

Spatial planning perspectives on sustainable community development: an analysis of informal settlements intervention in the Gauteng City Region

TC Taruza

 orcid.org/0000-0002-7491-9066

Thesis accepted in fulfilment of the requirements for the degree *Doctor of Philosophy in Science with Urban and Regional Planning* at the North-West University

Promoter: Prof JE Drewes

Graduation May 2023

25654586

DECLARATION

I, Takudzwa Charisse Taruza, declare that this study: **Spatial planning perspectives on sustainable community development: an analysis of informal settlements intervention in the Gauteng City Region**, is my own unaided work and it has not been submitted before for any degree or examination at any university by me or any other person. This dissertation is submitted in fulfilment of the requirements for the degree Doctor of Philosophy in Science with Urban and Regional Planning at the North-West University, Potchefstroom campus, in the Republic of South Africa. All sources used or quoted in this dissertation have been duly cited and acknowledged by means of complete references.

DEDICATION

TO THE GLORY OF (MY) ABBA BABA...

*He did not waver at the promise of God through unbelief, but was strengthened in faith, **giving glory to God, and being fully convinced that what He had promised He was also able to perform (Romans 4 vs 20-21).***

...AND TO PROF CAREL (CALIE) B. SCHOEMAN [1949-2021]

May we reflect the excellence of the greats that trained us, they that have joined the cloud of witness and continue to cheer us on (TCT)

ACKNOWLEDGEMENTS

Ruach HaMashiach, the Spirit of Revelation, the Spirit of Knowledge and the Spirit of Truth. Thank you, my best friend. Thank you for all the talks, for the laughs; thank you for keeping me sane and for whispering words of advice. Thank you for taking me through a journey that helped me to understand the concept of RESILIENCE.

Anne Taruza, my first, favourite and strictest teacher! Thank you, Mama, for instilling and nurturing the passion to read, write and learn. Archibald Amos Taruza, you sought quality education for me till the (your) end. Thank you both for your sacrifices. Here's hoping that you are both watching and smiling, together with the rest of the cloud of witnesses.

Mbuya Mushambi and Maiguru Joe - my anchors, my pillars, my heroines. May you enjoy the fruits of your hard labour and support.

Prof Drewes, I am awed by your patience, gentleness, support, guidance and dedication. Thank you for taking me on and making sure that I get to the end of this journey. Thank you for always coming through.

Prof Ilse Schoeman, your smiles and laughter always brightened an otherwise dull day. Thank you for guidance, support and encouragement.

To the community representatives from the informal settlements under study and the key informants, may this be the beginning of sustainable community development. Thank you for making time to share your knowledge.

Hanneke Pretorius and Dr (Oom) Stephan Pretorius, "for you were chosen for such a time as this". Thank you for the being the Lord's vessels.

Nkateko Ndobe, Thabiso Katiba, Mari van der Westhuizen, how many versions of the same story did you have to listen to? Thank you for all your patience as you responded to the questions about everything and anything, especially on life within South Africa's townships. Thank you for your unwavering support. Thank you for keeping me sane.

Karel van Rooyen, Rene Maasz, Pieter Pretorius, Pieter Burgers, Prof Soya, and Sankie Monyane; thank you for your help with aspects of this study.

My family at AGES, we made it!

Dr Fortune Mangara, my brother and my loudest cheerleader - I am forever grateful for the comradery through 12 years of studying together!

Dr Chizema, my comrade-in-arms. Fatigue, fun, favour - well, here we are!

Louisa, nothing exceeds having someone believe in you.

Majory Dzingai, Queen Marekerah, Yvonne Ngorima, Sis Nancy Kawai, Samuel Magumura, Mr Mudzingwa, and Uncle Ngoni: thank you for holding my hand and walking this journey with me.

Mufundisi Gona, Mwari vakuitirei zvakanaka!

Vaughan McTaggart, Piet Barnard, David Moremo, Mike Makwela, Ezekiel Ntakirutimana, Stephan Potgieter, Oom Fred Calitz, Annelien Basson, Werner Fourie, Dr Matiza, Hisham Fidlalah and Raffael Beier; thank you for indulging my passion and making time to discuss anything and everything relating to this study.

Bernedito Murambire every moment you checked on me left me at the verge of tears. Muito obrigada!

Mr Gibson Chisango, Mr Gombiro, Ruth, John, Vernetia and everyone at the Task Force, you are the stars of this story.

Chiedza Machaka, Tsitsi Chimhashu, Sandra Makumbirofa, Lorraine Rupande and Tinotenda Majayaya, your level of support is outstanding.

To the Majayaya, Madimbu, Mushayabasa and Gona families, thank you for adopting me as one of your own. Mum Madzokere and Mum Makina – I still hear your cheers and prayers.

(Chi)Shamiso Ruth Majayaya, you are a marvel. Thank you for always coming through.

My chirpy nieces and nephews, you are my rays of sunshine. Always and forever!

Chido, Tashinga, Cyril, Isheanesu and Chiratidzo, I do not doubt that you were created with me in mind. Experiencing your conditional love and support has been one of life's greatest privileges. You too are stars in this story.

Sis Orly, we held onto this dream, and this is what dreams are made of.

Sis Manda and Bamkuru Willard, this journey started and ended with you. Thank you for carrying me through all the way. Honestly, words do fail me.

To the family and friends I may not have mentioned, may all your kindness, love and support be rewarded.

ABSTRACT

Informal settlements are a major planning challenge and have become a central policy issue in democratic South Africa. In spite of the various local, provincial, national and international initiatives to promote the creation of sustainable human settlements; informal settlements continue to exist as spatially marginalised societies characterised by poverty, unemployment, gender and social inequality as well as vulnerability to external shocks and disaster risks.

This study is based on the argument that, in practice, intervention is mainly directed at achieving set quantitative targets and goals rather than improving the lives of the inhabitants. The case of the Gauteng City Region provides the basis of assessing whether spatial planning promotes sustainable community development in informal settlement intervention. The study also seeks to understand if there are different perspectives to spatial planning within the different municipalities and if these influence informal settlement interventions.

In this regard, this study employs a pragmatic research paradigm, guided by a mixed approach of quantitative and qualitative methodological approach. This entails literature review on the key concepts guiding this study, desktop research, an investigation of local and international case studies in Alexandria in Egypt and Casablanca in Morocco, examination of policies and legislation in South Africa as well as spatial modelling, simulation, mapping and visualisation using Geographic Information Systems (GIS).

A Sustainable Community Index (SCI) is formulated to measure the sustainability informal settlements within the Rand West City Local Municipality (RWCLM) and Ekurhuleni Metropolitan Municipality (EMM). Each of the municipalities is represented by an informal settlement identified for in-situ upgrading and another one identified for relocation. The SCI scores reveal that none of the four informal settlements under study are sustainable. This means that the intervention measures to address informal settlements, in-situ upgrading or relocation, do not promote sustainable community development (SCD). It is also evident that municipal categories do not determine the sustainability of an informal settlement.

Therefore, this study proffers a Sustainable Informal Settlement Intervention Matrix to ensure SCD in addressing informal settlements. The matrix addresses key issues pertaining to housing and the built environment, the economy, the environment, equity and social capital, social and cultural as well as governance aspects of a community. This can be addressed through policies and legislation amendments or in practice at settlement, local, provincial, national or international level.

Key terms

Spatial planning, sustainable community development, Sustainable Community Index (SCI), informal settlement intervention, resilience, upgrading of informal settlements

OPSOMMING

Informele nedersettings is 'n oorweldigende beplanningsuitdaging en het 'n sentrale beleidsprobleem geword in 'n demokratiese Suid-Afrika. Ten spyte van die verskillende plaaslike, provinsiale, nasionale en internasionale inisiatiewe om die daarstel van volhoubare menslike nedersettings te vestig, is die harde werklikheid dat informele nedersettings aanhou bestaan as ruimtelike gemarginaliseerde samelewings wat gekenmerk word deur armoede, werkloosheid, geslags- en sosiale ongelykheid wat ook gekenmerk word deur armoede, werkloosheid, geslag en sosiale ongelykheid sowel as blootgestelde samelewings wat blootgestel is aan eksterne skokke en rampskokke.

Hierdie studie is gebaseer op die argument dat, in die praktyk, enige pogings tot hulp meestal daarop gerig is om kwantitatiewe teikens en doelwitte te haal eerder as om die lewens van die inwoners te verbeter. Die geval van die Gautengse stedelike streek verskaf die basis waarop 'n assessering gedoen kan word of die ruimtelike beplanning volhoubare vordering moontlik maak in intervensies in informele woongebiede. Die studie is ook daarop gemik om te probeer verstaan of daar verskillende perspektiewe onderliggend aan ruimtelike beplanning is in verskillende munisipaliteite en of hierdie perspektiewe informele vestings beïnvloed.

In hierdie opsig word 'n pragmatiese navorsingsprogramparadigma gebruik wat gerig word deur 'n gemengde benadering wat kwantitatiewe en kwalitatiewe metodologiese benaderings behels. Dit behels 'n literatuuroorsig oor die sleutelkonsepte wat hierdie navorsing rig, lessenaarnavorsing, 'n ondersoek na plaaslike en internasionale gevallestudies in Alexandrië in Egipte en Casablanca in Marokko - , ondersoek van beleide en wetgewing in Suid-Afrika sowel as ruimtelike modellering, simulاسie van beleide en wetgewing in Suid-Afrika sowel as ruimtelike modellering, simulاسie, kartering en visualisering deur die gebruik van Geografiese Inligtingstelsels (GIS).

'n Volhoubare Gemeenskapsindeks (Sustainable Community Index (SCI)) is geformuleer om die volhoubaarheid binne die Rand West City Local Municipality (RWCLM) en Ekurhuleni Metropolitaanse Munisipaliteit (EMM). Elk van die munisipaliteite is verteenwoordig deur 'n informele vestiging was uitgewys is vir doeleindes van *in-situ* opgradering en nog een vir verskuiwing. Die SCI tellings toon aan dat geeneen van die vier informele woongebiede wat bestudeer is volhoubaar is nie. Dit beteken dat die intervensie strategieë wat gebruik word om informele woongebiede op te hef nie daarin slaag om volhoubare gemeenskapsontwikkeling te bewerkstellig nie. Dit blyk ook duidelik dat munisipale kategorieë nie die volhoubaarheid kan bepaal van die informele nedersetting nie.

Hierdie studie poog dus om 'n Volhoubare Informele Vestigingsintredematrys te skep om informele vestigings aan te spreek. Die matrys spreek ook die sleutelaangeleenthede aan met betrekking tot behuising en die verboude omgewing, die ekonomie, die omgewing, ekwiteit, en sosiale kapitaal sowel as die regeringsaspekte van 'n omgewing. Dit kan aangespreek word deur beleide en wetgewingsamendemente van 'n gemeenskap, maar in praktiese terme op die vlak van die woonarea, en plaaslik, nasionale en internasionale vlakke.

Sleuteltermes

Ruimtelike beplanning, volhoubare gemeenskapsontwikkeling, Volhoubare Gemeenskapsindeks (VGI), informele vestigingsintervensie, volhoubaarheid van informele vestigings.

TABLE OF CONTENTS

DECLARATION	I
DEDICATION	II
ACKNOWLEDGEMENTS	III
ABSTRACT	V
OPSOMMING	VII
LIST OF TABLES	XIX
LIST OF FIGURES.....	XXI
ABBREVIATIONS AND ACRONYMS	XXV
GLOSSARY	XXIX
CHAPTER 1 INTRODUCTION TO STUDY	1
1.1 Introduction	1
1.2 Delineation of the GCR.....	2
1.3 Problem statement and substantiation.....	3
1.4 Research questions.....	4
1.5 Aims	5
1.6 Objectives	5
1.8 Structure of the study	5

1.9	Conclusion.....	8
CHAPTER 2	RESEARCH METHODOLOGY	10
2.1	Introduction	10
2.2	Research aims and context	11
2.2.1	Applied research.....	11
2.2.2	Theoretical research.....	11
2.3	Research purpose	11
2.3.1	Formative research.....	12
2.3.2	Evaluative research	12
2.4	Research paradigm	12
2.5	Research approach	13
2.6	Research design.....	16
2.6.1	Meta research.....	17
2.6.2	Case studies.....	18
2.6.3	Intervention research.....	19
2.6.4	Evaluation research.....	20
2.6.5	Modelling, simulation, mapping and visualisation.....	21
2.8	Conclusion.....	22
CHAPTER 3	SPATIAL PLANNING WITHIN A CITY REGION.....	26
3.1	Introduction	26
3.2	Spatial planning: definitions and perspectives	28
3.2.1	Planning within physical space	28

3.2.2	Spatial planning as a policy making tool	29
3.2.3	The coordinative function of spatial planning	30
3.3	Understanding the concept of a city region	32
3.3.1	Definitions and interpretation of the city region concept	32
3.3.2	The dynamism of city regions	33
3.4	Regional economic development and growth theories	34
3.4.1	Cumulative Causation Theory.....	35
3.4.2	Growth Pole Theory.....	37
3.4.3	Urban Bias Theory.....	38
3.4.4	Central Place Theory	40
3.5	Location and land use theories and models.....	43
3.5.1	Bid Rent Theory.....	43
3.5.2	Concentric Zone Model.....	45
3.5.3	Sector Model	46
3.5.4	Multiple Nuclei Model.....	48
3.6	Urban form	50
3.6.1	Understanding the urban form	50
3.6.2	Fragmented urban form	53
3.6.3	Sustainable urban form.....	56
3.7	Sustainable urban form models	58
3.7.1	Neotraditional Development.....	60
3.7.2	Urban containment	61

3.7.3	The Eco-City.....	62
3.7.4	Compact City.....	63
3.7.5	Sustainable Urban Form Matrix	66
3.8	Conclusion.....	68
 CHAPTER 4 SUSTAINABILITY AND RESILIENCE IN COMMUNITY DEVELOPMENT: INSIGHTS AND PERSPECTIVES.....		
		71
4.1	Introduction	71
4.2	Sustainable Community Development.....	73
4.2.1	Conceptualising SCD.....	73
4.2.2	Functional elements of SCD	78
4.3	Approaches towards SCD.....	85
4.3.1	Asset Based Community Development.....	85
4.3.2	Sustainable Livelihoods Approach	89
4.3.3	Corporate Social Responsibility	93
4.4	Resilience.....	96
4.4.1	Defining resilience	96
4.4.2	Measuring community resilience.....	99
4.5	Resilience and sustainability in community development	103
4.6	Conclusion.....	105
 CHAPTER 5 THEORETICAL PERSPECTIVES ON INFORMAL SETTLEMENTS		
		108
5.1	Introduction	108
5.2	Low-income housing.....	109

5.3	Low-income housing systems.....	110
5.3.1	State provision.....	110
5.3.2	Private sector provision	112
5.3.3	Public-Private Partnerships.....	113
5.4	Defining informal settlements	114
5.5	Life within informal settlements	116
5.5.1	Slums of despair.....	116
5.5.2	Slums of hope.....	119
5.6	Theories for addressing informal settlements	121
5.6.1	Maslow's hierarchy of needs.....	121
5.6.2	The right to the city	123
5.7	Intervention in informal settlements	126
5.7.1	Informal settlement upgrading	128
5.8	Conclusion.....	130
CHAPTER 6	INTERNATIONAL PERSPECTIVE ON ADDRESSING INFORMAL SETTLEMENTS	134
6.1	Introduction	134
6.2	Selection of the case studies.....	135
6.3	Addressing Ashwa'iyyat in Egypt	137
6.3.1	Background	137
6.3.2	Informal settlement intervention: Concept and intervention.....	137
6.3.3	The case of Alexandria.....	141

6.4	Intervention in Bidonvilles of Morocco	143
6.4.1	Background	143
6.4.2	Informal settlement intervention: Concept and intervention.....	144
6.4.3	The case of Casablanca	145
6.5	Conclusion	148
 CHAPTER 7 PLANNING TOOLS FOR SUSTAINABLE SPATIAL PLANNING AND COMMUNITY DEVELOPMENT IN THE FORMALISATION OF INFORMAL SETTLEMENTS IN SOUTH AFRICA		
		150
7.1	Introduction	150
7.2.1	Sustainable Development Goals.....	152
7.2.2	New Urban Agenda	152
7.3	Constitution of the Republic of South Africa 1996.....	152
7.3.1	Access to adequate housing as a basic human right	153
7.3.2	Intergovernmental intervention	153
7.3.3	Community participation	154
7.4	National Development Planning	154
7.4.1	National Development Plan 2030.....	154
7.4.2	Medium Term Strategic Framework.....	155
7.5	Spatial Planning and Land Use Management	157
7.5.1	Spatial Planning and Land Use Management Act (SPLUMA)	157
7.5.2	Spatial Development Frameworks (SDFs)	161
7.5.3	Integrated Urban Development Framework (2016)	164
7.6	Human Settlement Development	166

7.6.1	Housing Act 107 of 1997	166
7.6.2	Prevention of Illegal Eviction from Unlawful Occupation of Land (PIE) Act of 1998	168
7.6.3	Housing Development Agency Act 23 of 2008	169
7.6.4	Breaking New Ground: A Comprehensive Plan for the Development of Sustainable Human Settlements (2004).....	169
7.6.5	National Housing Code (2009).....	171
7.6.6	Upgrading of Informal Settlement Programme (UISP)	172
7.6.7	National Upgrading Support Programme (NUSP)	174
7.6.8	Priority Human Settlement Programme.....	176
7.6.9	Built Environment Performance Plans	177
7.6.10	Housing Chapter of an IDP (Housing Sector Plan)	179
7.7	Governance.....	179
7.7.1	Intergovernmental Relations Framework Act 13 of 2005.....	179
7.7.2	Local Government: Municipal Structures Act (117 of 1998)	180
7.7.3	Local Government: Municipal Systems Act 32 of 2000	180
7.7.4	Integrated Development Plans.....	182
7.8	Supporting policies and legislation	185
7.9	Conclusion.....	187
CHAPTER 8	INFORMAL SETTLEMENT INTERVENTION WITHIN THE GAUTENG CITY REGION	189
8.1	Introduction	189
8.2	Case study selection.....	190

8.3	National government.....	191
8.4	Gauteng Province.....	192
8.4.1	Background	192
8.4.2	Informal Settlement intervention	192
8.5	Ekurhuleni Metropolitan Municipality	193
8.5.1	Municipal Background	193
8.5.2	Informal settlements intervention	195
8.5.3	Kaalfontein Station informal settlement.....	198
8.5.4	Vlakfontein Portion 36 Informal Settlement.....	203
8.6	Rand West City Local Municipality.....	207
8.6.1	Municipal Background	207
8.6.2	Informal settlement intervention.....	208
8.6.3	Zenzele informal settlement.....	210
8.6.4	Jabulani informal settlement	216
8.7	Conclusion.....	221
 CHAPTER 9 ANALYSIS OF SUSTAINABLE COMMUNITY DEVELOPMENT IN ADDRESSING INFORMAL SETTLEMENTS IN THE GCR.....		
		223
9.1	Introduction	223
9.2	Tool for measuring SCD in informal settlement intervention.....	224
9.2.1	Formulating the Sustainable Community Index.....	225
9.2.2	Principles of the Analytical Hierarchy Process (AHP).....	226
9.2.3	Identification of indicators for SCD.....	227

9.2.4	Assigning values to the SCI components.....	235
9.2.5	Calculating SCI.....	240
9.3	Interpretation of the results	241
9.3.1	Sustainability and municipal categories	242
9.3.2	Sustainability and informal settlement category	242
9.4	Conclusion.....	243
CHAPTER 10 SYNTHESIS AND RECOMMENDATIONS.....		246
10.1	Introduction	246
10.2	Synthesis	247
10.2.1	Aims, objectives and research questions	247
10.2.2	Objective 1: Understanding key concepts.....	249
10.2.3	Objective 2: Approaches towards informal settlement intervention	251
10.2.4	Objective 3: International case studies	253
10.2.5	Objective 4: Policies, legislation and strategies.....	254
10.2.6	Objective 5: Tool for measuring sustainability	259
10.2.7	Objective 6: Sustainable Informal Settlements Intervention Matrix.....	259
10.2.8	Synthesis of research objectives	259
10.3	Recommendations.....	260
10.3.1	SCI tool and informal settlements databases	260
10.3.2	SCD based on capitals, vulnerabilities and hazards	261
10.3.3	Housing and the built environment.....	262
10.3.4	Economy	265

10.3.5	Environment	267
10.3.6	Governance.....	267
10.3.7	Social, culture and equity.....	268
10.3.8	Transport and connectivity.....	269
10.3.9	Informal Settlement Intervention Act	269
10.4	Employing the Sustainable Informal Settlement Intervention Matrix.....	269
10.5	Limitations of the study and areas of further research	273
10.6	Conclusion.....	273
REFERENCE LIST		274
ANNEXURE A: KEY INFORMANT INTERVIEWS – WARD COUNCILLORS		321
ANNEXURE B: KEY INFORMANT INTERVIEWS – TECHNICAL FUNCTIONARIES, CONSULTANTS AND OTHER STAKEHOLDERS		325
ANNEXURE C: ETHICS APPROVAL.....		328
ANNEXURE D: GCR CASE STUDY SELECTION CRITERIA		330
ANNEXURE E: INDICATORS FOR CALCULATING SCI.....		334
ANNEXURE F: DETAILED SUSTAINABLE INFORMAL SETTLEMENTS INTERVENTION MATRIX		340
ANNEXURE G: PROOF OF LANGUAGE EDITING		346
ANNEXURE F: TURN-IT-IN REPORT		347

LIST OF TABLES

Table 1-1: Structure of the study	6
Table 2-1: An outline of designs for planning research	16
Table 3-1: Dimensions of spatial planning	30
Table 3-2: Elements of the urban form	51
Table 3-3: Sustainable urban form design concepts	59
Table 3-4: Sustainable urban form matrix.....	67
Table 4-1: Understanding the term community	73
Table 4-2: Elements of SCD	79
Table 4-3: Defining resilience from different domains	97
Table 4-4: The 6Cs and 4Rs of measuring community resilience	102
Table 4-5: Resilience and sustainability in community development.....	104
Table 5-1: The right to adequate housing	125
Table 5-2: Historic policy responses to informal settlements	126
Table 6-1: Egypt unsafe areas categories and intervention measures.....	138
Table 6-2: Egypt housing and parallel initiatives to support informal settlement upgrading	139
Table 6-3: Morocco housing and informal settlement policies.....	144
Table 6-4: Chapter 6 summary table	149
Table 7-1: MTSF (2019-2024) relevant priorities and commitments.....	156
Table 7-2: SPLUMA Development Principles	158
Table 7-3: IUDF provisions on informal settlement intervention	164
Table 7-4: Housing programmes which support informal settlement upgrading	171

Table 7-5: Phases of informal settlement upgrading	173
Table 7-6: NUSP informal settlement categories	174
Table 7-7: Financial mechanisms for informal settlement upgrading.....	175
Table 7-8: Integration and sustainability through the IDP.....	183
Table 7-9: Supporting policies and legislation.....	186
Table 8-1: EMM Municipal background	194
Table 8-2: EMM provision of basic services in informal settlements	197
Table 8-3: Kaalfontein access to socio-economic amenities.....	202
Table 8-4: Vlakfontein access to socio-economic amenities	206
Table 8-5: RWCLM Municipal Background.....	207
Table 8-6: Zenzele access to socio-economic amenities.....	214
Table 8-7: Jabulani access to socio-economic facilities	218
Table 8-8: Jabulani development summaries	219
Table 8-9: Jabulani upgrading plan	220
Table 9-1: Indicators for SCD in informal settlement intervention	228
Table 9-2: Scoring the capitals	236
Table 9-3: Scoring the vulnerabilities.....	239
Table 9-4: Scoring the hazards.....	239
Table 9-5: Sustainable Community Index	240
Table 9-6: SCI ranges	240
Table 10-1: Rent-to-own housing model.....	263
Table 10-2: Sustainable Informal Settlement Intervention Matrix	270

LIST OF FIGURES

Figure 1-1: Graphic presentation of this chapter	1
Figure 1-2: Area under study	3
Figure 1-3: Structure of the study	7
Figure 2-1: Chapter 2 flow diagram	10
Figure 2-2: Integrating quantitative and qualitative methods.....	15
Figure 2-3: Measuring access to socio-economic facilities	22
Figure 2-4: Methodology summary	24
Figure 3-1: Chapter 3 flow diagram	27
Figure 3-2: The concept of spatial planning	31
Figure 3-3: The city region concept	33
Figure 3-4: Multiplier effect in regional development.....	36
Figure 3-5: The hierarchy of the hexagonal central place	41
Figure 3-6: Bid Rent Model.....	44
Figure 3-7: Concentric Zone Model	45
Figure 3-8: Sector Model	47
Figure 3-9: Multiple Nuclei Model	49
Figure 3-10: Understanding the urban form	51
Figure 3-11: Apartheid City Model by Davies (1981)	54
Figure 3-12: Post-Apartheid City Model by Christopher (2001).....	55
Figure 3-13: Sustainable Development Venn Diagram	57
Figure 3-14: Sustainable development elements integrated into the urban form.....	58

Figure 3-15: Chapter 3 Summary	70
Figure 4-1: Chapter 4 flow diagram	72
Figure 4-2: Elements of sustainable communities.....	83
Figure 4-3: Asset Based Community Development	86
Figure 4-4: The Sustainable Livelihoods Framework	90
Figure 4-5: Core concepts for resilience in communities.....	99
Figure 4-6: Cutters concept for measuring community resilience.....	100
Figure 4-7: ARC-D toolkit for community resilience	101
Figure 4-8: Chapter 4 summary.....	107
Figure 5-1: Chapter 5 flow diagram	109
Figure 5-2: Low-income housing provision	110
Figure 5-3: Procurement processes for formal and informal housing	114
Figure 5-4: Maslow's hierarchy of needs	122
Figure 5-5: Incremental security of tenure	129
Figure 5-6: Chapter 5 Summary	132
Figure 6-1: Chapter 6 flow diagram	135
Figure 6-2: International case studies urban population in informal settlements	136
Figure 6-3: Location of informal settlements in Alexandria.....	142
Figure 6-4: Location of informal settlements in Casablanca.....	147
Figure 7-1: Chapter 7 flow diagram	151
Figure 7-2: PHSHDAs principles and applicability	177
Figure 7-3: Multi-sectoral components of an IDP	184

Figure 8-1: Chapter 8 flow diagram	190
Figure 8-2: Location of EMM informal settlements.....	196
Figure 8-3: Kaalfontein Locality Map	198
Figure 8-4: Kaalfontein physical conditions.....	199
Figure 8-5: Kaalfontein station employment and income levels	200
Figure 8-6: Kaalfontein Station qualification for household subsidies.....	201
Figure 8-7: Vlakfontein Locality Map.....	203
Figure 8-8: Vlakfontein physical conditions.....	204
Figure 8-9: Vlakfontein employment and income levels	205
Figure 8-10: Vlakfontein qualification for household subsidies.....	205
Figure 8-11: Location of informal settlements in RWCLM	209
Figure 8-12: Zenzele Locality Map	211
Figure 8-13: Zenzele physical conditions.....	211
Figure 8-14: Zenzele number of persons per household.....	212
Figure 8-15: Zenzele age profile	212
Figure 8-16: Zenzele levels of income	213
Figure 8-17: Jabulani locality map	217
Figure 8-18: Jabulani physical conditions	217
Figure 9-1: Chapter 9 flow diagram	224
Figure 9-2: Scoring scales.....	235
Figure 9-3: SCI radar diagram	241
Figure 9-4: Capitals thematic scores	243

Figure 10-1: Chapter 10 flow diagram 246

Figure 10-2: Synthesising aims, objectives and research questions 248

ABBREVIATIONS AND ACRONYMS

ABCD	Asset-Based Community Development
AHP	Analytical Hierarchy Process
BEPPs	Built Environment Performance Plans
BNG	Breaking New Ground
CBD	Central Business District
CDS	City Development Strategy
CoE	City of Ekurhuleni
CoGTA	Department of Cooperative Government and Traditional Affairs
CoJ	City of Johannesburg
CPT	Central Place Theory
CRU	Communal Residential Unit
DHS	Department of Human Settlements
ECD	Early Childhood Development
EMF	Environmental Management Framework
EMM	Ekurhuleni Metropolitan Municipality
EPHP	Enhanced People's Housing Programme
FLISP	Finance Linked Individual Subsidy
GCR	Gauteng City Region
GDHS	Gauteng Department of Human Settlements
GIS	Geographic Information System
GIZ	German Development Cooperation (<i>translated</i>)

GOPP	General Organisation for Physical Planning
GP	Gauteng Province
GPI	Government Performance Index
GVA	Gross Added Value
H.D.A	Housing Development Agency
HDI	Human Development Index
HSDG	Human Settlements Development Grant
HSP	Housing Sector Plan
IDP	Integrated Development Plan
IDs	Identity Documents
IGRF	Intergovernmental Relations Framework
IRDP	Integrated Residential Development Programme
ISUS	Informal Settlements Upgrading Strategy
KPAs	Key Priority Areas
LED	Local Economic Development
MDGs	Millennium Development Goals
MIG	Municipal Infrastructure Grant
MoPIC	Egyptian Ministry of Planning and International Cooperation
MSDF	Municipal Spatial Development Framework
MTSF	Medium Term Strategic Framework
NDP	National Development Plan
NGO	Non-Governmental Organisation

NIMBY	Not in My Backyard
NPO	Non-Profit Organisation
NSDF	National Spatial Development Framework
NSDF	National Spatial Development Framework
NUA	New Urban Agenda
PDU	Urban Development Projects (<i>translated</i>)
PHDAs	Priority Housing Development Areas
PHSHDAs	Priority Human Settlements and Housing Development Areas
PPP	Public Private Partnership
PSDF	Provincial Spatial Development Framework
RWCLM	Rand West City Local Municipality
SA	South Africa
SCD	Sustainable Community Development
SCI	Sustainable Community Index
SDF	Spatial Development Framework
SDGs	Sustainable Development Goals
SFA	Sustainable Livelihoods Framework
SLA	Sustainable Livelihoods Approach
SLP	Sustainable Livelihoods Programme
SPLUM By-laws	Spatial Planning and Land Use Management By-Laws
SPLUMA	Spatial Planning and Land Use Management Act
TOD	Transit Oriented Development

UISP	Upgrading of Informal Settlements Programme
UN	United Nations
UN-Habitat	United Nations Human Settlements Programme
USDG	Urban Settlements Development Grant
WRDM	West Rand District Municipality

GLOSSARY

Absolute poverty	Involves a scarcity of such necessities as shelter, running water, and food; forcing families to focus on day-to-day survival
Agglomeration economies	The benefits firms obtain from being close to other firms in order to reduce transaction costs and to gain from network effects, such as shared information
Apartheid	A system of institutionalised racial segregation that existed in South Africa from 1948 until the early 1990s
Asset	A useful or valuable quality, person or thing; an advantage or resource
Biomimicry	Imitating nature in housing structural design
Central Business District	City centre
Core	The inner core areas of a municipality, town or city; including the CBD and its surroundings
Counter magnets	Towns that can be developed as alternative centres of growth and attract migrants to them rather than the metro/core city/region
Densification	horizontal and/or vertical increased use of space within an existing area or new development often encompassing an increase in number of units/building and or population
Development corridor	Transport or trade corridors that provide an appropriate regional level of mobility and accessibility to adjacent areas and should contain a high concentration of population and mixed land uses
Economic densification	Increase in the number of people living or working in an area
Economically Active Population	Employed and unemployed members of the population between the ages of 15 and 65
Egalitarian	Policies that advocate for equality among people
Food poverty line (extreme poverty line)	The amount of money that an individual will need to afford the minimum required daily energy intake (R624 in South Africa as of 2022)
Food security	Is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs

	and food preferences for an active and healthy life (World Food Summit, 1996)
Formalisation of informal settlement	Legal process of changing the status of an informal settlement through township establishment
Gini-coefficient	A measure used to calculate inequality within a region
Headcount	The proportion of persons that are considered to be multi-dimensionally vulnerable in accordance with the Stats SA Covid vulnerability index
Human capital	the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and recover from the impacts of hazards
Human Development Index	The overall indication of quality of life and opportunities within a region based on health, knowledge and standard of living
Human settlement	Organised grouping of human habitation
Inclusionary housing	Housing programmes and/or policies that focus on increasing the value of land for low-income housing provision
Incremental upgrading of informal settlements	The progressive introduction of administration, engineering services and land tenure rights to an area that is established outside existing planning, and may include any settlement or area under traditional tenure (SPLUMA, 2013)
Informal settlement intervention	Different responses to informal settlements including the upgrading, relocation and eviction of communities within these settlements
Inhabitants	Residents of informal settlements
Land development	The erection of buildings or structures on land, or the change of use of land, including township establishment, the subdivision or consolidation of land or any deviation from the land use or uses permitted in terms of an applicable land use scheme
Land use	Purpose for which land is or maybe be lawfully used
Livelihood	The capabilities, assets, and activities required for a means of living
Lower-bound poverty line	The food poverty line plus the average amount derived from non-food items of households whose total expenditure is equal to the food poverty line (R890 in South Africa as of 2022)

Master plan	Official document prepared to articulate the physical development intended over a period of about 25 years
Metropolitan area	An urban region that comprises a main city centre, and all surrounding territories that are integrated with it
Morphological densification	Increase in the density of the built environment in terms of surface coverage, building footprint, and street connectivity
Municipal Planning Tribunal	A group of officials appointed to receive and dispose of land development and land use applications within the municipal area These may include municipal officials and officials with the knowledge and experience e of spatial planning, land use management, land development or the law related thereto (based on SPLUMA, 2013)
Natural Capital	Natural resource stocks from which resource flows and services useful for livelihoods are derived These include intangible public goods such as the atmosphere and biodiversity, to divisible assets used directly for production (trees, land, etc)
Nodes or nodal areas	Activity areas that have been identified for focused economic development and growth, with a view to rationalizing available resources
Not In My Backyard	Opposition to the locating of something considered undesirable (such as a prison or incinerator) in one's neighbourhood
Periphery	The 'perimeter', the outer edges or boundaries of an area This could be in terms of geographic, social and economic boundaries Peripheral areas are also spaces which may be economically, socially, demographically, politically and/or culturally marginal, in relation to core areas
Physical capital	The built environment and natural resources within a community
Planning instruments	Statutory instruments that articulate the government's position on planning and development related issues and provide for the protection and management of those issues within the planning and development system
Planning intervention	Government intervention in addressing informal settlements through the use of planning instruments
Poverty gap rate	Ratio by which the mean income of the poor falls below the poverty line
Poverty traps	Socio-economic systems from which households and communities cannot escape poverty
Quality of life	Conditions of living measured in terms of health and socio-economic wellbeing

Region	A boundary characterised by homogenous spatial, economic, social, environmental or political characteristics
Regional development	Process through which a region is capable of improving its economic political and social welfare, ultimately enhancing and expanding regional growth
Regional economic development	Effort to reduce regional disparities by realising the full potential of a region's resources and its inhabitants to reduce regional disparities by supporting economic activities in regions
Regional economic growth	The increase in the capacity of a region's economy to produce and increase the production of goods and services per head of the population over a period of time
Rightful owner	Person or people that have legal ownership of a property
Security of tenure	Legal right to occupy and use property
Shack farming	Tenure option whereby owners of shacks rent them out to someone else or erect additional shacks in their backyard or an additional stand
Shack in a backyard	Informal structure constructed as an extension of the original formal housing structure on an erf
Shack not in a backyard	Informal structure illegally constructed on an invaded piece of land
Situational poverty	Generally caused by a sudden crisis or loss and is often temporary
Social capital	Resources available to people that reflect networks and connectedness that increase people's trust and ability to work together and expand their access to wider institutions, such as political or civic bodies
Social housing	Rental housing in terms of the Social Housing Act 16 of 2008
Social mobility	Change in the social status of people and communities
Socio-spatial marginalisation	Combined social and spatial segregation of people and communities
Soft spaces	A non-physical and strategic type of space formulated to represent a geographic area outside the political-administrative boundaries
Spatial diffusion	Spatial diffusion is generally concerned with the diffusion of consumer and entrepreneurial innovations This diffusion tends to appear spatially as

	terminals of a set of spokes from a common hub, thus reinforcing the role of urban centres and the transportation network
Spatial planning perspectives	Dimensions and perceptions of spatial planning
Spatial poverty traps	Situation where geographic capital (the physical, natural, social, political and human capital of an area) is low and poverty is high, as a result of geographic disadvantage (Bird 2019:3)
Spatio-economic	Denoting physical space and the economy collectively
Tenement	A type of building shared by multiple dwellings, typically with flats or apartments on each floor and with shared entrance stairway access
Township	An area of land divided into erven, and may include public places and roads indicated as such on a general plan
Township establishment	A regulated process to bring vacant, serviced, identifiable, registerable sites onto the property market for transfer and which culminates in the proclamation of the township
Township register	An approved subdivision register of a township in terms of the Deeds Registries Act
Transit Oriented Development	A type of urban development that maximizes the amount of residential, business and leisure space within walking distance of public transport
Upper poverty line	The food poverty line plus the average amount derived from non-food items of households whose food expenditure is equal to the food poverty line (R1335 in South Africa as of 2022)
Urban blight	The process by which a previously functioning city, or part of a city, falls into disrepair and decrepitude
Urban development boundary	Refer to Urban edge
Urban edge	A virtual development boundary and inter-related policy that serves to control urban sprawl by mandating that the area inside the boundary be used for higher density urban development and the area outside be used for lower density, green open spaces and/or no development (urban and rural divide?)
Urban fabric	Physical aspects of urban areas (towns and cities)

Urban penalty	Failure to provide infrastructure and service to the urban poor/low-income households; exposing them to unhealthy living conditions
Urban sprawl	The expansion of urban areas across the landscape and the conversion of forestlands, wetlands and agricultural areas to urban areas
Urban metabolism	The sum total of the technical and socio-economic processes that occur in cities, resulting in growth, production of energy, and elimination of waste

CHAPTER 1 INTRODUCTION TO STUDY

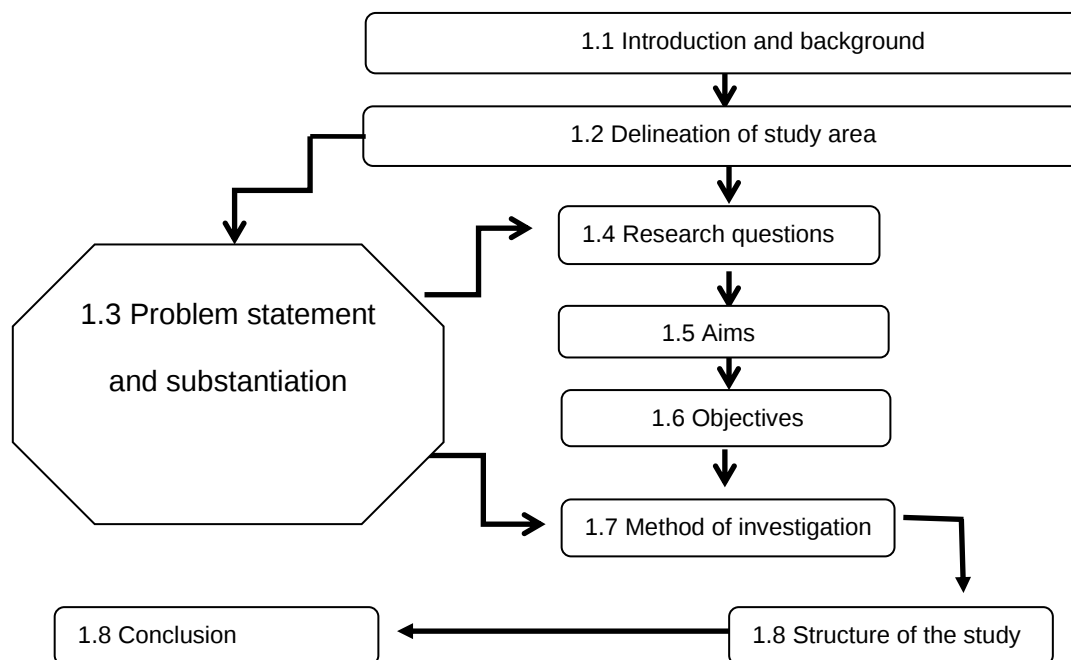


Figure 1-1: Graphic presentation of this chapter

Source: Own construction (2022)

1.1 Introduction

Informal settlements are a major planning challenge and have become a central policy issue at all spheres of government, particularly in the developing world. Globally, approximately 29.7 % of the urban population, that is, 880 million people live in informal settlements. National and international initiatives focusing on meeting Millennium Development Goal 7-Target 11, promoted a significant decline in the proportion of the world population living in informal settlements from 39.4 % in 2000 and 32,6 % in 2010 (UN-Habitat, 2016:14). The implementation of the 2030 Agenda for Sustainable Development with emphasis on Sustainable Development Goal (SDG) 11 has accelerated efforts to “Make cities and human settlements inclusive, safe, resilient and sustainable’ with more emphasis placed on informal settlements”.

In 2021, 26 % of the urban population in South Africa lived in informal settlements compared to 16.7% in 2002 (Stats SA, 2016:117; Stats SA, 2020:30). This owes mainly to the disjuncture between housing supply and housing demand despite the implementation of various policies and strategies aimed at addressing the post-Apartheid housing challenge. These include Reconstruction Development Programme (RDP) (1994), the Breaking New Ground: A

Comprehensive Plan for the Development of Sustainable Human Settlements (2004, 2010), the National Housing Code (2000 and 2009), the National Development Plan (2010) and the Delivery Agreement: Outcome 8 (2010).

The government set the goal to upgrade 400000 households in well located informal settlements as part of 2009 – 2014 Medium Term Strategic Framework (MTSF). Every province was allocated a target proportionate to the number of informal settlements and the availability of funding to upgrade informal settlements. The goal was achieved at national level, though some provinces exceeded the allocated targets while others did not meet their target.

