municipal zoning and applies to the entire municipal area. The purpose of the zoning scheme (GIZSBL, 2017:16) is to (1) make provision for planned development and the prosperity of the community; (2) give effect to the municipal SDF; and (3) determine development parameters and use rights, with due consideration of LUPA’s principles.

As a tool to encourage the GMSDF’s objectives, the GIZSBL makes provision for “overlay zones”. Overlay zones may make provision for additional development provisions and might be enforced to direct the form and nature of development and land use in a specific area and in accordance with municipal and local SDFs (GMSDF, 2018:8).

The GIZSBL, like the IDP and the LUPBLGM, does not mention segregation, urbanisation, sprawl or any other of the stressors identified in the study. Furthermore, no mention is made of regeneration or a compact urban form or mixed land use. However, this by-law differs from the previous two in that it refers mainly to zonings, use zones, overlay zones, enforcement and parking provisions. Principles such as segregation, integration and regeneration are not generally discussed in rigid documents such as this by-law.

8.7.2.5 Pacaltsdorp Local Spatial Development Framework

The PLSDF or precinct plan (refer to sub-section 6.3.1) intends to transform Pacaltsdorp from a dormitory town to an economically vibrant and thriving node by increasing thresholds by means of capitalising on the town’s natural and historic assets and encouraging densification. Figure
8-14 shows the area of Pacaltsdorp in the PLSDF’s long-term phasing plan, indicated from 1 to 4. The urban edge stretches up to the southern edge of the northernmost Phase 1 delineation. The alignment of the urban edge is elaborated on in sub-section 9.3.3. The long-term phasing map is included because of a lack of maps in the PLSDF. Such maps should be clear and indicate nodes, directions of growth and the urban edge. The lack of illustrative maps can be considered a deficiency in this local legislative framework.

Figure 8-14: Pacaltsdorp and the long-term phasing plan

Source: PLSDF, 2015:68

The PLSDF identifies the strategy of developing the vacant coastal properties south of Pacaltsdorp as an economic opportunity node in order to reposition the segregated and poor neighbourhoods into the larger economic drivers of George. The provision of further regional road infrastructure should also be resisted, since that could encourage urban sprawl (PLSDF, 2015:9).

A spatial development objective of the SDF is that strategic vacant land should satisfy new development demand, i.e. land parcels within the urban edge that are appropriate for future development are to be identified. By developing these opportunities, the intention is not to duplicate the segregated apartheid spatial patterns, but to promote sustainable and socially integrative city development (PLSDF, 2015:14).
Enhancers of the urban environment, namely compactness, regeneration and economic drivers, are, shockingly, not mentioned in this SDF. Little attention is paid to mixed land use, as the only strategy for mixed use is to “Support the use of underutilised land in proximity to the intersections off the N2 and along the routes linking Pacaltsdorp and Thembalethu to the existing CBD for more intensive mixed-use development” (PLSDF, 2015:9). The lack of policy guidance on enhancers of the urban environment of Pacaltsdorp is a matter of concern.

8.8 CONCLUSION

This chapter aimed to provide an extensive overview of the context of George in terms of the city’s place in the regional context, as well as the purpose it fulfils in the local context. Problems experienced in the current urban context are identified to provide a basis for recommendations. The land use planning and land use regulations of all spheres of government are discussed. Stressors as well as enhancers of Pacaltsdorp-George are identified to indicate areas that might be receiving attention, since the stressors should be addressed and the enhancers can be strengthened or supported.

A detailed discussion of the current urban context is imperative, as recommendations are based upon actual current problems and the relevant methods of possible improvement. The synthesis and recommendations will aim to solve the current land use problems in a manner that might benefit all inhabitants. The lessons learnt from the international case studies will also primarily guide the recommendations, only to be altered to accompany the urban context and the problems currently experienced in the area of interest.

A noteworthy finding is the lack of guidance in existing policies in terms of principles of integration, regeneration, mixed land use and economic drivers. Another noteworthy finding is the delineation of Pacaltsdorp’s urban edge. One of the provincial guiding principles states that “land development should be spatially compact … and should not involve the conversion of high-potential agricultural land or compromise ecosystems” (WCPSDF, 2014:22). Moreover, the question arises how Pacaltsdorp’s spatial principle (PLSDF, 2015:1) of densification can be achieved if approximately 3 720 (number calculated form the indications in Figure 8-14, PLSDF, 2015:68) hectares of developable land is being offered in the long-term phasing plan.
CHAPTER 9

SYNTHESIS AND RECOMMENDATIONS

9.1 INTRODUCTION

The study of urban regeneration was inaugurated by an overarching problem, discussed in sub-section 1.2, which is evident in various cities globally but also in most South African cities, namely segregated urban settlements. More eloquently put: the segregation of ethnic groups and race has historically been characteristic of the economic, spatial and social organisation of South African cities. The aim of the study, stated in sub-section 1.3, to evaluate the implications of land use planning and land use management and segregated communities and how regeneration and integration policies might establish competitive places that are liveable, fiscally sound and socially inclusive, was achieved by examining six objectives. The objectives were resolved by making use of three sections: (1) literature study discussed in chapters 3 to 6; (2) an empirical study that was carried out in chapters 7 and 8; and (3) synthesis and recommendations in chapter 9.

9.2 SYNTHESIS

The principal components of this research, when broken down into the most candid versions, consist of (1) urban form; (2) theories of spaces; and (3) land use planning and land use management. Though these concepts are closely correlated, each will be explained individually to illustrate the relationship between theory, empirical research and the findings.

In addressing the matter of urban form, a multitude of scholars have attempted to address urban form by applying a single theory (refer to sub-sections 3.2.1, 3.4.1, 3.4.2, and 3.4.3) to a single model, to be applied to cities having similar traits, to evaluate the fabric and moreover, to predict growth. However, it has been found that various factors contributing to different urban fabrics cannot be subject to one particular model of growth. A number of variables of an urban settlement necessitate guidance in the form of principles ultimately to formulate a case-specific model of growth.

As stated in Section 1.2, urban form is a result of locale decisions of firms, thousands of households and public-sector agencies in free-market economies. The urban form of cities in South Africa differs drastically from urban forms as per international literature, as it depicts racially divided communities and segregated urban settlements (sub-section 6.2.2 and 6.2.3). The segregation of ethnic groups and race has historically been characteristic of the economic (refer
to sub-section 3.2.2), spatial and social organisation of South African cities (refer to sub-section 6.2.2). It is a behavioural pattern of society that pervades all aspects of urban living and cannot be escaped by any South African inhabitant, which formulates the research problem (refer to Section 1.2). Segregated urban areas have continuously been associated with increased exposure to diseases, violence, inadequate accessibility, increased trips to school or work, inadequate public transport and an overall low quality of the natural and built environment. The second objective (listed in Section 1.3) of the study was to identify problems that were a direct or indirect result of urban form, land use planning and land use management. This objective has been addressed in numerous sections of the study to indicate problems experienced on all levels of urban hierarchies (Sections 3.5, 5.2, 6.2.2, 6.2.5, 7.2.3, 7.3.3, 7.4.3 and 8.5). These problems include rapid population growth, industrialisation, urbanisation, urban sprawl, inner-city decline, environmental problems, pollution, traffic congestion, scarcity of space, gentrification, fragmented pockets of development, disparate urban areas, economic disadvantage, unequal access to education and lack of social mobility.

The urban form developed as a result of apartheid stands out as a disproportionate example of settlement social engineering (sub-section 6.2.5). Apartheid fabricated the most excessive urban areas of economic and racial exclusion in the world (sub-section 6.2.5.1). The spatial organisation of African cities is drastically influenced by the early established, and deep-seated, notion that urban areas were preserved for whites, which gave rise to the apartheid city model (refer Section 6.2.3, Figure 6-4). South African urban fabric has been buttressed by a national political-ideology driven economy that produced mechanisms actively conducive to the composition of a class-like system and institutionalised supremacy-dependency relationships of social organisation (refer to Davies, 1981). The apartheid city’s urban structure, with its racially unequal and exclusive residential segments and health, recreational and educational facilities, was intentionally designed to keep interracial contact to a minimum. Considering urban expansion, the apartheid urban structure was designed to direct future growth outwards from segregated segments and therefore preserving the pattern that gave way to the deeply rooted urban segregation that is still prevailing today. The settlements we know today are segregated and fragmented because of racially segregated suburbs, mono-functional land uses, buffer zones that separate suburbs, racially divided urban growth patterns and low density urban sprawl.