The differences in the provincial performances could be attributed to maladministration, the differences in the funding options, approaches and capacity to implement informal settlement upgrading programmes and projects. This study focuses on the intervention measures employed within the Gauteng City Region (GCR) to address informal settlements as part of the MTSF 2014-2019. This is based on the fact that, Gauteng Province as the core of the GCR exceeded the target set for the MTSF 2014-2019. Also, an investigation into the GCR provides insight into the challenges and intervention measures employed within a city region, megacity or conurbation.

1.2 Delineation of the GCR

The GCR is an integrated cluster of cities, towns and urban nodes that together make up the economic heartland of South Africa. For this study, the delineation of the GCR will include the main/core region which is the Gauteng Province but exclude the surrounding wider region which includes Rustenburg, Potchefstroom, Klerksdorp, Sasolburg, Witbank, Middelburg and Secunda. Figure 1-2 shows the area under study:

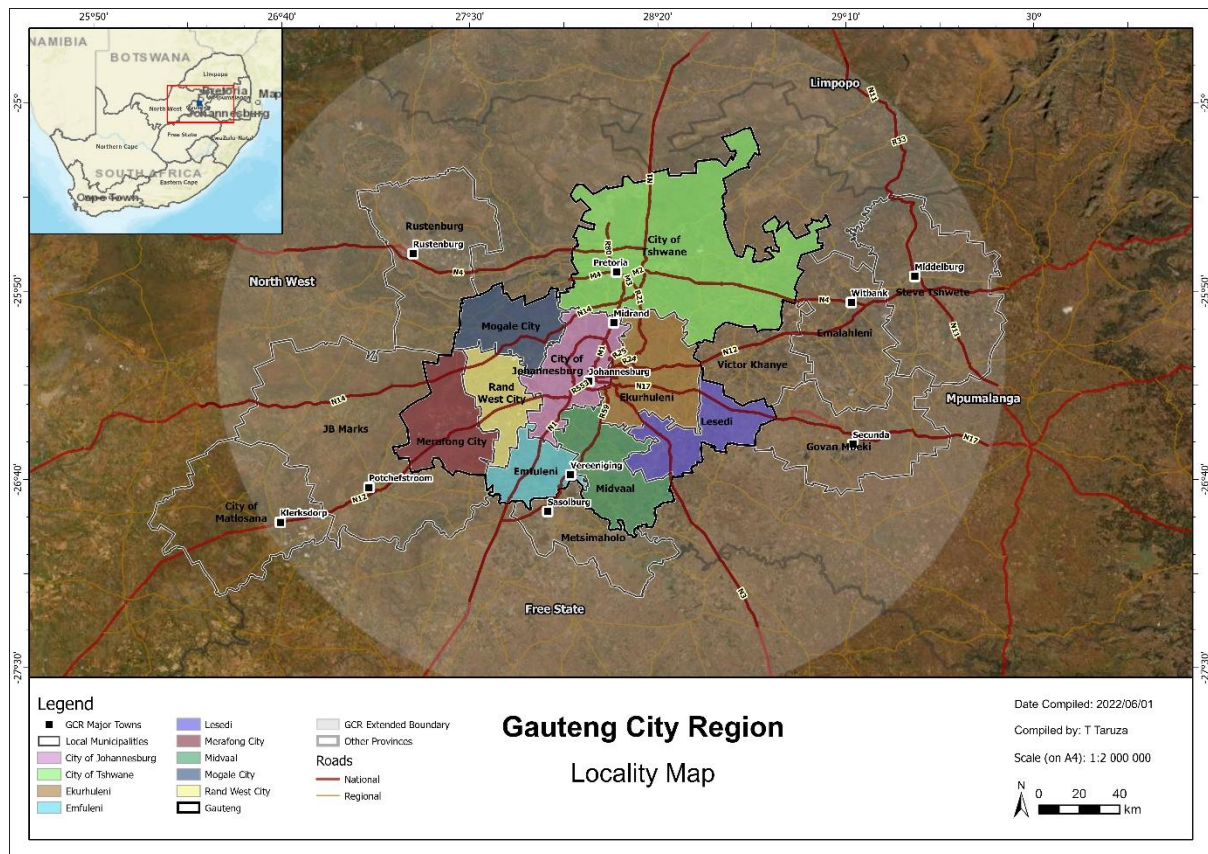


Figure 1-2: Area under study

Source: Own construction (2022)

1.3 Problem statement and substantiation

The high rates of urbanisation within the GCR have promoted the proliferation of informal settlements. Approximately 15% of the total households within the region reside in informal settlements (GCRO, 2015). The majority of the residents of these informal settlements, including those in settlements identified for upgrading, continue to live in poverty, lack access to employment opportunities, incur large transportation costs to access economic opportunities and are faced with threats of natural and man-made disaster risks.

The main planning instruments implemented to address the informal settlements do not recognise: the roles of gender, youth, children, people with disabilities and other marginalised groups in society; the potential of the informal economy within these settlements to induce local economic development as well as the effects of the external shocks in the land market in the formulation and implementation of informal settlement upgrading programmes.

The relocation of housing beneficiaries back to informal settlements and the resistance against other housing programmes indicate the inadequacy of the provided housing, failure to meet the

real needs of the people and lack of knowledge on the benefits of other housing options among the inhabitants of these settlements. Further, the provision of housing units mainly from the government fiscus has proven detrimental to the sustainability of the housing programmes and has thwarted the prospects of self-actualisation through the development of one's own housing.

From this study, it will become clear that government responses from all the three spheres are directed towards meeting the national set targets and goals rather than improving the livelihoods of the inhabitants. It is in this regard that the aspect of planning intervention in order to "Create Sustainable Human Settlements" as one of the major national goals becomes questionable. The absence of defined indicators to assess the sustainability of the on-going upgrading programmes indicates a flaw in the approach to intervene in informal settlements.

Thus, this research becomes a necessity as a means of investigating, analysing and understanding the roles and responsibilities of the government and the opportunities for ensuring sustainability and resilience in informal settlement upgrading, from a local, provincial and national perspective. The research is based on the notion that Sustainable Community Development (SCD) in informal settlement upgrading would improve the lives and the livelihoods of the inhabitants. Thus, this research is based on the following research questions:

1.4 Research questions

- What are the factors that influence the emergence of informal settlements and the lives within these settlements?
- Are there different perspectives in terms of spatial planning and informal settlement intervention within the GCR based on municipal category?
- How is sustainability measured in terms of spatial planning, community development and informal settlement intervention within the GCR?
- To what extent are government planning instruments effective in ensuring spatial sustainability and SCD in the addressing of informal settlements?
- What are the opportunities that exist to ensure sustainability and resilience in addressing informal settlements within the GCR?
- What are the lessons that can be drawn from the international study and how can these principles be integrated into the existing South African context?

1.5 Aims

The general aim of this study is to investigate the instrumentality of spatial planning in ensuring SCD in informal settlement interventions within the GCR.

The study also attempts to investigate the different perspectives and the factors contributing to the differences in the progress of informal settlement interventions amongst different municipalities within the GCR.

1.6 Objectives

- To understand the principles of informal settlement intervention, spatial planning and SCD
- To determine whether different approaches are employed in the upgrading of informal settlements depending on the different municipal categories within the GCR
- To assess the approaches that have been implemented to address informal settlements in other countries
- To examine the regulatory framework for planning intervention in addressing informal settlements and determine whether the principles of SCD are adequately reflected in policies and legislation
- To propose a tool for measuring the sustainability and resilience of informal settlements
- To proffer a Sustainable Informal Settlements Intervention Matrix to guide the informal settlements intervention within the GCR

1.7 Method of investigation

The research methodology is based on literature analysis and an empirical study. The theoretical part of the research is based on the use of secondary data sources, journals, internet material and databases that focus on sustainable spatial planning, SCD, resilience, and the formalisation of informal settlements among other themes. The empirical investigation focuses on the analysis of the policies and legislation and the formalisation of informal settlements within the GCR and reflects a mixed method research approach. Chapter 2 provides a detailed description of the methodology employed in the study.

1.8 Structure of the study

The study is divided into five sections and ten chapters. Sections A and B provide the overview of the study and the methodology to be employed to answer the research question and achieve the aims and objectives of the study. Sections C and D focus on the literature review and empirical study. Section E focuses on the synthesis of the research and the recommendations from the

study. Table 1-1 shows the structure of the study by detailing the five sections, the chapters within each section and the respective descriptions. Figure 1-3 illustrates the structure of the study, showing how Chapters 3 to 8 provide details from a macro to micro perceptive, with Chapter 9 refining the details to guide the synthesis and recommendations provided in Chapter 10.

Table 1-1: Structure of the study

Section	Chapter	Description
Section A: Introduction	Chapter 1: Introduction to study	Provides overview of the study
Section B: Methodology	Chapter 2: Research methodology	Details the research approach, paradigm, data collection and the analysis of data
Section C: Literature Review	Chapter 3: Spatial planning within a city region	Analyses spatial planning from a macro scale and provides the basis for understanding varying spatial planning perspectives and how these impact SCD and intervention in informal settlements
	Chapter 4: Sustainability and resilience in community development: insights and perspectives	Provides insight into the meaning of SCD and resilience and the theory hitherto
	Chapter 5: Theoretical perspectives on informal settlements	Examines low-income housing provision, the definitions and meanings of informal settlements and measures that been employed to address them
Section D: Empirical	Chapter 6: International perspectives on addressing informal settlement	Investigates informal settlement intervention measures in mega cities from an international perspective
	Chapter 7: Spatial planning and community development in informal settlements in South Africa	Reviews the legislation, policies and strategies that govern informal settlement intervention in South Africa
	Chapter 8: Informal settlements within the Gauteng City Region	Details the intervention measures and the status of informal settlements at national, provincial and local levels
	Chapter 9: Analysis of SCD in addressing informal settlements in the GCR	Analyses the findings from the study
Section E: Synthesis	Chapter 10: Synthesis and recommendations	Combines all the aspects of the research and provides recommendation to ensure SCD when addressing informal settlements

Source: Own construction (2022)

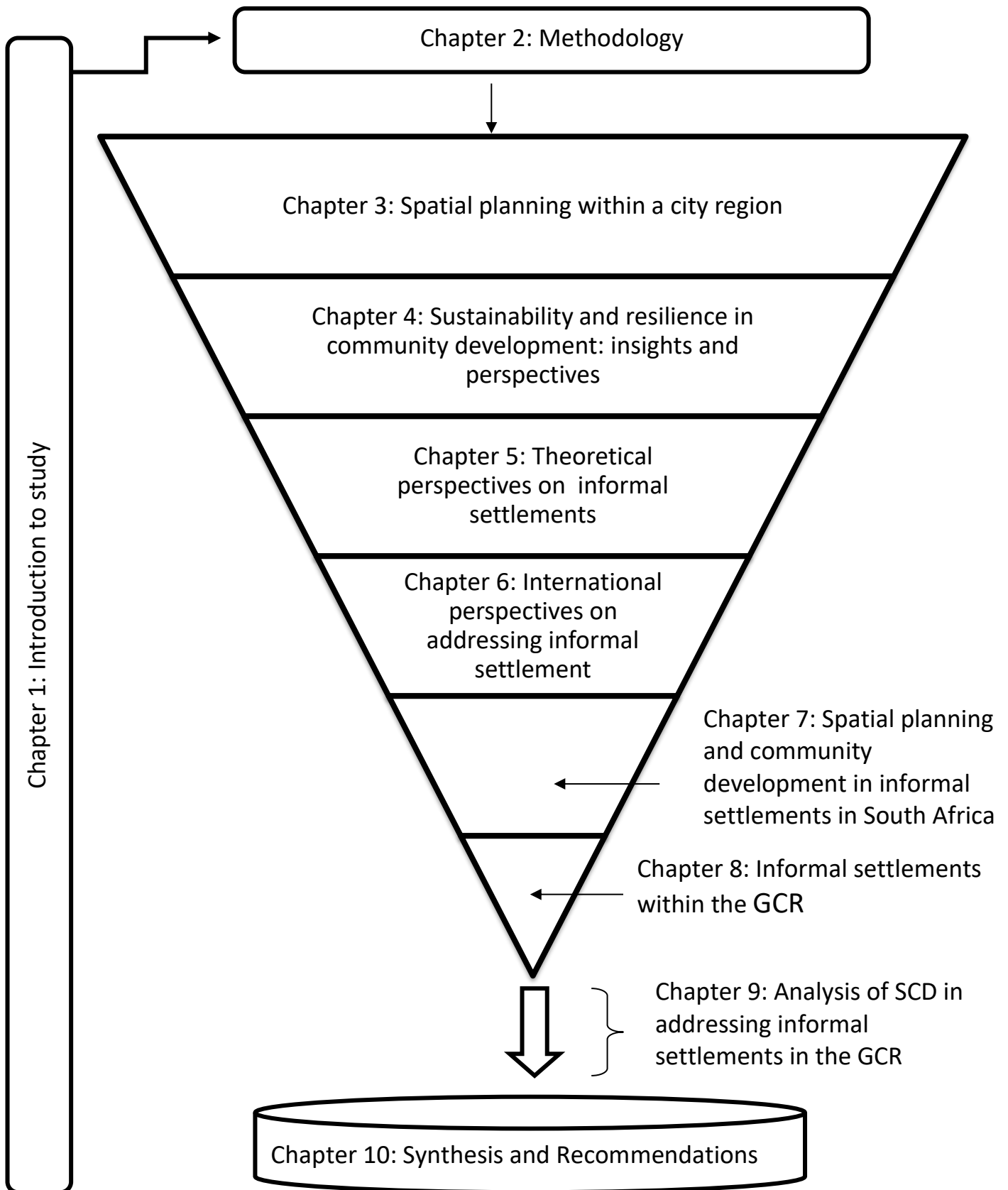


Figure 1-3: Structure of the study

Source: Own construction (2022)

1.9 Conclusion

This chapter details the background of the study, states the problem and significance of this research, provides the basic questions that this research seeks to answer, the aims and objectives of the study, hypothesises that there are different approaches to informal settlement intervention based on municipal category and the upgrading of informal settlements in the GCR does not lead to SCD; provides a summary of the methods of investigation and the structure of the study. The next chapter details the methodology employed in carrying out the research.

SECTION B:

Methodology

CHAPTER 2 RESEARCH METHODOLOGY

2.1 Introduction

While the previous chapter focused on the introduction and background to the study, Chapter 2 details the methodology adopted in the research; to answer the research questions and address the aims and objectives of the study. This is attained through outlining the research aims and context, the research paradigm, the research purpose, the research approach and the research design. Figure 2-1 displays the flow of the Chapter.

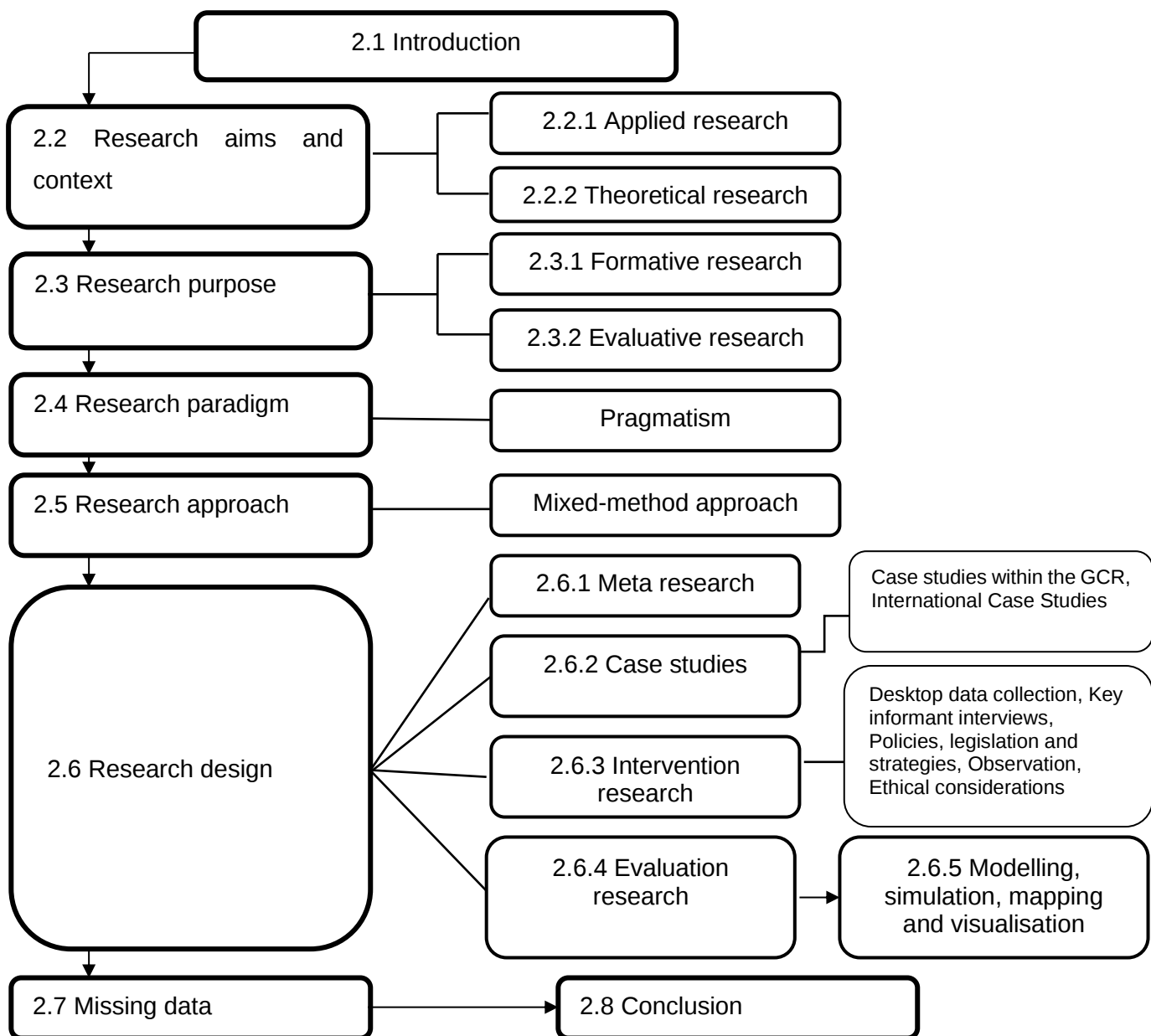


Figure 2-1: Chapter 2 flow diagram

Source: Own construction (2022)

2.2 Research aims and context

This study is premised on the notion that the current spatial planning interventions in informal settlements do not necessarily improve the quality of life of the inhabitants and in turn promote SCD. In this regard, the aim of this research is to provide solutions to the challenge of informal settlements in order to achieve SCD; while adding to the existing knowledge on the concepts of informal settlements and SCD, and their correlation. Thus, balancing applied and theoretical research.

2.2.1 Applied research

Applied research is the process of quantifying the application of knowledge gained from basic science to solve problems (Edgar & Manz, 2017:74). It seeks to improve understanding of the problem with the intent to contribute to the solution of that problem (Bickman & Rog, 2009:x). Guest *et al.* (2013:2) extend that though applied research can add to or generate new knowledge, the focal point is collecting and generating data to further comprehension of real-world problems. Chapters 6 to 10 focus on the empirical investigation, the presentation of research findings and possible solutions to addressing the challenge of informal settlements; thus, reflecting the applied research aspect of this study.

2.2.2 Theoretical research

According to Edgar and Manz (2017:71) theoretical research is a logical exploration of a system of beliefs and assumptions. Best and Khan (2006:10) are also of the opinion that theoretical research is merely an attempt to develop a general explanation of a certain phenomenon. Grant and Osanloo (2014:12-13) present a different perspective of theoretical research as a guide towards the choice and use of data as part of the study. This viewpoint is based on the notion that theories aid in the formulation of frameworks that guide the researcher in establishing the school of thought and formulating ideologies (Mngadi, 2018; Verma & Mallick, 1999:6). These aspects of theoretical research are reflected in Chapters 3,4 and 5 of this study, which constitute literature review.

2.3 Research purpose

The research purpose is an intrinsic aspect of the research that guides the researcher to answer the research questions in the most unambiguous manner as possible, that is, the logic to be followed, how the study will engage the empirical reality and the type of design required (du Toit, 2015:63). The purpose of this research is to guide planning intervention in addressing informal

settlement towards achieving SCD. As a result, this study follows formative and evaluative research.

2.3.1 Formative research

Formative research is “driven by planning interventions for purposes of decision making” to inform practice through site and settlement analyses as well as plan and policy analyses (du Toit, 2015: 63). Gittelsohn *et al.* (2006:2) extend that formative research involves gathering data for the development and implementation of intervention programmes that are culturally and geographically appropriate. In this regard, formative research seeks to direct (planning) interventions towards decisions that meet the real needs of the target group.

The formative research aspects of this study are primarily presented in Chapters 7, 8 and 9; where the research focuses on policy and legislative analysis, status quo of informal settlements at national, provincial, local and settlement level; analysis of the findings from the literature (Chapters 3 to 5) and empirical studies (Chapters 6 to 8); and recommendations on planning intervention to promote SCD in the upgrading of informal settlements.

2.3.2 Evaluative research

According to du Toit (2015:63) evaluative research assesses practice by diagnosing or clarifying problems, monitoring programmes and measuring outcomes and impacts. This aligns with Weiss (1998:4) views of evaluative research as “the systematic assessment of the operation and/or the outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy”. Though there has been debate over whether it is a research method, activity or process, the emphasis is on the orientation of evaluating social programs (Childers, 1989:251; Powell, 2006:102-103).

The focal point of Chapter 7 is to assess the policies and legislation governing intervention in informal settlement, Chapter 8 details the progress that has been made towards the upgrading of informal settlements by all three spheres of government, and Chapter 9 measures the outcome of these policies and programmes against the principles of SCD. Thus, the evaluative research aspect of the study.

2.4 Research paradigm

Lincoln *et al.* (2011:92) refer to a paradigm as the philosophical assumptions or to the basic set of beliefs that guide the actions and define the worldview of the researcher. Neuman (2011:94) extend that it “a general organizing framework for theory and research that includes basic assumptions, key issues, models of quality research, and methods for seeking answers”. A

paradigm entails the nature of belief about reality (ontology), the nature of knowledge and the process by which it is acquired and validated (epistemology) and approach to the production of data (methodology) (Collins & Stockton, 2018:2; du Toit, 2015:63; Ellen, 1984:9; Gall *et al.*, 2003:13; Richards, 2003:33).

While prominent planning research paradigms are modelled on the fact that reality exists independently and beyond the influence of people (positivist social science), social realities are socially constructed and constantly changing (interpretive social science) and debunking myths and empowering people to change society (du Toit, 2015:64-65), this study reflects pragmatism as a research paradigm.

Pragmatism as a research paradigm is modelled on the notion that there can be single or multiple realities that are open to empirical inquiry and knowledge and reality are based on beliefs and habits that are socially constructed (Creswell & Clark, 2018; Yefimov, 2004). Based on this, research should be modelled on a philosophical and/or methodological approach that best suits the research problem being investigated (Tashakkori & Teddlie, 1998:5). This often entails employing a plurality of methods and any combination of designs or a mixed-method design (du Toit, 2010:157).

This study applies a pragmatic approach based on the notion that addressing the challenge of informal settlement and ensuring SCD does not rely on a single method or philosophical approach. Though the research aims to provide an overall toolkit for implementing SCD, the greater component of the solutions is context specific; taking into consideration the constantly changing social and physical realities. Also, informal settlements are a multidimensional phenomenon that requires a variety of intervention measures to improve the human condition.

2.5 Research approach

The research approach or methodological approach refers to the use, that is, the collection and analysis of different types of data, particularly quantitative (numerical) and qualitative (textual and visual) data (du Toit, 2015:65; Rehman & Altharhi, 2016:52). Quantitative research methods would be used in situations in which the researcher wants to study how a specified variable affects another, using numbers or statistical data (Powoh, 2016:2). The goal is to generate accurate, reliable and unbiased measures that can be generalised for a large group of people (Steckler *et al.*, 1992:2, van Aswegen, 2018:15). The research is based on an outsider's perspective.

On the other hand, qualitative research methods use descriptive procedures to generate meaning and understanding of the phenomenon being studied (Guest *et al.*, 2013:2). The goal is to gain the insight how people make sense of their world, through observation, interviews, case studies

and analysing existing documents (Merriam, 2009:13; Steckler *et al.*, 1992:2). Qualitative research methods are often employed in cases where the researcher wishes to gather a general (not specific) idea from the subjects, the goal being to explore, interpret and describe a situation (Powoh, 2018:3) As a result, the researcher is 'close to the data', generating prolific, comprehensive, authentic data yet subjective data gained from the participants perspectives.

This study utilises a mixed-method approach, incorporating aspects of both the quantitative and qualitative approaches. According to Johnson *et al.* (2007:123) mixed methods research is the type of research in which elements of qualitative and quantitative research approaches, that is, use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques are combined for the purposes of breadth and depth of understanding and corroboration.

Steckler *et al.* (1992:5) motivates the use of the mixed-method approach to counteract the shortcomings of both the qualitative and quantitative approaches while maximising on their strengths. Creswell (2009:4) is also of the opinion that a mixed-method approach is "more than simply collecting and analysing both kinds of data; it also involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research". Figure 2-2 illustrates the ways by which quantitative and qualitative methods can be integrated resulting in a mixed-method approach.

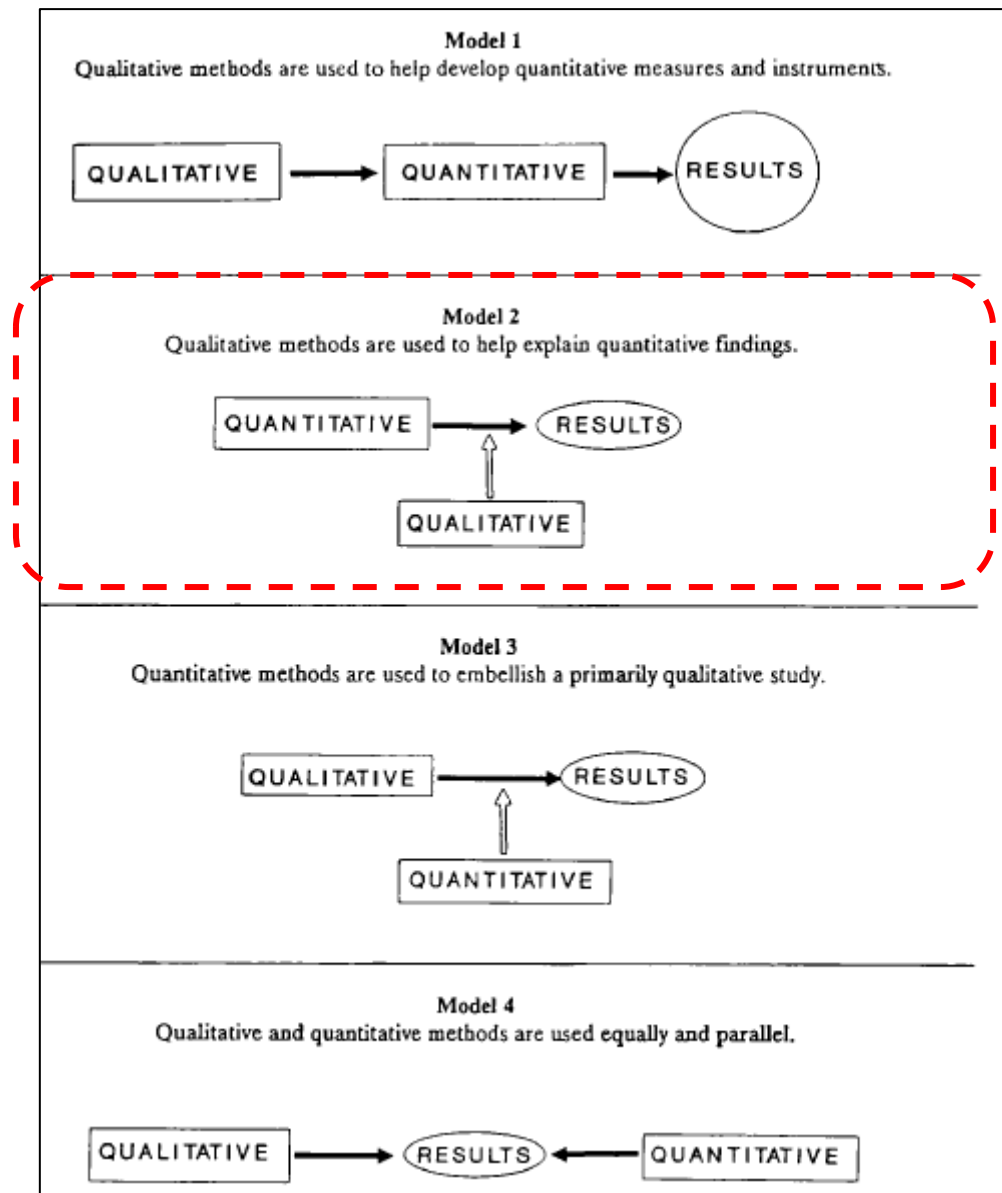


Figure 2-2: Integrating quantitative and qualitative methods

Source: Steckler (1992:5)

This study is based on Model 2 where the study is predominantly quantitative but qualitative methods are used to interpret and explain the quantitative findings. The assessment of planning intervention (Chapter 9) is predominantly quantitative, based on statistical data provided in preceding chapters; particularly Chapter 8. On the other hand, perceptions of key informants and the assessment of policies and legislation are primarily qualitative methods that contribute to and explain the quantitative results. Thus, the use of a mixed-method approach.

2.6 Research design

Research design refers to the many ways in which research can be conducted to answer the question being asked (Marczyk *et al.*, 2005:22). It is the arrangement of conditions for the collection and analysis of data to combine the relevance of the research purpose to the procedure (Akthar, 2016:68). Du Toit (2015:61) is of the opinion that research design is logical plan employed to maximise the validity of research findings. In this regard, a research design only guides data collection, processing and analysis; but also presents the logical basis for these decisions to answer the research question as unambiguously as possible.

Planning research often utilises the following research designs: (1) surveys, (2) experiments, (3) modelling, simulation, mapping and visualisation, (4) textual and narrative studies, (5) field studies, (6) case studies, (7) intervention research, (8) evaluation research, (9) participatory action research (PAR) and (10) meta-research (du Toit & Mouton, 2013:125). Table 2-1 shows these research designs, their subtypes and the logic behind their use in a study.

Table 2-1: An outline of designs for planning research

Research design	Research design subtypes	Logic
Surveys	Cross-sectional surveys	Generalisation
Experiments	Longitudinal surveys True experiments (laboratory experiments) Quasi-experiments (field/natural experiments)	Causal attribution
Modelling, simulation, mapping and visualisation	Modelling; simulation Mapping; visualisation	Prediction/illustration 
Textual and narrative studies	Content/textual analysis Discourse/conversational analysis Historiography; biography	Interpretation(hermeneutical)
Field studies	Ethnography (participant observation) Phenomenology	Interpretation(ethnographical/phenomenological)
Case studies	Single/multiple case studies Comparative case studies	Contextualisation 
Intervention research	Site/settlement analysis and assessment Plan/policy analysis and assessment	Intervention 

Research design	Research design subtypes	Logic
Evaluation research	Diagnostic/clarificatory evaluation (ex-ante Tevaluation) Implementation evaluation; programme monitoring Outcome/impact evaluation (ex post evaluation)	Evaluation 
PAR	Technical/scientific/collaborative PAR Practical/mutual and/or collaborative/deliberate PAR Emancipating/enhancing/critical science PAR	Participation/action
Meta-research	Literature reviews; Research synthesis Conceptual analysis Typology/model/theory construction Philosophical/logical/normative argumentation	Various logics depending on the objectives of the research (for example to review, synthesise or analyse) 

Where  denotes the designs utilised in this study

Source: Adapted from (du Toit, 2010:125-128; du Toit, 2015:68-70)

This study utilises the following research designs: modelling, simulation, mapping and visualisation (in Chapters 1, 8 and 10), case studies (Chapters 6 and 8), Intervention research (Chapters 7 and 8), Evaluation research (Chapter 9) and Meta research (Chapters 3,4,5 and 9). The following sections describe how these research designs were incorporated into the study.

2.6.1 Meta research

Meta-research is research about research itself focussing on the methods, reporting, reproducibility, evaluation, and incentives (Ionannidis, 2018). Du Toit (2015:71) provides that meta research includes which includes literature reviews, research syntheses, conceptual analysis, the construction of typologies, models or theories, and philosophical or normative argumentation.

Existing knowledge on spatial planning, city-regions, sustainable urban form, SCD, community resilience, informal settlements challenges, opportunities and responses is examined through literature review. This adds to the knowledge of these key concepts under study as well as identifying gaps in literature where this study can add value. The literature on these concepts is

discussed in Chapters 3, 4 and 5. The study also provides and synthesis of the findings in Chapter 10.

2.6.2 Case studies

Purposive and convenience sampling techniques were utilised for the selection of the local and the international case studies. According to Palinkas (2015:533) “purposive sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources”. Convenience sampling involves the selection of participants and cases based on the availability and/or accessibility of data (Ellison *et al.*, 2009:198). For this study both techniques were used to identify cases that reflect the issues that align with the objectives of this study while taking into consideration the availability of data. The selection of the case studies is discussed in the next sections.

2.6.2.1 Case studies within the GCR

The selection of the GCR as the study area is based on its role as the economic heartland of South Africa; hence, the high rate of urbanisation and the prevalence of informal settlements. The existence of different municipal categories also provides the platform to assess the differences in the performance of municipalities in addressing informal settlements. The polycentric spatial structure of provides insight into the urban network strategy and the impact or lack thereof on informal settlements within different municipalities.

Ekurhuleni Metropolitan Municipality was selected as the metropolitan municipality under study because it ranks the lowest in Gauteng as per the Government Performance Index (GPI) (Good Governance Africa, 2021:10). Rand West City Local Municipality was also selected on the same basis (Good Governance Africa, 2021:14) as well as the fact that it is a mining town, which will provide insight into the juncture between informal settlement upgrading and the revitalisation of mining towns.

The informal settlements under study were selected based on the National Upgrading Support Programme (NUSP) categories, as detailed in Section 7.6.7 of the study. The four settlements basically fall into two groups:

- Category A and B1, that is, informal settlements that will receive conventional or incremental full upgrading; and
- Category B2 and C, that is, informal settlements that will receive deferred or immediate relocation.

Other factors such as the availability of data, environmental and socio-economic factors, access to key informants and alignment with other spatial and human settlements projects and programmes also influenced the choice of the settlements under study.

2.6.2.2 International Case Studies

The study investigates informal settlement intervention programmes in Alexandria, Egypt and Casablanca, Morocco. The selection of these case studies is based on their status as large cities with high rates of migration and urbanisation, the consequent prevalence of informal settlements and the decline in the number of informal settlements and the proportion of the urban population in informal settlements. The success or lack thereof of interventions in promoting SCD is determined through an investigation into the measures by the respective governments, Non-Governmental Organisations (NGOs) and the World Bank. This provides insight on lessons that can be learnt for the Gauteng City Region in South Africa.

2.6.3 Intervention research

According to Du Toit (2010:121, 127) intervention research is aimed at bringing change to affect development through an analysis of the physical space as well as the policies and plans relating to that development. The study utilises desktop data, key informant interviews and data gained at site visits for the analysis of the informal settlements under study. The review of policies and legislation is aimed at assessing the policies and plans relating to the informal settlements and how they can be utilised to achieve SCD.

2.6.3.1 Desktop data collection

Desktop data is collected through the assessment of data from Statistics SA (Stats SA), Regional Explorer (ReX), CSIR publications and data from the Gauteng City Region Observatory (GCRO) as well as data and publications from consultants that have participated in informal settlement upgrading programmes. Components of the data for all of the informal settlements under study except for Zenzele were gathered from previously done or on-going projects.

2.6.3.2 Key informant interviews

Semi-structured interviews were conducted with key stakeholders in the upgrading of informal settlement. Municipal functionaries from the Town Planning Departments and the Department of Human Settlements in South Africa and other countries under study, where possible, were interviewed to attain information on the informal settlements within their jurisdictions; as well as to assess their intervention as stipulated within the policies and legislation governing the upgrading of informal settlements.

Consultants, other town planning professionals and expert on informal settlement upgrading were interviewed to gain their perspective on the upgrading of informal settlements, challenges they have faced in addressing informal settlements and the opportunities that may exist to ensure SCD in the upgrading of informal settlements. A sample of the semi-structured questionnaire used to guide the interviews is provided in Annexure B.

Semi structured interviews were also held with ward councillors and community representatives to gain insight into the lives of the inhabitants of informal settlements. The objective was to gather data on the informal settlements that could not be attained elsewhere as well as to understand their perspectives on the informal settlements and the intervention measures that have been implemented thus far. Though household interviews would have contributed vastly to the data gathered, the COVID-19 lockdown restrictions hindered the administering of these surveys. A sample of the questionnaire in Annexure A shows how the questions were structured in order to maximise the quantity and quality of data gathered from the ward councillors and community representatives.

2.6.3.3 Policies, legislation and strategies

Chapter 7 of this study focuses on the assessment of policies, legislation and strategies that govern informal settlement intervention in South Africa. The objective is to investigate whether these regulatory frameworks adequately reflect and address the issues that relate to informal settlements as well as the prospects of SCD when upgrading these settlements.

2.6.3.4 Observation

The research also includes direct observation of some of the informal settlements within the GCR. Photographs and coordinates of the areas visited are captured for reference and analysis purposes.

2.6.3.5 Ethical considerations

This research went through the ethical clearance process to promote integrity, quality, and transparency, informed consent, confidentiality, voluntary participation, avoidance of harm to participants, independence/freedom from partiality and/or clear declaration of interest/partiality. The study is regarded as posing low risk to participants as indicated in Annexure C.

2.6.4 Evaluation research

Evaluation research is aimed at diagnosis, implementation, and/or impact evaluation of the principles, issues, elements and policies relating to the study (Du Toit, 2010:108). The study

seeks to formulate a matrix for which the informal settlement interventions by the GCR municipalities, the Provincial Government and the National Government will be assessed against the principles, objectives and indicators for SCD determined within the scope of the study.

The Analytical Hierarchy Process (AHP) is used to select the objectives and indicators; rate then rank the scores of each settlement in terms of capitals, vulnerabilities, hazards and the combined sustainability score (Sustainable Community Index). A Sustainability Informal Settlement Strategy is conceived to guide municipalities in the implementation of informal settlement intervention strategies that promote sustainability and resilience in community development. These aspects are presented in Chapter 9 and Chapter 10 of the study, based on the information obtained from previous chapters particularly Chapter 3, Chapter 4, Chapter 6, Chapter 7 and Chapter 8.

2.6.5 Modelling, simulation, mapping and visualisation

Geographic Information Systems (GIS) is utilised for data collection, spatial analysis and the mapping of localities, challenges and opportunities, access to critical facilities and recommendations to ensure SCD. Shapefiles from a variety of sources were utilised for data collection. The spatial analysis for access to services and socio-economic facilities is based on the principles set in the CSIR Guidelines for the provision of Social Facilities and the CSIR Redbook. For example, a 5-kilometre buffer of the informal settlements is created and overlain with the shapefile of primary and secondary schools to show the number of these facilities within that range. This is demonstrated by Figure 2-3. GIS is used for the mapping of informal settlement localities and illustrating the urban form in Chapters 1 and 8.

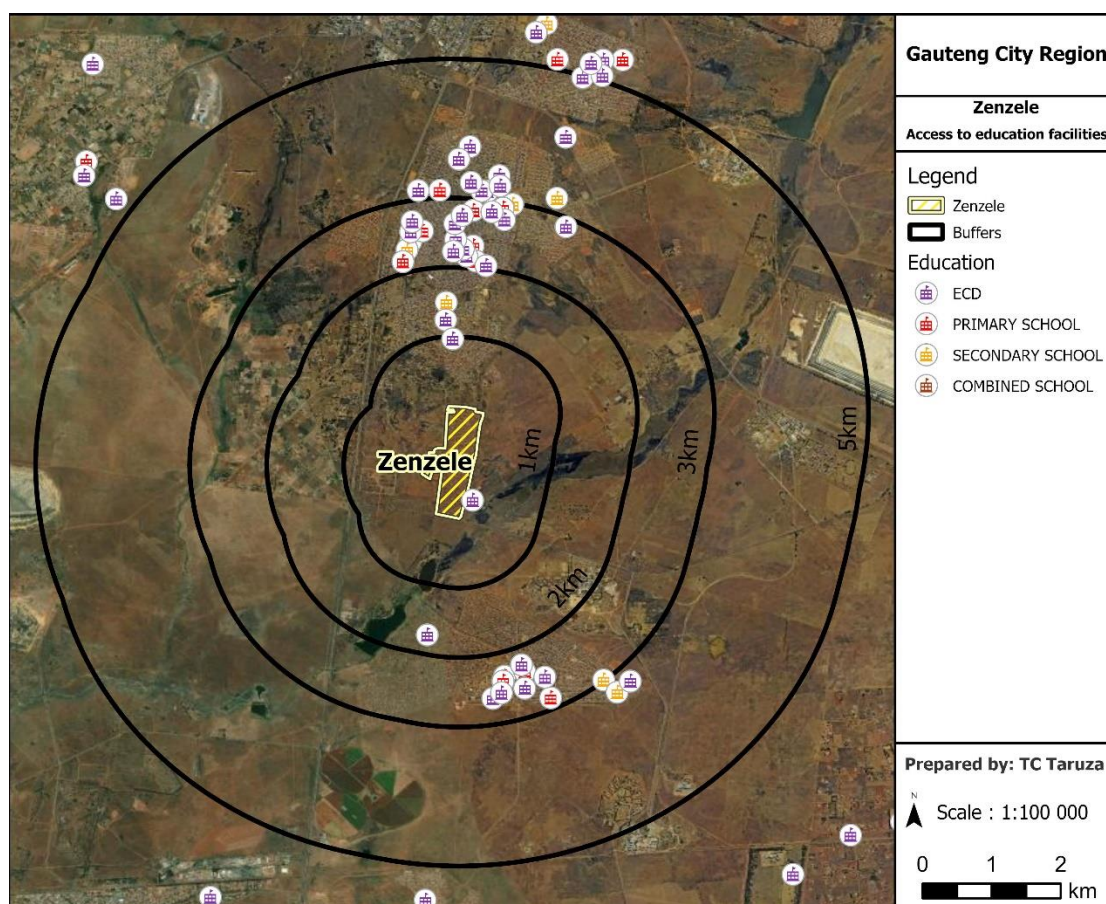


Figure 2-3: Measuring access to socio-economic facilities

Source: Own construction (2022)

2.7 Missing data

One of the main challenges faced in undertaking the study was the collection of comprehensive, accurate and timely data as relates to the household statistics, socio-economic issues within the informal settlements and intervention measures to address the issues within informal settlements. The obstacles include but are not limited to unavailability or incompleteness of specific data or information over time; incompatibility of definitions and incomparability of data sources; restrictions to accessing data due to the sensitivity of data relating to informal settlements; setting up meetings with government officials and/or the reluctance of government officials to provide data on informal settlements.