The urban form of the apartheid settlements typically shows concentric circles similar to the concentric zone model (sub-section 3.4.1), with centrally located white residential and commercial areas, coloured and Indian areas surrounding the city centre, with areas of open space and diverse topographies used as buffer zones and lastly, African residential areas on the outskirts. The ripple of the apartheid city stretches far, as there is no other place in the world where economic, racial, spatial and social structures are so deeply interwoven, with such deterministic
and unequal consequences for its residents (sub-section 6.2.5.1). The urban form of Rotterdam (refer to 7.2.1), which is a larger city with a dedicated port infrastructure, shows classic traits of the multiple nuclei model (refer to 3.4.3), with a number of areas of compact development. The city of Kolkata (refer to 7.3.1) as the main commercial, business and financial hub of eastern India, also requires the model of multiple nuclei (refer to 3.4.3) to strengthen multiple centres of growth as opposed to strengthening one city centre.

In addressing the matter of urban form, it is evident in the international case studies (Objective 5, Section 1.3) that Rotterdam pro-actively predicted problems relating to urban form (sub-section 7.2.4), problems relating to a rapid increase in population (5.2.1) urbanisation (5.2.3) and urban sprawl (5.2.4). Planning policies identified growth centres of “concentrated deconcentration” that consisted of six storeys or more. In contrast, Johannesburg has only recently started investigating regeneration projects (sub-section 7.4.1), though it has an urban form that is low-density, sprawling and polycentric, is still classified as inefficient, with divided urban areas, and is a sprawling city characterised by inequality. Great success is evident in the projects, e.g. the vertical city (sub-section 7.2.5.1), Hoogvliet (sub-section 7.2.5.2), post-industrial restructuring (sub-section 7.3.5.1), BIP (sub-section 7.3.5.2), corridors of freedom (sub-section 7.4.5.1) and inner-city regeneration (sub-section 7.4.5.2), from which various lessons can be learned. Studies have indicated that the spatial configuration in George has also been shaped by apartheid-based spatial planning. Considering Pacaltsdorp (sub-section 8.3), it has not developed to its full potential, as indispensable business opportunities and developments have been directed primarily towards George CBD and the developments occurring at the Garden Route Mall to the east of George (refer to Figure 8.7). The urban form of the urban settlements being studied is relevant, for the clear resemblance with the apartheid city is unmistakable. The corresponding implications of the urban form are ever-increasing and will not simply evaporate; drastic measures are required, in terms of regeneration, to create urban spaces that better integrate these urban settlements better.

The second component, theories of urban spaces, indicated in the first objective listed in Section 1.3, can be described in terms of the reciprocal action of economic activities (sub-section 3.2.2) against the sphere and service area of industries (sub-section 3.2). The theory of urban spaces and the linkage they form with economics are first illustrated metaphorically (Weber and Friedrich) as iron chains, as one is dependent on the other and every portion of production positions itself geographically while bearing consumption in mind (sub-sections 3.2.1 and 3.2.2). The economic system is then described as an interrelated phenomenon of different spheres. The spheres are made up of consumption, production and distribution. When doing an evaluation in the light of an economic system consisting of different spheres, practically all cities might be considered as different sizes of economic spheres. The area of George is no different. The pattern of
centralisation (refer 3.2.1) is not merely a human form of thinking, compiled and developed because of humanity demanding order; it prevails as a consequence of the immanent pattern of matter, as evident in George.

A centralistic order, the configuration of accretion developing from a nucleus that is a fundamental paragon of the order of groupings that belong together (sub-section 3.2), is clearly seen in the central area of George (sub-section 8.3). The distribution of inhabitants and the magnitude of agglomeration in the centre itself have a direct influence on the consumption of central goods. These effects of agglomeration, and the factors determining the range of central goods, spatially form a ring encircling the core of the goods, resulting in inner-city investment and development in the city area. George, which is regarded as a prominent central place, fulfils an unescapable role, not only within the municipal area, but also within the greater region (refer to Section 8.1).

Land use planning and land use management (refer to Sections 4.4 and 4.5), as the third and final component of the research, together with the existence of the physical, built environment, determine stressors of the urban environment (refer Section 5.2). However, with the correct initiatives and guidance, land use planning and land use management might just as well facilitate the enhancers (refer to Section 5.3) of the urban environment. The third objective (listed in sub-section 1.3) was to establish the stressors as well as enhancers of the urban environment based on a thorough literature review and the perusal of international case studies. One of the identified stressors occurs irrespective of land use planning and land use management; population growth (sub-section 5.2.1), however pressing the matter, is not a result of land use planning. It does, however, contribute to immense pressure on the planning and management of land use.

The management of land use (refer 4.5.3) is the most powerful tool that the planning practice possesses to reconstruct urban form. Sub-sections 7.2.5, 7.3.5 and 7.4.5 also indicated that the evolution of strategies and policies to address urban problems are associated with alterations of urban governance and political regimes. Notwithstanding the potential of this planning tool, it has been overlooked to a large degree in terms of legislative reform. Taking into consideration the power of the tool and particularly the implications of its correct management, the lack of legislative guidance is inexplicable. Without reform in the legislative sphere, it will be extremely difficult to use planning to promote urban integration and sustainability.

Legislative policies in Rotterdam (refer to sub-section 7.2.2) allow governmental bodies direct domination of the allocation of land and the distribution of diverse land use functions by means of pro-active land policy and zoning regulations. Moreover, it is found that the system of planning is moderately non-restrictive. Though contrasting sharply with land use planning (refer to Section 4.4) and land use management (refer to Section 4.5) in South Africa, this planning system will succeed under efficient guidance. In Kolkata, the state regulates the planning and management
of land use by an act of 1979 (refer to sub-section 7.3.2) that was promulgated at a time when the town planning profession was establishing itself. This was demonstrated in the emergence of professional societies, planning journals and pressure groups. It can be argued that a revision of their planning legislation might be beneficial. In South Africa (refer to Section 6.3), more specifically, spatial transformational planning law is what ultimately guides the planning and management of uses of land. In fact, national legislation initiated racial separation and the corresponding repression of the black African majority; it was legally introduced in 1948 following the National Party’s election victory (sub-section 6.2.1). In response to the early established, and deep-seated, notion that urban areas were preserved for whites (refer to Section 8.3), exacerbated by the struggle of black Africans to get by and to gain greater access to the benefits the cities had to offer, African people began to re-create the nature of urbanism in the rural settlements, giving rise to segregated settlements (refer to sub-section 5.2.5) (fourth objective as listed in Section 1.3).

The evaluation of the legislative framework (refer Section 6.3), starting at national level and later discussed at provincial and local level (refer Section 8.7), raised no particular concern. It is concluded that the problem does not lie with lack of legislative policies, but with the guidance they provide and their execution, as well as lack of innovative policies (as illustrated in the international case study, sub-section 7.2.5).

The effects of urban regeneration policies (sub-section 5.3.2) (fifth objective as listed in Section 1.3), discussed as one of the enhancers of the urban environment (refer Section 5.3), are evident in the case study analysis (sub-sections 7.2.4, 7.3.4, 7.4.4 and 8.6). A noteworthy finding is that urban regeneration policies move beyond the aspirations, achievements and aims of urban renewal, which is generally regarded as a process of principally urban development and physical change, urban regeneration’s foremost aim of urban rehabilitation. This connects directly with the multi-faceted nature of urban dynamics (Chapter 5). Therefore, when making recommendations (refer Section 9.3) on urban regeneration, the process of urban development and physical change is the principle that will be kept in mind throughout the recommendations.

9.3 RECOMMENDATIONS

“The competitive advantage of cities, and thus the most promising approach to attaining economic success, lies in enhancing diversity within the society, economic base, and the built environment” (Fainstein, 2005:4). According to this widely accepted argument, urban diversity is regarded as a vital resource for cities’ prosperity and a prospective catalyst for socio-economic advancement (Bodaar & Rath, 2005:3; Tasan-Kok & Vranken, 2008:159; Eraydin et al., 2010:526). As mentioned a number of times throughout the study, when considering urban
studies, the literature essentially links the benefits of urban diversity with the economic competitiveness of a city. Therefore, the recommendations of this study will borrow from Tsenkova's process of urban regeneration, illustrated in Figure 5-4. Four categories were identified, namely physical, economic, social and environmental, to encompass the results of a series of programmes for action and strategies for change (Tsenkova, 2002:1; Goksin & Muderrisoglu, 2005:7; Adair et al., 2009:12; Hassan, 2012:230; Czischke et al., 2015:6; and Alsubeh, 2017:129). These components were also highlighted as part of a three-legged stool illustrating more sustainable development, with the exception of the physical component (refer to Figure 4-1, section 4.3). The recommendations, also grouped into these four categories, will be linked to concepts that have been discussed throughout this study. The primary outcome for urban regeneration of Pacaltsdorp–George is the creation spaces that are competitive, liveable, fiscally sound and spatially inclusive. The process of urban development and physical change is the principle that will be followed.