2.8 Conclusion

This chapter details the methodology employed in the study. The research aims and context explain the need to balance applied and theoretical research in order provide solutions to ensuring SCD in informal settlement intervention and add to the existing knowledge. The research purpose

focuses on assessing policies, programmes and plans and guiding planning intervention as relates to formalisation of informal settlement hence the use of formative and evaluative research.

A pragmatic research approach is employed to cater for the multiple realities that define the phenomenon of informal settlements and to ensure the use of a plurality of research methods and any combination of research designs. Consequently, the research utilises the mixed-method approach to quantify statistics relating to the informal settlements under study and incorporate qualitative aspects on how the inhabitants of informal settlements (and other key stakeholders) perceive the world they live in.

The research is based on multiple research designs. The meta research aspects of the study are emphasised through literature review. Local and international case studies are used to give context to the study and reflect various perspectives in addressing informal settlement. Intervention research in the form of desktop data collection, key informant interviews, an analysis of policies and legislation, observation and ethical considerations are utilised to provide insight into the settlements under study and the regulatory framework; while guiding prospective intervention measures. Spatial analysis and mapping of the issues under study are carried out using GIS; thus, the use of the modelling, simulation, mapping and visualisation research design. The formulation of a matrix to analyse informal settlement interventions against the principles of SCD is an aspect of evaluation research which will also be employed in this study.

The provisions of this Chapter are illustrated in Figure 2-4 and next section of the study focuses on literature review, within which Chapter 3 discussing literature on sustainable spatial planning within a city region.

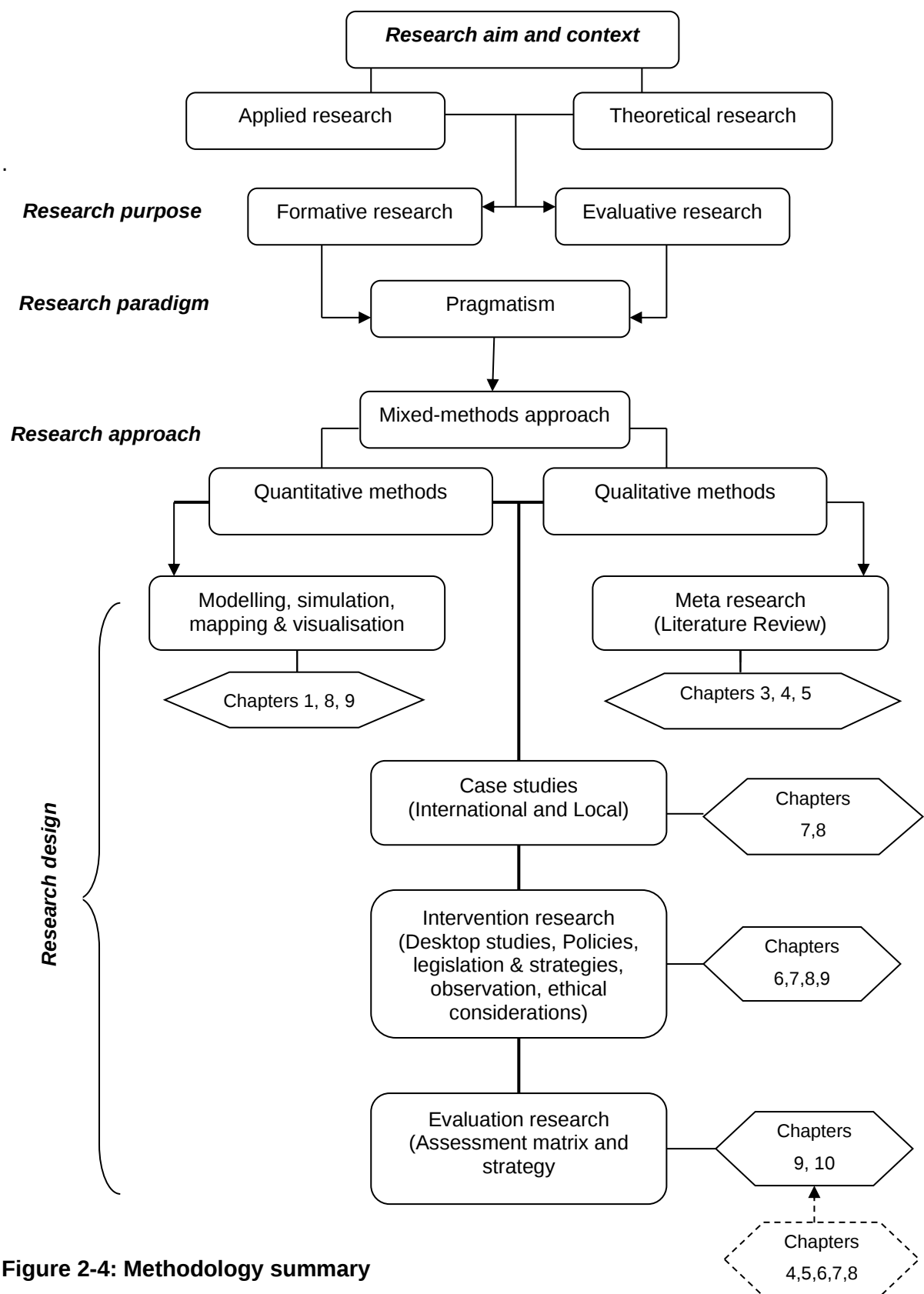


Figure 2-4: Methodology summary

Source: Own construction (2022)

SECTION C:

Literature Review

CHAPTER 3 SPATIAL PLANNING WITHIN A CITY REGION

3.1 Introduction

Within a city region context, spatial and economic development is often lopsided. Little explicit attention has been paid to uneven development within the framework of core and peripheral areas at local, provincial or national scales in South Africa (Peberdy *et al.* 2017:27). This chapter provides the basis for understanding spatial planning perspectives within the GCR. Thus, laying the foundation for answering the following research question, as provided in Section 1.4 of the study: **Are there different perspectives in terms of spatial planning and informal settlement intervention within the GCR based on municipal category?**

This is attained through understanding the concepts of spatial planning and city region development, investigating the spatial and economic development of city regions, examining the factors that determine the spatial structuring and location of land uses within a city region, and the configuration of this spatial structuring with land uses. The chapter highlights that one key element to sustainable spatial planning is achieving a sustainable urban form. This will ultimately influence SCD in addressing informal settlements.

Thus, the focus of this chapter is on the definitions and conceptualisation of spatial planning; defining and providing the theories for the development within a city region; defining the urban form and explaining the different categories of the urban form; explaining the elements, typologies and models of a sustainable urban form and ultimately, an assessment of the ideal urban form. This structure is depicted in Figure 3-1:

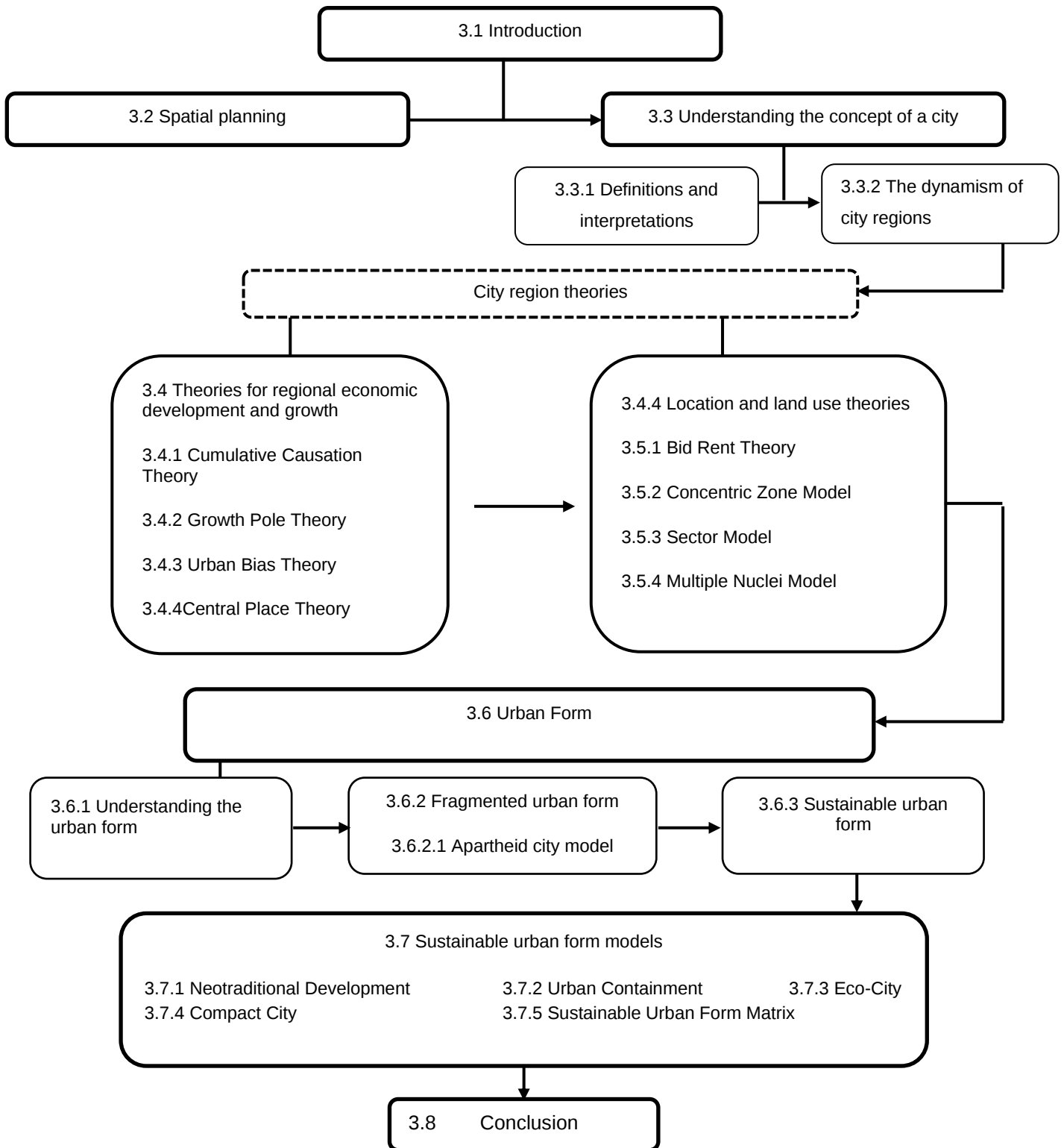


Figure 3-1: Chapter 3 flow diagram

Source: Own construction (2022)

3.2 Spatial planning: definitions and perspectives

Defining spatial planning is complex due to the contestations arising from the perspectives of different authors, institutions and to some extent regional perspectives. Over the years, there have been paradigm shifts on how spatial planning can be defined and conceptualised; from traditional statutory planning to modern day approaches such as smart or new urbanism.

Klein *et al.* (2012:20) describe spatial planning as the recognition of the forces shaping the city form, the influence of politics on development and collaborative engagement of different sectors in development. Spatial planning is “a public sector function with the purpose to influence future spatial distribution of activities; to ensure rational arrangement of land uses and the linkages, to balance demands for development with the need to protect the environment, and to achieve social and economic objectives” (UN, 2008:1).

These definitions incorporate the aspect of space and sustainability into the traditional definitions of planning as: “the link between knowledge and action (Friedmann, 1987), a rational choice (Davidhoof & Reiner, 1962), controlling the future (Wildasky, 1973), or framing subsequent decisions (Faludi, 1987)” (Alexander, 2016:91). From these, Pijnappels (2009:25) identified three interlinked themes within which spatial planning can be understood, that is: planning within space, planning with stakeholders; and planning as a process.

Based on those themes, this section analyses spatial planning from the following perspectives: planning with physical space; planning as a policy making tool; and planning as a coordinative approach. These give insight on how spatial planning influences and can be utilised to address the challenge of informal settlements and ensure SCD.

3.2.1 Planning within physical space

Spatial planning is the arrangement of land uses, people and activities in spaces of various scales. According to Santoso *et al.* (2015:1), spatial planning is planning the structure and patterns of utilization of space; including land use, water, air and other natural resources. This demonstrates that spatial planning is not just about land but anything that occupies space; hence the existence of other dimensions such as marine spatial planning and environmental spatial planning. The focus of this study is on spatial planning as pertains to land and the built environment.

The South African Cities Network (SACN, 2005:5) defines spatial planning as the arrangement and design of the “way in which different activities, land uses and buildings are located in relation to each other, in terms of distance between them, proximity to each other and the way in which spatial considerations influence and are influenced by economic, social, political, infrastructural

and environmental considerations”. As an activity, spatial planning has a profound impact on the internal layout and functional organization of land uses and their regulation at the level of towns and cities and ultimately shapes the emergent distribution of population and economic activities observed in human settlements (Acheampong, 2019:12).

In this regard, the development function of spatial planning focuses on promoting a balance between or among different, sometimes conflicting, uses of land. This is often achieved through master planning and land use management, as defined in Table 3-1. This brings into perspective the aspect of spatial planning as a policy making tool.

3.2.2 Spatial planning as a policy making tool

Spatial planning also entails the formulation and implementation of regulatory frameworks that govern the use of space. Van Leeuwen *et al.* (2007) define spatial planning as a policy-making process through which the actors involved try to define and create desired spatial situations while defining and preventing undesired ones. In this regard, spatial planning serves as both a restrictive and promotional policy making tool that can be used to regulate undesired outcomes while attracting, promoting and bringing about desired change.

While this may promote order and improved aesthetics, this very aspect of spatial planning may promote the marginalisation of people and uses that do not align with the prescribed standards and norms, such as informal settlements. In this regard, spatial planning can be both proactive and reactive. The concept of strategic spatial planning indicates that spatial planning is also meant to be futuristic and interventional in the formulation and implementation of policies. To this end, spatial planning extends to the incorporation of informal planning processes in addressing land use management irrespective of the widening gap in principles and practice that has ensued as a result (Okeke, 2015:155).

This also brings into perspective the concept of spatial planning as a political process. Every government has a set of goals on which they base their manifesto on and politicians formulate decisions that affect the activities of the areas under their jurisdiction to achieve these goals. Spatial planning is then utilised to implement these decisions into strategic policy. In this regard, Acheampong (2019:22) observes that the spatial planning system in any country reflects the formal national governance structure in that country. This is further explored in Section 7.5 of the study.

3.2.3 The coordinative function of spatial planning

Spatial planning is not an autonomous domain but the coordination of stakeholders, practices and policies affecting spatial organization. Due to the fact that there is often a degree of competitiveness regarding the use of space, spatial planning involves resolving conflicting political and social demands on space (Cilliers & Victor, 2018:29). As a result, spatial planning is the vertical, horizontal and diagonal coordination of multi-sectoral, territorial, political and cultural interests and needs, to achieve a balanced outcome. Spatial planning also seeks to achieve a balance between public authorities and private institutions engaging in spatial activities.

Neuvel (2009:104) elaborates that spatial planning is not only substantive but a procedural concept that details how spatial planning processes should be designed, how spatial planning decisions should come about or how conflicts about both substantive and procedural aspects should be managed. Spatial planning is then understood as an activity, process and approach through which coordination is ensured to resolve conflicting demands on space.

Overall, spatial planning is a scientific discipline and an administrative technique developed as an interdisciplinary and comprehensive approach to ensure balanced spatial development. As a result, the concept embodies a variety of dimensions and practices. Table 3-1 presents some of the terms and dimensions synonymous with spatial planning, as applicable to this study. Figure 3-2 illustrates the concept of spatial planning as applied to this study.

Table 3-1: Dimensions of spatial planning

Urban and/or rural planning	Design and regulation of the uses of space within the urban and/or rural environment
Regional planning	Includes both rural and urban planning and transcends the limitations imposed by boundaries administered by local authorities by embracing planning issues for regions as spatial units larger than a single town, city or metropolitan area, but smaller than the state
Master planning	The process of developing or improving aspects of the built environment through the implementation of a long-range plan that balances and harmonizes all the relevant elements. These include population, economy, housing, transportation, community facilities and land use.

Strategic spatial planning	A socio-spatial process or method aimed at solving complex spatial problems by creating strategic visions, actions and means that shape and frame what a place is and may become. It facilitates decision-making within a society and entails establishing and developing strategies set within a long-term perspective.
Land use planning	Planning for the optimal current and future use of land, considering the different social, political, economic and environmental concerns.
Land use management	A system of legal requirements and regulations that govern the use of land and the rights to its development

Source: Own construction based on (Healey, 2007:127; Stead, 2021:300; van Dijk, 2021:1)

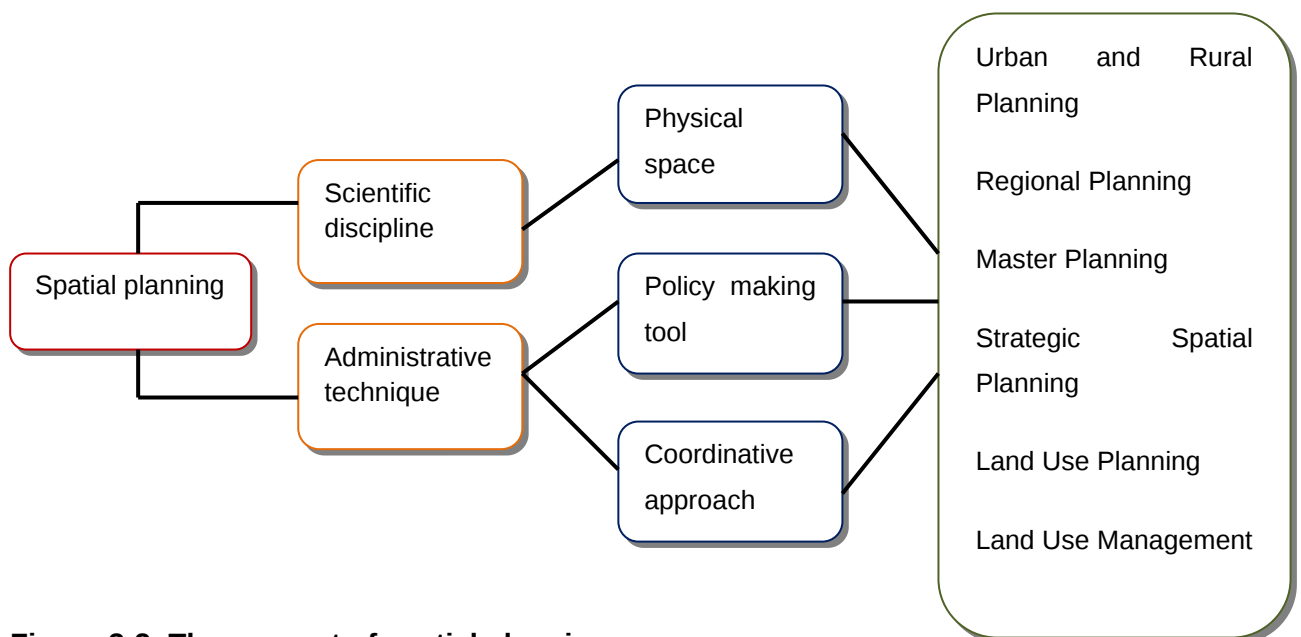


Figure 3-2: The concept of spatial planning

Source: Own construction (2022)

The overall goal for spatial planning is to balance various uses of land by categories, through policy making and coordination; to promote spatial sustainability. Having established an understanding of the concept of spatial planning, the next section provides insight into the concept of a city region. Emphasis is placed on the definition of a city region and dynamism within a city

region. These form the basis for understanding the spatial development within a city region and how it impacts informal settlements and SCD.

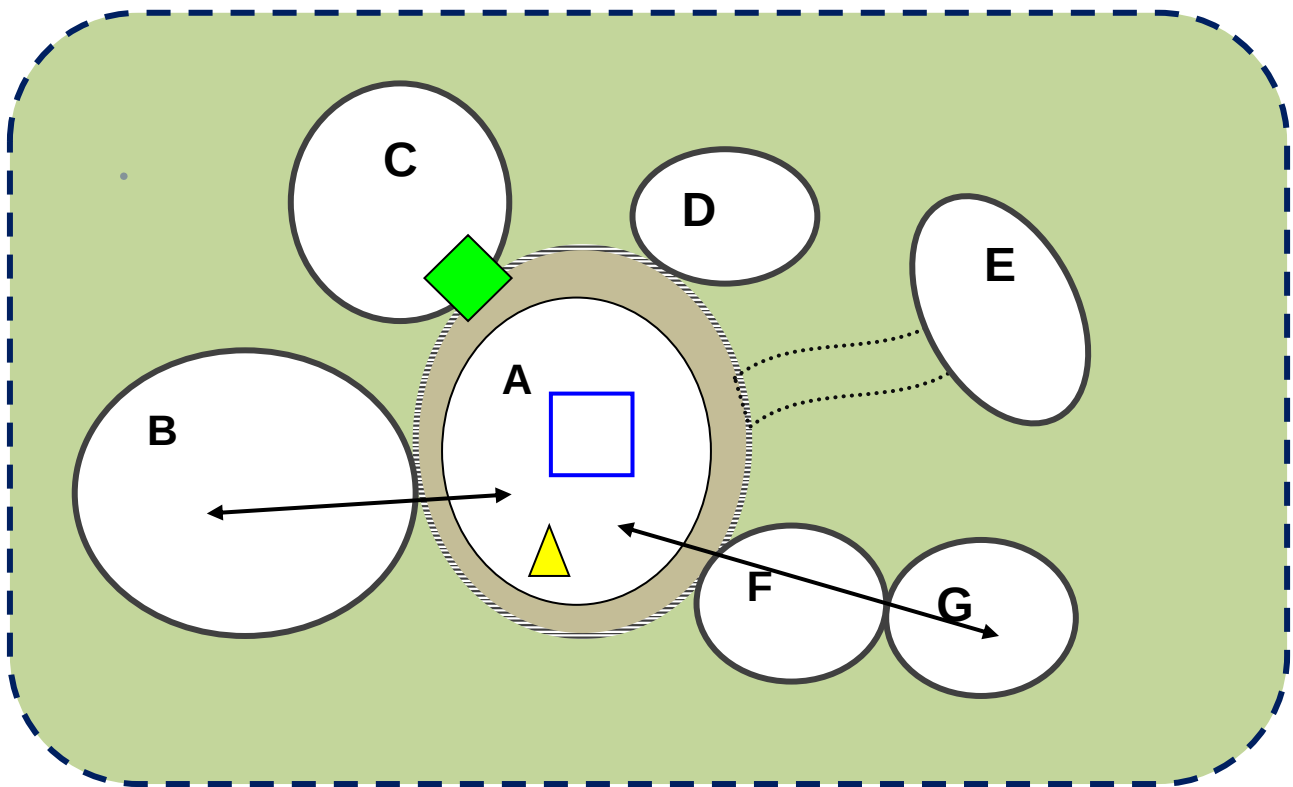
3.3 Understanding the concept of a city region

The concept of city regions has, over the years, gained widespread attention from economists, planners, politicians and policy makers alike. Despite the widespread attention, the concept is often misunderstood. Conteh (2017) explains that a city region typically denotes a number of large cities forming a conurbation or urban zone with multiple administrative districts but sharing resources such as one or more Central Business Districts (CBDs), labour markets and a network of transport systems such that it functions as a single unit.

3.3.1 Definitions and interpretation of the city region concept

According to Watson (2018:4) a city region is an area within which the connections between one or more cities and the surrounding rural land are intense and are functionally connected; economically, socially, politically and geographically. Scott (2008:131) defines a city region as “enormous expanses of contiguous or semi contiguous built-up space surrounded by hinterlands of variable extent (and) marked by ramifying local institutions and an increasingly distinctive political identity”.

A city region transcends the traditional administrative boundaries of single urban local government authorities to include other cities and towns as well as semi-urban and rural hinterlands. This is based on the argument that administrative boundaries do not delineate interdependencies between the cities, their neighbouring towns and commuter hinterland. This is reflected by human behaviour regarding where to live, work, shop, visit for entertainment and leisure; the non-linear functional economic areas, such as job markets or real estate markets; and the cross-boundaries ecological and environmental relations such as animal habitats and pollution (Hildreth & Clark, 2005:2; Purkarthofer & Humer, 2019:3). According to (RWCLM, 2019:27) the main objective is to ensure that economic activities from different parts of the province complement each other, placing more emphasis on collaboration than competition; to build an integrated and globally competitive region. Figure 3-3 provides a graphical illustration of a typical city region.



Where:

	City Region		Metropolitan Municipality
	Municipal Boundary		Animal habitations
	Rural-urban fringe		Movement of people, goods and information
	Urban centre		Urban node

Figure 3-3: The city region concept

Source: Own construction (2022)

3.3.2 The dynamism of city regions

The concept of city regions aligns with Patrick Geddes notion of a conurbation; which he described as a polycentric urban agglomeration of cities, large towns and other urban areas that have merged to form one continuous developed area (Karon & Mikulski, 2012:184). Geddes emphasises the significance of developing transportation to link areas and create a single urban

labour market or travel to work area. In this regard, city regions transportation should be understood as the key driver for city region formation and development.

Rodriguez-Pose (2008:1027) explains that the term city regions is often used intermingled with other similar or complementary concepts such as: global cities, world cities or regional economies. This brings into perspective the significance of city regions as spaces designed to promote economic growth and development. While this may not be the case in all city regions; the integration of various cities is often a strategy to promote the economic competitiveness of the region, nationally and/or internationally. Scott and Storper (2003:581) posit that city regions are locomotives of the national economies within which they are situated; by reason of their jointly generated agglomeration economies and their innovative potentials.

Cross boundary interactions require the consideration of functional overlaps and interconnections in respect of spatial planning (Greenberg, 2010:21). Purkarthofer and Homer (2019:2) propose the view that soft spaces hold the potential to successfully tackle planning challenges by bypassing bureaucracies and rigidities associated with administrative boundaries and statutory planning. Since development at the city region scale often implies the coordination of a range of institutions and agencies, planning for them presents opportunities for efficient governance through the formulation and implementation of strategic policies.

However, Grandqvist *et al.* (2019:1) note that although city regions aim to break away from the slow and bureaucratic statutory planning, strategic spatial planning in administratively fragmented city regions has been rife with tensions that include technical challenges in defining functional urban systems, organizational flux and inter-municipal competition over investments and taxpayers. The political identities of city regions as territorial units with the boundaries that do not coincide with some pre-existing administrative boundaries and the implications on spatial planning are still to be understood (Scott, 2008:15)

City regions have also been associated with influencing a myriad other spatial planning challenges such as urbanisation, the proliferation of illegal settlements and spatial inequality. Greater perspective into city regional spatial planning is gained through the analysis of theories of regional growth and development as well as location theories.

3.4 Regional economic development and growth theories

The principle of agglomeration economies explains the relations between or amongst cities in proximity to each other. In a city region context, the individual cities or regions share knowledge, benefit from shared infrastructural development initiatives as well as the presence of large firms. In some instances, the development of a city region is initiated at one point anticipating the flow

of innovations from that point to the surrounding areas. In other cases, growth and development within and among these regions is not equal due to a myriad of factors including government or political interference and inadequacy in terms of implementation.

Therefore, this section examines the Cumulative causation theory, the Growth Pole Theory, the Urban Bias Theory and the Central Place Theory. Though the Core -Periphery theory by Friedmann (1965) would provide insight into uneven development in a region based on a core and peripheral area, these aspects are also included in the Cumulative Causation Theory; hence the exclusion of the former.

3.4.1 Cumulative Causation Theory

The Cumulative Causation Theory explains why and how there is inequality in the development of regions; why the inequalities persist; and how such trends can be overturned. The theory was introduced by Gunnar Myrdal in 1957, as he described how increasing returns to scale produce clustering of economic activity within those regions that are first to industrialize, at the detriment of other regions (Dawkins, 2003:139). This manner of development produces two classes of regions: develop/leading and underdeveloped/lagging regions.

The theory states that regions that gain an initial advantage maintain and expand it as they attract migration, capital and trade to the detriment of development in other regions, hence uneven development (Azestop, 2019:20). As the process of growth feeds itself through a process of cumulative causation “underdeveloped regions may benefit from growth in developed regions through spread effects resulting from the diffusion of innovations into a lagging region and the growing export markets for lagging region products.

However, these benefits tend to be offset by the “backwash” effects resulting from the flow of capital and labour from the lagging region into the developed region” (Myrdal, 1957:39). The process of cumulative causation is reinforced by free trade among these regions, further catalysing growth in developed regions at the expense of lagging regions (Dawkins, 2003:140). As explained by Myrdal (1957:39), lagging regions are often characterised by fewer economic or employment opportunities, low levels of real income, low investment as well as capital deficiency.

As the developed region expands, it attracts more people in search of employment opportunities. The exodus of labour explains the high rates of urbanisation to cities and metropolitan areas. In a city region context, the dominance of metropolitan areas in urbanisation is highlighted by the fact that three quarters of internal and, by some measures, external migration is to metropolitan areas (Collinson *et al.*, 2006:3). This explains a backwash effect as more labour congregates in the developed regions while there is a reduction in labour and skills in the lagging region. Long

and Zhang (2009:11) agree that interactions between developed and underdeveloped regions leads to a process of labour workforce pooling as skilled labourers enter a region exchanging knowledge, ideas and information.

Consequently, both regions may face similar challenges such as the proliferation of informal settlements but the higher levels of knowledge, income, tax base, innovation and infrastructure within the developed region make it superior in addressing these challenges. This supremacy may be perpetuated by state or political interference through the investment; resulting in a multiplier effect. This is illustrated in Figure 3-4:

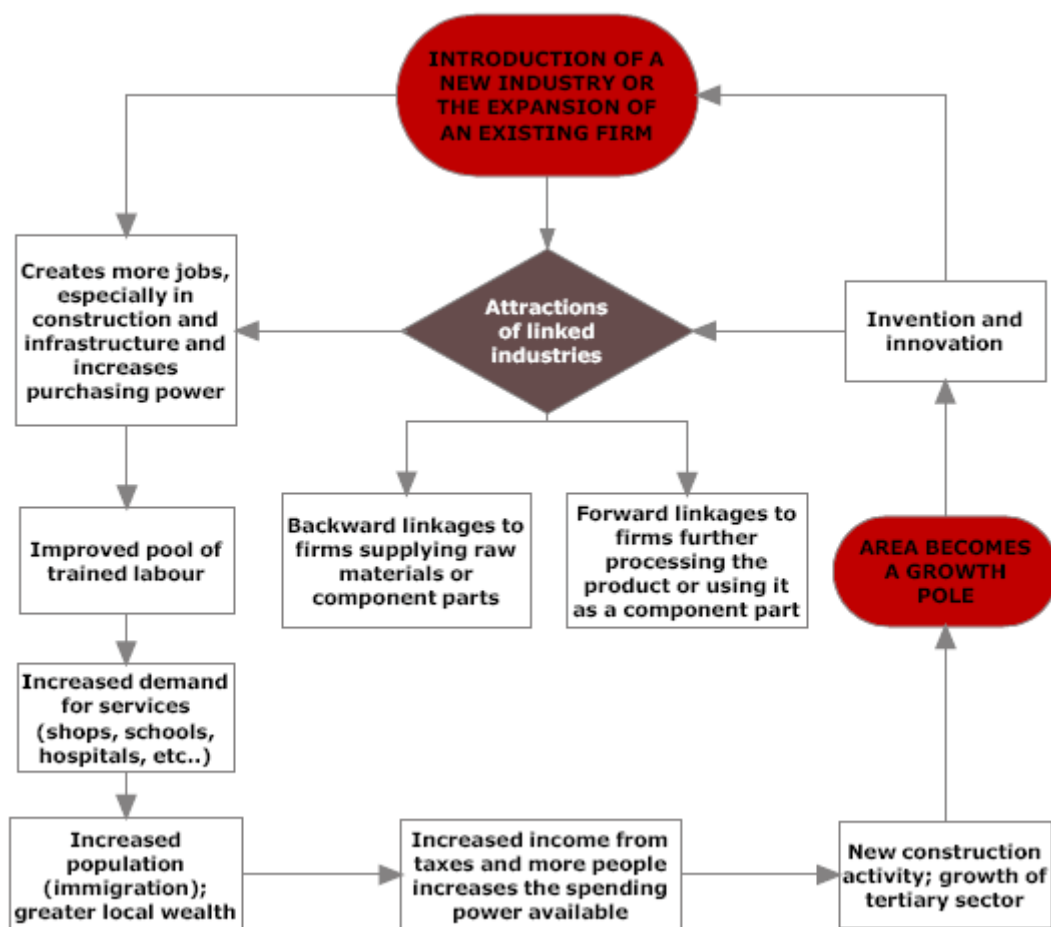


Figure 3-4: Multiplier effect in regional development

Source: Barcelona Fields Studies Centre (2020)

Fujita (2004:7) posits that political interference would bring about the end to the inequality and the policies promoting equality would induce higher economic growth. Contrary to the State's former position in perpetuating inequality, and in turn poverty within the lagging regions, the implementation of egalitarian policies would integrate the interests of different groups and regions,

advance economic development and a further drive to the whole process of spread effects (Pacino & Rizza, 2009:189-191). This is further explained in the Growth Pole Theory.

3.4.2 Growth Pole Theory

The growth pole theory also explains how growth occurs at key points and at different intensities within a region. The theory accounts for the prospects of spread effects or the diffusion of economic growth and development within a spatial context. This is premised on the postulation that: state intervention through policy implementation manifests in the establishment of 'counter magnets' in order to promote development in such areas and ensure that it will gradually diffuse to the poorer and isolated parts of the country in order to reduce disparities between regions (Boshoff, 1989:34).

The original theory was propounded by Francois Perroux (1950) who, from an economic perspective, defined growth poles as: "propulsive firms that are large relative to other firms and generate induced growth through interindustry linkages as the industry expands its out" (Dawkins, 2003:139). Boudeville (1966) then provided a spatial perspective, defining a growth pole as a place where a set of expanding industries are located in an urban area and induce further development of economic activity throughout its zone of influence. The place where these 'expanding', 'propulsive' or 'dominant' industries are located in the region becomes the pole of the region and agglomeration tendencies are promoted.

In essence, a growth pole is a town, city, region or state with an agglomeration of propulsive industries that start and stimulate growth to the surrounding areas (Kimengsi & Fombe, 2015:82). Gavrilla-Paven and Bele (2017:209) expound that a growth pole is an urban location where economic activity ignites growth and better quality of life in the urban periphery.

The growth pole theory is acclaimed for providing insight into the role of government in stimulating and supporting sustainable and equitable economic growth and development within and among regions. The establishment of a growth pole attracts public and private investment which in turn results in the provision of socio-economic services and infrastructure within that pole (Kimengsi & Fombe, 2015:87).

This theory explains how the development of nodes as centres for development and corridors as access routes to these nodes and other economic opportunities can stimulate SCD in informal settlements intervention. Though there is limited research on the relationship among nodal and corridor development, sustainable community and addressing informal settlement, existing literature supports the prospects of SCD through the creation of growth poles. As postulated by Dobrescu and Dobre (2014: 262,266), growth poles are locomotives of integration whose network

with other centres induces rapid economic growth, job creation and a boost in the labour productivity of the region

However, the growth pole theory is generally criticised on the grounds that the implemented policies and strategies often do not lead to the expected outcome of inducing new economic growth in lagging regions. Christofakis and Papadaskalopoulos (2011:7) argue that the introduction of growth poles in the developing countries often does not lead to the improvement in the conditions and quality of life as expected. The situation is aggravated by limited intervention measures from the government; which is equally challenged by inadequate capacity arising out of poor funding, lack of manpower, poor project execution and inadequate participation by the community (Magidimisha. & Chipungu, 2019:233).

Hospers (2004:79) adds that “besides the attractiveness of a growth pole at a certain point in time, it is important to review and discuss the adaptability of the area over time”. In this regard, the creation of nodes as growth poles may not induce SCD at micro level; and economic development at macro/municipal level if the policies are not sufficiently implemented and monitored.

3.4.3 Urban Bias Theory

The urban bias theory explains how development policies tend to favour urban areas to the disadvantage of rural areas; and in turn induce urbanisation. The theory was propounded by Michael Lipton in 1977 in his book: ‘Why the Poor Stay Poor: A Study of Urban Bias in World Development’. Lipton argues that “urban bias is the moving force behind needlessly slow and inequitable growth in contemporary developing countries” (Lipton, 1984:139)

The theory states that urban dwellers, because they have more power and government support, can divert a disproportionate share of resources towards their personal interests and benefit; to the disadvantage of the rural sector (Adell, 1999:11). As a result, urban areas have improved infrastructure and services; more employment opportunities; better access to information and technology; and better investment opportunities. Rural areas on the other hand, are often characterised by poverty, lower employment opportunities and lack of basic infrastructure and services.

The role of politics in promoting inequalities between urban and rural areas underpins this theory. Robert Bates clarified how urban biased policies “made good sense for politically powerful groups in Sub-Saharan Africa” since the governments worked in response to the demands of organised private interests of the urban elites and a few wealthy farmers (Bates 1988:121). Due to their desire to get re-elected and retain power, governments tend to use a disproportionate share of

the resources in generating more favourable urban outcomes (Magumdar *et al.*, 2004:139). Governments are also likely to use the urban bias to curb the potential of any form of urban political protests.

The theory also provides insight on how some of alliance between urban and rural politicians and elites reinforces the divide between urban and rural areas (Adell, 1999:11). Politicians in the urban areas would seek to promote their own interests hence the flow of funds and resources to urban areas; while politicians in rural areas would strive for continued domination of the rural communities hence, they allow the channelling of funds to urban areas.

The theory explains how development policies and the resultant urban bias influence migration of people from rural to urban areas, particularly in developing countries. According to Yeboah (2008:62) government development policies and budget allocations, which favour urban residents over rural areas, tend to pull people into the urban areas. This had positive implications during the 1950s and 1960s, as the aim was to promote the rapid transference of men and women from unproductive jobs in the countryside to more productive jobs in towns and cities (Corbrisse & Jones, 2010:7). In the context of modern-day cities and towns, the consequential unprecedented urbanisation has resulted in pressure on resources and high rates of unemployment within urban areas.

Zimbalist (2017:5) explains the concept of intra-rural and intra-urban bias whereby, some colonial government policies in the late nineteenth and early twentieth centuries reflected a specific intra-rural and intra-urban bias that benefited whites at the expense of black Africans. However, this is not a contrast per se; but an extension of the theory which shows the use of government policy to marginalise one group socially and spatially within a region at the expense of another. Section 3.6.2.1 explains this concept in detail.

The same argument can be used to explain the differences between the lives and livelihood of the urban elites in high-income, low-density neighbourhoods and those in the poorer sections of the city such as informal settlements. Although urban dwellers would ideally benefit from the urban bias unlike their rural counterparts; the lives of the residents of informal settlements are characterised by the lack of access to infrastructure and basic services and unemployment among other challenges. Sverdlik (2011:140) concedes that some low-income households in urban areas may enjoy limited benefits if governments are unable or unwilling to provide infrastructure and services or fail to promote environmental health and access to health care; a phenomenon referred to as the urban penalty.

3.4.4 Central Place Theory

The Central Place Theory (CPT) was developed by Walter Christaller in 1933 and expanded by August Lösch in 1940. The theory and the subsequent model provide a framework for the analysis of settlement hierarchy and the structure of settlement patterns. The theory is based on the following:

- The central place exists primarily to provide goods and services to its surrounding population. The city is, in essence, a distribution centre.
- Higher order goods are specialised items that people buy less often. Lower order goods are those that are replenished frequently such as food and other routine household items.
- Range is the maximum distance consumers are willing to travel to access a specific good or service. Beyond this distance consumer will not travel as the distance travelled for good/service will outweigh the benefit. This also includes the transport costs incurred.
- Threshold is the distance that marks out a circular area with sufficient population to generate a level of demand required to bring about the provision of certain goods or services. If this size is not reached, then a particular activity will not start, or it will be closed.
- A good or service is provided only when the range exceeds the threshold
- Sphere of influence is the area under influence of the Central Place
- The urban hierarchy is based on the functions available in a given settlement (adapted from Christaller, 1966:22)

3.4.4.1 Hierarchy of Central Places

The CPT illustrates the spatial arrangements and distribution of human settlements and their number based on population and distance from another human settlement. The CPT suggests that the central places, providing goods and services to the surrounding areas, would form a hierarchy. A large number of widely distributed small places would provide lower order goods and services to service regular widespread demand. Successive steps of the hierarchy would consist of larger central places providing even higher-order goods and services (Planning Tank, 2016). Figure 3-5 depicts this arrangement of central places.