9.3.1 Physical category

The physical category comprises recommendations that will result in a change of the physical urban fabric, i.e. rebuilding the city centre, the improvement of housing and policies concerning public transportation. This sub-section of the physical category is threefold and discussed by referring to (1) amendment of local legislation and development guidelines; (2) government initiatives; and (3) a proposed transportation system. Proposals emanate from knowledge gained in the case-study analysis (refer to sub-sections 7.2.5, 7.3.5 and 7.4.5)

9.3.1.1 Amendment of local legislation and development guidelines

The first and foremost proposal is an amendment of the PLSDF. The most powerful tool that the planning practice possesses to reconstruct urban form is land use management. Notwithstanding the potential of this planning tool, it has largely been overlooked in terms of legislative reform (as discussed in Sections 4.5 and 9.2).

Architectural guidelines for the CBD area of Pacaltsdorp, to be designed by a professional team, should be included in the development framework and all developments to occur in the CBD should adhere strictly to these guidelines. The architectural guidelines are proposed simply to serve as an integrating tool to coordinate how proposals for development will affect the greater area physically, with the primary focus on the public realm: the spaces for public use, the designs of buildings and streets, sidewalks and public open spaces.

Development parameters are to be included in precinct plans and the LSDF, specifically for the Pacaltsdorp CBD area, to offer incentives for increased densities and mixed land use
developments. Figure 9-1 illustrates a typical architectural guideline for the regeneration of a CBD area.

![Figure 9-1: An architectural guideline for CBD regeneration](image)

**Source:** Wheaton CBD Design Guidelines, 2012:8

By amending the local legislation and development guidelines, concepts of urban morphology, land use management, integration, economic drivers and regeneration could be triggered to deliver a desired urban settlement.

### 9.3.1.2 Government initiatives

As discussed in the preceding section, the proposal for Pacaltsdorp CBD consists of a corridor development consisting of infill development of high-density mixed land use in a compact urban form that is well-serviced by public transportation routes.

Inclusionary housing, more often referred to as mixed-income housing, is a well-known term throughout South Africa. The foundation is a housing programme that is usually government-driven, which promotes mixed-income housing delivery through initiatives or programmes to encourage property developers to include a portion of housing units for low- and moderate-income households. Different types of government initiatives (WCGIHP, 2009:9) that might be offered could include:
• Reductions or waivers of rezoning (and other land use applications) and building plans for developments located in the CBD area and for projects that enhance the appearance of the regeneration project, as identified in the amended LSDF and the architectural guidelines (sub-section 9.3.1.1);
• Fast-tracking the approval of inclusionary projects to be developed on identified land;
• Fiscal benefits, such as the possibility of a tax-credit scheme;
• The provision of either linked or bulk infrastructure, or reductions or waivers in respect of developers’ bulk service contributions;
• Enhanced use rights and development on private land; and
• Fast-tracking the approval of projects that are inclusionary or that promote mixed and compact land uses.

The proposal for the regeneration of the Pacaltsdorp CBD is firstly a corridor-driven development that primarily aims to increase accessibility between Pacaltsdorp and George CBD. Secondly, it seeks to provide well-serviced public transportation routes between the two identified nodes of interest, and lastly to intensify land use around the corridor through high-density mixed land use in a compact urban form. The regeneration of George CBD is illustrated in Figure 9-2. Two metropolitan sub-centres have been indicated together with Pacaltsdorp CBD and George CBD. Discussions of these sub-centres have been limited throughout the study, for they are not relevant to the study. It should be noted, however, that a proposed increase of density is not directed at the eastern node located at the Garden Route Mall and the Kraaibosch development, since it is proposed that development be redirected to the focus area of Pacaltsdorp CBD, the existing George CBD and the Blanco area (the node indicated towards the west).
The primary concept for the regeneration of Pacaltsdorp CBD is the principle of regeneration. The proposal demands strategies of integration, mixed housing strategies, corridor development, compactness and mixed land use. The success or failure of the proposal will rest upon the level of implementation of the policy and adherence to it, governmental and legislative guidance, and ultimately, on the management of the land uses.

9.3.1.3 An integrated transportation system

Transport systems have shown great success in overcoming segregated cities, especially in the Johannesburg case study (refer Section 7.4). Therefore, an integrated transport system is proposed to integrate segregated urban communities better, to offer lower transportation costs and to save commuting time. The proposal is to make use of the already functioning George Integrated Public Transportation Network (GIPTN), the Go George buses, but to streamline identified routes throughout George. The proposal is to dedicate a lane on the road network to
buses only. Having a dedicated bus lane would save immeasurable frustration, for vehicular movement will not be impaired by bus stops in primary road networks. The bus routes will also be fast-tracked because the buses will not be forced to wait for cars before departing after a stop. The proposal is phased as illustrated in Figure 9-3.

![Figure 9-3: Phased transportation development plan](image)

**Source:** Own creation

The commencement of successive phases depends on the success of the previous phase. Subsequent phases should be altered based upon lessons learnt from the previous phase. Concurrently, the possibility of restricting the use of cars in the CBD should be explored, as it will result in streamlining the bus lanes and supporting the transportation system, since inhabitants will be more likely to make use of the GIPTN, optimising the reduction of the number of cars on the road.

### 9.3.2 Economic category

This category comprises new economic opportunities offered by economic diversification. The proposed principle is corridor development (as discussed in sub-section 4.5.3.4) along Beach Drive and York Street. This strategy goes together with the regeneration of the Pacaltsdorp CBD
(refer to sub-section 9.3.1.2). However, the focus area is rather the CBD of Pacaltsdorp. More specifically, the idea of an economic corridor is pursued because economic corridors connect economic forces along delineated geographical areas. These corridors are usually situated in urban landscapes where large numbers of economic actors and huge resources are concentrated, and they provide a connection between economic nodes (Brunner, 2013:1). The George CBD and the Pacaltsdorp CBD will thus constitute the two economic nodes that are connected by York Street and Beach Drive.

### 9.3.2.1 Amendment of local legislation and development guidelines

An amendment of the PLSDF and precinct plans, as discussed in the physical category’s sub-section 9.3.1.1, correlates directly with the economic category. By altering the physical environment of the settlement, economic initiatives can be established to offer increased opportunities to local residents, decrease commuting distances from the living to the working environment and to offer a settlement that comprises mixed land use.

![Proposed land use zoning for Pacaltsdorp](image)

**Figure 9-4: Proposed land use zoning for Pacaltsdorp**

*Source: Own creation*
Development guidelines, proposed to be subject to the amended local legislation and supported by the proposed architectural guidelines, will direct the development of an envisioned economic node with desirable structures and development parameters. An influx of economic activity is foreseen to contribute to more desirable living conditions. As a result, the area will become more attractive to potential inhabitants and thus stimulate a co-dependent growth model.

**9.3.2.2 Government initiatives**

The government can support the proposed economic development by implementing initiatives such as access to credit, subsidies, decreased public expenditure and lower interest rate charges. The government can offer assurance of the efficiency of institutions, productivity and promotion of investment in the real economy. “The government is a catalytic agency and managers respond to the incentives and disincentives the government establishes” (Griffins, 2008:6). The government can also offer investment to help stimulate economic growth in the area, as the more developed area will offer considerably higher contributions from rates and taxes than the current under-developed, high-potential area.

The concepts supported by the economic category of urban regeneration for the Pacaltsdorp area are improved accessibility, increased integration so as ultimately to break away from the apartheid spatial legacy and a compact urban development comprising mixed land use along the economic corridor. A more compact urban form will increase access to public spaces and facilities and it also aligns with the NDP goal indicated under sub-section 9.3.3. When considering urban morphology, the principles of the sector model prevails, with two CBDs that are linked by increased intensification economic corridor development of mixed use. The five principles of SPLUMA (refer to sub-section 4.5.3.5) and the IUDF (refer to sub-section 6.3.2) should form an integral part of the development of the economic function of Pacaltsdorp.

Government initiatives include (1) the Industrial Development Corporation (IDC) is responsible for business development activities such as marketing products, identifying investment opportunities and managing relationships with stakeholders and clients. The IDC provides financial support through commercial debt, equity, export finance, wholesale finance and guarantees. (2) National Treasury is responsible for managing South Africa's national government finances and supporting efficient and sustainable public financial management. It is National Treasury’s responsibility to ensure accountability, transparency and sound financial controls in the management of public finances. (3) the Department of Trade and Industry’s strategic objectives are to facilitate transformation of the economy to promote industrial development, investment, competitiveness and employment creation.
9.3.3 Social category

The foremost strategy of the social category is to create public spaces that have basic amenities and good lighting, that are safe, inclusive, attractive and well-maintained.