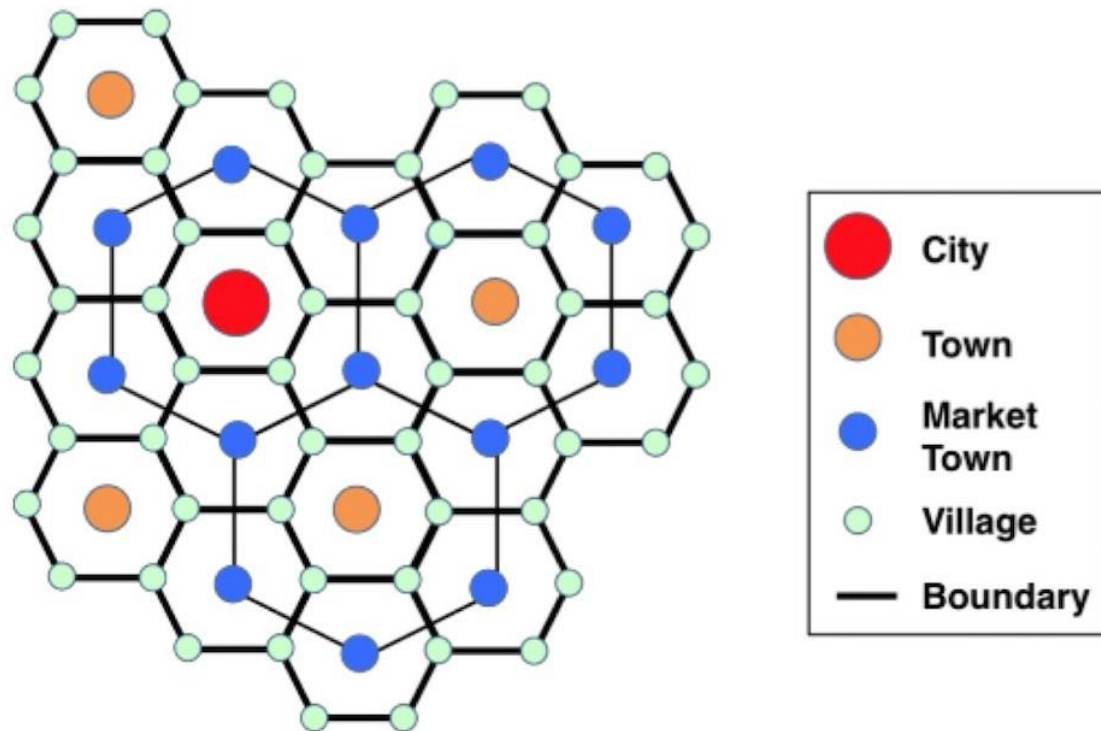


Figure 3-5: The hierarchy of the hexagonal central place

Source: Jamal (2017) adapted from Christaller (1966)

The diagram explains the existence of cities, towns and settlements of different sizes; performing different functions, through the recognition of the economic relationships within cities and their hinterlands (Briney, 2020; Capello, 2015:75). Within a city region context, these settlement typologies can be considered as different municipalities, with metropolitan municipalities or the core of the city region representing the city. The theory explains that the concentration of goods and services would be within that metropolitan municipality or core, resulting in higher concentrations of people, more economic activities and higher rates of urbanisation.

Brand (2014: 16-17) extends that the identification of high and low order centres allows for the delimitation of functional areas in national space, based on the relationships and flows between the different spaces and the economic catchment areas of higher order centres. Whereas the city can represent a core or metropolitan municipality, the town, market town and village represent surrounding administrative boundaries, regional centres and smaller nodes (also as illustrated in Figure 3-5). These provide lower order goods and services for which people do not need to travel to the metropolitan or core to have access.

This in turn provides the basis for understanding the challenges and opportunities that are experienced within different settings within the city region. Schmidt and Du Plessis (2013:13) elucidate the significance of understanding settlement typologies to effectively conceptualise

plans, allocate resources, reduce erroneous interpretations of rural processes and urbanisation trends, determine the implementation of development interventions and avoid misclassification and misguided policy formulation. Thus, regional planning plays a vital role in ensuring that every settlement typology is adequately planned for.

The administrative principle describes how products and services, especially tertiary functions come to be territorially organised into an urban hierarchy. Christaller propounded that “settlements are nested according to sevens and market areas of the smaller settlements are completely enclosed within the market area of the larger settlement” (Ikeda & Murota, 2014:7). This is based on the idea that it is unrealistic for centres to be ‘shared’ and pattern of control which cuts through functional units is potentially problematic” (Madina, 2016:8). As a result, the administrative function is held at the higher order centre.

This principle is reflected in the arrangement of administrative functions and governance structures within city regions and metropolitan cities. Although the different districts or regions all have district offices, main administration and certain functions are carried out at the central office. Municipalities with functions under the jurisdiction of provincial governments also demonstrate this arrangement. This also extends to the provision of basic services such as health and educational facilities. Smaller settlements and towns are often served by clinics and primary and secondary schools (low-order services) while hospitals and tertiary educational institutions (higher order services) serve the whole city or metropolitan area.

However, Raagmaa and Kroon (2005: 205) argue that the provision of social infrastructure such as schools and hospital should not be entirely based on the Central Place concept and rank size rule but should take into consideration community participation and the political premise within that area. Turok and McGranahan (2013:470) also acknowledge the dominance of political ambitions, personal interests and the restrictions imposed by the government as major contributing factors in the location of settlements and the provisions and standards of social and technological infrastructure; all of which are omitted by the CPT.

The transport principles states that the distribution of central places is most favourable when as many important places as possible lie on one traffic route between two important towns, leading to the minimization of road length (Ikeda & Murota, 2014:7). Given the assumption that consumers will travel to the closest supplier of a particular product, situating central places on a traffic route provides for most efficient transport network and the least costly infrastructure provision.

Higginson (2016:14) notes that “the concept of growth and development nodes linked to transport networks in modern urban spatial planning also follows this logic”. This translates to the provision

of economic goods and services along transportation routes to promote accessibility and reduced costs while ensuring a network for all the administrative places within the city region. Therefore, despite the flaws and criticisms of the CPT, the theory sheds light on the interdependence of settlements, the hierarchy of functions, the threshold populations and the role of transport networks within a city region. Regardless, there is need to comprehend the urban structuring within a city region and the location choices that determine such structuring.

3.5 Location and land use theories and models

Location and land use theories explain the rationale as to why firms and households locate where they are and ultimately why land uses are organised in a certain manner; by taking into consideration the economic forces that steer location choices. Capello (2011:2) posits that location theories seek to explain the distribution of activities in space to identify the factors that influence the location of individual activities, the allocation of different portions among land uses and the functional distribution of activities in space. For this study, these theories explain how spatial planning, in terms of land use planning, influence spatial structuring within city regions and the location choices available for low-income households, especially informal settlements.

3.5.1 Bid Rent Theory

The Bid Rent Theory explains the spatial marginalisation of informal settlements within a region. The theory, propounded by William Alonso in 1960; is based on the assumption that a region or a city only has one core which is often the CBD, centre or market. The theory is an extension of Johann von-Thunen's Isolated State Model (1926) which illustrated, using concentric zones, the location of agricultural land uses with higher transportation costs and greater revenue closer to the market or centre (Clark, 1967:370-371).

Alonso adopted the theory to urban land uses, explaining that equilibrium is achieved when a land use's proximity to the centre is offset by transportation costs incurred in reaching that centre. The theory postulates that rational consumers would seek out locations to balance costs of commuting with the inconveniences associated with commuting. In that regard, consumers who can afford and are willing to pay for more premium land would locate closer to the CBD of a city incurring minimal transportation costs while consumers paying a lower rent would in turn pay greater transportation costs due to the distance from the CBD (Alonso, 1964: 14). Figure 3-6 illustrates the probable location choice for commercial, industrial and residential land uses according to the bid rent theory.

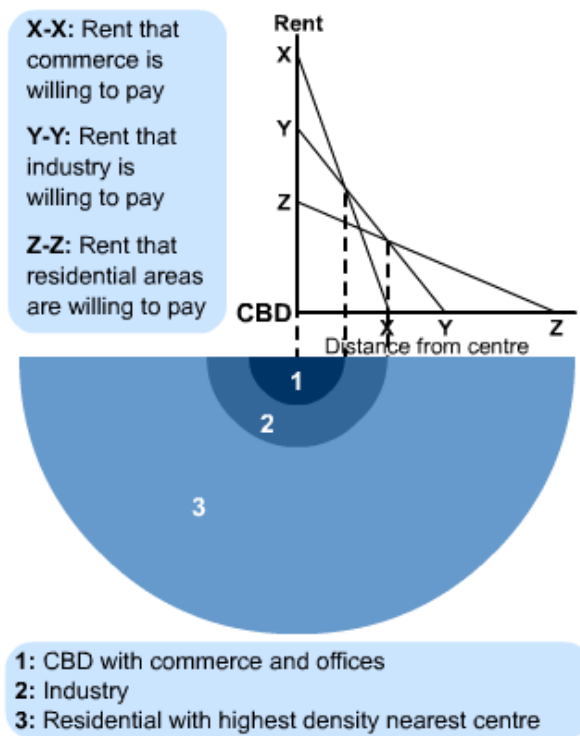


Figure 3-6: Bid Rent Model

Source: Adapted from Alonso (1964:15)

The theory explains how housing particularly that of low-income households often opt for land farther from the CBD, to pay less rent. According to Alonso (1964:15) the poorest properties are found on the very outskirts of the city, as this is the only location that they can afford to occupy, while commercial activities and in turn housing for the high-income earners are located near the CBD. Bochnovic (2014:10) affirms that households will continually evaluate locations and settle further from a CBD, as long as the gains made through reductions in land cost outweigh the disadvantages of increased commuting cost.

Despite household choices, land use management through zoning is institution in allocating land for low-income households on the peripheries of the city. This is exacerbated by the role of the housing market in relegating low-income households from accessing housing on prime land. Thus, informal settlements and other low-income housing options are often located on the peripheries of the city or region where land is cheaper and more accessible.

On the other hand, the theory fails to recognise the 'paradox of urban cities', that is, the possibility of low-income households locating at or close to the city centre in higher densities to curb the excessive rent. Despite earlier assertions, transportation costs often constitute a large proportion of the household income. As a result, cramped residential houses within or close to the CBD are a feature common in the developing world. Low-income households occasionally invade open

spaces in areas zoned for other uses particularly those in proximity to economic opportunities; thus, the establishment of informal settlements. Beckmann (1969) supports this assertion noting that “poorer people would maximize their location for the benefit of reduced transportation costs, but at the cost of less occupied space”. This manifestation is explained by the Concentric Zone Model. Nonetheless, the Bid Rent Theory explains how spatial marginalisation of informal settlements is due to the affordability and accessibility of land on the periphery of a city or region.

3.5.2 Concentric Zone Model

The Concentric Zone Model, proposed by Ernest Burgess in 1924, is an extension of the bid rent model. The model illustrates the relationship between expansion of the city and the socio-economic groups within society using five concentric zones. The model assumes that the centre is the oldest part of the city around which the city expands over time, and the newest development comes on the edges. The concentric zones are illustrated by Figure 3-7 below.

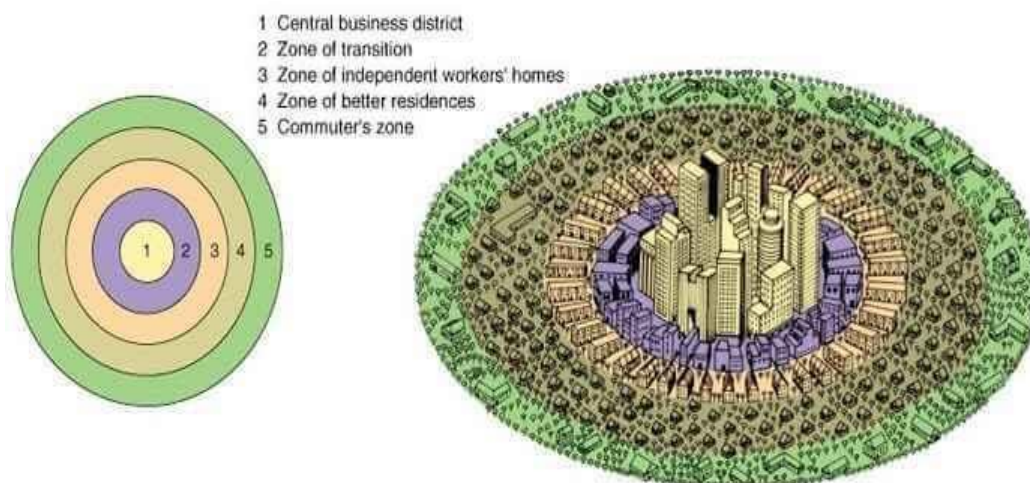


Figure 3-7: Concentric Zone Model

Source: Burgess (1924:85-97)

The centre has a high density of activities, and the availability of land is scarce hence the more prominent groups of society opt to reside farthest from the CBD where they can build large houses. The growth of the city would result in the CBD invading the surrounding land uses and the continual successive invasion of zones by the preceding zone. The zone of transition is characterised by older structures and buildings which were previously used for factories and slum like tenement housing blocks. The conditions in this zone illustrate the typical urban blight within sections of cities. In this regard, the model explains the choice made by the poor to settle in marginalised sections of the city which are affordable for them as they cannot compete with the affluent groups in society.

The model also illustrates how accessibility to economic services and facilities is a critical factor in the determination of residential land use particularly for the poor, in urban setting. Ngoran and XiongZhi (2015:48) explain that proximity to places of work and other goods and services influences the choice made by lower income groups to reside in the inner-city suffering from urban decay while the higher income groups settle in the urban periphery as they can afford cars. Everson and Fitzgerald (1972:31) agree that the poor often cannot afford transportation costs to access goods and services, hence the need for them to be located near the centres of provision.

However, the model has been criticised for not being applicable to areas outside of the United States. The simplicity of this model is not a fitting representation of the complex nature of cities whereby boundaries and zones are not particularly concentric. Quinn (1940:210) concurs that various cities do not conform to a circular spatial pattern but show irregularities in their patterns, even Chicago on which the model was based. Further, the structure of modern-day cities shows co-existence of different land uses within the same space or alterations to certain spaces to allow for mixed land uses. According to Harvey (1996:216) modifications in the socio-economic and physical aspects of cities or urban settings results in land use alterations that include rezoning of portions of land, infill development within city boundaries and the development of dormitory areas.

Also, the model does not account for the growing impact of transportation routes on land use. Rodrigue (2020) explains that the model was developed when motorized transportation was still uncommon as most people used public transit, hence the city's expansion involved reconversion of existing land uses. In that regard, use of concentric zones does not conform to the normal urban setting where low-income housing is influenced by the location of industries which in turn tend to be located along transport route. The Sector Model makes these provisions.

3.5.3 Sector Model

The sector model was propounded by Homer Hoyt in 1939. This model is an altered version of the concentric zone model which explains how cities develop in sectors rather than simple rings. Hoyt observed that cities would tend to grow in wedge-shaped patterns, or sectors, emanating from the CBD and centred on a major transportation route. He also observed that similar sectors or land uses attracted each other which repelling incompatible land uses (Hoyt, 1939:30-36). Figure 3-8 illustrates the Sector Model.

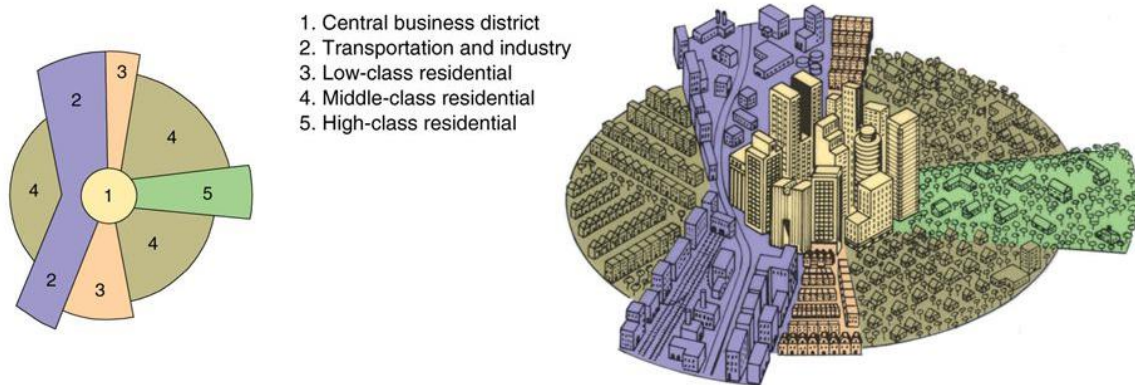


Figure 3-8: Sector Model

Source: Hoyt (1939: 30-36)

The Sector Model is lauded for the recognising the role of transportation and transportation route in the determination of the spatial arrangement of cities. Transport linkages profoundly influence activities and their locations. Industries and retail activities often locate close to roads/railways to reduce transportation costs and ultimately costs of production while households locate in areas with higher accessibility to work and other socio-economic facilities (Iacono *et al.*, 2008:2). This explains the location of sectors 2 and 3 in proximity to each other on the model whereby by the poorer people who usually work in the factories stay close to the industry to save transportation costs. Therefore, some informal settlements locate on land close to transport networks and industries to reduce costs in accessing economic opportunities.

The model also explains how certain areas of the city are more attractive for certain activities due to environmental, socio-economic and physical factors. As illustrated by the model, low-income housing is often located in proximity to the industrial sector while housing for the upper class is locate farther from industrial areas, in a corridor extending to the outer edge of the city. The land within which this sector falls is undesirable due to air and noise pollution from the industries; hence it is considered only fitting for low-income housing. This explains how zoning of land uses may influence the location of low-income housing and informal settlements close to industries and undesirable or inhabitable land prone to disasters.

Hilal *et al.* (2017:134) concede to the location of industrial areas and environmental amenity values as determinants in the location of low-income housing. This spatial arrangement is typical of colonial cities within which racial segregation, as a result of repressive colonial policies, influenced the physical structure of residential patterns and ultimately the cities' spatial structure (Carr, 1997:168). This is discussed further in Section 3.6.2.1 of this study.

However, the sector model is criticised for the monocentric representation of cities as multiple business centres are not accounted for in this model. Like the Concentric Zone Model, the Sector Model is not applicable to polycentric cities as many CBDs exist in such towns. Moreover, every city is different, and the factors influencing the growth of a city are diverse. Arribas-Bel and Sanz-Gracia (2014:981) argue that many cities have evolved into structures with multiple employment centres, indicating the contrast between reality and the monocentric city assumptions.

Nonetheless, the sector model illustrates how the clustering of land uses is determined by compatibility of land uses, how access to transport and economic places determine the location of low-income households and how spatial planning inadvertently or directly influences the location of informal settlements close on undesirable land.

3.5.4 Multiple Nuclei Model

Chauncy Harris and Edward Ullman observed that cities do not grow from an individual CBD; but develop multiple centres, nodes or nuclei that shape land values and surrounding areas; each with its own unique main function within the city. The Multiple Nuclei Model illustrates how new business districts began to develop their own adjacent land use patterns either by replicating the historic CBD patterns or developing new patterns of office complexes, high density residential and retail combinations (Harris & Ullman, 1945:14). The Multiple Nuclei Model is illustrated in Figure 3-9.

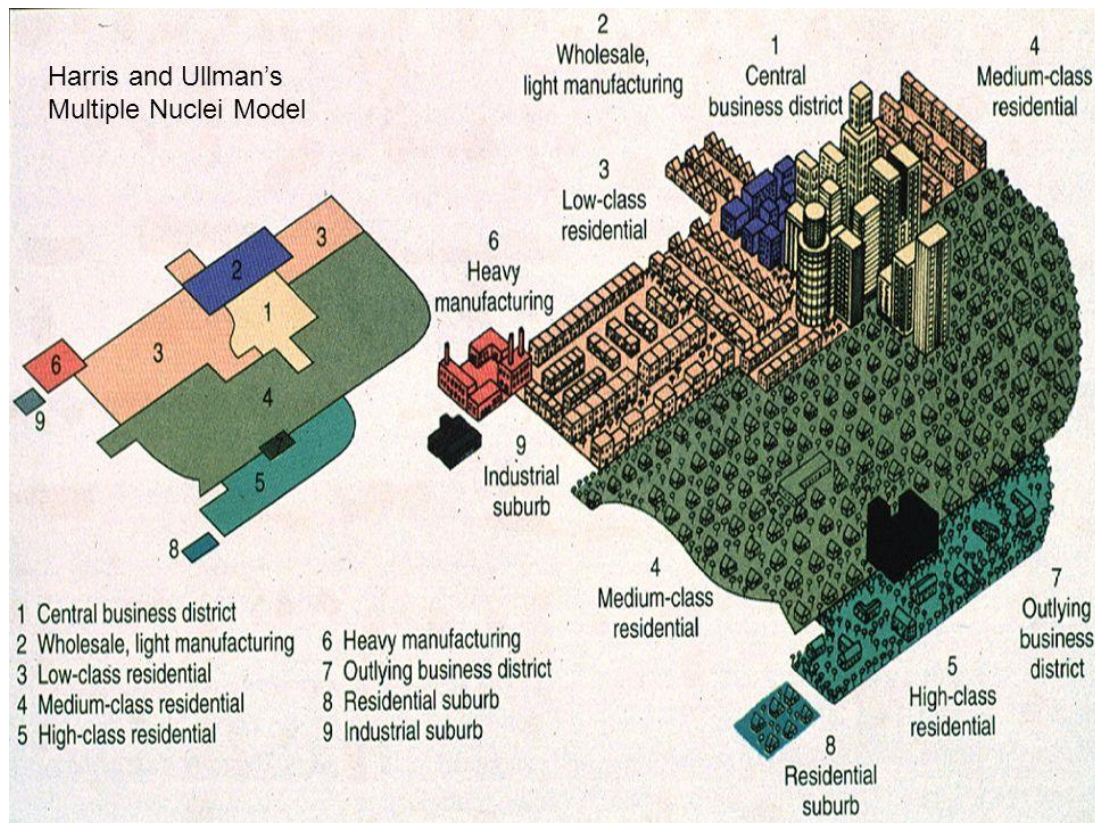


Figure 3-9: Multiple Nuclei Model

Source: Harris and Ullman (1945:47)

The model explains how decentralisation of activities has shaped the spatial and economic structures within urban areas. Due to urbanisation, which in turn influences the city's expansion, the traditional CBD cannot cater for the employment and other economic needs of the whole population hence the need for decentralisation of activities and employment opportunities. According to McMillen (2001:15) decentralisation within cities especially metropolitan cities, has resulted in the reduction in the proportion of jobs within the traditional CBD and large employment districts or employment sub-centres have arisen outside of central cities. The creation of these nodes or commercial centres promotes accessibility for spatially marginalised communities such as informal settlements as they would not have to travel long distances and in turn incur large transportation costs to access economic opportunities.

On the other hand, the model also describes how profit maximisation and compatibility of activities influence the choice of location for certain activities and in turn, land uses. A particular activity will locate itself where maximum profit can be earned; there a minimum restrictions activity and are fewer non-compatible activities. Waugh (2002:423) explains that the model was "developed as a response to the need for maximum accessibility to a centre, to keep certain types of land use

apart and to indicate the differences in land values”, inducing the specialisation of activities for each land use.

Mohsin and Anwar (2015:412) support this assertion, explaining that similar industries with common land use and financial requirement are established near each other and this clustering influences their immediate neighbourhood. This specialisation of activities promotes the marginalisation of low-income households as their activities and economic needs attract lesser investment opportunities and are perceived to generate less profit. This explains why informal settlements have limited, if any, access to high class service activities such as shopping malls, banks and retails shops.

Still, Yelling (1986:150) argues that certain commercial activities are likely to find low-class neighbourhoods desirable sites to invest, one of the reasons being limited restriction of business expansion. This presents prospects for access to economic facilities and high-class services for low-income households. Therefore, the Multiple Nuclei Model demonstrates how spatial planning can promote accessibility and transformation to low-income residential areas.

The location and land use theories and model provide insight into the development and structuring of cities by explaining the how land value influences the location and arrangement of land uses within a city or a region. This in turn explains the location of low-income households, particularly informal settlements. However, these simplified models of urban structuring do not explain the interactions between stakeholders using spatial planning and relevant planning policies; taking into consideration the economic, social, and ecological aspects of the urban structure. Thus, the essence of understanding the urban form.

3.6 Urban form

3.6.1 Understanding the urban form

According to Barton and Tsourou (2013:92) the urban form is the “distribution and pattern of human settlement within the city region”. It is the spatial pattern of human activities at a certain point in time; expressed as the configuration of the arrangement, function and aesthetic qualities of building designs, street layout, land use and urban spaces within a region (Anderson *et al.* 1996: 9; Mead *et al.* 2006:110).

Doherty *et al.* (2009:4) add that the urban form is the arrangement of the large functional units of the city which reflects both the historical development of the city and its more recent planning history and is defined by the spatial patterning of industries, commercial and residential land-uses and also by the different levels of residential density. In this regard, the urban form can be

described as “the shape of urban settings in terms of the defining characteristics such as the design and structure, where development occurs, what type of developments are likely to realise, what type of spaces are available and the interconnection of these areas” (Cilliers, 2015:22). While Figure 3-10 shows a graphic illustration of the urban form, Table 3-2 shows the elements of an urban form; providing more insight into the term and the concept.

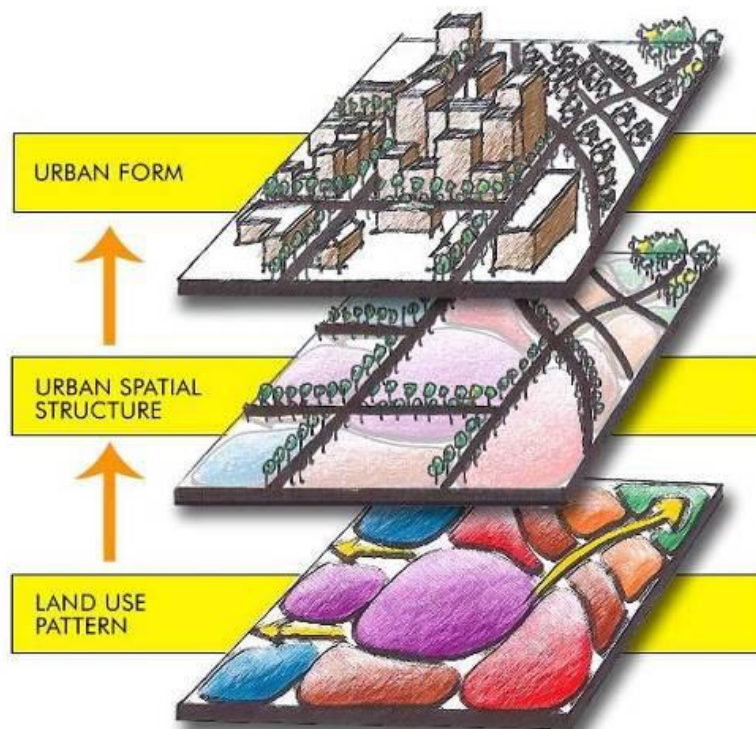


Figure 3-10: Understanding the urban form

Source: Kyova Interstate Planning Commission (2013:8.1)

Table 3-2: Elements of the urban form

Element	Description	Illustration
Density	The numerical measure of the number of people residing, or the extent of building development, in a given area. Basically, it is the concentration of population and activity in an area	

Element	Description	Illustration
Layout	The spatial arrangement and configuration of streets, blocks, buildings and open spaces. It influences the way in which different places and spaces are connected to each other Permeability is the crucial aspect of layout, as refers to the amount of access that is possible within an area.	
Housing/ building type	The character of the built environment, facades, height and style of the buildings as well as the continuity of space. Different types of housing/ building impact differently on people and the built environment.	
Land use	The different functions of the environment.	 ■ Purple - Parks ■ Salmon - Retail ■ Yellow & Orange - Private homes ■ Cream - Retail with Residential ■ Red - Residential Townhomes ■ Lt blue - Offices and Offices with Retail
Transport infrastructure/ Accessibility	Transport infrastructure is closely associated with accessibility as it determines the ease with which buildings; spaces and places can be reached .	
Integrated Elements	The above elements are interconnected and inter-dependant	

Source: Adapted from Dempsey *et al.* (2010: 23-26); Wan-Mohd Rani and Shamsuddi (2013:1162-1163)

While different authors offer a variety of urban form typologies; this study focuses on the two that are mainly applicable to the issues under discussion, that is, fragmented urban form and sustainable urban form. These explain how master planning and strategic spatial planning have promoted the proliferation and challenges within informal settlements as well as the opportunities for sustainability in addressing these challenges respectively.

3.6.2 Fragmented urban form

The term 'fragmentation' generally refers to the process by which various inequalities are produced and reproduced within the physical, socio-economic and political landscapes of cities. Chakwizira *et al.* (2018:85) define spatial fragmentation as the physical separation of urban land parcels, activities and use from socio-economic opportunity areas by buffering techniques such as roads, railways and open spaces from complementary and critical socio-economic opportunity areas. Balbo (1993:27-29) identified the following main causes for spatial fragmentation:

- Extreme rapid population growth;
- Functioning of the urban economy, that is, formal and informal practices that have an impact on land use and in turn the urban form;
- Ideology of urban planning, through master planning; and
- The role of the state, through the power of inclusion or exclusion.

The result is the emergence of different zones selected by or apportioned to different social or cultural group; isolated spaces and lifestyles; and a massive urban organism divided into various subsystems functioning in a fragmented manner (Altinok & Cengiz, 2008:3). Balbo (1993:25) observes the following as the common fragments which make up a city in developing countries: the centre which corresponds to the colonial city core; the planned districts; the illegal settlements, squatter settlements and/or slums; and the historic city, in countries with an urban tradition predating the colonial period. These are clearly illustrated by the Apartheid City Mode.

3.6.2.1 Apartheid city model

The Apartheid City Model demonstrates spatial fragmentation within a city, as a result of the role of the state and master planning. The model was employed as an instrument for Apartheid spatial planning in South Africa; in order to separate Black African, Coloured and Indian residents from the White residents. The imposition of racial segregation dislocated communities and entrenched inequality in the built environment, marginalising much of the population (Turok, 1994:244). The black communities were deprived of essential services and economic opportunities and had to travel long distances to access work and other economic opportunities.

Although the Post-Apartheid spatial planning system has attempted to rectify the remnants of Apartheid, there has been limited success in reducing the fragmentation. Some areas are well located in relation to current economic opportunities while others, mainly the former Black Africans townships located in the periphery, have remained disadvantaged (Todes *et al.*, 2010:416). The Apartheid and Post-Apartheid scenarios are depicted by Figure 3-11 and Figure 3-12 respectively.

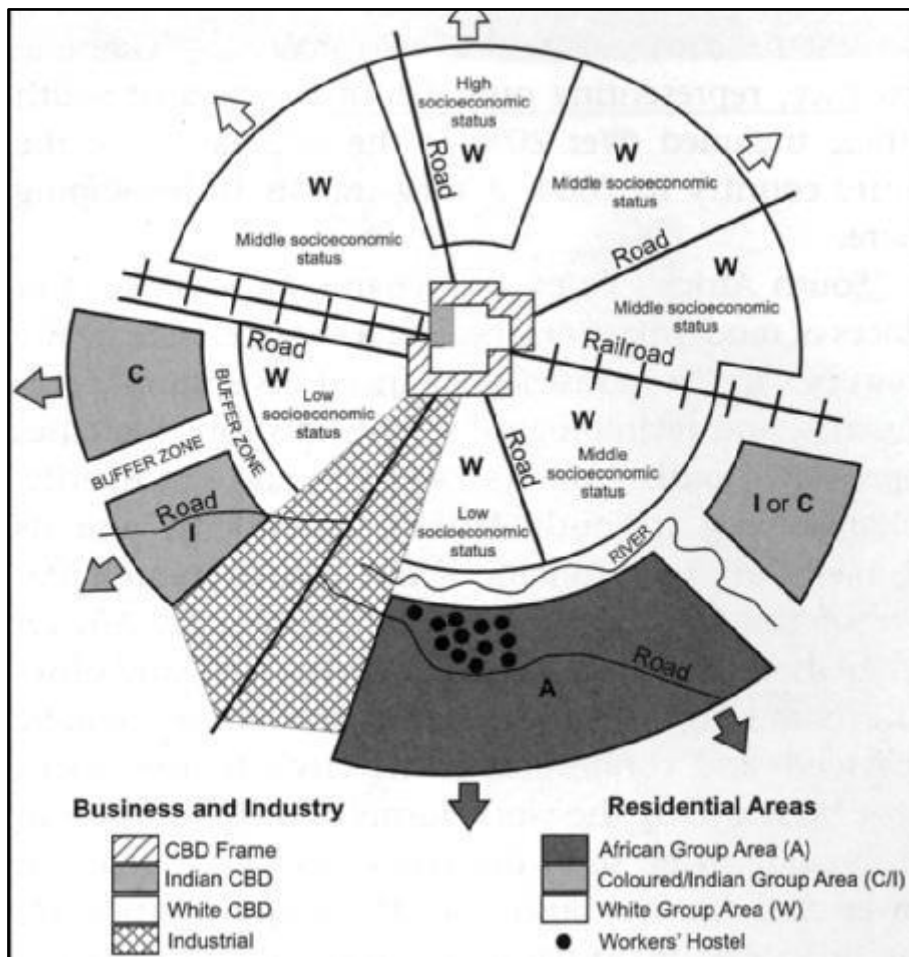


Figure 3-11: Apartheid City Model by Davies (1981)

Source: Cole and De Blij (2007)

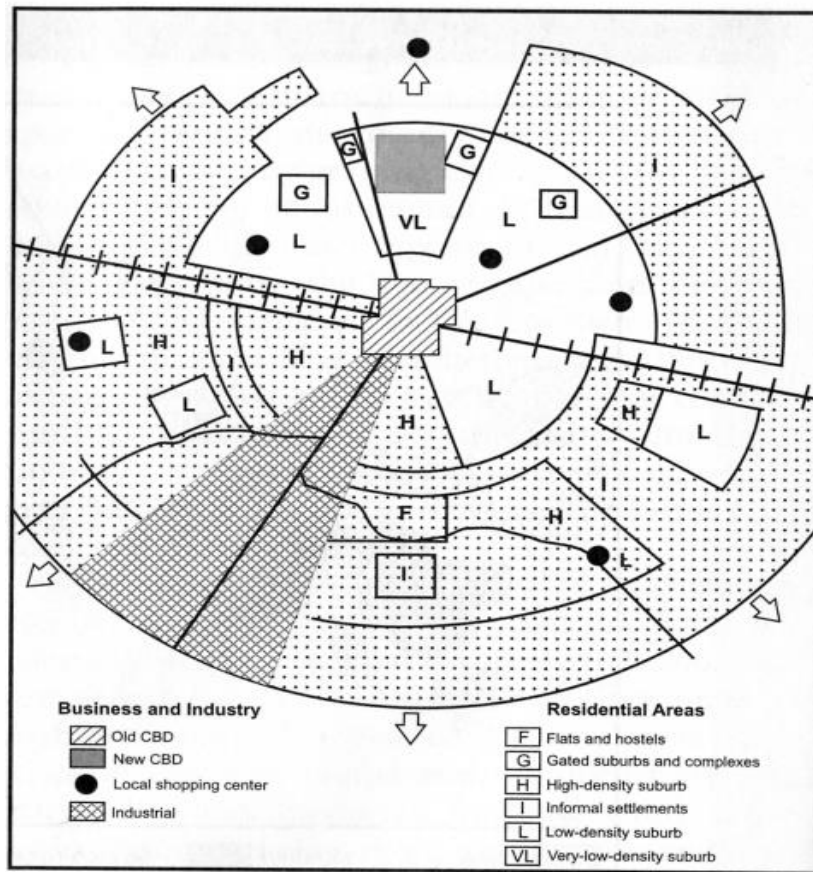


Figure 3-12: Post-Apartheid City Model by Christopher (2001)

Source: Cole and De Blij (2007)

The Post-Apartheid city model illustrates how spatial fragmentation manifested in scattered and sprawled settlements within which commuters travel long distances from residential areas to industrial/commercial working areas (Chakwizira *et al.*, 2018:84-85). These have emerged in the form of gated communities and informal settlements in the periphery of cities and town. This reliance on automobiles poses threats such as traffic congestions within the city and air pollution.

The major economic implication of such fragmentation is experienced by the low-income households particularly those in informal settlements. Due to the long distances they have to travel, the transportation costs constitute a great proportion of their income. Schoeman (2019: 30) concurs that the increase in inequality is experienced by low-income earners located on the periphery of the city who have higher transport costs and spend a lot of time travelling between places of work and home. As a result, this aggravates poverty within these communities.

Another implication on the urban form is unsustainable land use. On one hand are the gated low-density residential developments, in which each housing unit takes up far more land than housing in downtown areas or in townships (Hamann *et al.*, 2020). On the other hand, there are informal

settlements scrambling for any available land to meet their housing needs and promote better accessibility to economic opportunities. As a result, informal land invasions also occur on state land, especially on the buffer strips located along transportation routes as well as open land not suitable for residential development, such as flood plains, wetlands or any other open spaces within existing townships (Schoeman, 2019: 29).

Lemanski and Oldfield (2009:11) assert that invading public open land also contributes to a broader goal of integration as they invade land where they can establish social networks and relationships that help sustain them in poverty-stricken condition. This, together with the need to locate close to work opportunities, also explains the co-existence of gated communities or low-income suburbs with informal settlements in proximity to each other. Jimmy *et al.* (2019:4) claim that this dualism of informal and formal gated developments is a typical representation of a fragmented city; contrasting Balbo's (1993:3) assertion that the different fragments of the city live and function autonomously.

Extremely high densities, the use of non-conventional building materials and unstructured layout in informal settlements, are also some of the implications of spatial fragmentation on the urban form. The implications of these mainly relate to the quality of life of the residents within the settlements in the form of criminal insecurity, threats to structural collapse, disease outbreaks and the absence of social protection in cities.

3.6.3 Sustainable urban form

Though researchers and authors have not been able to provide a concise definition of a sustainable urban form, the key principle is maintenance and transformation of the urban form to promote better quality of life. This stems from Ebenezer Howard's Garden City concept where he perceived that the co-existence of the town and the country would provide citizens with the best of each world and improve their quality of life (Howard, 1902:18). Therefore, it is noteworthy that the concept of a sustainable urban form is enshrined on the principles of sustainable development.

Sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987: 34?). This state of sustainability is achieved by promoting the co-existence of three dimensions of sustainable development, that is, environmental, social and economic sustainability, as illustrated in Figure 3-13.



Figure 3-13: Sustainable Development Venn Diagram

Source: Korneychuk (2018)

From this, it is evident that sustainable development is development that delivers basic environmental, social and economic services to all without threatening the viability of the natural, built and social systems upon which these services depend (Burton *et al.*, 1996:200). Therefore, a sustainable urban form is achieved by integrating of social, economic and environmental factors into the urban form and maintaining a dynamic balance between sustainability and the transformation of the urban form to meet various demands. The integration of the concept of sustainable development into the urban form is depicted by Figure 3-14.

Sustainable development elements integrated into the urban form

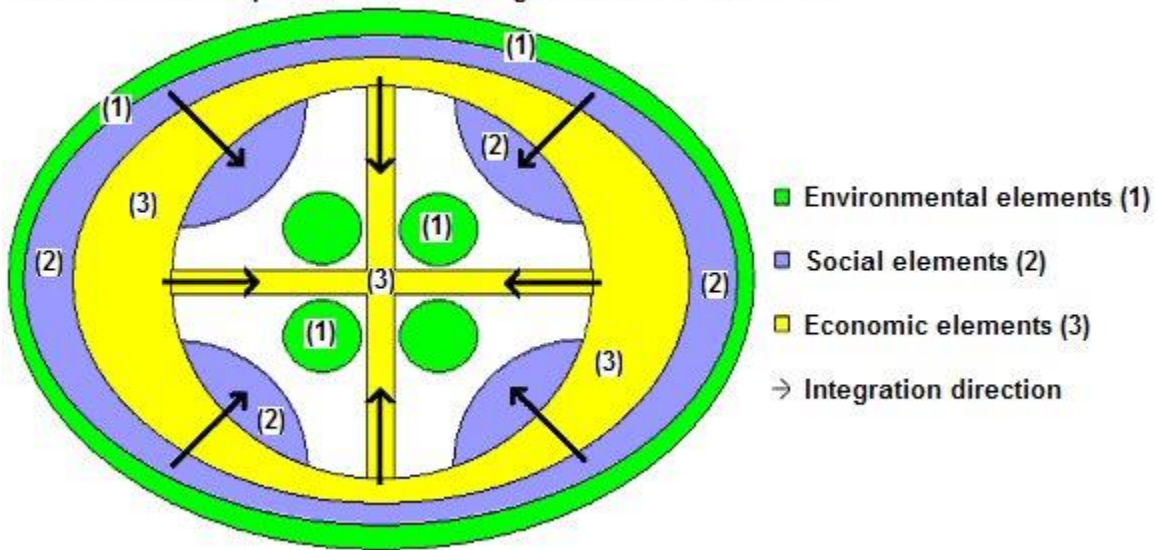


Figure 3-14: Sustainable development elements integrated into the urban form

Source: Pekelharing (2008:66)

The figure above shows that the integration of sustainable development into the urban form promotes compaction and connectivity rather than fragmentation. Wheeler (2003:334) provides that a “sustainable urban form is likely to be compact, contiguous, connected, diverse and ecological”. Burton *et al.* (2013:7) extend that sustainable urban form refers to certain basic characteristics that a neighbourhood/city should possess that would enable it to function within its natural and man-made carrying capacities, based on the general elements of an urban form and various growth options such as intensification and decentralisation.

Thus, spatial planning should endeavour to incorporate the principles of a sustainable urban form to improve the quality of life for the inhabitants of informal settlements and to achieve a sustainable local and regional urban form. The next section discusses how strategic spatial planning, land use planning, land use management and/or regional planning is utilised for the realisation of a sustainable urban form.

3.7 Sustainable urban form models

The concept of a sustainable urban form is based on the design principles provided in Table 3-3. The integration of these principles informs the models to be implemented and are utilised to determine the best option for this study.