“A good public space is like a good party, you stay longer than you intended to.”

~ Jan Gehl

Designing places for people is, after all, one of the most important aspects of urban planning. A quality built environment is one that is diverse, legible, unique and varied. Legible built environments are characterised by landmarks such as navigable street networks, landscaping, notable buildings and well-defined public spaces. “The quality of a public space can define the liveability of a place” (WCPSDF, 2014:22). Figure 9-5 is an illustration of two incentives for public space that are affordable and do not require consistent capital investment in terms of upkeep.

![Figure 9-5: Incentives for permanent public spaces](Source: Efroymson et al., 2009:72)

Incentives like these two illustrations are straightforward public amenities that do not require considerable capital for construction or upkeep. Amenities like these will provide facilities for the public to integrate communities better and support a sociable environment by integrating the inhabitants.
9.3.3.1 Amendment of local legislation and development guidelines

The NDP makes the following noteworthy recommendation (2015:18): “Promote mixed housing strategies and more compact urban development to help people access public spaces and facilities, government agencies, and work and business opportunities.”

The proposal for the amended LSDF and precinct plan should adhere to all categories of the process of urban regeneration, as illustrated in Figure 5-4. One of the deficiencies of the existing LSDF is lack of planning for public spaces (as discussed in 8.7.2), therefore the proposal for the amended LSDF and precinct plan is not only to include, but to prioritise, ample planning guidance for the development of high-quality urban spaces. Local legislation is required to ensure consistent decision-making relating to the development of urban spaces and to ensure the sustainability of the places that are being created.

9.3.3.2 Government initiatives

Initiatives might be offered in the form of community workshops with community partners and residents to create design solutions and prioritise needs. An initiative that might not be directly related to public spaces is to increase community safety. If this is done, inhabitants will feel at ease to make use of public spaces, which will strengthen the sense of community belonging and social cohesion.

Short-term improvement projects can be initiated and guided by the government and thus be tested and refined over a number of years. Social development might be facilitated by grants offered by the Department of Social Development, which will make provision for an inspectorate of social development.

Government initiatives for Pacaltsdorp include; (1) The Value-Based Life-Skills Programme is a community project of the Youth Development Office of George Municipality. A team of peer educators facilitate a programme of life orientation classes ranging from Grade 8 to Grade 12. The content of the life-skills development varies depending on the developmental stage of the learner, with the primary focus on careers and academics. (2) The reading project is a reading programme of the Youth Development Office of George Municipality. The aim of the project is to eradicate illiteracy among the youth in Pacaltsdorp. (3) The art skills programme was a once-off programme that focused on the artistic development of the youth. Together with a familiar artist, Anthony Noble, peer educators from the Youth Development Office hosted a successful art programme for the students of the adult basic education and training school, Pacaltsdorp.
9.3.4 Environmental category

Pacaltsdorp's long-term phasing plan, indicated in Figure 8-14, shows the area of Pacaltsdorp together with the urban edge, stretching up to the southern edge of the northernmost Phase 1 delineation. As mentioned in sub-section 8.8, one of the provincial guiding principles states that “land development should be spatially compact … and should not involve the conversion of high-potential agricultural land or compromise ecosystems” (WCPSDF, 2014:22). Therefore, the question arises, how can Pacaltsdorp’s spatial principle (PLSDF, 2015:1) of densification be achieved if approximately 3 720 hectares of developable land is being offered over the long term? Certainly, available land for future development should be considered. However, 3 720 hectares of land is undoubtedly an overkill when considering George’s current growth rate. In addition, the availability of the land, even over the long term, works directly against the principle of increased densification. Figure 8-4 illustrates the Pacaltsdorp area with the amended southern and western delineations of the urban edge, indicated by the dashed yellow line, together with a proposed area for biodiversity conservation, indicated in green, adjacent to the Skaapkop River. The exact extent thereof is subject to an in-depth environmental impact assessment study.