Table 3-3: Sustainable urban form design concepts

Design Concept	Description
Compactness	This concept hinges on intensification and increasing the density of development and activities. Intensification, a major strategy for achieving compactness includes development of previously undeveloped urban land, redevelopment of existing buildings or previously developed sites, subdivisions and conversions, and additions and extensions. If applied properly, the result would be the reuse of urban land while rural land beyond the urban edge is protected
Sustainable Transport	Sustainable transportation refers to “transportation services that minimise social and environmental costs of their provision; take into consideration the carrying capacity; and balance the needs for mobility and safety with the needs for access, environmental quality, and neighbourhood liveability”. This often entails providing equitable access for people, financial affordability, reducing the carbon footprint, minimising the use of land and ensuring efficiency.
Density	Density as a design concept of the urban form encompasses high density and integrated land use design systems. This will reduce the costs on land, infrastructure and travel while encouraging greater physical activity, social connectedness and vitality
Mixed Land Uses	This is premised on designing urban areas to reduce automobile use. The idea is to locate compatible land uses in proximity to one another; thus, reducing travel distance between activities. In this regard, heterogeneous zoning is employed.
Diversity	Development that caters for a mixture of land uses, mixture of land uses, building and housing types, architectural styles, and different income levels. “If development is not diverse, then homogeneity of built forms often produces unattractive, monotonous urban landscapes, a lack of housing for all income groups, class and racial segregation, and job-housing imbalances that lead to increased driving, congestion, and air pollution”

Design Concept	Description
Passive Solar Design	Design that reduces the demand for energy and provides sustainable use of passive energy through specific measures. This is mainly based on the assumption that design, siting, orientation, layout, and landscaping can make the optimum use of solar gain and microclimatic conditions to minimize the need for space heating or cooling of buildings by conventional energy sources. In this regard, passive solar design affects the urban form through, for example, the orientation of buildings and urban densities.
Greening	The inclusion of nature as an integral component of the built environment. These can be man-made or natural landscapes. The benefits of greening include biodiversity conservation, aesthetics, improved physical and mental health, food security, resilience, moderating the effects of climate change, reduction in pollution and improving the economic attractiveness.

Source: Adapted from Brilhante & Klaas (2018:2-3); Jabareen (2006:39-43); Lehmann (2011:245-256); Wheeler (2003:328)

3.7.1 Neotraditional Development

Neotraditional development is a town planning movement that seeks to create better urban forms based on (some of) their physical qualities. Common approaches include:

- New urbanism which advocates for design strategies based on traditional urban forms to reduce suburban sprawl and inner-city decline and to build and rebuild neighbourhoods and cities (Jabareen, 2006:43).
- Transit Oriented Development - a type of development that includes a mixture of housing, office, retail and/or other amenities integrated into a walkable neighbourhood and located within a half-mile of quality public transportation (National Treasury, 2017:7).

Neotraditional developments have been praised for addressing some of the major challenges faced in developing countries. In developing countries, TOD is considered the best method to improve accessibility within major cities, by reducing travel distance for residents while simultaneously strengthening the financial viability of the public transport systems (Cooke *et al.*, 2018:365). As a result, implementation of TOD curbs the inaccessibility challenges imposed by the fragmented urban form while promoting connectivity between spaces and places.

One of the major criticisms for new urbanism is the limited applicability to the existing physical and socio-economic structures in developing areas. An inherent challenge for the new urbanist planners is how to create premodern-looking urban forms within current economic and technological conditions (Lucka, 2018:21). As a result, development based on new urbanism tends to be as unaffordable for middle-and lower-income families and more appealing to upper income groups.

Implemented projects have however revealed that increasing inner city density often does not attract upper income groups. According to Kreiger (1998:74) new urbanism projects have helped produce more subdivisions than towns; densities too low to support much mixed use legitimising low-density, peripherally located, home dominated real estate development. Holcombe (2004: 292) also argues that under free market conditions, people choose to live in the suburbs in favour of more space. As a result, new urbanism developments seem to proliferate rather than curb urban sprawl.

3.7.2 Urban containment

Urban containment refers to limiting the horizontal expansion of development within an urban area. The central idea is to prevent the outward expansion of the urban field while forcing the development market to look inward (Jabareen, 2006:44). Nelson (2000:2) explains that urban containment consists of drawing a line around an urban area within which development is permitted; to accommodate projected growth and needs within a specified future time period. Shen and Kawakami (2013:3) extend that urban containment is most simply expressed as maintaining a line that separates urban and rural areas.

Urban containment planning has two basic purposes: to promote compact, contiguous, and accessible development provided with efficient public services; and to preserve open space, agricultural land and environmentally sensitive areas that are not currently suitable for development (Nelson, 2000:2). This can be achieved through the implementation of policies on greenbelts or urban growth boundaries.

A greenbelt is a physical area of open space that surrounds a city or a metropolitan area, and it is intended to be a permanent barrier to urban expansion (Han *et al.*, 2017:2). This often includes farmland, forests or other green spaces. An Urban Growth Boundary is a line or boundary drawn around an urban area to separate it from the surrounding rural areas (Han *et al.*, 2017:2). Rather than a physical area, a UGB is a line mandating the use of the area inside the boundary for urban development and the area outside be preserved in its natural state or used for agriculture.

Overall, greenbelt and UGB policies promote urban containment in urban areas; if they are implemented under stringent measures. The resultant intensification of land development within the limits of the urban areas promotes mixed use development while preserving natural habitats and wildlife corridors beyond the designated urban areas. These urban containment policies may also promote increase in food security and increase in revenue of the greenbelt are preserved for agricultural and forestry uses. Clark and Tsai (2000:64) concur that the result of the preservation of agricultural land that urban containment allows is increase in agricultural productivity on the urban fringe if rural values are protected.

However, successful implementation of urban containment policies in developing countries is often limited due to myriad, complex and interconnected issues as a result of high rates of urbanisation and weak institutions in policy implementation. Shen and Kawakami (2013:2) concur that the urban growth boundaries set by planners are broken by rapid urban development. Fulford (2005:105) adds that lack of cooperation from the development industry hinder the prospects for realising the long-term goal of urban containment.

Strict control over land development may cause social problems and distortions in urban growth patterns. The implementation of greenbelts may result in reduction in developable land and in turn a reduction in the number of houses being built; prompting the emergence or proliferation of slum-like conditions in the inner city.

Kim and Choe (2010:42-62) argue how the policy may not be very successful in containing urban sprawl. The intensification of the inner city promoted dense unplanned developments beyond the greenbelt resulting in distortions of urban growth patterns. The densest areas in the region were those adjacent to the greenbelt, as people take advantage of the free amenity the greenbelt offers.

3.7.3 The Eco-City

The eco-city is an umbrella metaphor that encompasses a wide range of urban-ecological proposals that promote the ecological agenda and emphasizes environmental management through environmental, social, and institutional policy implementation (Jabareen, 2006:47). The eco-city addresses the importance of compact urban structure and other city planning approaches in saving energy and resources (Register, 2006:182).

In developing countries, the model is lauded for its alignment with the existing conditions particularly in informal neighbourhoods. An analysis of material/ resource flow as well as urban metabolism within an informal settlement presents an opportunity to identify symbiotic relationships that can promote resource efficiency. Some of the characteristics of informal

settlements that promote such sustainable urbanism, as adapted from Attia & Khalil (2015: 667), are:

- The construction of shacks using recycled building materials that could be upgraded to promote energy efficiency;
- High densities which provide a perfect setting for walkability and energy efficiency;
- The distribution of land uses according to needs;
- The use of secondary streets as recreational spaces where children play; and
- The prospects of converting to greater reliance on renewable energy sources.

Guibrunet and Broto (s.a.:15) agree that productive and domestic activities within an informal neighbourhood can be mixed as place within the home; and combining these two activities would favour the circularity of material flow and in turn improves resource efficiency. Investment in efficient technologies and education programmes would promote sustainable urban metabolism and resource efficiency within these neighbourhoods.

However, investment in energy technology and education are often not a priority in developing countries. In countries where informal settlements are prevalent, cities often focus on meeting basic urban infrastructure needs, such as for public transportation, clean piped water, drainage systems and waste management. The urban planning systems are constrained by weak institutions and lack of enforcement of planning regulations as well as municipalities' limited capacity, knowledge and coordination, and competing priorities (World Economic and Social Survey, 2013:71).

3.7.4 Compact City

The compact city is a high-density mixed-use and intensified urban form. The concept centres on densification and intensification to ensure that urban activities are located closer together to promote better access. According to Burgess (2000) the compact city approach aims to “increase built area and residential population densities; to intensify urban economic, social and cultural activities and to manipulate urban size, form and structure and settlement systems in pursuit of the environmental, social and global sustainability benefits derived from the concentration of urban functions”.

3.7.4.1 Sustainable modes of transport

The compact city model and approach are lauded for promoting more sustainable modes of transport. Limited mobility due to the proximity of activities reduces the distance that must be travelled to access goods and services. Ahlfedlt and Pietrostefani (2017:9) explain that the concentration of people and jobs provides a solid foundation for walking, cycling and public

multiple choices of public transportation from metro; busses; to trains. In this regard, compact cities offer opportunities to reduce fuel consumption and in turn reduce air pollution transportation costs incurred while accessing goods and services; particularly within low-income households.

3.7.4.2 Sustainable use of land

Compact cities also encourage the reuse or recycling of urban land, while rural land beyond the urban edge is protected. Economic and morphological densifications as well as mixed use developments promote sustainable use of land. In developing countries, intensification of land through infill developments and backyard housing render compact cities sustainable. Lategan and Cilliers (2016:23) acknowledge the prospects of backyard rental housing presenting opportunities for infill development within low-income suburbs and curbing the proliferation of urban sprawl. Also consider brown fields when addressing informal settlements.

3.7.4.3 Economic viability

Support for the compact city urban form also extends to the economic viability of the model. Infrastructure, and basic services, that is water and sanitation facilities; roads; and street lighting, can be provided cost-effectively per capita. Bibri (2018:50) concurs that the compact city model promotes cost effective infrastructures provision as well as sustainable use of energy. Though this may be a challenge for government, support through public-private partnerships or the transfer of land development rights may curtail the costs that would have been incurred by government solely.

3.7.4.4 Social sustainability

Interacting with friends and neighbours plays a critical role in stimulating an individual's well-being as well as diversity, social cohesion, and cultural development within society. These interactions are often experienced as people live in proximity to each other as well as sharing public spaces. Mixed functions within compact cities enhance socialising through local movement for people for various reasons, increasing the use of sidewalks and parks and the provision of cafes, restaurants and small shops where people can stand, sit and converse (Mouratidis, 2018:8; Shirazi, 2020:11).

Diversity, social cohesion, and cultural development within society are also enhanced by having people of different income groups and culture staying in proximity to each other. In this regard, the compact city urban form is also considered equitable as it allows easy accessibility to all people (Bibri, 2018:50). From a developing country perspective, this aspect of the compact city offers opportunities for integrated human settlement provision, thus promoting integration and social sustainability.

3.7.4.5 Quality of life

Overall, the compact city urban form can improve quality of life for residents having taken into consideration all the above benefits. Jabereen (2006:46) expounds the view that a good quality of life can be sustained, even with high concentrations of people. Milder (2012:9) affirms that one of the advantages of the compact city is that quality of life and quality of services can be maintained in the city.

3.7.4.6 Criticism of the compact city

However, the compact city has been criticised through empirical studies particularly in its applicability to developing countries. One of the major criticisms is on the aspect of densification and the effects thereof. Low-income neighbourhoods are by nature dense and further densifying them would pose challenges on their quality of life. Naess (2014:1538) argues that urban densification runs the risk of exposing more inhabitants to living conditions that seem unfavourable to their health; and the permanence of urban built structures makes it likely that future residents will also be affected by conditions resulting from today's urban planning.

Densification is ideal when critical services, such as water, sanitation, waste collection and full electrification are provided at an affordable rate. Alhelfeldt and Pietrostefani (2017:25) extend that lack of access to basic services in developing countries poses health risks for residents, particularly water- and vector-borne disease. This is often exacerbated the governments' lack of capacity to accompany or supplement the compact city initiatives with improvements or repairs on existing infrastructures.

Burgess (2000:17) argues that densification by reducing plot sizes or increasing built area ratios; the effect on urban agriculture could be very serious for the poor, for whom it is a basic element in their survival strategy. Low-income households in urban areas often rely on vegetables they grow on their yards for sustenance, thus reducing the stand sizes would be unsustainable. The situation is aggravated by the possible reduction in open spaces within urban neighbourhood due to compaction.

Other criticisms of the concept relate to social sustainability. Though the compact city is intended to promote integration; improvement in the economic attractiveness of an area may drive up the land prices threatening affordable housing (Alhelfeldt & Pietrostefani, 2017:5). As a result, low-income households will not afford to stay within the core of the city promoting further segregation. Increase in noise and crime may also render the compact city unattractive (Lategan & Cilliers, 2016:14; Mouratidis, 2019:262); particularly for middle-to-high income earners who associate the two with low-income households.

Generally, a compact city may also promote traffic congestion especially in the urban centres. Milder (2012:14-15) argues that car dependency is a product of high levels of income and leisure travel seems to increase in compact cities. In this regard, high levels of income and human behaviour seem have a much more significant impact on mobility than city design. Also, the reduction in the mean travel to work may promote an increase in drive alone vehicle use, as people do not have to share the fuel costs. This will ultimately lead to traffic congestion in the urban centres.

Nonetheless, the compact city presents solutions to some of the major planning challenges. The compact urban form observed in informal settlements is not based on any formal idea of compaction; but is an expression of the solutions to the highly competitive situation regarding urban land and central locations. Kotharkar *et al.* (2012) add that there are possibilities that existing densities can be increased within developing countries, if the intricacies and repercussions are carefully analysed in advance; especially at a regional and metropolitan scale.

3.7.5 Sustainable Urban Form Matrix

Considering the strengths and weaknesses of each of the models of sustainable urban form, Jabareen (2006:47) conceived a Sustainable Urban Form Matrix to identify the most ideal urban form. Table 3-4 depicts this matrix.

Table 3-4: Sustainable urban form matrix

		URBAN FORM											
		Neotraditional Development			Compact City			Urban Containment			Eco City		
Design Concepts (Criteria)		Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
	Density	1	2	3	1	2	3	1	2	3	1	2	3
	Diversity	1	2	3	1	2	3	1	2	3	1	2	3
	Mixed Land Use	1	2	3	1	2	3	1	2	3	1	2	3
	Compactness	1	2	3	1	2	3	1	2	3	1	2	3
	Sustainable Transportation	1	2	3	1	2	3	1	2	3	1	2	3
	Passive Solar Design	1	2	3	1	2	3	1	2	3	1	2	3
	Greening-Ecological Design	1	2	3	1	2	3	1	2	3	1	2	3
	Total Score	15 Points			17 Points			12 Points			16 Points		

Source: Adapted from Jabareen (2006:47)

From Table 3-4 above, it is apparent that the compact city model presents the most ideal sustainable urban form. However, there has been contention among planning professionals and researchers as indicated in Section 3.7.4.6. Cautious conclusions have been drawn that there is no universal paradigm for sustainable urban form (Kim & Choe, 2010:43). Doherty *et al.*, (2009:5) add that no one knows what this ideal urban form would look like and its spatial and ecological terms are still to be defined, particularly in existing urban forms.

In this regard, there is need for reform on spatial planning policies to promote the realisation of urban forms that are ideal for specific areas. Okeke (2018:155) affirms that spatial planning, especially in Africa, should link spatial models for urban development with sustainable land use management for the effective restructuring the urban form. Williams *et al.* (2000) express the view that sustainable urban forms will only be achievable if they are underpinned by policy background which commits to global sustainability goals but leaves room for local formation and implementation of solutions.

3.8 Conclusion

This chapter provides insight on spatial planning within a city region. This is based on the analysis of the concepts of spatial planning and city regions; an assessment of the theories for regional development and growth and location and land use theories; an investigation into the concept of fragmented and sustainable urban forms; and an assessment of the concept of an ideal urban form.

Spatial planning is a concept that entails planning with physical space, policy-making and coordination amongst different sectors and entities to achieve balanced development. City regions are functionally connected soft spaces that transcend administrative boundaries and provide opportunities to tackle planning challenges associated with the rigidity of administrative boundaries, albeit influencing the proliferation of spatial planning challenges associated with rapid urbanisation.

The theories for regional development and growth provide insight into the role of regional planning in the development of city regions by exploring hierarchies within settlements, uneven development within city regions because of backwash and spread effects; policies directed at influencing growth at one centre; as well as urban or political bias towards specific areas at the detriment of others. The location and land use theories explain how income, accessibility and functional similarities influence the location of households and land use activities. These theories also provide insight into the influence of land use planning, land use management and master planning in urban structuring.

The urban form describes the historic development, distribution and pattern of human settlement and the configuration of elements within the city region. This study discusses how master planning influences the fragmented urban form as illustrated by the Apartheid City Model. Achieving a sustainable urban form is key in addressing spatial planning challenges of a fragmented urban form within city-regions. Though the compact city outranks the other models of sustainable urban form, strategic spatial planning could utilise principles of urban containment and neotraditional development policies can be implemented to curb urban sprawl, promote connectivity and strengthening the financial viability of the public transport systems. Thus, Chapter 3 lays the foundation for understanding SCD; which is the focus of Chapter 4. Figure 3-15 presents a summary of Chapter 3.

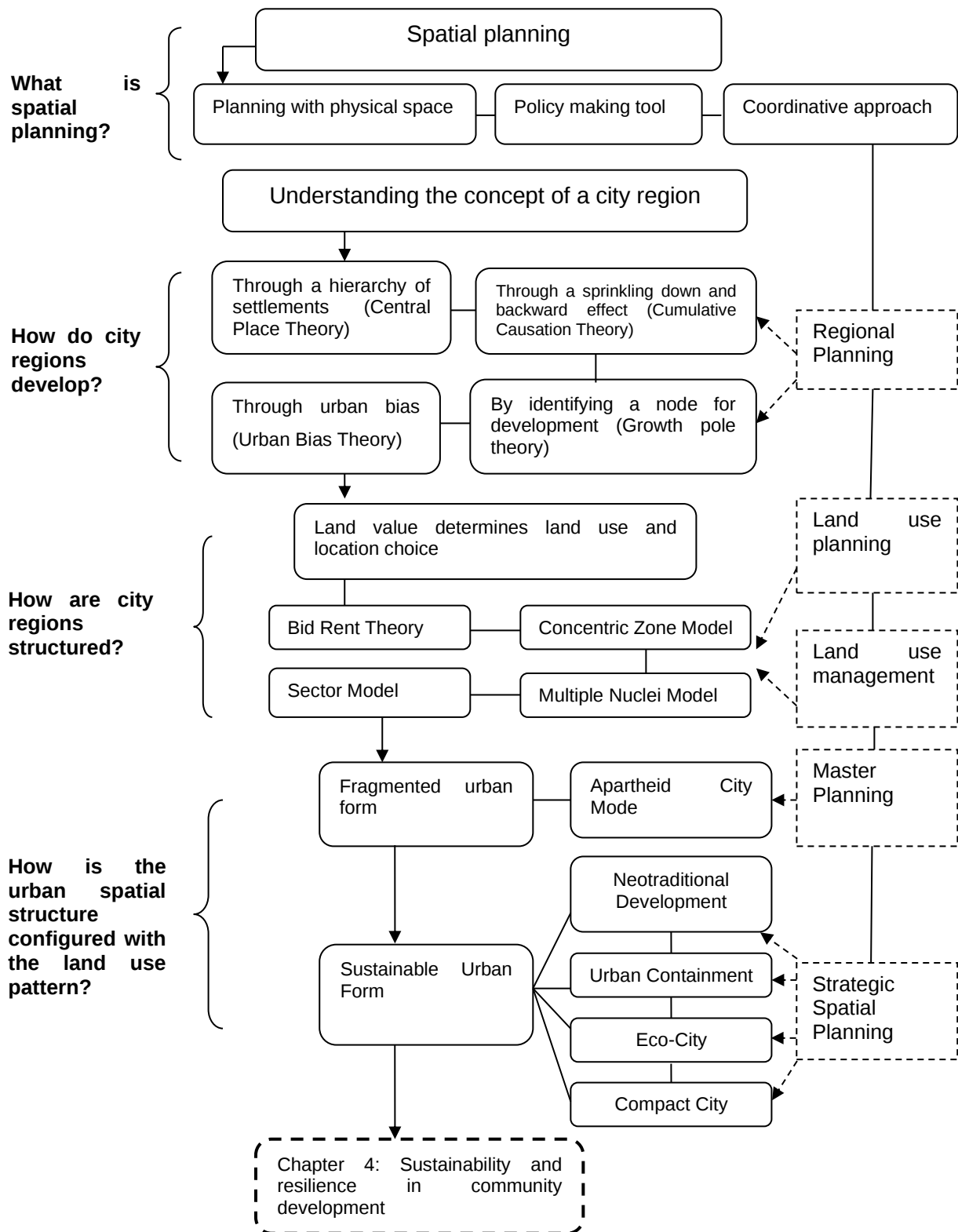


Figure 3-15: Chapter 3 Summary

Source: Own construction (2022)

CHAPTER 4 SUSTAINABILITY AND RESILIENCE IN COMMUNITY DEVELOPMENT: INSIGHTS AND PERSPECTIVES

4.1 Introduction

Cities are faced with a myriad of spatial, environmental, economic and social internal and external challenges adversely affecting the lives of communities residing in these cities. Recent trends indicate the increasing urgency expressed by urban and rural communities around the world to tackle these challenges and increase their resilience to poverty and inequality, social exclusion, violence and fragility, as well as climate change and disaster risks.

While the previous provided insight into the essence of a sustainable urban form; the current chapter narrows the view on the sustainability and resilience concepts to community level. Emphasis is placed on the definitions and conceptualisation of the two concepts, the functional elements and dimensions of SCD, approaches and the challenges towards the realisation of SCD. The chapter further explores the concept of resilience by examining how it can be measured and ultimately, the relationship between resilience and sustainability in community development. Figure 4-1 illustrates the structure of the chapter.

The chapter lays the basis for Chapter 9 in answering the following research question, as stated in Section 1.4: **How is sustainability measured in terms of spatial planning, community development and informal settlement intervention within the GCR?** In conjunction with Chapter 8, this chapter also creates the platform to answer the question: **What are the opportunities that exist to ensure sustainability and resilience in addressing informal settlements within the GCR?**

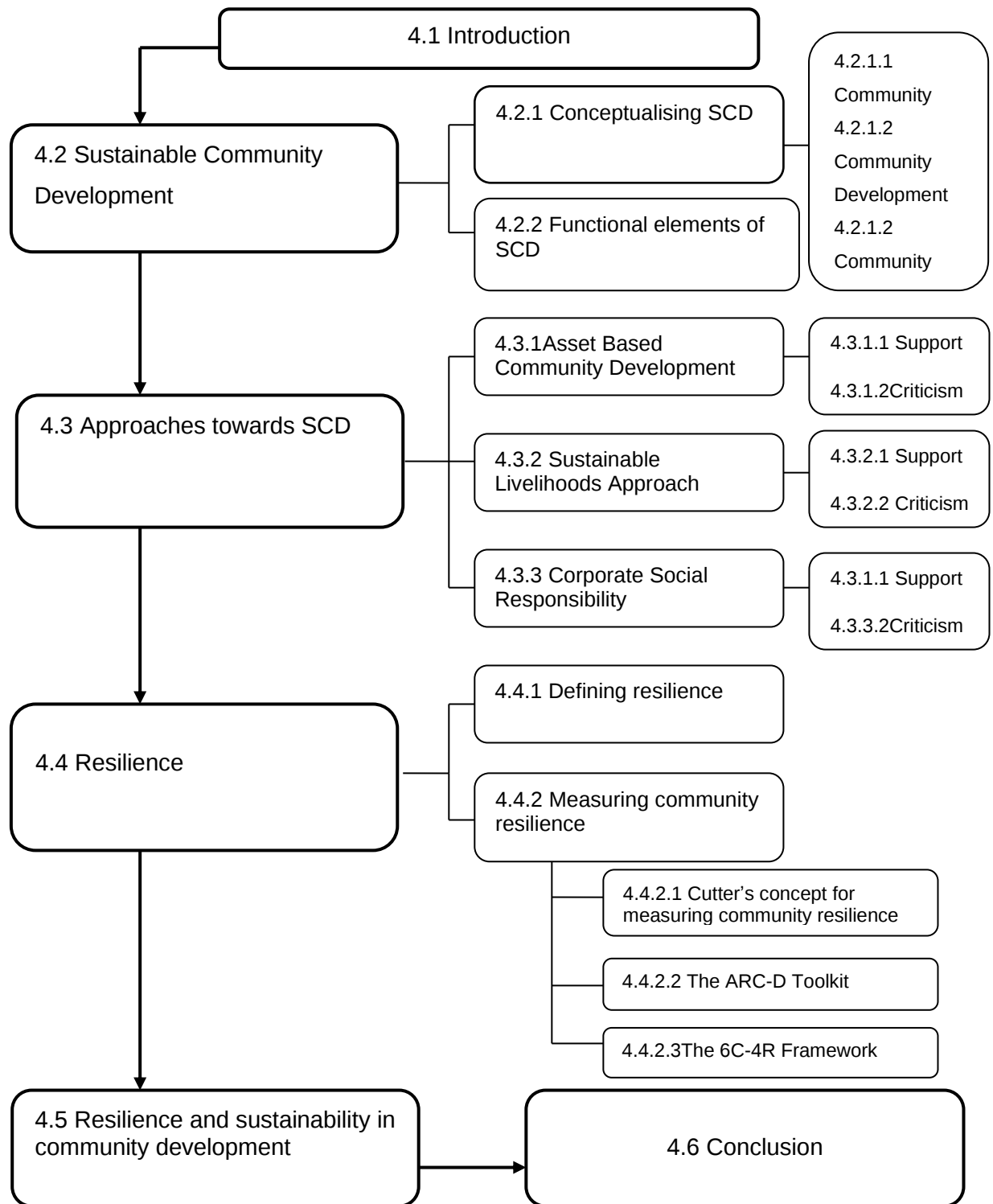


Figure 4-1: Chapter 4 flow diagram

Source: Own construction (2022)

4.2 Sustainable Community Development

Many developing countries have been locked into a vicious cycle of economic decline, increasing poverty, and environmental degradation (Hope 1996:196). Planners and policy makers utilise community development as a tool to address the environmental, social, economic and spatial challenges faced within these nations. However, more often than not, community development addresses socio-economic challenges at the detriment of other resources. In this regard, Hembd and Silberstein (s.a) argue that: community development, like any other form of development, requires reconsideration and transformation in light of the sustainability imperative. Sachs (2005) (cited by Muthuri *et al.*, 2012:357), explains the significance of Sustainable Community Development (SCD) as a cluster solution to the problem of relative economic underdevelopment and the widespread poverty endemic to developing countries.

Da Costa *et al.* (2013:279) provide that the concept of sustainable communities is difficult to assess and is not an appealing concept, owing to its broad field of analysis and the fact that it summarises in two words two of the main challenges that cities face nowadays: the sustainability of their functioning and a permanent loss of what is commonly called ‘sense of community’. It is therefore imperative to understand the key terms and issues pertaining to SCD.

4.2.1 Conceptualising SCD

4.2.1.1 Community

The term community often describes a group of people the same place or having a particular characteristic in common. Roseland and Spiliotopoulou (2017:53) define a community as a group of people bound by geography and with a shared destiny, such as a municipality or a town. Community can also refer to “the condition of sharing or having certain attitudes and interests in common. Table 4-1 provides and explains the various definitions or facets of the term community.

Table 4-1: Understanding the term community

Author	Definition
Altman,2000	Community defined by locale refers to people who share locality, for example, a corporate neighbour, but it does not necessarily assume common ties or social interaction
Kepe, 1999	A community defined by sharing refers to people who identify with each other and are bonded by common values, norms, ideology, and beliefs or shared interests, resources, and social issues
Wilkinson, 1991	A community can also be defined by the notion of joint action where collective action becomes a source of cohesion and identity among people

Author	Definition
Wilkinson, 1970	A community may be defined by social ties , that is, as a web of kinship, social, and cultural ties of people within the same locality
MacQueen, McLellan, Metzger, & Kegeles, 2001	Somewhat paradoxically, it has also been contended that a community can be defined by diversity where different individual characteristics help articulate the social complexity within communities

Source: Adopted from Muthuri (2012:367-368)

Following this, community can be described as a locale, the virtue of sharing, a joint action for collective action, the social ties and diversity that exists among a group of people. Dunham *et al.* (2006) usefully distinguish four types of communities employing Lee and Newby's (1983) typology: the community of place, the community of interest, the virtual community, and the community of practice. These facets of a community are critical components of development that impacts the collective group of people.

4.2.1.2 Community development

The term development is attributed to growth, expansion and change. As such, community development revolves around growing, expanding and/ or changing the state of or circumstances within the community. It is the action and process of addressing the needs of the community and enhancing the resources and capacity (opportunities) of the community while finding common ground and balancing competing interests. According to Hope (1996:195) community development is a process of social and economic action for solving community problems presupposed on an understanding of the basic social and economic problems of and opportunities within the community.

Community development is a process where community members come together to take collective action and generate solutions to common problems; ranging from small initiatives within a small group to large initiatives that involve the broader community (Peernetbc, 2012). This explains the significance collective action as an intricate tool towards the addressing community challenges and the realisation of community goals.

Community development is also centred on combined efforts and active networks between the community and external parties. Often, community development is initiated, executed and financed through initiatives by donors, NGOs and government agents. Thus, community and its development can be understood as an active process of network construction and maintenance, using a variety of spaces, reasons and activities to promote and support local and external interactions.

A critical attribute of community development is the art of involving the members of the respective communities in the development process to ensure a sense of ownership of the development products; promote improved decision making that meets the 'real' needs of the communities and transfer of skills gained through engagement in the development process. Head (1979:101) concurs with the opinion that community development is "a process designed to create conditions of economic and social progress for the whole community with its active participation and fullest possible reliance upon the community's initiative". Idemudia (2007:5) also adds that "the process by which the efforts of the people themselves are linked with those of other agents and actors to improve the socio-economic and cultural conditions of the community; this in turn, leading to people becoming more competent to fully contribute to national progress and able to live with and gain some control over local conditions and the changing world".

However, criticism on community development emanates from the fact that it is often biased towards an economic, sometimes social undertaking; but rarely on the environmental undertaking. Emphasis on economic growth as the main determinant and indicator for community development is unsustainable and has often led to over-exploitation of natural resources. Ibrahim (2017:2) agrees that more prioritising intense economic activities to address social welfare often generates environmental drawbacks and exacerbate the exhaustibility of natural resources; thwarting the extent to which economic activities could be intensively undertaken. OECD (2011:7) also adds that despite the foundation of economic activity and development, natural resources are often undervalued and mismanaged. Therefore, it is critical to incorporate the environmental aspect into community development to efficiently address the social and economic needs of the community while protecting the environment.

In practice, community development often negates the engagement of communities in the development process, foregoing the use of indigenous skills and knowledge. Yet, indigenous knowledge is a critical resource which provides insight into the culture and history of a community and could contribute to the increased efficiency, effectiveness and sustainability of the development process (Gorjestani, 2000:1). Consequently, Waswa *et al.* (2014:58) argue that for a community to be sustainable it should have the ability to meet its current and future needs in relation to existing knowledge, skills, values, culture and resources; an attribute that is still lacking in community development ideologies and practices in developing countries.

Also, development initiatives and process at community level often exclude certain groups from participating due to traditional, cultural and social norms. In many rural/ traditional societies; the men, especially those who hold leadership roles, are at the forefront of development and disregard contributions from women and other members of society down the social ladder. The Standing Conference for Community Development (2001:5) argues that community development

should be focused towards building active and sustainable communities based on social justice and mutual respect; changing power structures to remove the barriers that prevent people from participating in the issues that affect their lives.

In this regard, the gap in traditional community development emerges through failure to acknowledge indigenous knowledge and skills, inefficiency in terms of natural resource conservation and incapacity to address the inequalities in society. Thus, the essence of SCD.

4.2.1.3 SCD

The concept of sustainable communities is entrenched on the definition and principles of sustainable development. A sustainable community is one that meets the social, economic and environmental needs of the current generation without compromising those of future generations. Egan (2004:7) defines sustainable communities as communities that 'meet the diverse needs of existing and future residents, their children and other users, contribute to a high quality of life and provide opportunity and choice.

The interconnection amongst the three constructs of sustainable development is an integral aspect of sustainable communities. According to Muthuri *et al.* (2012:369) "a sustainable community resembles a living system in which human, natural and economic elements are interdependent and draw strength from each other". Bridger and Luloff (1999:381) concede that sustainable communities meet the economic needs of their residents, enhance and protect the environment and promote more humane local societies by: striking a balance amongst between environmental concerns and development objectives while simultaneously enhancing local social relationships.

However, maintaining this balance in deprived communities such as informal settlements can be challenging; since the communities' settlement patterns and livelihoods depend on the 'over-exploitation' of the environment, in the pursuit satisfaction of the communities' vital needs. Yet, though the disadvantaged communities degrade the environment out of necessity, they are willing to invest in time and effort to protect the environment when they have ownership and control over the property (Rogers *et al.*, 2008:168). In this regard, addressing the social and economic aspects of a community such as promoting the sense of ownership influences environmental conservation.

On the other hand, achieving the social, economic and environmental balance is sometimes compromised by development initiatives for which the main goal is meeting the wants not necessarily the needs of the communities, resulting in strains on natural and economic resources. Schlebusch (2015:63) concurs that the real challenge of creating a sustainable community lies in

the process of harmonizing the expectations and needs of the community with the values of sustainability. Regardless, SCD should ensure the satisfaction of vital needs rather than desires; improving quality of life without compromising the resources for future generations.

This brings into perspective the notion of intergenerational equity and maintaining development over time. Van Schalkwyk (2015:73) explains that sustainable development refers plainly to maintaining development overtime and from this, a sustainable community can be described as a community in which development is maintained over time. Rather than being a fixed thing, a sustainable community is continually adjusting to meet the social and economic needs of its residents while preserving the environment's ability to support it (Roseland & Spiliotopoulou, 2017:53). Hope (1996:195) explains that SCD does not imply that a given process of economic growth should be made to continue indefinitely nor economic retrogression; it is about progress, growth, the generation of wealth, and the use of resources.

However, the challenge with the realisation of intergenerational equity in sustainable communities often lies with the practicality of balancing the needs of the current generation and those of the future generations. On one hand, the dependence of poor communities on natural resources, as explained above, thwarts their efforts to reserve resources for future generations. Brown Weiss (1990:198) concedes that impoverished communities cannot be expected to care about the future generation when they cannot care for themselves today. On the other hand, the frugal preservation of existing resources for future generations could be detrimental to the quality of life of the present generation. Spijkers (2018:10) notes that increasing attention to intergenerational equity in the developing world can be a threat to the interests of the people of the present generation, particularly the poor who would starve themselves only to secure interests of the unborn future people.

In this regard, emphasis should also be placed on development that ensures that deprived communities enjoy the satisfaction of having their vital needs met using the available resources. Dale and Sparkes (2010:2) emphasise that "sustainable communities do not mortgage their resources for the present benefit or exploitation but instead continually adjust their social structures and economic activities at a rate and scale that enables the resources to replenish themselves so that these resources will also be available for future".

Though the focus has been on balancing the needs of the present generation with those of the future generations in terms of natural resources, intergenerational equity should also be understood in terms of social and economic aspects of a community. Current community development initiatives should ensure that the social relationships and networks established within the present generation and the benefits thereof extend into future generations.

Opportunities and the knowledge on the significance of such relations should be passed from generation to generation. The same applies to ensuring that the opportunities for and the essence of education, employment and entrepreneurship are passed from one generation to another.

Intragenerational equity is also a critical component of sustainable communities. Lack of equity is prominent in low-income communities such as informal settlements; as large differences exist in within communities. Brown Weiss (1996:607) notes the essence of not only focusing on future generations but addressing the equity concerns among communities within the present generation. Limited research emphasis is placed on intragenerational equity within communities such as informal settlements. Also, the literature that exists does not focus on the indicators of such equity or inequality nor the practical measures that can be implemented to achieve this equity. In this regard, there is a need for indicators to ensure intragenerational equity towards SCD.

Therefore, it is evident that development for sustainable communities goes beyond basic provision of goods and services. SCD is growth, expansion and change which focuses on ensuring a balance between economic and social decisions with environmental protection, ensuring intragenerational and intergenerational and maintaining such development over time. An examination of the functional elements of SCD provides more perspective on the prospects of improving the lives and livelihoods of communities, particularly those in informal settlements.

4.2.2 Functional elements of SCD

Improved quality of life is the central goal for sustainable communities, whereby development seeks a better quality of life for all its residents while maintaining nature's ability to function over time. As a result, a sustainable community is one that is: well-designed, well planned, well run, well connected, well served, active, inclusive and safe, offers equality of opportunities and good services for all, offers decent homes at affordable prices, thrives and environmentally sensitive (Da Costa *et al.*, 2013:281, McDonald *et al.*, 2009:50).

Power (2004:5) proposes the following as the building blocks of sustainable communities: planning, design, density and layout; minimising energy use and environmental impact; a viable local economy and services; and community organisation and neighbourhood management. Institute for Sustainable Communities (1997) adds that the key elements of a sustainable community are: leadership, civic engagement and responsibility; ecological integrity, economic security and social well-being. As such, SCD is modelled on the elements presented in Table 4-2 and Figure 4-2.

Table 4-2: Elements of SCD

Element	Description	Relevance to study
Housing and Built Environment	Housing represents: - the physical elements of housing, that is, housing area and average size of buildings (number of households per building) - sufficient range, diversity and affordability of housing within a balanced housing market - the quality of construction and the dynamics of new building construction. Built environment focuses on: - green urban area', that is, well-maintained, local, user-friendly public and green spaces with facilities for everyone including children and older people - land use with emphasis on quantification of aspects such as continuous or discontinuous urban fabric, residential, industry or commercial and agricultural areas - High quality, mixed-use, durable, flexible and adaptable buildings	The conditions of housing and the built environment influence quality of life, socio-economic well-being, spatial integration, environmental protection and economic development Diversity and an integrated mix of different types of homes and different tenures options cater for a range of household sizes, ages and incomes resulting in adequate housing Incorporation of green aspects into the physical fabric promotes aesthetics, connectivity, sense of recreation and relaxation, disaster risk mitigation and ecological balance
Economy	Focusses on: - economic activities, professions and socio-professional status as well as the existing economic activities in the neighbourhood - household income and monthly expenses - education and employment, including dynamic job and business creation - sufficient land and buildings to support economic prosperity and change	Local Economic Development (LED) through the creation of opportunities that promote local work, trading, income generation and circulation of money culminates in social and economic sustainability and integration as well as food security Education and training are key to all aspects of sustainability and integration Connecting to the wider economy improves the communities' economic base and provides

Element	Description	Relevance to study
	promoting a strong business community with links into the wider economy	opportunities for knowledge sharing and economic development Employment creation is key to poverty alleviation at household and community level Diversity in livelihoods strategies improves the local economy
Transport and Connectivity'	Transport focusses on: - Road infrastructure and facilities for safe walking and cycling, public transport systems and mobility, that is, the daily labour mobility, daily goods and services demand, and travel times, making it possible to analyse the choices of families in their everyday life. Connectivity focusses on: - widely available and effective telecommunications and Internet access to minimise the distance and physical movements.	Transport provision is key to integration, spatial structuring and sustainability in community development. Different modes of transport should complement each other and cater for the various needs and preferences within a community Connectivity is critical for communication and access to information that relates to the communities and the rest of the world
Services	The aim is to provide a “full range of appropriate, accessible public, private, community and voluntary services”. This also includes: - aspects such as satisfaction with the services' provided - the frequency of goods and services in the neighbourhood - fully developed, adequate, easily accessible and quality educational and health facilities and services - long term and cross boundary mind frame from service providers	The availability, accessibility and quality of services are key elements in determining the quality of life within a community. Adequate and quality services promote physical and social integration, good health, environmental protection and financial sustainability

Element	Description	Relevance to study
Environment',	This includes: • Efficient use of natural resources, that is, the consumption of natural resources such as air, water and land; as well as ensuring energy efficiency, flood defence and waste minimisation • Reducing pollution of any kind • Recycling as a means of saving natural resources and minimising the impact of urban waste at household and community levels	Environmental protection and conservation are critical for enhancing the communities' health, ensuring intergenerational equity, economic development and sustainability as well as protecting the biodiversity within the area
Social and Cultural'	This includes: • a sense of community identity and belonging • the satisfaction that individuals feel from the cultural and leisure activities and services available in the neighbourhood • security and safety based on an analysis of the levels of crime and anti-social behaviour; as well as community -friendly policing within the neighbourhood	Tolerance, respect and engagement with people from different cultures, background and beliefs are critical for community development The skills and indigenous knowledge from the communities should be embraced and employed as the foundations for community development The culture and lifestyle of the inhabitants of a community determine the character and identity of that community Positive social interaction and local organisation promote the spirit of community and provide the platform to raise issues, address problems and seek solutions together The sense of safety and security promotes stability, confidence and the desire to remain and contribute to the community's development over time

Element	Description	Relevance to study
Equity and Social Capital	This entails ensuring that people of all ages, races, cultures, genders and abilities are given access to services, jobs and education and are socially included in the community.	Migrants and people from non-dominant cultures should be taken into consideration when addressing challenges as well as planning and implementing community development Ensuring equity within a community promotes growth, social innovation, sense of belonging and enhances social capital. Equity and social capital lasts to provide opportunities for future generations.
Governance	This includes: • strategic, visionary, representative, accountable governance systems that enable inclusive, active and effective participation by individuals and organisations • strong, informed and effective leadership that responds positively to change • strong, inclusive, community and voluntary sector • a sense of civic values, responsibility and pride	Effective community engagement is critical for ensuring that leadership and participation is not centred on the elites promotes a sense of inclusion and presents opportunities for all income groups and social classes to lead in community development

Source: Own construction based on Baker and Mehmood (2013:321-323); Da Costa *et al.* (2013:281), Egan (2004: 19-21); ODP (2003)

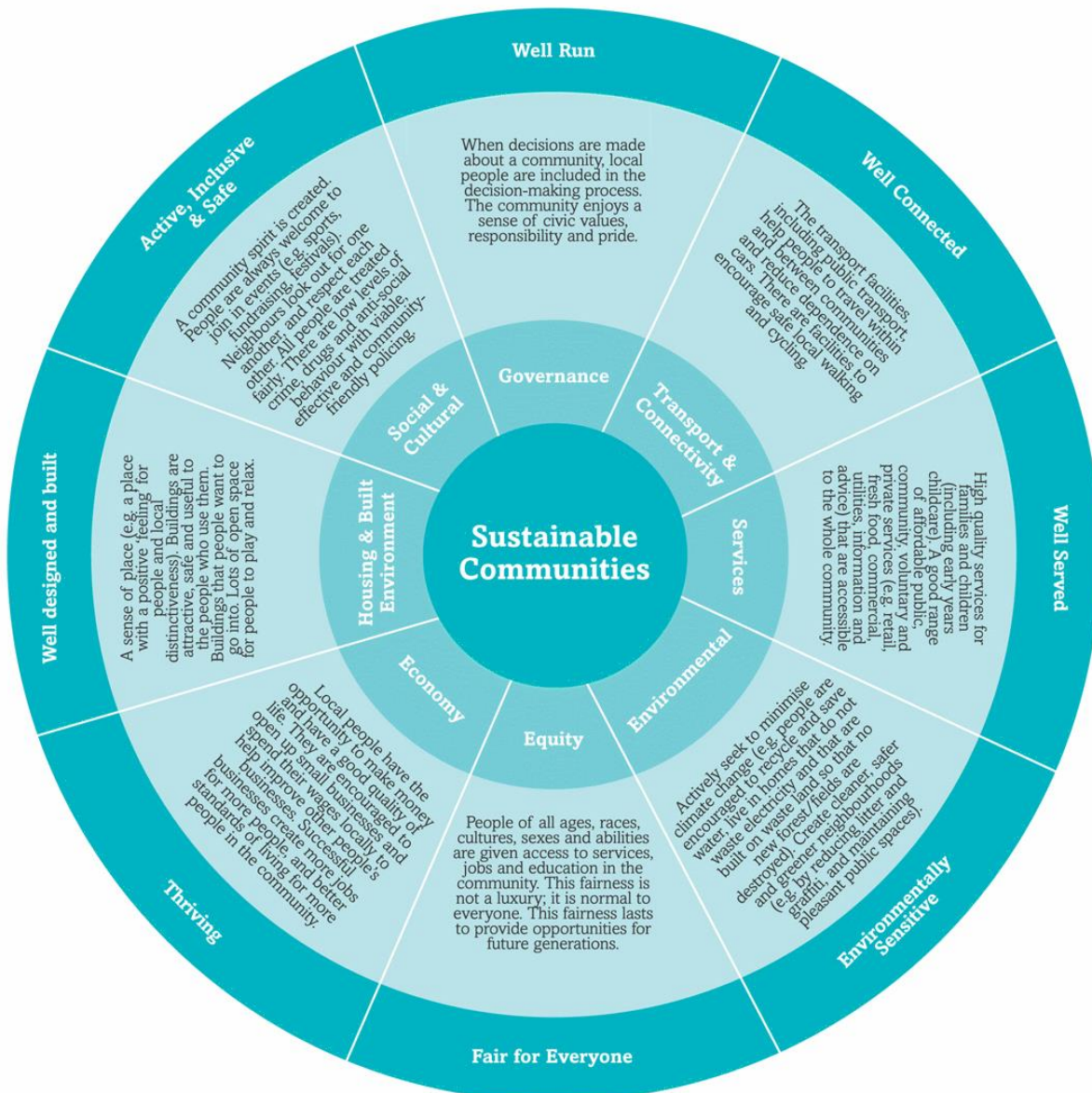


Figure 4-2: Elements of sustainable communities

Source: Da Costa *et al.* (2013:281)

These elements cover the essential aspects of lives that would promote SCD and lay the basis for the identification and analysis of indicators. However, food security is another critical aspect of people's lives that has often been omitted from SCD discussions. Food security is critical for health and well-being, poverty reduction, employment creation, economic growth and stability within a community. Though these benefits may be gained from other elements of SCD, is it essential to gain more insight into food security as a concept.

4.2.2.1 Food security

Marginalised communities such as those residing in informal settlements often reflect high degrees of food insecurity, principally due to household income and the ability to access food through purchase (Black, 2018:64; Naicker *et al*, 2015:268; Rudolph *et al*, 2012:9). According to FAO (1996) food security is “a condition that exists when “all people, at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”.

Food insecurity has been linked to detrimental health, social, economic and environmental outcomes within these communities. Kaiser *et al.* (2017:1-2) explain that food insecure households often have low consumption of fresh produce, high chronic disease rates, limited mobility, work impairment, depression, and anxiety. Perez-Escamilla (2017:2) adds that food insecurity often causes poor child development, increased risk to infectious diseases, social unrest and internal strife, and the degradation and destruction of natural ecosystems.

In this regard, food security should be included as an element of SCD in order to improve the quality of life within these communities. A holistic approach involves issues from community members’ ability to obtain food, to the social welfare of the workers and participants in the food system. The following aspects of food security are critical for a healthy, vibrant, optimally active and environmentally and economically sustainable community; as provided by (FAO, 2006:1-2; Holben, 2002: 156; Perez-Escamilla, 2017:1-3; Zembe, 2017:32-34):

- Food availability – domestic food production that is sufficient to households and all classes within the community;
- Food access – access by individuals to adequate resources for acquiring appropriate foods for a nutritious diet in socially acceptable ways including the distance one must travel to a supermarket, the availability of transportation to food outlets, and the economic ability to purchase enough;
- Food utilisation – consumption, storage, preservation and selection of food to reach a state of nutritional well-being where all physiological needs are met. This includes the safety of foods being sold and the knowledge of community members on how to safely prepare foods to avoid food-borne illness
- Food stability – maintenance of food security over time and in face of disaster shocks and stresses, that is, access to adequate food at all times

Further, working towards food security promotes a sense of community. Food security is a product of and promotes the sense of community networking, sharing and joint action based on the definitions provided in Table 4-1. Sattanno *et al.* (2007:3) agree that promoting food security

through local food systems strengthens social health and community self-reliance. Therefore, food security should be incorporated as an element for SCD.

4.3 Approaches towards SCD

Though there are various approaches towards SCD, this study explores three that are most relevant to intervention in informal settlements. These approaches reflect the essence of focusing on the positive aspects of informal settlements, balancing the positive and negative aspects to improve livelihoods and the role of external stakeholders in inducing or enhancing SCD in addressing informal settlements.

4.3.1 Asset Based Community Development

Asset Based Community Development (ABCD) is an approach towards community development that builds on a community's assets rather than focusing on its needs. According to Burke *et al.* (2009:5) ABCD involves working with the strengths, skills and resources of a community to build engagement and jointly defined goals rather than starting from a needs-assessment or deficit perspective. Haines (2009:38) espouses the view that the basic approach of ABCD is focussing on successes and small triumphs instead of what is missing or negative about a place to foster a positive outlook of the community.

The basic principles of ABCD are: "change must come from within the community; development must build upon the capacities and assets which exist within the community; change should be relationship driven, and change should be oriented towards sustainable community growth" (Rusell, 2016). Lee (2020) is of the opinion that the basic principles of ABCD are: every individual has something to give a community, communities know themselves best, relationships drive community development, questions lead to solutions, that is, the goal is to ask questions that allows the community to discover solutions through their answers, and support should come from inside the community first.

In this regard, Kretzmann and McKnight (1996:4-13) identified the following asset as the building blocks for ABCD:

- Individuals, including those labelled mentally handicapped or disabled and the marginalised because they are too old, young or poor;
- Organisations and associations (their experience, skills, social, physical, and financial resources);
- Assets that are located within but are controlled from outside the community (schools, parks and libraries); and

- Assets originating from outside the community and controlled by outsiders

Recent research have added the stories and heritage of local places as a crucial building block for ABCD (Rusell, 2016). McKnight and Rusell (2018:3-10) provide the following as the essential elements of the ABCD process which promote sustainable community building efforts:

- Resources, that is, the resources utilised to realise ABCD and enhance local wellbeing;
- Methods, that is, the processes and procedures that have to be implemented to ensure that communities go about making the resources productive in a communal sense;
- Functions, that is, the essential functions that can be collectively performed by the citizens to create greater community wellbeing; and
- Evaluation, that is, assessing the authenticity of the entire ABCD process against the goal of enhancing collective citizen visioning and production.

Figure 4-3 provides a summary of ABCD.

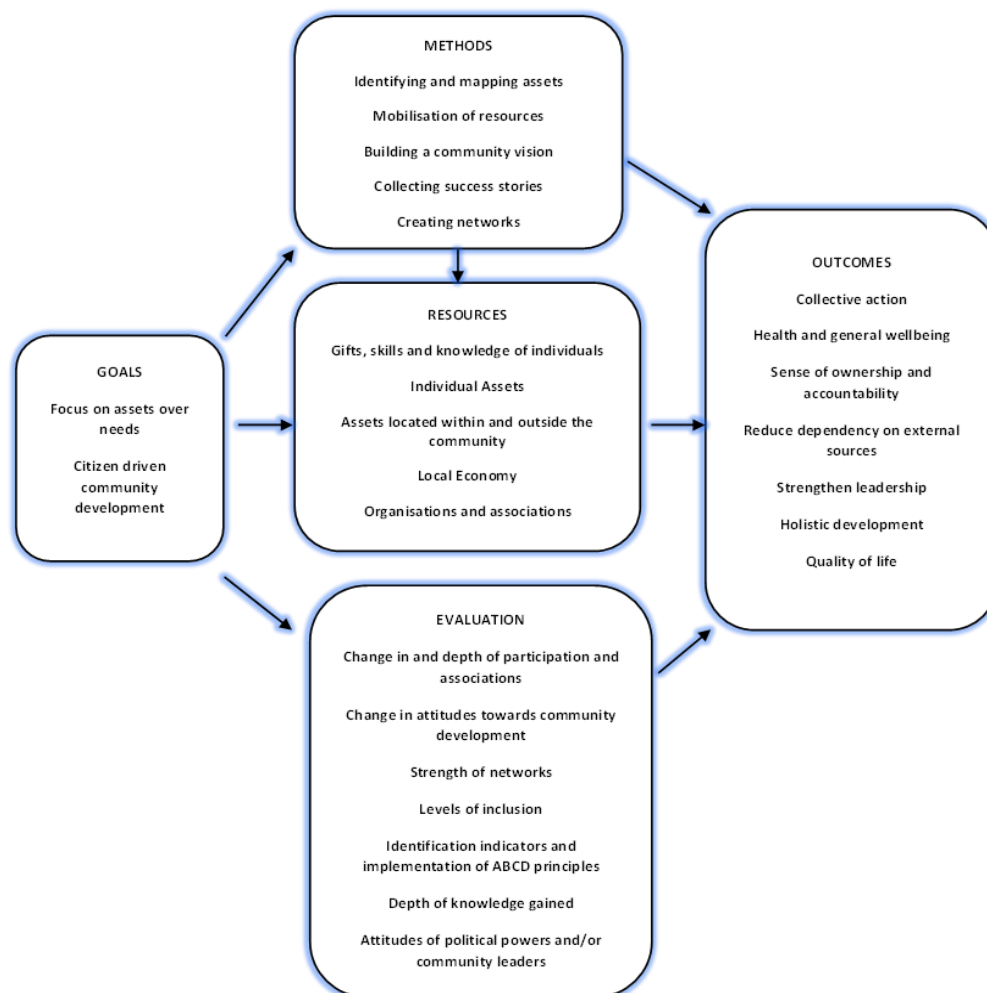


Figure 4-3: Asset Based Community Development

Source: Adapted from McKnight and Rusell (2018:3-10)

4.3.1.1 Support for ABCD

All four elements of ABCD are essential to SCD. The identification of assets and the focus on strengths rather than weakness is therapeutic in nature and contributes to the health and general wellbeing of communities (Ennis & West, 2012:405; Foot, 2012:5; Foot & Hopkins, 2010:10-11). Rusell (2016) emphasises the essence of changing from focussing on what is wrong to what is strong as a critical process towards SCD. In this regard, ABCD is a key strategy in the realisation of SCD.

ABCD motivates and empowers communities to take ownership of the development in their community. Mathie and Cunningham (2003:274) explain that the “appeal of ABCD lies in its premise that communities can drive the development process themselves by identifying and mobilizing existing, but often unrecognized assets, and thereby responding to and creating local economic opportunity. This promotes sustainability as communities become aware of the resources, skills and functions they possess and can be guided into channelling that towards community development that benefits the present and future generations.

Identifying resources and evaluating the ABCD process also creates a sense of purpose and accountability amongst community members. Nel (2020:269-272) observes that rather than solely relying on external funding, communities that are sensitised to ABCD tend to drive their own development, are more self-motivated and self-organised, enter partnerships with funding organisations where they negotiate and decide what would be provided by the funder without the attitude that the organisations were obliged to fund the community development initiative. This also improves the governance aspect of SCD as it creates a sense of civic values and pride, encourages participation and volunteerism amongst community members while producing effective and informed leadership that enables inclusivity and maintains sustainable connections with external parties.

Working toward a shared community goal promotes collective action; which is a key element in the realisation of the principles and elements of SCD. According to Harrison *et al.* (2019:2) ABCD adopts a partnership approach where services are coproduced, and service users play a key role in the governance, design, and facilitation of services. Muthuri *et al.* (2012:361) endorse ABCD as a tool towards SCD since it is framed using an ‘asset lens’ that highlights the existing collective capacities of a community as a basis for collective action for addressing problems of community development.

ABCD also provides a platform for communities to work together towards a common goal by focussing on social networks. This in turn strengthens social capital and enhances the sense of

community while channelling the assets towards areas of need. Ennis and West (2010:406) agree that the ABCD model follows a process where trust is developed, a new story about the community is formulated and new skills and new relationships are developed. By connecting people as well as connecting people to resources, ABCD also contributes to access of economic opportunities, enhances the social and cultural aspects of communities and contribute towards equity within communities. Foot (2012:60) adds that ABCD provides the prospects of improving support for deprived/disadvantaged or neglected communities by adopting a collaborative approach

4.3.1.2 Criticism of ABCD

However, ABCD is criticised for not taking into consideration the multiple structural barriers faced by disadvantaged people and communities nor directly confronting issues related to power and oppression within communities (Healy, 2005:168). Mathie and Cunningham (2003:483) concur that ABCD does not directly confront the issue of unequal power and its attendant oppressions; particularly for women and the opportunities for lower-caste or -class groups to build confidence and 'occupy the space' for participation.

Collver (2013:52) agrees that ABCD does not require residents to engage directly with politics through advocacy or any other means that may disrupt the unequal distribution of wealth and power; as powerful elites continue to control their roles and ability to produce change. The structure of the ABCD approach promotes minimal interference from external actors which in turn does not challenge the issues such a racism, prejudice against one gender and ageism experienced at personal or community level. This may hinder effective identification and mapping of assets within the communities as well as effective participation.

Another major criticism is the limited empirical evidence on the implementation of the ABCD approach and the absence of indicators for measurement. According to Harrison *et al.* (2019:2) 'there currently is limited evidence about the mechanisms underlying ABCD programs and the populations and contexts for which they are most suited'. Mathie and Cunningham (2003:479) also argue that the ABCD approach is "occasionally flawed and far from conclusive, generally suffering from small subject populations, poor descriptions of the independent variable, and varied dependent measures".

This coupled with the absence of frameworks and indicators for measurement limits the effective evaluation of the ABCD approach and programmes. Though indicators and assessment measures set by communities themselves encourage deeper commitment and bring about positive change (Matthews, 2013:16-17), these measures may be complex to translate into value

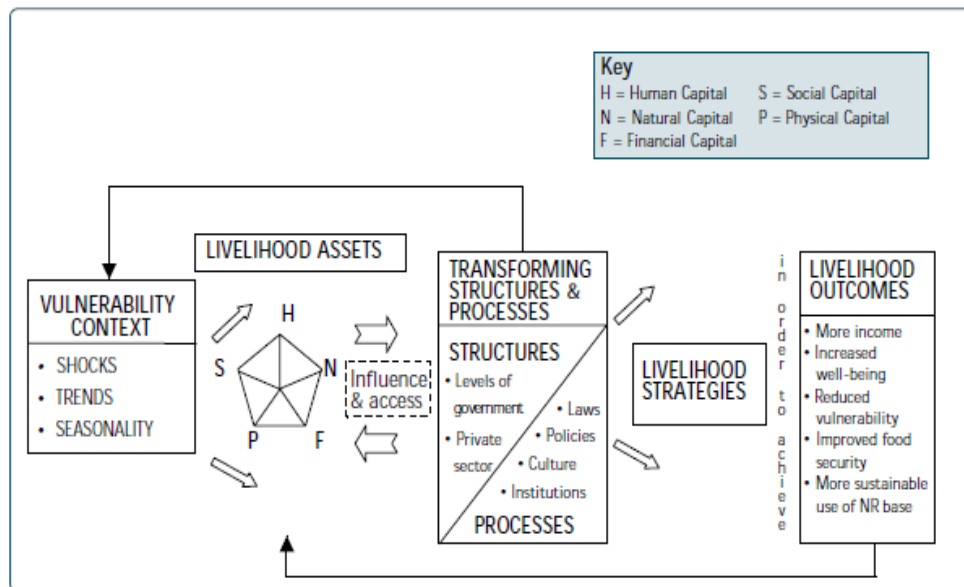
frames required for policy making (Blickem *et al.*, 2018:3). In this regard, there is need for a basic framework that guides ABCD implementation and assessment while ensuring that individual communities make amendments that align with the specific contexts.

Nonetheless, ABCD provides a platform for holistic development which is essential for SCD. Chirisa (2009:33-34) observes that the ABCD approach promotes gender, generation and inclusive community building, create a platform for community building by facilitation and continuous learning and ensures holism in community building; while reconciling the divergent interest of different groups to strengthen solidarity and collective endeavours. ABCD presents prospects of achieving longer-term process benefits, not only in an economic sense, but through the development of all forms of capital that are necessary for a community to thrive (Blickem *et al.*, 2018:3; Haines, 2009:47). Thus, contributing to better quality of life and sustaining communities.

4.3.2 Sustainable Livelihoods Approach

The Sustainable Livelihoods Approach (SLA) is a poverty reduction technique which focuses on the factors that impact on livelihood opportunities to ensure that they are sustainable for community development through policy intervention. SLA is premised on the observation that the poor rely on a multifaceted range of assets, and that differential access to and returns from these assets has a major impact on their livelihoods (Gilling *et al.*, 2001:305). The concept also explains how vulnerability within communities is most experienced by members with the least number of assets due to social exclusion and discrimination (Oxfam, 2013:7). Though the SLA was designed for rural communities, it can be implemented in urban deprived communities such as informal settlements.

The SLA is implemented using a Sustainable Livelihoods Framework (SLF). The framework depicts the interlinkages amongst the factors that constrain or enhance livelihood opportunities and how they can be organised. This is based on the premise that vulnerable stakeholders have access to certain assets and their livelihood strategies which influence and are influenced by the existing institutions and policies; thereby determining livelihood outcomes (Kollmair & Gamper, 2002:4-5; Serrat, 2008:2-3). This is illustrated by Figure 4-4:



Where:

Human capital (H)	The skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives.
Social Capital (S)	The social resources upon which people draw in pursuit of their livelihood objectives through networks and connectedness, membership of more formalised groups, relationships of trust and reciprocity
Financial Capital (F)	The financial resources that people use to achieve their livelihood objectives.
Physical Capital (P)	The basic infrastructure and producer goods needed to support livelihoods.
Natural Capital (N)	The natural resource stocks from which resource flows and services useful for livelihoods are derived.

Figure 4-4: The Sustainable Livelihoods Framework

Source: DFID (1999)

4.3.2.1 Support for SLA

4.3.2.1.1 Dynamism, holism and sustainability

The SLA is lauded for acknowledging that the poor depend on various strategies for survival which helps identify aspects that can be prioritised to reduce poverty and enhance livelihoods. Murambadoro (2009) agrees that SLA is critical as it identifies existing assets and strategies which create opportunities to identify entry points for intervention. This, coupled with the recognition of the relationship amongst livelihood assets, the vulnerabilities they are exposed to and the structures and processes that can transform livelihood strategies, renders SLA suitable for SCD; as it provides a holistic approach to intervention. According to Oxfarm (2013:7) the SLA provides a platform for families and communities to improve their livelihoods and tackle the

priorities and issues which concern them through by acknowledging that a holistic approach to intervention would be more effective in supporting people to make positive changes in their lives.

Serrat (2008:3) expounds the view that the SLA frees development practitioners from conventional to more process-oriented approaches that stress the importance of understanding institutions by mapping the institutional framework and linking the micro to the macro and the formal to the informal. SLA presents prospects for monitoring and evaluating the humanistic approach, policy level and local-level changes as well as the divergent impacts of institutional change or the general development activity on various groups of people (Karki, 2021:269-270). In this regard, SLA can also be utilised as an analytical tool for the identification of development priorities and new activities prior to any development activity, whilst the SLF can be used as a checklist or means of structuring ideas as the project or programme progresses (Kollmair & Gamper, 2002:9). Thus, promoting the sustainability of development projects by maintaining requisite development over time.

SLA also promotes SCD by recognising equity as a key element of development and placing emphasis on capacity building. Chambers and Conway (1991:6) explain that “a sustainable livelihood comprises of people’s capabilities and their means of living, including food, income and assets”; and is sustainable when it can ‘cope with and recover from stress and shocks, maintain and enhance its capabilities and assets, provide for future generations and contribute to other livelihoods at local and global levels in the short and long term. DFID (1999) submits that: people centred, holism, dynamism, building on strengths, macro-micro links and sustainability are the core concepts of sustainable livelihoods. Thus, bringing into perspective capability, equity and sustainability as key interlinked concepts for both SLA and SCD.

4.3.2.1.2 Policies and institutions

SLA places emphasis on the identification of institutions, initiatives, policies and legislation that have an impact on livelihoods of the poor and influence their livelihoods strategies. According to Ashley and Carney (1999:10-11) SLA is used to guide policy approaches through the identification of policies, structures and processes that affect livelihoods and inform dialogue about the need for policy and institutional change. Gilling et. al, (2001:317) extend that SLA stresses the role local stakeholders play in determining the content and evaluation of sector policies, while also enhancing government interventions designed to fight poverty. In this regard, SLA creates a platform for transformation that paves the way for the realisation of the tangible aspects of SCD while ensuring equity, social and cultural transformation and good governance.

4.3.2.1.3 Community engagement and perspectives

This also brings into perspective community engagement as a key aspect of SLA. According to Maphosa (2014:iv) SLA contends that urban communities should become planners, initiators and executors of community development interventions so that transformation can occur. To identify the real needs, capacities, vulnerabilities, opportunities and assets within a community, the members of the community should be fully engaged in the development process. Community engagement as an aspect of SLA provides the platform for education and awareness on the vulnerabilities and assets that the communities may have been unaware of as well as opportunities for equity and good governance; which are essential for SCD. In this regard, Morse *et al* (2009:13) acknowledge the desirability of SLA in development because it is people-centred in a direct sense and impels engagement with the people that should be helped by an intervention or policy.

Recognition of human capital as a critical component of poverty alleviation and community development provides additional merit for SLA as a tool for SCD. Although literature does not focus much on it, aspects of human capital such as mental strength as described by Oxfarm (2013:7) provide the platform to understand individual and the community's behavioural tendencies and perspectives. This ultimately promotes development that identifies the deep-rooted causes of poverty within the community and addresses the community's needs; while engaging institutions such as religious groups for improved well-being and sustainable transformation.

4.3.2.2 Criticism of SLA

Although SLA presents prospects of transformation through structures and processes, there is limited empirical evidence on the structural transformation of policies and legislation to incorporate SLA into poverty related development programmes or on the contributions of SLA to structural transformation. This poses uncertainty on the reliability of SLA in inducing SCD through the implementation of policies and legislation that address poverty related issues. On the other hand, the role of culture and institutions such as religious groups cannot be disregarded as they are often at the core of development especially in low-income societies. Thus, emphasis should still be placed on transforming structures and processes to enhance livelihood strategies and in turn induce SCD.

This is compounded by the complexity of implementing the SLF based on the need for multiple complementary indicators to assess livelihood change. Kollmair and Gamper (2002:10) are of the opinion that the endeavour to be holistic leads to the consideration of many aspects which require

immense financial, time and personal resources and vast information that can be difficult to cope with. Though a single objective is insufficient to measure performance, determining a selection of indicators to assess or combining multiple quantitative and qualitative indicators can pose problems (Karki, 2021:270; Morse *et al* 2009:14). However, the approach does not always have to start from scratch but can build on information that is already known and available (Oxfarm 2013:19). In processes such as informal settlement upgrading, information for the SLF can be obtained from the enumeration or complementary studies. Also, the multiple indicators can be altered and reduced since the implementation of the SLA is often context specific.

SLA is also criticised for not taking into consideration the fact that enhancing livelihoods of one group can undermine those of another (Serrat, 2008:4). According to Karki (2021:270) “institutional change rarely affects everyone equally and various groups are likely to have highly divergent opinions about change”. This is compounded by neglect of power dynamics in the practical implementation of the SLA despite inclusion in the framework. According to Ashley and Carney (1999:35) the SLF overall can convey a somewhat cleansed, neutral approach to power issues which contrasts starkly with the fundamental role that power imbalances play in causing poverty. Social networks can also be exclusive due to the hierarchical and coercive relationship within society resulting in the exclusion of the weakest and most vulnerable members (DFID, 2010:44; Khan, 2012:10).

Regardless, the SLA can be adapted to encompass these disparities in preferences and power to promote inclusivity, good governance, adequacy in service provision and in turn opportunities for SCD. Therefore, it is essential to understand the influence of external parties, particularly corporations operating in communities in improving livelihoods.

4.3.3 Corporate Social Responsibility

Corporate Social Responsibility (CSR) refers to strategies corporations or firms conduct their business in a way that is ethical, society friendly and beneficial to community in terms of development. This is based on the principle that companies should take into consideration the impact their business activities have on the social, environmental and economic aspects of the communities they operate in and seek to ensure corporate citizenship (Ziolo *et al*, 2019: 59). Corporate citizenship is the acknowledgement by firms that communities are key stakeholders whose dignity and human rights have need to be respected and protected and by doing so the community’s well-being is enhanced while establishing a good reputation for the business (Muthuri *et al.*, 2012:360).

In this case, the concept of CSR is based on the notion of enhancing the business' profitability within the legal parameters while fulfilling their responsibilities to society that extend beyond profit seeking (Kurucz *et al.*, 2008:84; Ward *et al.*, 2007:1). In essence, a healthy, educated and satisfied community with high quality of life creates a productive and effective workforce that would contribute to an increase in the company's revenue and profits.

4.3.3.1 Support for CSR

CSR contributes to SCD by balancing the three constructs of sustainable. The provision of infrastructure and services, creation of employment and other opportunities, community engagement, establishing relations between the business and the community while protecting the environment are key elements for both CSR and SCD. Ward *et al.* (2007:1) emphasise that CSR positively contribute to sustainable development by addressing their social and environmental impacts, and potentially also through social or community investments. Fallah Shayan *et al.* (2022:16-17) explain the complementarity of sustainable development and CSR as function of the mutual need for natural resources accessibility, workforce functionality, and economy reliability.

CSR is lauded for capacity-building through training and technology transfer. The transfer of technology through CSR provides solution to social issues in modern society and guarantees the survival of humanity in the long run based on sustainable development of society (Potocan, 2021:12). According to (Hope, 1996: 196) CSR creates opportunities for the transfer of appropriate technology best suited to the resources and future development potential of disadvantaged communities and developing countries. Despite limited empirical knowledge and research, technology transfer through CSR is critical for disadvantaged communities as it enhances knowledge and skills that can be applied to other development related opportunities such as entrepreneurship and enhances human capacity.

The principle of community citizenship promotes community engagement in corporate affairs that affect communities. Company interests in community engagement include creating successful partnerships with communities to boost their reputations, complying with legal obligations, access to indigenous knowledge and elimination of stakeholder conflict (Masum *et al.*, 2020:35-36; Scherer & Palazzo, 2011:910). In return communities gain knowledge and skills and they are involved in making decisions that affect them. Werner (2009:545-546) adds that CSR induces social change allowing socially excluded members of society opportunities to meet their basic needs and be integrated into society through economic empowerment and participation. In this regard, CSR contributes to the equity and social capital, governance and economic aspects of SCD.

4.3.3.2 Criticism of CSR

However, CSR has been criticised not addressing the root cause of poverty and underdevelopment. Companies sometimes engage in CSR only as a legal requirement and neglect the real needs of communities. Corporate efforts have failed to address the developmental needs of communities nor deliver on their promises, especially in countries with weak regulatory context; which would have made them attractive to companies (Mueller-Hirth, 2016:59; Idemudia *et al.*, 2022:92). As a result, CSR may fall short of ensuring SCD especially in marginalised communities.

The disjuncture between the promises and delivery often leads to conflicts with host communities. While communities may expect initiatives that improve their livelihoods, companies may not consider these as their responsibility; resulting in company -community conflict (Banerjee, 2022:133). Also, despite being lauded for creating platforms for addressing conflicts, CSR may also induce social tensions within host communities. Increase in employment of migrant groups or programmes that focus predominantly indigenous groups, may create or exacerbate tensions between native and non-native members of the communities (Narula *et al.*, 2017:85-86, Ward *et al.*, 2007:2). This shows that poor implementation of CSR initiatives may nullify the prospects of good governance, equity and social capital in addressing the challenges that are faced within marginalised communities. Thus, thwarting SCD.

Limited community engagement in practical CSR initiatives also hinders SCD. The reluctance of host communities to participate in these initiatives or open channels for access to resources can be attributed to limited knowledge of CSR within communities and/or power struggles between business and communities; where communities are presented as objects of rather than agents of their own development (Masum *et al* 2020:38; Sheng, 2013: 278). Muthuri *et al.* (2012:371) explain that comprehensible understanding and appreciation of power in corporate–community interactions are the keys to the successful implementation of stakeholder engagement in the governance of SCD.

Nonetheless, the implementation of CSR in development of or addressing the challenges faced by marginalised communities such as informal settlements present prospects of SCD. Ensuring that businesses consider the social, economic and environmental challenges and opportunities within the communities they operate in will alleviate poverty and other development challenges faced within these deprived communities.

Though the above approaches provide insight and guidance towards SCD, they do not indicate how communities should respond and continue to thrive when faced with disasters. Though

resilience and sustainable development sometimes presented as separate context, this study presents community resilience as a critical component of SCD. Therefore, the next section is on understanding the concept of resilience and in turn community resilience.

4.4 Resilience

Resilience thinking responds to the perpetual challenges of complexity, uncertainty and change in the environments in which we live and work (Harrison *et al.*, 2014:10). Until recently, resilience was often associated with Psychological and Ecological studies. Complex contemporary social, ecological, economic and political challenges faced in modern day urban areas have stimulated the need to focus on community resilience.

This study explores community resilience as part of a greater urban system from an environmental social, economic, spatial and political perspective. This is based on the fact that low-income households are often vulnerable to natural disasters, social and political unrests as well as being more susceptible to shocks as a result of economic crises. Ellis and Dietz, (2017) broaden the traditional view of resilience to encompass resilience in the daily adversities that communities may face, and these include insufficient access to social services, poor housing conditions, and systemic racism, among others. Therefore, it is critical to understand the definition and meaning of community resilience.

4.4.1 Defining resilience

The word resilience is derived from the Latin word *resilire*, a combination of prefix *re* and the verb *salire* which mean going backwards and to jump respectively (Pizzo, 2015:133). Holling (1973), the seminal source in resilience thinking; instituted engineering resilience, the capacity of a system to move back quickly after a natural disaster or social upheaval to its original equilibrium, and ecological resilience, the magnitude of the disturbance that can be absorbed before the system changes its structure” (Holling, 1996:33). In the more recently popular perspective of evolutionary resilience, resilience is defined as the ability of complex socio-ecological systems to change, adapt and, crucially, transform, by self-organisation, in response to external stresses and strains (Davoudi, 2012:302; Folke, 2016).

There are myriad definitions for resilience from different domains and various authors, indicative of the various aspects, dimensions and interpretations of the term. Table 4-3 displays some of the definitions of resilience highlighting the key words that best describe the multidisciplinary aspect of the concept and its adaptability within complex systems.

Table 4-3: Defining resilience from different domains

Author	Domain	Definition
Bodin, 2004	Physical	The speed with which a system returns to equilibrium after displacement irrespective of how many oscillations are required
Holling, 1973	Ecological system	The persistence of relationships within a system; a measure of the ability of systems to absorb changes of state variables, driving variables, and parameters, and still persist
Abel, 2001	Ecological system	The ability to persist through future disturbances
Klein, 2003	Ecological system	The ability of a system that has undergone stress to recover and return to its original state; in terms of: • the amount of disturbance a system can absorb and remain within the same state or domain of attraction; and • the degree to which the system is capable of self-organization
Adger, 2000	Ecological and social systems	The ability of communities to withstand external shocks to their social infrastructure
Adger, 2003	Ecological and social systems	The ability to persist (i.e., to absorb shocks and stresses and still maintain the functioning of society and the integrity of ecological systems) and the ability to adapt to change, unforeseen circumstances, and risks
Comfort, 1999	Community	The capacity to adapt existing resources and skills to new systems and operating conditions
Mileti, 1999	Community	(The ability to) withstand an extreme event without suffering devastating losses , damage, diminished productivity , or quality of life without a large amount of assistance from outside the community
Godschalk, 2003	Community	A sustainable network of physical systems and human communities, capable of managing extreme events; during disaster, both must be able to survive and function under extreme stress
Timmerman, 1981	Community	A system's capacity to absorb and recover from the occurrence of a hazardous event ; reflective of a society's ability to cope and to continue to cope in the future
Wildavsky, 1991	Community	The capacity to cope with unanticipated dangers after they have become manifest, learning to bounce back
Brown, 1996	Community	The ability to recover from or adjust easily to misfortune learning to bounce back
Sonn, 1998	Community	The process through which mediating structures (schools, peer groups, family) and activity settings moderate the impact of oppressive systems
Paton, 2001	Community	The capability to bounce back and to use physical and economic resources effectively to aid recovery following exposure to hazards

Author	Domain	Definition
Center for Community Enterprise, 2000	Community	Intentional action to enhance the personal and collective capacity of its citizens and institutions to respond to, and influence the course of social and economic change
Chenoweth, 2001	Community	The ability to respond to crises in ways that strengthen community bonds, resources , and the community's capacity to cope
Ganor, 2003	Community	The ability of individuals and communities to deal with a state of continuous long-term stress ; the ability to find unknown inner strengths and resources in order to cope effectively; the measure of adaptation and flexibility
Quinlan, 2003	Community	The degree to which a system expresses capacity for learning and adaptation
Ahmed, 2004	Community	The development of material, physical, socio-political, socio-cultural, and psychological resources that promote safety of residents and buffer adversity
Kimhi, 2004	Community	Individuals' sense of the ability of their own community to deal successfully with the ongoing political violence
Coles, 2004	Community	A community's capacities, skills, and knowledge that allow it to participate fully in recovery from disasters
Allenby, 2005	Community	The capability of a system to maintain its function and structure in the face of internal and external change and to degrade gracefully when it must
Pfefferbaum, 2005	Community	The ability of community members to take meaningful, deliberate, collective action to remedy the impact of a problem, including the ability to interpret the environment , intervene, and move on
UN/ISDR, 2005	Community	The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing to reach and maintain an acceptable level of functioning and structure
Perrings, 2006	Community	The ability of the system to withstand either market or environmental shocks without losing the capacity to allocate resources efficiently
RAND, 2018	Community	Community resilience involves transformation from adverse environments to those that support and facilitate family health and wellness without losing the community's unique identity and essential characteristics.
Butler, 2007	Individual	Good adaptation under extenuating circumstances; a recovery trajectory that returns to baseline functioning following a challenge

Source: CARRI (2013:3 – 9); RAND (2018)

The definitions of resilience as provided in Table 4-3 demonstrate that resilience can be considered as: the ability, degree, amount of, speed, system's capacity, process, intentional action; and/ or development of. In this regard, the resilience of a community is framed according to the following core concepts:

Attribute	• resilience is an attribute of the community
Continuing	• a community's resilience is an inherent and dynamic part of the community
Adaptation	• the community can adapt to adversity
Trajectory	• adaptation leads to a positive outcome for the community relative to its state after the crisis, especially in terms of its functionality.
Comparability	• the attribute allows communities to be compared in terms of their ability to positively adapt to adversity

Figure 4-5: Core concepts for resilience in communities

Source: Adapted from CARRI (2013:2)

Thus, community resilience can be understood as “the capability of a community to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, growth, and maintaining or seeking a new equilibrium in the face of turbulent change” (CARRI, 2013:10). However, the definition of community resilience and the concept of resilience in general should not be limited to a specific set of words as case-specific and changing approaches are needed in response to the different ways in which environments change. Harrison *et al.* (2014:4) agree that if resilience is reduced to a checklist, then it would surely lose its core message, which is, ensuring that case-specific and changing approaches are employed to different ways in which urban environments change.

4.4.2 Measuring community resilience

Jordan and Javernick (2012:2196) note that in the aftermath of a traumatic event, lower income communities often have fewer reserves for recovery, less eligibility for government assistance, and government programs often cannot keep pace with their need for temporary and permanent housing needs. In this case, these communities are highly vulnerable and community resilience counters this vulnerability. It should be noted that high levels of vulnerability do not necessarily translate to low levels of resilience as such communities may possess significant social and cultural capital; but possess less inherent and adaptive resilience (Tiarney, 2009:7). It is therefore imperative to understand how community resilience can be measured.

4.4.2.1 Cutter's concept for measuring community resilience

According to Brose (2012:1) community resilience is measured by taking to consideration vulnerable populations, critical and environmental infrastructure, social factors and built infrastructure. The approach utilises the guideline indicated in Figure 4-6. Though the approach creates a platform for community engagement in the calculation and determination of community resilience, it is not scientifically comprehensive. The concept does not provide insight into the identification and quantification of the objectives, measures and indicators for community resilience. Therefore, there is need for a more comprehensive framework.

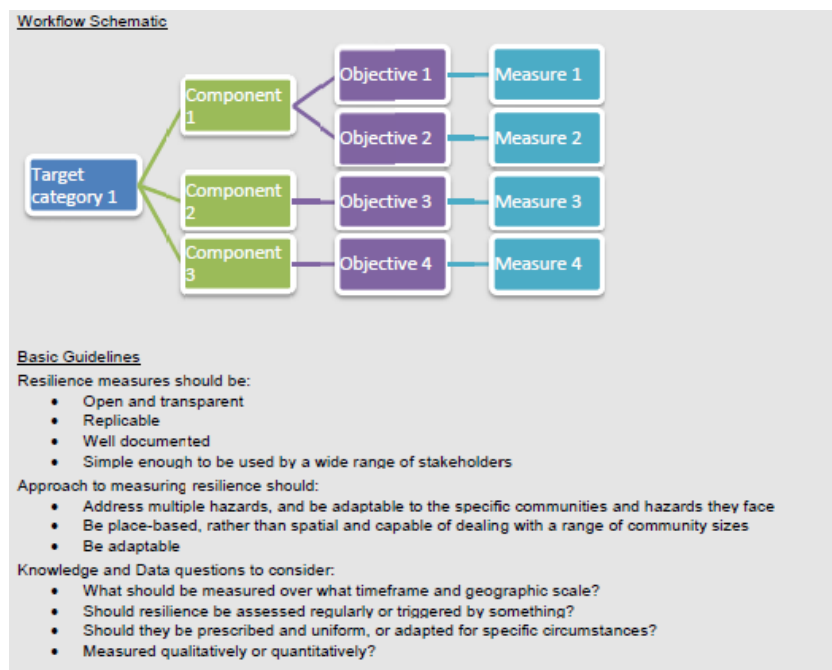


Figure 4-6: Cutters concept for measuring community resilience

Source: Brone (2012:22)

4.4.2.2 The ARC-D Toolkit

Clark-Ginsberg *et al.* (2020:3-4) suggest the use of the ARC-D based on the following system sectors: education, economic, environmental, political and governance, health, infrastructure, social and cultural and disaster risk management. This toolkit examines the beneficiaries (resilience for who), the context (resilience for who), shocks and stresses (resilience to what), level of exposure (resilience to what) and the systems and levels where intervention will occur (resilience how). The ARC-D toolkit is illustrated by Figure 4-7:

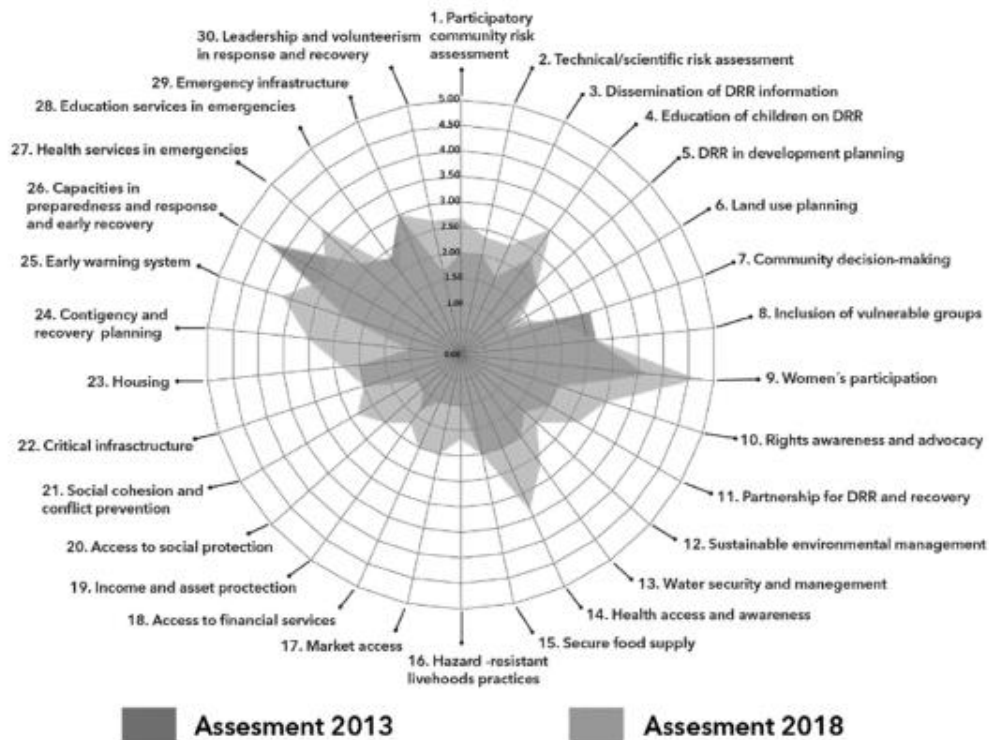


Figure 4-7: ARC-D toolkit for community resilience

Source: Clark-Ginsberg (2020:8)

The ARC-D toolkit is comprehensive, addresses key aspects of community development, and helps identify an interlink among communities, government agencies and other key stakeholders. However, it utilises numerous indicators which would be onerous to assess especially when assessing resilience as a component of SCD. Therefore, there is a need for a toolkit or approach that is more comprehensive and refined while incorporating the key elements for community resilience, especially in marginalised communities.