Figure 9-6: Proposed amended urban edge for Pacaltsdorp

Source: Own creation adapted from GMSDF, 2018:27
The amended urban edge will direct development towards the city centre and offer limited developable space, as opposed to an array of available land. This will ensure increased densities, as no development will be allowed outside the urban edge.

9.3.4.1 Amendment of local legislation and development guidelines

It is proposed that the urban edge be amended to limit developable space, to increase densification and to strengthen the mixed land use strategy. In terms of availability of land for future development, a condition can be imposed in the proposed amended LSDF (see sub-section 9.3.1.1) that only once 85% of the developable space inside the urban edge has been developed, the delineation of the urban edge might be considered to include more developable land. This number is a mere indication. The exact percentage of developable space that must be used is to be determined by a specialist.

9.3.4.2 Government initiatives

The challenges identified through the course of the study: rapid population growth, industrialisation, urbanisation, urban sprawl, pollution, traffic congestion, scarcity of space, gentrification, fragmented pockets of development, disparate urban areas and economic disadvantage (Sections 3.5, 5.2, 6.2.2, 6.2.5, 7.2.3, 7.3.3, 7.4.3 and 8.5), illustrate ever-expanding pressure on the environment.

Initiatives might be provided in the form of guidance, tools and indicators that promote sustainable and healthy environments. Practitioners, decision-makers and experts can collaborate across sectors to optimise the urban environment through policy, research, advocacy and capacity building.

9.4 CONCLUSION

This study aimed to evaluate urban form, while considering it as a result of locale decisions of firms, thousands of households and public-sector agencies in free-market economies. Evidence showed that the urban form of a majority of South African cities reflects segregation patterns, which was the most serious problem discussed throughout this study. Urban segregation evolved as a natural response to high levels of social allotment generated by supremacy-dependent relationships that came into being from ethnic and cultural pluralism and different degrees of technological development, as well as class-forming mechanisms in the political economy. Both voluntary and imposed residential segregation were present in the spatial formulation of South African cities, known as apartheid urban form. However, distinct types of urban segregation prevail, depending on the urban context: ethnic or racial segregation and differences in income.
classes. The active relationship between social exclusion and income classification has created a continual downward spiral: *segregation promoting exclusion and exclusion promoting segregation*.

The problem at hand is an ever-increasing concern and will remain unsolved until definite intervening measures are taken. Consequently, a series of proposals for policies and regeneration projects were discussed for the study area. These were based upon principles established during a case study analysis of urban areas of different status. The comprehensive proposal for this is illustrated in Figure 9-7 below.

![Figure 9-7: Comprehensive urban regeneration proposal](image)

**Source: Own creation**

The necessity of adequate policy guidance and a legislative framework is discussed throughout this study. It is found that a step in the right direction cannot be made without governmental guidance.
9.5 LIMITATIONS OF RESEARCH

The acknowledgement of limitations affecting study is of importance. These are summarised below.

- A limited amount of research has been conducted on South African settlements, urban form, ethnic distributions and policy guidance. The available data on population distribution, which is integral to the determination of the level of segregation, such as the 2011 census, can be considered outdated. Some more recent population data is available; however, the available data is insufficient and does not include the ethnic population data required for the study. Thus, resolution had to be found in the 2011 census data.
- An in-depth study on the socio-economic analysis would have been preferred. However, such a study could not be conducted owing to lack of data and available research. Gathering such data did not form part of the scope of the research either.
- The inclusion of a statistical analysis would have been preferred. However, as listed, the available data is limited and therefore the data inputs would have had to be collected personally. A statistical data analysis, however, was not included in the objectives of this study. It might be considered to extend the study in areas of future research.

9.6 AREAS OF FUTURE RESEARCH

In terms of extending the research on segregated urban areas in future research, the following is recommended:

- Conducting research on the area of Thembalethu and proposing integration and regeneration strategies for the area of Thembalethu, which contains large population groups per area, as well as the highest percentage of inhabitants per residential area in the whole of George;
- Testing the practical implementation of integration and regeneration strategies and conducting research based upon the findings;
- Exploring the vitality and necessity of planning processes and assessing the level of influence that they might exert on vulnerable population groups; and
- Expanding the research to other providences to test levels of segregation, measure integration and evaluate regeneration policies.
This research serves as a step towards acquiring better understanding of the implications of segregated urban settlements. The results presented are not exhaustive, as the primary research occurred only in the George municipal area, and it is hoped that the research fraternity will continue to explore this important theme, especially in South African cities.
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