4.4.2.3 The 6C-4R Framework

Atreya and Kunreuther (2016:1) introduce the 6C-4R framework, holistic approach to measure community resilience. The framework is based on the specification of the Human, Social, Physical, Natural, Financial and Political sectors of a community (the six capitals, 6Cs) and characterizing four properties of resilience (4Rs) (robustness, resourcefulness, redundancy and rapidity).

The 6Cs are adapted from the capitals from the Sustainable Livelihood Framework described in Section 4.3.2, with the addition of political capital to incorporate the role of people in power in supporting change. The 4Rs represent the:

- “Ability to withstand stress without suffering degradation or loss of functionality (**robustness**);
- Capacity to meet priorities and achieve goals in a timely manner to contain losses, recover functionality and avoid future disruption (**rapidity**);
- Extent to which alternative elements or other measures are substitutable (**redundancy**); and
- Capacity to identify problems, establish priorities, and mobilize resources when existing conditions threaten to disrupt the system (**resourcefulness**)” (Atreya & Kunreuther, 2016:5-8).

Table 4-4: The 6Cs and 4Rs of measuring community resilience

Capital (C)/ Resilience (R)	Financial	Natural	Human	Physical	Social	Political
Robustness	<i>Income/Wealth</i>	<i>Floodplain conservation</i>	<i>Family emergency plans</i>	<i>Strength of critical infrastructure and housing to withstand shock</i>	<i>Proportion of socially vulnerable population</i>	<i>Ability to withstand and manage a disaster efficiently</i>
Rapidity	<i>Insurance Availability</i>			<i>Multiple communication sources</i>	<i>Interval to restore life line services</i>	<i>Respond immediately to the disaster</i>
Redundancy	<i>Alternative sources of income</i>		<i>Skills for alternative income</i>	<i>Availability of alternate routes</i>	<i>Availability of housing options for victims</i>	<i>Generate reports at local, state and federal level</i>
Resourcefulness	<i>Funds set aside for emergency</i>	<i>Regulations to limit the use of natural resources</i>	<i>Ability to maintain livelihood</i>	<i>Availability of materials for restoration</i>	<i>Capacity to address the needs of victims</i>	<i>Creating funding for disaster management</i>

Source: Atreya and Kunreuther (2016:9)

The 6Cs and 4Rs provide the basis for quantifying different attributes of a community resilience to understand the current resilience status, track activities over time and identify the areas where more focus is needed (Atreya & Kunreuther, 2016:33). Indeed, the 6Cs and 4Rs of community resilience cover the essential factors relating to vulnerabilities that communities such as informal settlements may face; and the quantification, scaling and/or rating of each of the attributes promotes a balance over the contributions of each of the factors.

Robustness of human capital may have to be combined with rapidity of physical capital, redundancy of financial capital and resourcefulness of social capital to ensure that a community can anticipate, absorb, adapt and/or recover from disasters or unwanted stresses. However, the 6C-4R method does not measure the magnitude resilience but it provides a framework for understanding the relationship between the aspects of resilience and the capitals. Therefore, there is need for a formula or tool to measure the resilience of a community. Regardless, this

method also exemplifies the relationship between resilience and sustainability in community development; as will be discussed in the next section.

4.5 Resilience and sustainability in community development

Resilience and sustainability have been presented as twin, opposite and substitute processes, depending on the context within which the two concepts are mentioned. Redman (2014) perceives them to be different concepts as sustainability systematically examines future options and assigns measures and indicators to attain those options while resilience is more robust and adaptive, to ensure the system can withstand and absorb unspecified system shocks and stressors. Pizzo (2015:136) agrees that resilience is an upgraded version of sustainability whereby resilience factors imbalance and imperfect existing knowledge to ensure flexibility in response to an uncertain future while sustainability is entrenched on achieving balance with the right action.

On the other hand, both resilience and sustainability share the similarity of being properties of a system. Carpenter *et al.* (2001:770) note that rather than being distinct entities themselves, the application of sustainability and resilience require them to be descriptors of a system. Fiksel *et al.* (2014:44) concur that sustainability and resilience both refer to the state of a system or feature over time, focusing on the persistence of that system under normal operating conditions and in response to disturbances. From this, the two concepts of sustainability and resilience can be used as quasi-synonyms (Pizzo, 2015:136).

Despite and because of the similarities and differences between the two concepts, the two concepts are interrelated and can co-exist. Though Lew *et al.* (2016:22) argue that the contrast between the two concepts is that sustainability initiatives focus on preserving traditional methods of resource use while resilience initiatives tend to focus on adapting to new conditions, creating innovative uses of traditional knowledge, these very differences forge interdependency between the concepts. The ability to anticipate and foresee future scenarios is placed against the ability to strategically react, which would also help to adapt to unexpected changes.

Walker and Salt (2006:37) affirm that a system is sustainable, even in the face of unpredictable change, when it has achieved a high level of resilience or adaptive capacity. Harrison *et al.* (2014:15) support this claim, describing sustainability as an essential goal for development, and resilience as a way of thinking and acting that leads to the achievement of sustainability. Whereas sustainability focuses on increasing the quality of life for the present and for future generations, resilience creates operative responses to both extreme disturbances and persistent stress that may hinder improving quality of life. This brings into perspective the essence of community resilience is an integral aspect of SCD especially as relates to intervention in informal settlements.

According Magis (2010:413) change is an inevitable attribute of a community and the ability to successfully anticipate and respond to unpredictable change makes resilience a critical component of community sustainability. Since continually adjusting to meet the needs of the people is critical for SCD, enhancing the adaptive capacity offers a pathway for maintaining community functioning by withstanding, absorbing, bouncing back and finding balance at all stages of the development process.

Table 4-5 further illustrates how resilience can be a component of SCD by taking into consideration the 4Rs of resilience as provided in Section 4.4.2.3, the core concepts of resilience in Figure 4-5 and the principles of SCD highlighted in Section 4.2 of the study.

Table 4-5: Resilience and sustainability in community development

Resilience	Sustainability	Resilience and sustainability in community development
Robustness	Change and continuity	Resilience as an attribute and inherent aspect of a community ensures that a community can continually transform to meet the needs of the community. This also brings about the capability to recover/self-organize or adapt in the unexpected circumstance
	Collective action	The ability to withstand, adapt and reorganise is enhanced and the community's inherent nature to work together by embracing similarities and differences among the residents is strengthened
	Achieving the social, economic and environmental balance	Adaptation ensures that when natural, economic or social disasters occur, other aspects of the 3 constructs of sustainability will contribute to the community's ability to gracefully weather the shocks and stressors
Redundancy		Adaptation allows the community to embrace the unknown, identify alternative options to conserve the environment while meeting the social needs and maximising economic opportunities
	Quality of life	Adaptation and trajectory create opportunities for improved quality of life
Rapidity		Resilience curbs vulnerability and promotes improved quality of life through immediate response

Resourcefulness	Intergenerational and intragenerational equity	Comparability endorses the identification of problems and opportunities, establishment of priorities, and the mobilisation of resources that ensure that the needs of current and future generations are balanced and met
	Meeting vital needs using available resources	

Source: Own construction (2022)

However, implementing resilience as a component of SCD is sometimes marred by some practical deterrents. Fewer implemented projects to reflect the relationship between sustainability and resilience; particularly as pertains to addressing informal settlements. This, to an extent, owes to the misinterpretation of multiple sub meanings embedded in the concept of resilience and the inability to determine operations where transformation or preservation of the states of the system should be employed (Alexander, 2013:2707; Pizzo, 2015:133).

Limited knowledge on the applicability of the aspects of resilience hinder successful integration into the principles of SCD in practice. Cai *et al.* (2018:850) explain that the disconnect between resilience research and actions policy and decision makers is due to failure to understand the relationship between resilience as a property (inherent) and a process (adaptive). Also, the key to sustainability lies in being more efficient with resources; which often diminishes redundancy as a key characteristic of resilience. Yet, sustainability (efficiency) on its own makes the system more vulnerable. Regardless, resilience as a component of sustainability presents opportunities to maximise on the strengths of both concepts to promote SCD.

4.6 Conclusion

This chapter provides the basis for understanding SCD as the key element for addressing informal settlements. The chapter examines the concept of sustainable community by elaborating on community, community development and SCD. A community can be understood as a locale, the aspect of sharing, the notion of joint or collaborative action, the social ties within a group of people and the diversity within such a setting. Community development is the process of growing, expanding and/or changing that is centred on the collective action of community members and external members within a network; to create a sense of ownership and improved decision making. Due to limitations of traditional approaches to community development, SCD is presented as the panacea to address the real needs of communities.

The functional elements of SCD provide insight on how intervention in informal settlements can improve the quality of life of the inhabitants. SCD through the implementation of Asset Based Community Development encourages accentuating assets rather than the weaknesses of a

community. However, failure to acknowledge the barriers that disadvantaged communities face and the absence of measurement tools renders the approach ineffective. The Sustainable Livelihoods Approach examines the factors essential for poverty reduction by highlighting vulnerability contexts, livelihoods assets, transforming structures and processes, livelihood strategies and livelihood outcomes. Though holistic, the SLA does not elucidate the roles and responsibilities of institutions operating within a community, hence the examination of Corporate Social Responsibility.

The chapter also focuses on the concept of resilience as a critical response to challenges and vulnerabilities that face disadvantaged communities such as informal settlements. Resilience is an attribute of a community, an inherent part of a community that fosters continuity, the ability to adapt, the trajectory and propensity for comparability to anticipate, withstand and adapt to adversity. Measuring community resilience is mostly effective using the 6C-4R Framework which frames a community's capital against the principles of robustness, rapidity, redundancy and resourcefulness.

Though considered twin, opposite and substitute processes, resilience and sustainability can co-exist in community development. Resilience strengthens the ability to plan for the future and improve livelihoods by creating pathways to strategically anticipate, withstand, react and bounce back from vulnerabilities and unexpected changes. Collective action, change and continuity, balancing social, economic and environmental needs using available resources as well as intergenerational and intragenerational equity are enhanced through robustness, redundancy, rapidity and the resourcefulness of a community. Therefore, resilience is a critical component of SCD when addressing informal settlements. Figure 4-8 displays a summary of this chapter and the next chapter provides more insight into the theoretical perspectives of addressing informal settlements.

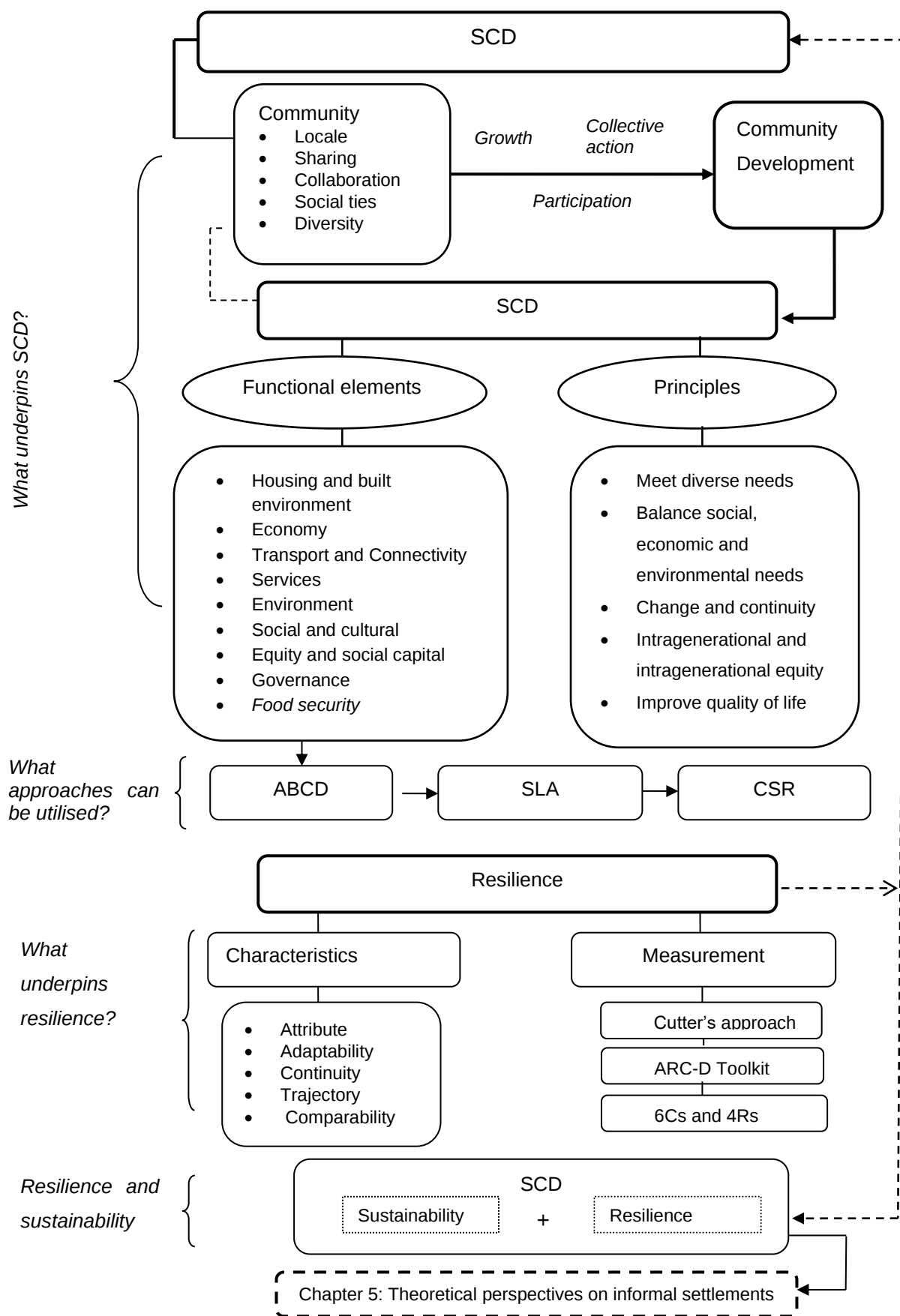


Figure 4-8: Chapter 4 summary

Source: Own construction (2022)

CHAPTER 5 THEORETICAL PERSPECTIVES ON INFORMAL SETTLEMENTS

5.1 Introduction

Access to adequate and affordable housing is a growing challenge for all countries worldwide, particularly in Africa. Most housing problems in Africa are largely related to affordability, where housing is expensive and household incomes are too low; as well as the extremely high rate of urbanisation with which the housing sector cannot cope. Many urban households, faced with few other options, have resorted to living in substandard housing with inadequate facilities. Thus, the essence of understanding the concept of informal settlements as a housing solution to many of the urban poor.

The focus of this chapter is on understanding the definition of informal settlements, the factors that contribute to the emergence of the settlements, the challenges and opportunities relating to informal settlements, the need to intervene in addressing and realising these challenges and opportunities as well as the intervention measures directed at informal settlements. To achieve this, this chapter examines the merits and demerits of low-income housing systems to understand the cause effect relationship between formal and informal housing and identify alternatives to addressing informal settlements.

The chapter also details the different perspectives on informal settlements by defining them and explaining the notions of slums of hope and slums of despair. Maslow's hierarchy of needs and the right to the city motivate addressing informal settlements to improve the quality of life for the inhabitants. The chapter also describes the historic measures that have been implemented to address informal settlements with emphasis on the upgrading of informal settlements. In this regard, this chapter forms the basis for reflecting on **all the research questions in this study**. Refer to Section 1.4 of this study for the research questions. Figure 5-1 illustrates the structure of the chapter.

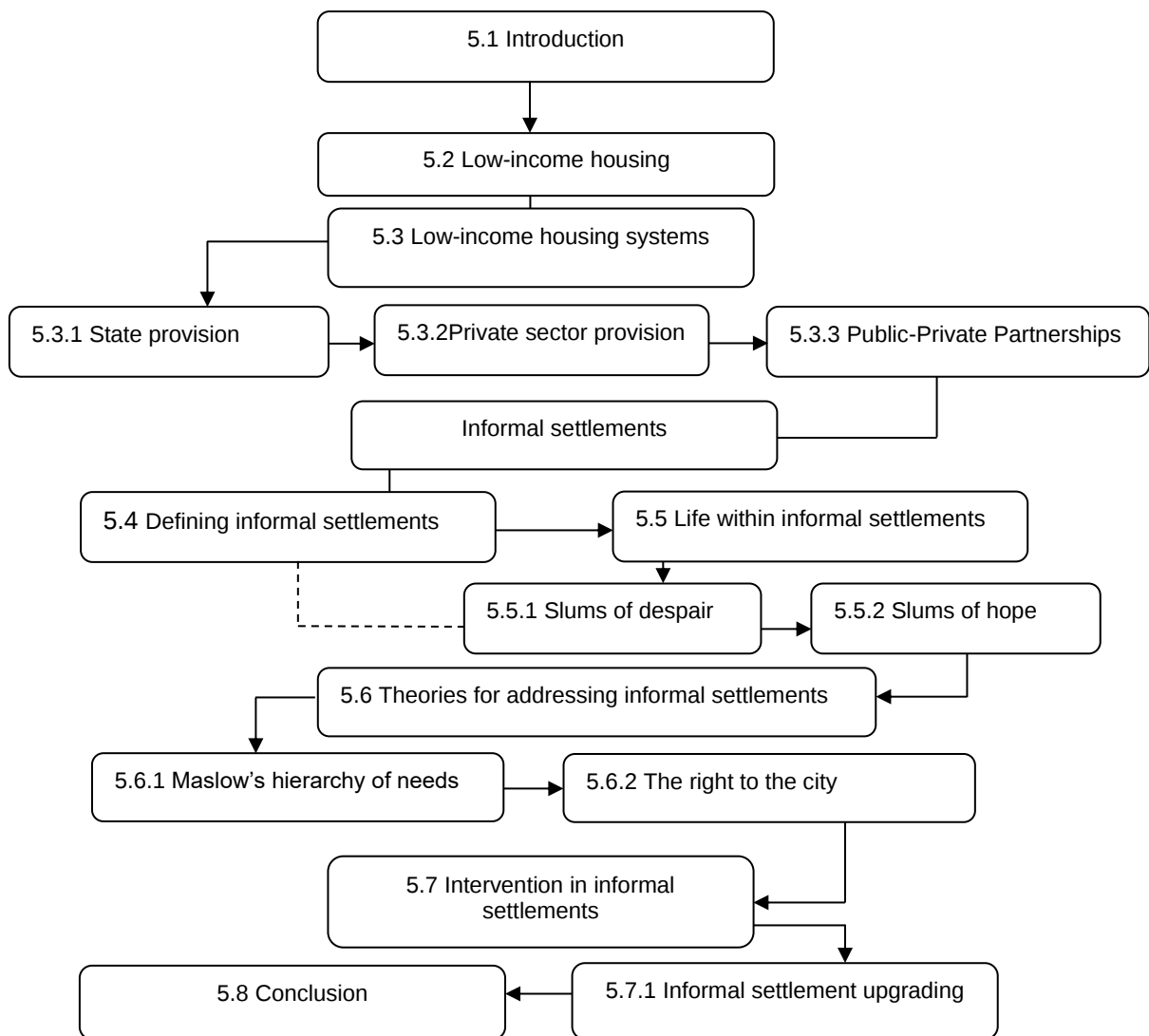


Figure 5-1: Chapter 5 flow diagram

Source: Own construction (2022)

5.2 Low-income housing

Low-income housing generally refers to housing provided for the segment of society whose income is below the median household income. The term affordable housing is also used to refer to housing for low-income earning households. Evans and Evans (2007:252) define low-income housing as any housing that is generally limited to occupancy by persons whose household income does not exceed certain pre-set maximum levels. Beaver (2020) expounds the view that low-income or affordable housing is any home, rented or owned, in which costs comprise less than 30 percent of the household monthly income. Ideally, the households should be able to pay for housing costs and utilities; and still be able to pay for other necessities such as food, transportation and health care.

5.3 Low-income housing systems

Low-income housing is broadly categorised into formal and informal housing. Formal housing is housing that is produced through formal systems and the settlements are formally planned according to planning norms and standards and have gone through a statutory approval process. Informal housing is housing that is produced through informal systems and the settlements generally do not conform to planning norms and standards (NUSP, 2015a:1). Formal housing is mainly provided by the state, the private sector and through public-private partnerships. On the other hand, informal housing can be described as housing by the people, whereby households identify a portion of land to establish a settlement or abandoned buildings. These systems are reflected in Figure 5-2.

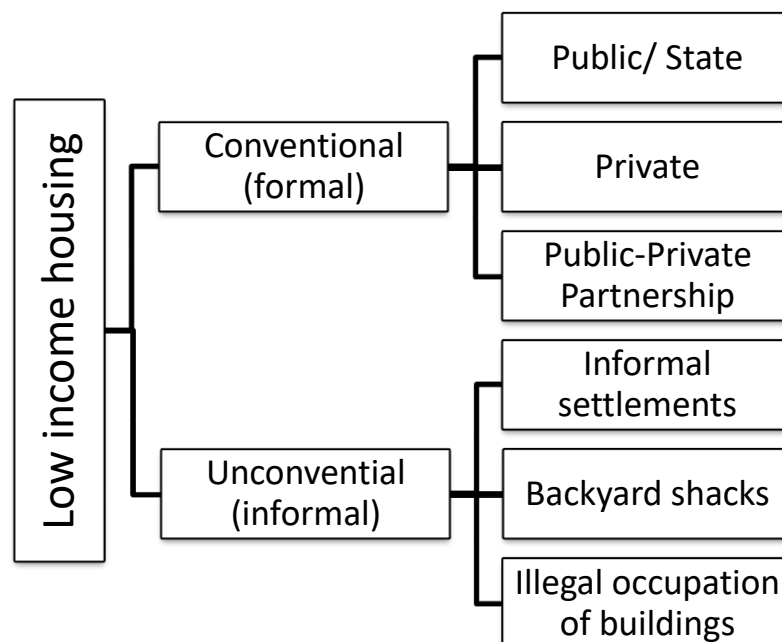


Figure 5-2: Low-income housing provision

Source: Adapted from Drakakis-Smith (2012)

5.3.1 State provision

Low-income housing delivery is often a function of the state, especially in developing countries. The state generally assumes this role in response to legislative and constitutional mandates to ensure that all citizens have access to adequate housing; which is a basic human right. On one hand the state's delivery of low-income housing encourages "viable, integrated settlements where households could access opportunities, infrastructure and services" (Republic of South Africa, 1994:6). On the other hand, full delivery of housing by the state has been criticised for overburdening the national fiscus, failing to provide quality housing to meet the residents' needs,

promoting a dependency syndrome on the citizens and placing more emphasis on housing ownership over other tenure options.

According to Thwala et al. (2018:2491) the unprecedented governments deficits have instigated a cross-examination on the efficacy of state interventions and the sustainability thereof, particularly in welfare services with high expenditure like housing. The Financial and Fiscal Commission (2013:39) concedes that the failure to differentiate between human settlements components that can be considered a public good and those that are a private good often overburden's the national fiscus. While the provision of basic infrastructure should be the responsibility of the state, individual households and private sector should concentrate on providing the private-good components of human settlements.

The provision of fully subsidised or fully developed housing by the state also creates unrealistic expectations and promotes a dependency syndrome on the citizens. The right to adequate housing has been misconceived to mean that the state should build housing for all the citizens (UN-Habitat, 2009:5). As a result, citizens sometimes do not take initiatives to access formal housing as they rely on the state. Oldfield and Greyling (2015:1100-1101) explain that waiting for state-provided homes has become a normal and everyday intergenerational condition across South African cities. This sole reliance on the state for housing provision in turn aggravates the housing challenge.

On the other hand, Sidoti (1996:3) argues that "such a narrow interpretation of human rights cannot be justified. Public housing is one of the few effective ways of guaranteeing everyone, everywhere, the right to a place to live in peace and security and governments should endeavour by all appropriate means to ensure the realisation of this right". Though this may be true, the over-reliance on state may cripple the socio-economic skills and resilience that are associated with housing as a process. Thus, stifling prospects of SCD in human settlement development.

Another criticism for state provided housing is poor quality and failure to meet the real need of the people. Hamdi (1995:25) refers to the provision of housing as the provider paradigm. The provider paradigm is criticised for focusing more on increased production, being overly standardised and the enforcement of unrealistic minimum acceptable standards worsens the housing conditions of the poor (Hamdi, 1995:28). These in turn have negative impacts on the socio-economic status of the residents, their safety and health as well as their general well-being. Manomano and Tanga (2018:30-31) concede that the housing provided by the state often have low quality structures exposing the residents to risks of burglary, theft and contracting diseases, subject the recipients to the risk of loss of worth and dignity, contribute to the community becoming run down and ultimately condemn the residents to a life of poverty.

The provision of housing by the state often does not explore a variety of tenure options available for low-income households. In many developing countries, state provision of low-income housing has focussed more on ownership than any other tenure options. As a result, citizens are not willing to explore alternative options such as rental housing and this has curtailed progress towards reducing the housing deficit.

5.3.2 Private sector provision

Housing policy emphasis shifted from state provision towards the encouragement of private sector participation in housing development at the realisation that provision of housing by the state is largely inefficient (Angubiade et al., 2013:4, 120; South Africa Institute of Race Relations, 2015:13). Engaging the private sector in the provision of low-income housing curbs the financial constraints faced by the state. The private sector often has capital adequate to increase the numerical production of low-income housing. Loxley (2013:489) adds that the private sector possesses better project management skills which enable timely housing development. This housing option is efficient and provides the platform for adequate low-income housing provision.

However, the provision of low-income housing through the market or the private sector has been criticised for excluding the very people low-income housing is intended for. The costs of accessing low-income housing by the private sector often exceeds the income range. Shaqra'a *et al.* (2015:391) notes that an average low-income family spends two and three times the annual income when purchasing a house, in addition to a huge down payment. As a result, low-income households are inadequately housed because they lack sufficient income to participate effectively in the housing market and the housing market is inaccessible (Mokgwatsana, 2018:42).

Political interference also hinders the effective provision of low-income housing by the private sector. Taruvinga and Mooya (2015:35) note that most low-income housing projects suffer from policy unpredictability and unreasonably high standards instituted by the state, which cannot exceed the payment capabilities of the low-income sector. Coetzee (2018:14) adds that there is often inflexibility in lowering these standards thwarting the successful implementation of private sector low-income housing provision.

Although literature indicates the reluctance of the private sector to provide low-income housing, empirical evidence shows that there have been successful low-income housing initiatives by the private sector. Limited research has been carried out on the mechanisms by which the private sector can be encouraged to participate in low-income housing delivery and alternative tenure arrangements that would benefit both the developers/investors and the housing beneficiaries. The existing empirical evidence has been hampered by the absence of explicit theoretical frameworks,

leading to speculative and overly descriptive research on the subject (Drane, 2013:13-14; Taruvinga & Mooya, 2016:35). While private sector provisions have the potential to address the affordability and accessibility challenges faced by low-income households, the prospects are enhanced through the collaboration of the private sector and the state/public sector.

5.3.3 Public-Private Partnerships

Public-Private Partnerships (PPPs) are government schemes involving the private sector in public sector projects (Al Shareem *et al.*, 2014:7). Loxley (2013:487) explains that a private party and a government agency sign a long-term contract for some combination of construction, ownership, design, financing operation and/or maintenance of public infrastructure; in this case housing units and related infrastructure. The common objective of public-private partnership in housing delivery is to boost the productivity of housing sector, increasing housing affordability and improve access to basic infrastructure (Harelima, 2017:2).

PPP are ideal for low-income housing provision as they reduce the burden on the state in financing the projects. Loxley (2013:489) concur that allowing the private sector to finance projects directly, relieves the government of the shortage of domestic funds and reduces their debt. Also, PPPs allow a reduction in the bottlenecks with solely private sector housing provision as government would create conducive terms for access to land, land use regulation, and reduced construction and production costs. As a result, governments often aim at adopting an enabling role by incentivising the private sector to become housing providers and while the government focuses on managing the housing sector (Coetzee, 2018:14). Ultimately, low-income households can afford housing that meets their needs.

However, procedures for PPPs can be complex due to the lengthy contract negotiations that involve complicated legal documentation. Al-Shareem *et al.* (2014:7) explain that bureaucratic inadequacies and delays in surrendering land titles and limited political determination are some of the factors that have hindered or delayed low-income housing provision through PPP. In instances where the government nor the developer owns the land for the prospective housing projects, undue interferences and obtaining suitable locations may hinder the delivery of housing.

Moreover, PPPs and all the other systems for conventional low-income housing provision often do not meet the real needs of low-income households. The processes are often top-bottom approaches that do not take into cognisance the role of the beneficiaries in the design of both the programmes and the physical structures. In addition to the shortcomings of each of the approaches as mentioned in previous sections, the housing supplied often does not meet the demand and the lengthy process of accessing conventional housing does not meet the urgent

need for shelter among low-income earners. As a result, households often resort to the invasion of land or buildings to secure their housing needs. Thus, the emergence and proliferation of informal housing. Figure 5-3 shows how the procurement processes for informal housing can be appealing to low-income households.

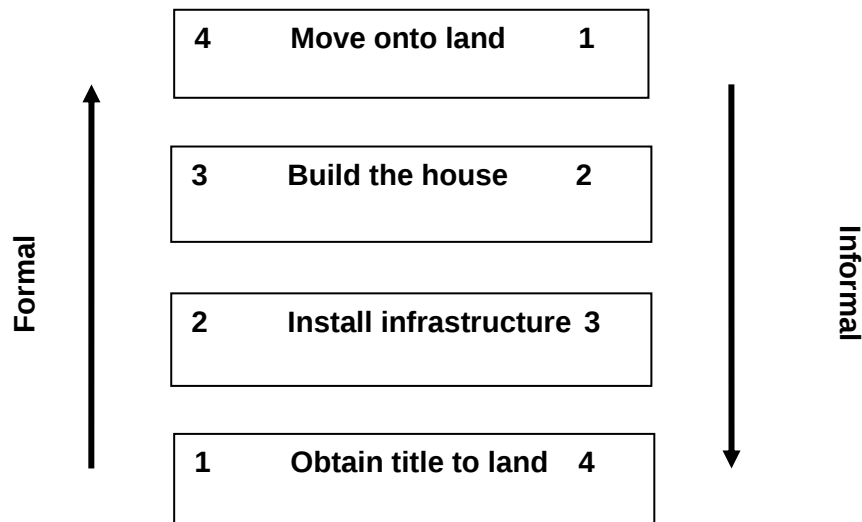


Figure 5-3: Procurement processes for formal and informal housing

Source: Adapted from NUSP (2015b:13)

5.4 Defining informal settlements

One of the major challenges in systematically addressing informal settlements owes to the varying definitions across regions, municipalities and actors. UN-Habitat (2015:1) defines informal settlements as residential areas where: inhabitants have no security of tenure vis-à-vis the land or dwellings they inhabit with modalities ranging from squatting to informal rental housing, the neighbourhoods usually lack, or are cut off from, basic services and city infrastructure and; the housing may not comply with current planning and building regulations and is often situated in geographically and environmentally hazardous areas.

According to Statistics South Africa (2016:31), an informal settlement is an unplanned settlement on land which has not been surveyed or proclaimed as residential; consisting mainly of makeshift structures not approved by a local authority and not intended as a permanent dwelling. The South African National Housing Code and the National Upgrading Support Programme (Department of Human Settlements, 2009:16; NUSP 2015a:7) use the following five criteria to identify informal settlements:

- Illegality and informality which refer to the unlawful occupation of land and the fact that the settlements have not been formally planned;
- Insecure tenure, that is, the absence of or limited long term rights for household to continue living on the land; posing uncertainty over the prospects of future evictions;
- Inappropriate locations as refers to the siting or location of the settlements on land that is not suitable for residential development. This includes steep slopes, flood plains, unstable soil, road reserves; lack of access to main roads, or proximity to harmful land-uses (such as radio-active mine dumps, hazardous dump sites, dangerous infrastructure);
- Lack of or limited access to basic services such as water, sanitations, street lighting, refuse collection, paved road surfaces and essential services such as health facilities; educational facilities; post offices and police stations; and
- Poverty, vulnerability and social stress as evidenced by long periods of unemployment or poorly paid and insecure jobs in the informal sector, low levels of education; inadequate income for food and basic home improvements.

Internationally, the terms slum and informal settlement are often used interchangeably. However, the use of the word slums has been criticised by academics due to the negative connotations associated with it. Cadavid (2011:24) provides insight into the stigmatisation of slums by tracing their definition back to *The Slums of Great Cities* (1894) within which they were referred to as: areas of dirty back streets especially when inhabited by a squalid and criminal population; to the present-day definition by the Merriam-Webster dictionary which has essentially replaced the criminal perception with social disorganisation. UN-Habitat (2007:1) concedes that the term is loose and deprecatory but explains that the use of word in developing countries lacks the pejorative and divisive original connotation, simply referring to lower quality or informal housing.

Further, though the definitions overlap; slums cannot be equated to informal settlements. According to Ley (2009:11) *slum* refers to the physical housing condition while informal settlement refers to the legal (unlawful or unauthorised) status of the settlement. UN-Habitat (2015:1) refers to slums as the most deprived and excluded form of informal settlements characterized by “poverty and large agglomerations of dilapidated housing often located in the most hazardous urban land”. In this regard, slums essentially include the:

- urban informal housing that is not in a backyard in South Africa;
- Favelas in Brazil;
- Aashwa’iyyat in Egypt;
- Bidovilles in Morocco;

- Villas miseria in Argentina; and
- Barrios in Venezuela

For this study, an informal settlement is an area where housing units and complementary services have been illegally constructed on urban land that the occupants have no legal claim to; are in contravention with building and planning regulations; and lack adequate access to basic services and amenities. This excludes backyard shacks and the illegal occupation of inner-city buildings.

5.5 Life within informal settlements

Understanding the realities and the perceptions of informal settlements is based on the two main discourses that have dominated discussion on these settlements: the duality of slums of hope and slums of despair. The contrast between the two views that informal settlements are places of hope or places of despair stems from the perceptions that the residents of these settlements have against those of the general public.

Stokes (1962:189) provides the following descriptions for both notions:

- "hope means that quality of psychological response by the inhabitant of the slum which indicates both his intention to "better" himself and his estimate of the probable outcome of such an effort
- despair by the same token denotes either a lack of such intention or a negative estimate of the probable outcome of any attempt to change status".

5.5.1 Slums of despair

A proportion of the general public and some authorities generally consider informal settlements as places that have a negative connotation on the aesthetics of the city affecting the general planned structure of the urban form, as well as the hubs of all sorts of criminal activities. This discourse of slums as places of despair dates to the late 19th Century when the affluent urban population and authorities expressed disdain over the squalor conditions within which the people lived and the criminal activities that transpired within the settlements (Brodrecht, 2010:1). According to Franzel (2016) slums inspired fear in those who observed them and would do anything to avoid setting foot in them, consequently carrying with it the notion of slums of despair.

5.5.1.1 Territorial stigmatisation

This territorial stigmatisation persists in the modern world as evidenced by the Not-In-My-Backyard (NIMBY) syndrome. Nadasen (2010:41-43) explains how the opposition of residents of formal housing towards the presence of informal settlements is an issue of socio-spatial conflicts

emanating from perceived negative impacts associated with behavioural motives and disadvantages to the welfare of the residents of formal housing. Owusu *et al.* (2008:185) note that the stigmatisation of the residents of informal settlements contributes significantly to the underdevelopment of the community; as it forms the basis for denying the community and its residents' jobs and other vital services. This in turn reinforces the economic, health, spatial and other poverty related challenges experienced within these communities.

Ehebrecht (2014:65) expounds the view on how the concerns of the urban elite have a strong influence on politicians and urban developers' decision to integrate informal settlements into existing neighbourhoods perpetuating the socio-spatial marginalisation of the inhabitants of informal settlements. As a result, communities in informal settlements continue to live in a state of despair as there are limited opportunities for them to rise out of those conditions.

5.5.1.2 Poverty reproduces poverty

The harshness of lives in informal settlements often produces and reproduces the negative traits of those who live within them. Lewis (cited by Brodecht, 2010:2) based his argument for slums of despair on the cyclical reproduction of poverty, criminality and stagnation within these informal settlements; arguing that the repetitive behaviour and conditions bore no hope for slums. Jensen (2009) agrees that a problem created by poverty often begets another, which in turn contributes to another, leading to a seemingly endless cascade of deleterious consequences. Indeed, poverty and criminality are often reproduced in informal settlements.

However, conceptualising informal settlements as places of despair without examining and addressing the contributing factors is inadequate. Understanding the underlying causes for cyclical depravity in informal settlements provides a platform to alter the perceptions towards the lives of the inhabitants of these settlements and aids in identifying adequate solutions.

The spatial contexts relating to informal settlements have destined them to be poverty traps from which residents cannot escape. According to Bird (2019:3) physical isolation and inadequate infrastructure are major factors that contribute to the emergency of spatial poverty traps. Grant (2010:11) adds that spatial inequality is one of the main causes of urban poverty traps and by merely being in disadvantageous spatial environments, low-income households will likely not escape poverty traps.

Due to spatial marginalisation, the transport costs incurred in accessing economic opportunities constitute a large proportion of the income earned by the residents of informal settlements and this curtails their prospects to save or invest. The challenge is exacerbated by lack of basic services and educational facilities which contribute to poor health and low levels of education.

These restrict the participation of the residents of informal settlements in the formal labour market, reduces their opportunities to gain higher income and in turn instigates poverty traps.

5.5.1.3 Concentration of brokenness

According to Weimann and Oni (2019:2) inhabitants of informal settlements experience social and spatial marginalisation and in turn are confronted with an increased risk to mental and overall wellbeing. UN-Habitat (2003:75) explains that the concentration of social and economic deprivations, high population density, high numbers of broken families, high unemployment, and economic, physical and social exclusion contribute to higher rates of poverty, crime and violence in informal settlements. As an expression of these psychological issues, inhabitants of informal settlements often victimise vulnerable groups within the settlements resulting in replication of socio-psychological ills.

The general absence or shortage of father figures as one of the main causes of brokenness within informal settlements has not been adequately explored. Freeks (2017:90-104) identified the absence of fathers as role models as well as guides when navigating life's challenges as major contribution to suicides, aggressive behaviour among children, student dropouts, juvenile delinquency, rape, burglaries and gender-based violence in communities. Mkhombo (1999:13-15) notes the absence of fathers and the resultant lack of authoritative figures present to discipline the children as one of the main factors that stifle the optimal educational development of children residing in informal settlements.

5.5.1.4 Political influence

This brings into perspective the issue of political influence in changing the circumstances in informal settlements. Informal settlements are a political asset which politicians often use them as a tool to gain votes. While promises are made to better the lives of inhabitants of informal settlements, their circumstances often remain the same over long periods of time. Politicians are sometimes reluctant to change these circumstances for their individual benefits.

Marx *et al.* (2013: 198) explain how the interests of the people in charge of the slum and those of the majority of the slum dwellers often differ and promoting opaque governance mechanisms that are often beneficial to a minority of bureaucratic entrepreneurs willing to garner support in slum patronage politics or to extract rents from their informal control over the land. Joireman (2011:66-73) adds that bureaucratic entrepreneurs, that is, government officials or state representatives operating outside the limits of their authority, may collude with local chiefs to discourage improvements in the housing infrastructure that could lead to more entrenched tenancy rights.

In some instances, the absence of genuine representation may promote adverse consequences when issues of eviction are at stake. In this regard, informal settlements often remain stagnant and can be regarded as places of despair since political will is one of the main tools that can be used for sustainable intervention in addressing informal settlements. Though there is limited literature on this aspect, it is critical to note that informal settlements would not be places of despair if there is genuine political will which is not rhetoric.

5.5.2 Slums of hope

On the other hand, the residents of the informal settlements consider the settlements to be places where their livelihoods are enriched. The argument for informal settlements as places of hope is mainly based on them providing housing solutions to the proportion of urbanites who cannot access formal housing. While some residents consider their informal dwellings as places of temporary settlement, the greater proportion of the residents consider them as permanent settlement until they are relocated or evicted. A significant portion of the inhabitants live informal settlements by choice, to access the most viable living option and experience the advantage of belonging to a population that is out of sight of legality away from the rules and regulations of mainstream society (Mwamba & Peng, 2020:510). As a result, many households have invested a considerable proportion of their limited resources in making life as comfortable as possible in these settlements.

5.5.2.1 Upward mobility and hope for better life

In many cases, informal settlements are the receiving areas for migrants seeking employment opportunities and chances for personal development within urban areas. This, all things being equal, would be the first step towards advancing lives and livelihoods for migrants. Turok *et al.* (2017:22) concur that informal settlements may also provide access to opportunities which may encourage human progress by linking people to the facilities, contacts and livelihoods typically concentrated in cities. Strokes (1962:190) adds that under normal conditions, migrants in informal settlements would eventually be absorbed into the general employable population and move up the social class structure. Also, empirical evidence shows a significant portion of informal settlement dwellers are rent-paying tenants (UN-Habitat, 2016a:14) who do not only rely on vacant and free land but would pay for their housing provided the opportunity.

However, Rains and Krishna (2019:2) argue that upward mobility appears to be limited in informal settlements, particularly those in developing countries as they are faced with limited and sporadic upward mobility and consistent downward mobility, brought on by risk and vulnerability. Marx *et al.* (2013: 194) explain that generations of informal settlement residents may be trapped low-

skilled and low-income circumstances that hinder advancement in human capital and in turn thwart the chances for upward mobility. Regardless, the aspirations held by inhabitants of informal settlements to live in well-planned and more secure often influence their endeavours for to improve their lives. If supported by program or policy interventions, informal settlements would promote upwards mobility for the inhabitants.

5.5.2.2 Entrepreneurship and savings

This also brings into perspective the role of entrepreneurship in the lives of the inhabitants of informal settlements. Whereas a significant proportion relies on formal employment opportunities or are unemployed, an equally significant proportion engage in activities within the informal sector to ensure a livelihood. In many instances, these enterprises have gone beyond being sources of a livelihood but constitute the community's financial capital, contribute to local economic development and are an indication of the level of human capital within the community.

Agyabeng *et al.* (2022:250-251) explain that the innovativeness to survive the challenges in informal settlements prompt the identification of opportunities to create and invest in small business; contributing to urban development through revenue generation and creation of employment. UN-Habitat (2016:18) also concurs that integrating entrepreneurial activities from informal settlements into urban planning and development can expand a city's job opportunities and improve informal economic activities' productivity. Therefore, entrepreneurship in informal settlements presents them as slums of hope does not slum of despair.

Savings groups are also a common element in informal settlements. According to National Treasury (2020:22) savings schemes are a critical component that bridges the gap between informal and formal financial systems and create access to move in times of household crises. This indicates that people in informal settlements have the ability to accumulate finances for various reason and presents opportunities for resilience against economic and natural disasters.

5.5.2.3 Sense of community and governance

The misconception of informal settlements simply as structures and not places have deluded the understanding that within these settlements are social networks and livelihood opportunities that define the social and economic resilience of these communities. Informal settlements generally display high levels of social interaction, normally through day-to-day activities. Neighbours in informal settlements tend to know one another well and engage in reciprocity, which means helping one another as and when needed and according to their abilities (NUSP, 2015:12). In this regard, informal settlements possess a high degree of social capital that can be utilised to attain sustainability and resilience. Also, informal settlements are often governed by a community

leadership outside of the formal leadership appointed by government. This indicates that the communities have the ability to self-organise and make decisions that address their needs and challenges.

5.5.2.4 Sustainability and resilience

Meyers (2008:128-133) acknowledges that even the poorest communities already have some level of sustainability that would have allowed them to exist without any development intervention. The innovation and ingenuity in the construction of the housing structures, early warning and disaster response systems, social ties, financial systems and governance structures are all indications of sustainability and prospects of SCD within informal settlements.

Informal settlements also present high levels of urban resilience as the inhabitants have adapted to crowded housing conditions and limited economic opportunities by creating their own housing and generating their own income (Weakley, 2013:ii). The informal structures used for residence as well as places for production, can be expanded over time and can accommodate more people when needed (Kamalipour, 2020:2; NUSP, 2015:12). This displays the flexibility, redundancy and resourcefulness of informal settlements as the constituents of resilience of informal settlement.

Even after evictions or civil unrest, inhabitants of informal settlement have exhibited the ability to bounce back to their original state in a timely manner. In this regard, informal settlements should also be regarded as slum of hope. Taking into consideration the characteristics of informal settlements that define them as slums of hope or slums of despair, it is essential to investigate the theories of intervention that would lead to SCD.

5.6 Theories for addressing informal settlements

5.6.1 Maslow's hierarchy of needs

Maslow's Hierarchy of Needs is a theory of motivation based on unmet human needs ranging from basic physiological needs to self-actualisation. Propounded by Abraham Maslow in 1943, the theory states that human behaviour is influenced by 5 levels of hierarchical needs; whereby a higher order need emerges to motivate a person when a lower order need has been met. When the lower order need has been met, it ceases to motivate human behaviours (Maslow, 1943:372-386). The model for the hierarchical needs is presented in Figure 5-4.



Figure 5-4: Maslow's hierarchy of needs

Source: Adapted from Maslow (1943:372-386)

Though there is limited literature on the hierarchy of needs and housing provision, the theory guides intervention in informal settlements to address human, physical, social and financial capital and promote resilience. Despite access to shelter, inhabitants of informal settlements are often deprived of warmth, adequate food, water, personal security, health and employment among other basic needs. Adequate housing within these settlements provides physiological needs through decent warmth and ventilation, promotes security and safety through employment, resources, family and design for crime prevention. As a result, intervention projects and programmes often address these needs first through the provision of basic services as they are deemed the most crucial.

Social capital is also a critical component of informal settlement intervention and the realisation of psychological needs. According to Furtado (2020:6) social relations and networks are essential

sources of affection, social activity and coping tools when faced with adversity in informal settlements. These social ties need to be maintained when addressing informal settlements. Esteem needs are realised when residents consider that their opinion and public participation process can influence local decisions. Arnestein identifies citizen control as the highest level of citizen participation whereby the marginalised groups or communities handle everything from planning, policy making to managing a programme (Arnestein, 1969:217). Informal settlement interventions create the platform for such measures ultimately leading to a sense of ownership and recognition.

Housing provision by the state often thwarts the realisation of self-actualisation as a critical need among the inhabitants of informal settlements. Since adequate housing is the ultimate goal for most of the inhabitants, their participation in designing, construction, financing and decision making would induce a sense of fulfilment. This aligns with John Turner's views that allowing households the freedom to choose, build or direct the construction of their housing with minimum interface but adequate support from central government stimulates individual and social-well-being (Turner & Fichter, 1972:155, Turner, 1976:129). Hamdi (1995:28-29) extends that community/household autonomy, incremental building and improvisation are fundamental aspects of housing provision. These pave the way for achieving full potential, including creative activities.

However, the desire to meet the five levels of needs may not follow a hierarchical structure in real life. Psychological needs especially feeling of belonging and love are as critical as basic needs within an informal settlement. It does not follow that the need for kinship and social networks can only emerge when basic needs have been fulfilled. Rather, they often emerge concurrently. Even the need for self-actualisation emerges when the people move into the settlement through their aspirations and dreams as described in Section 5.5.2.1 of this study. Regardless, this need is often realised last, albeit incremental measures building and addressing informal settlements. Therefore, Maslow's hierarchy of needs provides insight into the needs of the inhabitants of informal settlements; which may guide policy and programme intervention to achieve adequate housing and SCD.

5.6.2 The right to the city

The right to the city motivates the inclusion of the inhabitants of informal settlements into the planning and development of the urban spaces they reside in and those that surround them. The theory was conceptualized by Lefebvre (1967) to describe the citizens' collective right to change the city and shape the process of urbanization. According to Lefebvre (1996:174) the right to the city "manifests itself as a superior form of rights: the right to freedom, to individualization in

socialization, to habitat and to inhabit". This right is both a cry and a demand, a cry out of necessity and a demand for something more (Lefebvre, 1968:34; Marcuse, 2009:190).

The right to the city as a cry out of necessity refers to the need for intervention to address the most basic necessities within informal settlements. As a demand for more, the right to the city is then understood as the right not just to basic services but the right to a good quality of life. In this regard, the right to the city extends to the right to information, the rights to use of multiple services, the right of users to make known their ideas on the space and time of their activities in urban areas; it would also cover the right to the use of the centre" (Lefebvre, 1991:34).

To address this right to habitat and to inhabit would be to acknowledge the that informal settlements have rights to the space they occupy, without untimely evictions. By nature, informal settlements are illegal and addressing them would mean acknowledging illegality. However, Lefebvre understood informal settlements as a phenomenon that attempted to counter spatial domination by the state and the market (Huchzermeyer, 2021:48). The functional separation of uses through master planning marginalised certain individuals in society preventing them access to certain services, to each other and to land while arrogating the properties to owners who bought land in the marketplace (Lefebvre, 1970:109; Lefebvre, 1996:129).

This is the very structure challenged by informal settlements and appropriation would allow them to reclaim what is rightfully theirs. Purcell (2013:149) explains that appropriation presents opportunities to rethink the concept of rightful ownership within the city, discarding the property rights conception of ownership and affirming that the city belongs to those who inhabit it. Inhabitants of informal settlements therefore have the right to live in, work and characterise urban spaces through ownership of the space they occupy. Harvey (2008:23-24) elaborates on this claim by explaining that by virtue of possessing the power to radically shape the space he lives in after his own heart's desires, man has a right to this city.

This extends to the right to participate in the development and management of the urban space themselves. According to Purcell (2013:150) "as they engage in real and active participation, their own collective power is revealed to them, and they increasingly understand themselves as capable stewards of the urban and its collective life". This means that inclusion rather than city planning evokes a sense of creativity, promotes a sense of ownership and belonging, not just within the confines of their communities but as members of the city as a whole. Decisions at city level should also include the views and perceptions of the inhabitants of informal settlement. However, Lefebvre claims that these citizens often only have a nominal contributions and circumstances force them to sink back into obscurity (Lefebvre, 1996:129). Therefore,

participation as the right to the city should be understood not as passive right but an ongoing process.

Overall, the realisation of the right to the city promotes justice, equity, democracy, full development potentials and recognition of human differences aligns with the principles of sustainability and diversity (Marcuse, 2013:193). As these are some of the key elements of sustainability and resilience, the right to the city creates prospects for SCD. Moreover, the right to the city would translate to the right to adequate housing; which should be the key target for intervention in informal settlements. The key features for adequate housing are presented in Table 5-1.

Table 5-1: The right to adequate housing

Element	Description
Affordability	Costs associated with housing should not threaten or compromise the attainment and satisfaction of other basic needs
Accessibility	Housing should ensure that (the needs of) disadvantaged and marginalised groups in society are considered
Habitability	Provide for adequate space and protection against physical weather elements and other threats to health, structural hazards, and disease vectors
Security of tenure	All persons should possess a degree of security of tenure which guarantees legal protection against forced eviction, harassment and other threats
Location	Allow access to economic opportunities and social facilities and should not be built on polluted sites nor in immediate proximity to pollution sources
Cultural adequacy	Consider and enable expression of cultural identity and ways of life

Source: Adapted from OHCHR (2019?)

The elements of adequate housing also align with the elements of SCD as stipulated in Section 4.2.2 of this study; hence the essence of ensuring the realisation of adequate housing in informal settlement intervention. Huchzermeyer (2021:50) suggests a transduction approach to informal settlement intervention as an alternative to the traditional statutory planning to achieve the right

to the city. Therefore, the next session examines the approaches that have been employed to address informal settlements and their implications on the realisation of adequate housing.

5.7 Intervention in informal settlements

World over, various responses have been extended to the existence of informal settlements, ranging from indifference, opposition to cooperative. Indifference towards their existence fuelled the burgeoning of informal settlements (Arnott, 2009:182, Avis, 2016:30). The harsh negative responses to oppose the existence of the informal settlements through evictions have been in contravention of the human rights of the inhabitants and have not succeeded in thwarting the proliferation of the settlements (Davis, 2006:38; Taruza, 2016:41). Governments cooperative responses have been in acknowledgement of the need to intervene in the challenges faced by informal settlements through the implementation of policy responses detailed in Table 5-2.

Table 5-2: Historic policy responses to informal settlements

Policy responses	Details	Outcome
Eradication and public housing schemes (1950s - 1970s)	Evictions and demolitions of informal settlements accompanied by resettlement and public housing delivery.	The mass housing was not economically sustainable, and production became slow, and had limited impact on the housing shortage
Site and services scheme (1970s)	Provision or sub-division of land, public utilities and community facilities to ensure economically accessible housing and related economic opportunities.	Provided opportunities for collaboration between government and the inhabitants of informal settlements. However: • Programmes could not cater for all inhabitants and residents who could not be relocated resettled into informal settlements • Location of sites and services in peri-urban areas ion further marginalised the beneficiaries. • Corruption and inadequate beneficiary assessment led to middle class benefiting from the scheme instead of the intended beneficiaries • Ultimately, led to the proliferation of informal settlements

Policy responses	Details	Outcome
Formalisation of informal settlements (1970s)	Township establishment with formal services, formal land rights/titles and top structures	Security of tenure through formal presented prospects for access to funding and credit opportunities for home improvements and improving quality of life. However, • Lengthy township establishment processes and processing for land titling would promote tenure insecurity • Provision of top structures curtails the opportunities for households to participate in the development of their houses
In-situ upgrading of informal settlements	Incremental provision of tenure, provision of basic services and community engagement to improve the well-being of the community. Implemented through in-situ upgrading, reblocking and relocation when upgrading is not possible due to physical and environmental constraints	Details in Section 5.7.1
Participatory Slum Upgrading Programme (2008)	Engaging key stakeholders and placing them at the centre of informal settlement upgrading initiatives	Harnesses the skills and knowledge of inhabitants, leading to more informed decisions and effective intervention Promotes beneficiary ownership and control Promotes inclusivity and fosters change of mindsets towards improving the living conditions of the beneficiaries Fosters coordination and partnership between communities, local authorities and national authorities

Source: Own construction based on Fegue (2007:450-454); Menshaw *et al.* (2011: 170); Taruza (2016:42-48); UN-Habitat (1987:174); UN-Habitat (2022)

5.7.1 Informal settlement upgrading

According to Menshawy et al. (2011:170) the upgrading of informal settlements refers to the provision of basic services, that is, clean water supply, adequate sewage disposal, solid waste collection, storm water drainage as well as legalising and regularising properties to promote secure tenure. Bah et al. (2018:225) are of the opinion that informal settlement upgrading includes physical improvements in terms of basic services, tenure regularisation, housing improvements, access to social facilities and community participation. Satttherthwaite (2012:206) explains that at the core of the concept of upgrading is the recognition by governments over the legitimacy of the settlement to be upgraded and the inhabitants' right to live there. This means that the upgrading of an informal settlement refers to any process that entails government's recognition of the basic aspects of the right to the city through in-situ upgrading or relocation.

The provision of basic services is critical in curbing the health threats and improving the livelihoods of the inhabitants in informal settlements. According to Cities Alliance (2012:5) upgrading of informal settlement improves the quality of life by remedying sources of communicable diseases which impose the some of the greatest challenges in informal settlements. UN-Habitat (2018:36) extends that provision of basic services improve accessibility, safety, entrepreneurship and the settlement's economy. In this regard, provision of basic services adds to the accessibility and habitability aspects of adequate housing and the housing and built environment component of SCD.

The engagement of communities in the upgrading process promotes a sense of ownership, allows access to indigenous knowledge and skills, fosters capacity building, nurtures collective action among the inhabitants and encourages coordination and partnership between communities, local authorities and national authorities. Ndalifilwa (2019:20) adds that engaging communities in upgrading of informal settlements allows the local authorities to keep pace with the needs and changes within the settlements. However, Ehebrecht (2014:153) argues that if a community is inhomogeneous and different groups have different and conflicting interests, prospects of successfully upgrading the settlement are limited. Also, the levels of engagement of communities in the upgrading process have been debatable. Regardless, effective community engagement would lead to cultural adequacy and affordability in informal settlement intervention.

Incremental provision of tenure security protects inhabitants against arbitrary evictions, creates opportunities for inhabitants to access to funding and credit opportunities and opportunities for municipalities to invest in the settlement while minimising the lengthy process of acquiring full tenure. This entails local recognition of ownership based on settlement practices, administrative recognition through policies and administrative practices and legal recognition through township

establishment or recognition in a town planning scheme amendment or zoning (NUSP, 2015:3). The process is shown in Figure 5-5.



Figure 5-5: Incremental security of tenure

Source: Urban LandMark (2013:5)

One of the major advantages of incremental security of tenure is it provides an opportunity to integrate local and official tenure systems. Payne and Durrand-Lasserve (2013:38) concur that incremental security of tenure builds on tenure systems and categories that present a degree of social legitimacy rather than introducing options that require more administrative efforts and do not align with the local processes. Also, this reduces the risks of evictions while promoting flexibility for future re-planning of the settlement (UN-Habitat, 2018:26).

According to Dawood (2013) incremental security of tenure demonstrates opportunities for incremental housing and housing microfinance, motivate inhabitants to improve their homes. It allows modest initial development, incremental housing investment, a measure of stability and opportunities for government to build technical and administrative procedures over time and within their own resource capacity (Alabi *et al.*, 2021:200-201; Payne & Durrand-Lasserve, 2013:38; UN-Habitat, 2003:9). In this regard, upgrading of informal settlements addresses the security of tenure aspects of adequate housing and SCD.

On the other hand, the principles of informal settlement upgrading do not emphasise and in turn neglect the issues pertaining to marginalised groups within informal settlements. Living in informal settlements disproportionately affects different groups within the communities particularly women, children, youth, people with special needs and migrants. Patriarchy in land tenure systems restrict women's rights to own property and in turn financial, security and livelihood opportunities that would have been gained through such tenure (Avis, 2016:31; UN-Habitat, 2014:10-15). The negative developmental issues among children and the youth are not directly addressed in informal settlement upgrading, nor are the prospects of including them in the process. Ostracism and alternative housing options for migrants are also not addressed in informal settlement upgrading programmes and literature.

Though community engagement is a critical component of informal settlement upgrading, other socio-economic issues that characterise informal settlements such as the consequences of the absence of fathers and roles models within these societies, the role of savings groups and informal financial mechanisms and existing governance structures are not adequately explored. Massey (2013:609) adds that upgrading plans and layout do not cater for meeting spaces and disrupt women's social network. Also, in instances where upgrading is not supported by the introduction of social and economic facilities, the inhabitants are further marginalised from economic opportunities. Thus, compromising the potential to improve quality of life and realise adequate housing in informal settlement intervention.

The absence of indicators to measure the sustainability, resilience or success of informal settlement upgrading projects or programmes is another challenge. Though informal settlements possess elements of sustainability and resilience, these have not been adequately encapsulated in upgrading programmes. This is exacerbated by the drive to reach quantitative goals rather than improving the lives of the inhabitants (Massey, 2013:608), lack of commitment and transparency within some local authorities (Ehebrecht, 2014:148) and limited capacity to successfully implement upgrading programmes. Therefore, informal settlement upgrading is the best approach to address informal settlement but there is need to adapt the processes and programmes to improve the quality of life of the inhabitants and in turn provide adequate housing and SCD.

5.8 Conclusion

This chapter provides insight into the concept of informal settlements by examining low-income housing systems, the definition of informal settlements, the lives within informal settlements, the theories for addressing informal settlements and the historic policy responses to informal settlements from a theoretical perspective.

Low-income housing is categorised as conventional and unconventional housing. Conventional housing is housing that is provided by the state, private sector and PPPs through formal housing systems and according to the stipulated norms and standards. State provision of housing aligns with the mandate of the state to promote the right to housing but does not meet the demand for housing and creates a sense of dependency among citizens. Private sector provision has the capacity to improve housing delivery but is thwarted by political interference and low incentives to participate in low-income housing. PPPs allow financing and expertise from the private sector and coordination and a conducive housing development environment but the complex contractual processes between the two sectors hinder effective delivery of low-income housing.

Unconventional housing is housing developed outside the prescribed norms and standards. This includes illegal occupation of buildings, backyard shacks and informal settlements. Informal settlements are defined based on invasion of land, access to basic services, security of tenure, inappropriate location and poverty. These settlements can be understood as slums of hope and/or slums of despair. Slums of hope define informal settlements as places with potential to improve the lives of the inhabitants and slums of despair illustrate the challenges of and within informal settlements.

The theories for addressing informal settlements explain the need for intervention to ensure SCD. Maslow's hierarchy of needs motivate addressing physiological, psychological and self-fulfilment needs in improving the quality of life of the inhabitants of informal settlements. The right to the city concept emphasises recognition of the inhabitants of informal settlements as owners of the land they occupy and creative builders of the city. In this regard, the right to the city should be understood as a cry for the need for intervention to address the most basic necessities and a demand to a good quality of life.

Intervention in informal settlements has evolved from neglect, demolition, provision of sites and services, formalisation of informal settlements, in-situ upgrading of informal settlements to participatory slum upgrading programme. Informal settlement upgrading is the most dominant approach and is considered the best since it emphasises basic service provision, incremental security of tenure and community engagement in the intervention process. However, the absence of indicators to assess the impact on the lives of the inhabitants indicate a gap in improving the lives of the inhabitants. Therefore, the next chapter investigates the practicality of informal settlement intervention from an international perspective. Figure 5-6 illustrates the summary of this chapter.

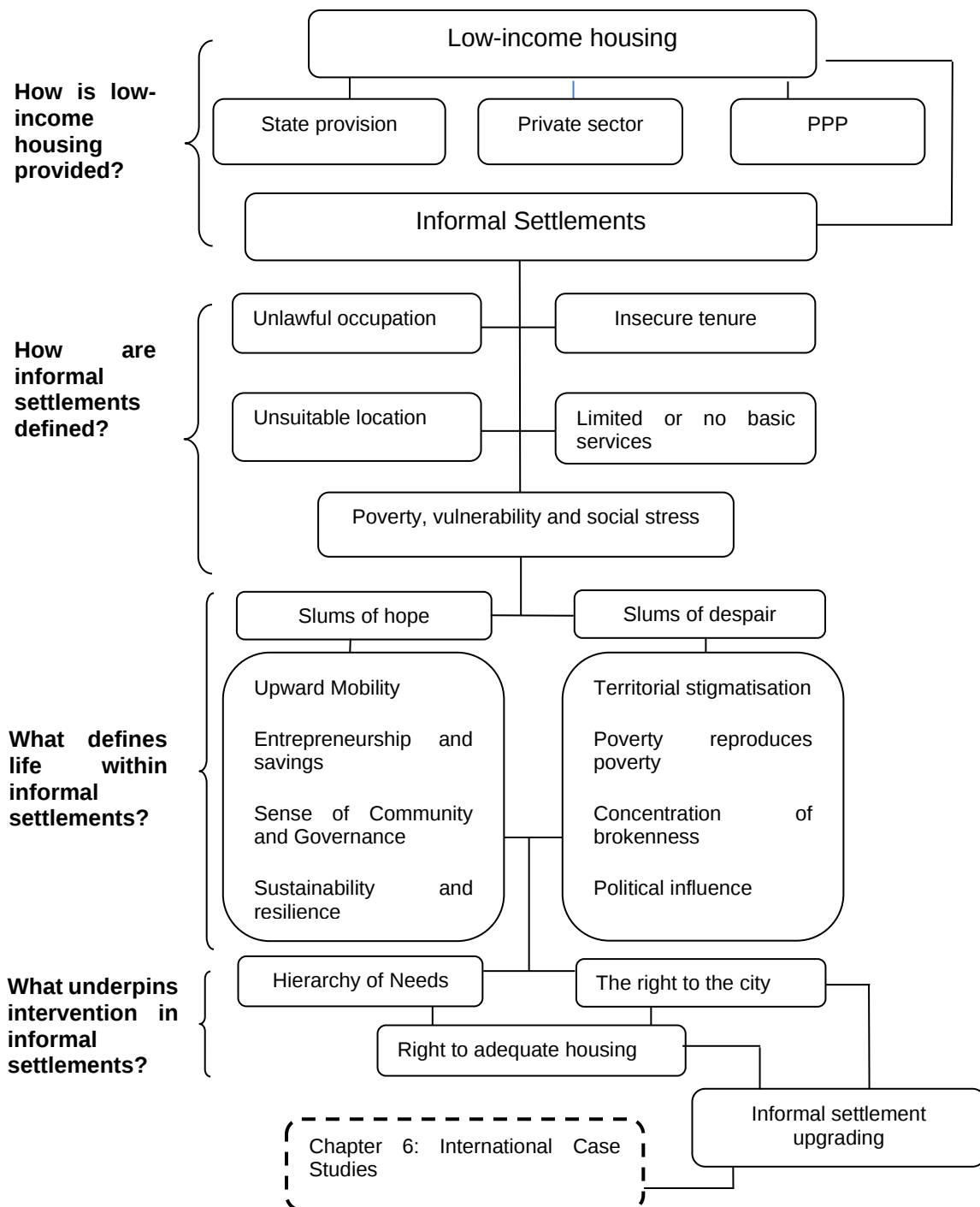


Figure 5-6: Chapter 5 Summary

Source: Own construction (2022)

SECTION D:

Empirical studies

CHAPTER 6 INTERNATIONAL PERSPECTIVE ON ADDRESSING INFORMAL SETTLEMENTS

6.1 Introduction

Addressing informal settlements has been at the core of the international human settlement agenda since the implementation of the Vancouver Declaration on Human Settlements (Habitat I) in 1976. The bi-decennial conferences since then (Habitat II & III) and development goals (MDGs and SDGs) have shaped intervention in informal settlements internationally, nationally and locally. While the previous chapter provided theoretical insight on the concept of informal settlements and the intervention measures, this chapter reflects on the international case studies at a practical level.

The purpose of the chapter is to provide insight into the essential elements and the practicality of improving the lives and livelihoods of the inhabitants of informal settlements, and in turn, promote SCD within a city region. An investigation of the policies, programmes and strategies implemented in Alexandria in Egypt and Casablanca in Morocco reflects on the following research question: **What are the lessons that can be drawn from the international study and how can these principles be integrated into the existing the South African context?** (Refer to Section 1.4 of the study).

This chapter focuses on the background of each country and city as related to informal settlements; informal settlement policies, legislations and strategies at national and city level as well as the progress that has been made in addressing informal settlements and improving the lives and livelihoods of the inhabitants. The chapter also provides an account on the selection of the international case studies. The structure of this chapter is displayed in Figure 6-1.

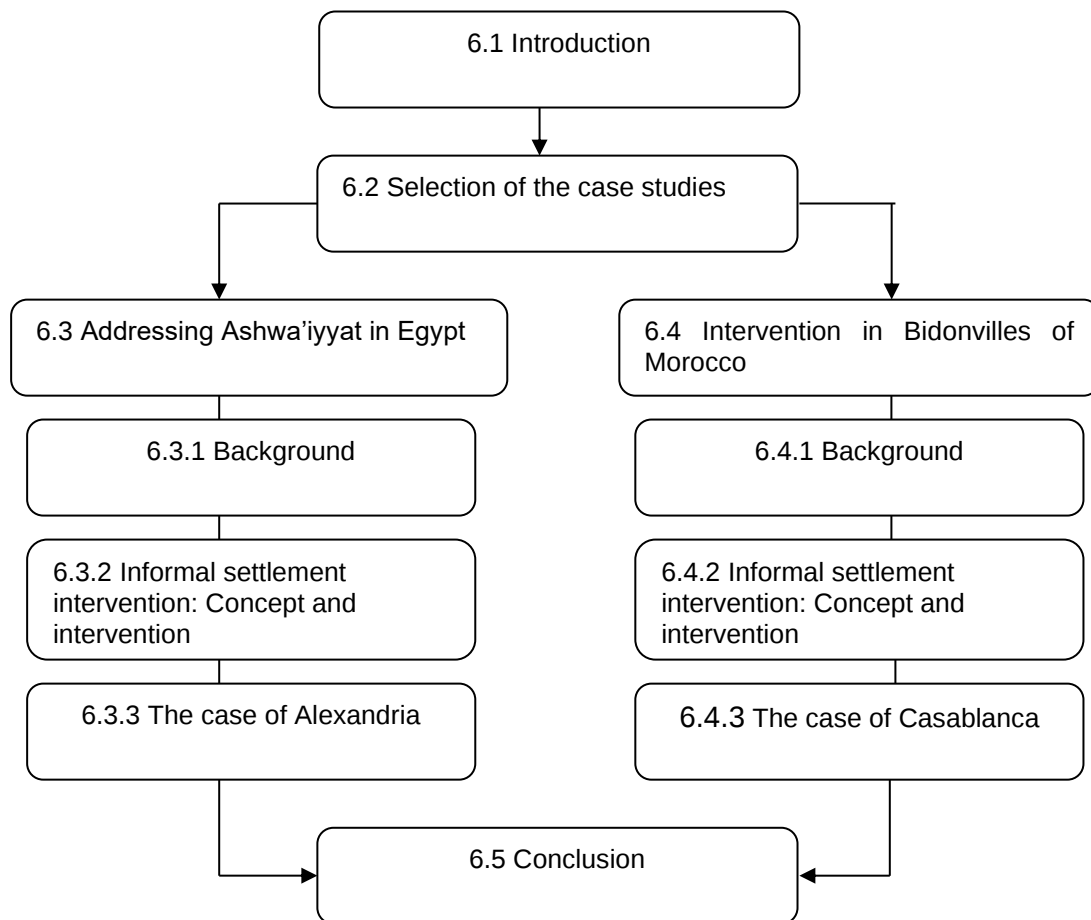


Figure 6-1: Chapter 6 flow diagram

Source: Own construction (2022)

6.2 Selection of the case studies

Since the objective of this study is to assess the approaches that have been implemented to address informal settlements in other countries, data on various international case studies that have experienced a decline in the number of informal settlements and proportion of urban population were gathered. Egypt and Morocco were selected based on convenience sampling of the seven countries on the whose development status is comparable with South Africa (refer to Figure 6-2). These countries were selected from the UN-Habitat lists for urban population in slums from 1990 to 2018. The availability of additional data on progress that has been made in terms of informal settlement intervention and the planning instruments utilised to achieve these goals greatly determined the selection of these two countries.

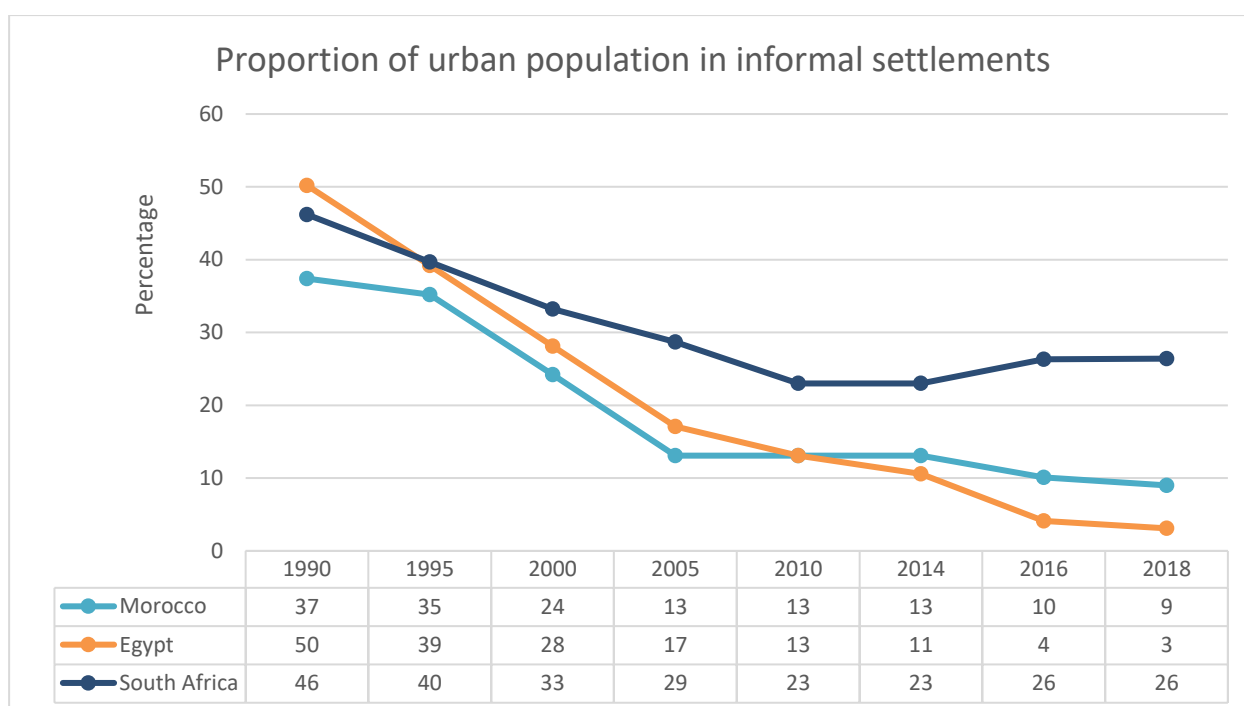


Figure 6-2: International case studies urban population in informal settlements

Source: UN-Habitat (2021a)

The figure shows that all three countries have experienced gradual decline in the urban population in informal settlements. While both international case studies have accomplished decline of urban proportion in informal settlements, the progress in Egypt has been tremendous hence the selection as a guiding case study. The strategy employed in Egypt also provides insight on the effects of the categorisation of informal settlements as an intervention measure. This aligns with the measures implemented in South Africa, as will be discussed in Section 7.6.7 of this study. The selection of Alexandria is based on the fact that success of the strategy employed in Egypt was based on the programme pioneered within that city. Alexandria also displays elements of spatial segregation and brain drain to Cairo, despite being a metropolis in itself. This also guides interventions in South Africa's lagging metropolitan cities and even secondary cities characterised by a fragmented urban form.

The rate of urbanisation in Morocco is close to that of South Africa, at 64% and 68% respectively (World Bank, 2021a). Examining the strategies in Morocco will guide South Africa on how to ensure a decline in the urban population within informal settlements despite the rapid rate of urbanisation; which is one of the major contributing factors in the proliferation of informal settlements. Casablanca was selected based on the success of the renowned Cities Without Slums Programme. Also, planning approaches in Casablanca reflect how spatial planning policies promoted the emergence and proliferation of informal settlements.

6.3 Addressing Ashwa'iyyat in Egypt

6.3.1 Background

Egypt has an estimated total population of 104 million and an urban population of approximately 44,7 million, that is 43% of the total population (World Bank, 2021a; World Bank, 2021b). According to UN-Habitat (2021a) the urban population in living informal settlements (Ashwa'iyyat) has declined from approximately 12.5 million in 1990 to 1.3 million people in 2018. This translates to a decline from 50% to 3% of the urban population in 1990 and 2018, respectively (UN-Habitat, 2021b). This decrease in numbers is attributed to the policy interventions to address the informal settlements in Egypt.

6.3.2 Informal settlement intervention: Concept and intervention

The emergence of informal settlements in and around the large cities in Egypt since the 1960's owes to natural growth, flux of rural-urban migration, mismatch between housing supply and housing demand, and the interference of the public sector in the housing market (Khalifa, 2015:1152-53; Magdi, 2018:318; Nassar & Elsayed, 2017:2367). Though the initial response to informal settlements in the 1970s and 1980s was negligence, security and humanitarian reason prompted the government to implement policies on informal settlement upgrading in the early 1990's (Khalifa, 2015:1154).

The Informal Settlement Development Programme (ISDP) (1993-2004) was implemented as a national plan for intervention in informal settlements. The aims for the programme were the assessment of informal settlements and the provision of infrastructural and basic services such as electricity, water supply, sewerage, paving the streets, tree-planting and landscaping for informal settlements as well as developing areas that had deteriorated. The programme resulted in the provision of water, electricity, sanitary drainage, waste management and road paving for 352 of the 1221 areas identified for development. Also, 13 of 20 areas identified for demolition were demolished and reconstructed (UN-Habitat, 2020:23). The informal settlement belting program (Tahzeem El- Ashwa'iyyat) implemented between 2004 and 2008 focused on supporting local government in developing detailed plans that can curb the proliferation of informal settlement (Khalifa, 2015:1154).

The Informal Settlement Development Facility (ISDF) was implemented in 2008 to coordinate efforts and finance for the development of an informal areas program. ISDF led to the reclassification of informal settlements based on physical conditions and legal status to unsafe areas (inappropriate housing and posing risks to life, health and tenure) and unplanned areas (those that are in contravention of planning and building laws and regulations) (Adbelhaim,

2010:4; Nassar & Elsayed, 2017:2368; UN-Habitat, 2020:23). According to UN-Habitat (2020:25) the current intervention is divided into three time periods:

- Short-term – Egypt with no unsafe areas by 2020
- Mid-term – Development of unplanned areas
- Long-term – preventing the emergence of new informal areas

Whereas unplanned areas generally provide safe residential environments with minimum need for maintenance, the degree of risk is high in unsafe areas. Consequently, policies and strategies have been changed with prioritizing intervention for unsafe areas (Khalifa, 2015:1154). These unsafe areas were further classified into four categories depending on the severity of the risks as shown in Table 6-1. Informal settlement intervention in Egypt has also been supported by other national housing programme for the provision of affordable housing and initiatives parallel to informal settlement upgrading. These are provided in Table 6-2.

Table 6-1: Egypt unsafe areas categories and intervention measures

Category	Intervention measure
“Grade 1: areas that threaten life including those located under or above sliding geological formations, in floodplain areas; or under threat from railways accidents	Relocation to government provided housing or monetary compensation
Grade 2: areas of unsuitable shelter conditions including buildings made of makeshift materials, for example shacks, sites unsuitable for building, such as solid waste dump sites or ruined buildings	Alternatives include: • in situ housing replacement with densification or displacement to nearby state-owned land; • monetary compensation; • housing rehabilitation; or • credit for housing improvement
Grade 3: areas exposed to health risks including those lacking accessibility to clean drinking water or improved sanitation, located in the vicinity of industrial pollution, or located under electrical power lines	Alternatives include: • transfer or conversion of aerial power lines to land cable in cooperation with concerned Ministries and Governorates; • regularisation of polluting factories in cooperation between the Ministry of Environment and the Ministry of Industry; or • the implementation of safe water supply systems and sanitation facilities within the plan

Category	Intervention measure
	of the Holding Company for Water and Wastewater
Grade 4: areas of instability due to insecurity of tenure including areas located on the territory of state-owned land, on sovereign quarters or on the territory of endowments (Awqaf).	Alternatives include: • legalising tenure with charge; or • provision of alternative housing

Source: Adapted from Abdelhaim (2010:6-8); Khalifa (2015:1155-1156); UN-Habitat (2020:23-26)

Table 6-2: Egypt housing and parallel initiatives to support informal settlement upgrading

Policy or programme	Aims and/or Provisions	Outcome
New Towns Policy (Late 1970s)	Addressing inadequate supply of housing and the informal urbanization encroachment on agricultural land	Public housing provided in the desert fringes were unoccupied due to high prices, remoteness of the cities and inadequate supply of services
Site and services or self-help (1980s)	New cities and provision of housing (with support from national funding agencies)	Land legalisation was expensive and time consuming Housing was unaffordable for low-income households
National fund for upgrading (1992)	National survey to identify informal settlements	Classification of settlements into three categories: • Upgrading • Removal • Replacement
Mubarak Youth Housing Project (1996)	Provide 70,000 affordable dwelling units, in a healthy and productive residential environment for the youth from disadvantaged backgrounds State cross-subsidized nearly 40% from the sales of high-income residential areas and offered subsidized credit of 15,000 EGP per	Units distributed in 15 new cities. Though supply was less than demand, the project was successful and replicated in other cities.

Policy or programme	Aims and/or Provisions	Outcome
	unit, payable over 40 years at 5% interest rate	
Other interventions	Upgrading of schools in poor and informal areas as part of the “100-Schools project” implemented by the NGO Heliopolis Services sponsored by Mrs. Suzan Mubarak (former first lady)	Project was successful
	Upgrading of youth centres in poor neighbourhoods by the Coca Cola Company	Project was successful
	The Future Housing Project steered by businessmen in real estate, manufacturing and construction towards construction of 70000 dwelling units	Acclaimed for innovative approach that integrates architectural, planning, social, economic, cultural, technological, and environmental dimensions
	Participatory Development Programme in Urban Areas (PDP) supporting participatory methodologies to local authorities and civil societies to improve service provision and quality of life among the inhabitants Spearheaded by Egyptian Ministry of Planning and International Cooperation (MoPIC) and the German Development Cooperation (GIZ)	Project led to improved decision making in the provision of services within informal settlements

Source: Adapted from Hegazy (2016:4-11); Khalifa (2015:1156-1157); UN-Habitat (2020:23-26)

The tables indicate that slum upgrading programmes in Egypt focus mainly on the provision of essential services. While the focus was on providing infrastructure and improving physical condition of the deprived areas, socioeconomic aspects were completely ignored (Khalifa, 2015:1154; Nassar & Elsayed, 2017: 2371). Magdi (2018:318) concurs that many slum upgrade plans have neglected sustainability objectives as well as socio-economic initiatives to improve quality of life, and to decrease the gap between community needs and government policies. ElFouly and El Aziz (2018:10-11) observed that local authorities perceived enhancing quality of

life in unsafe areas to be relocated as a misallocation of governate resources. Utility provision is regarded as the best response as it could maintain people's health without risking attachment to the informal settlement.

Ezz (2018) observed that ISDF does not indicate whether there was an improvement in the lives of the inhabitants after upgrading, there are often restrictions to livelihood opportunities in new complexes and relocated residents often must travel long distances between newly developed communities and the city centre. Also, residences are structured according to area of origin, thwarting effort for integration. Nassar and El-sayed (2016:1) conclude that a community-driven approach is proposed to unfold the potential of slums by giving control of decisions and resources to the community.

6.3.3 The case of Alexandria

6.3.3.1 Background

Alexandria is the second biggest city and the main port of Egypt and is considered the second capital after Cairo (Barakat, 2021:7; Barthel *et al.*, 2016:1,6). It has two seats under its jurisdiction forming a metropolis; with an urban lifestyle primarily attracting rural or Bedouin citizens (Nassar & Kamel, 2016:2). Though Alexandria has most of the services which Cairo has, most educational, health and commercial amenities are based in Cairo and Alexandria suffers from brain drain. The Alexandria Governate has adopted SUP Alex 2032 to address these and other challenges, including the upgrading of informal settlements (Barthel *et al.*, 2016:7). However, the power for slum upgrading lies with the state, local branch for the General Organisation for Physical Planning (GOPP) and private sectors.

Like many cities in Egypt, the emergence and proliferation of informal settlements in Alexandria is due to the gap between housing supply and demand (Nassar & Kamel, 2016:3). In addition to these, unemployment, economic conditions and the inability to accumulate capital to access formal housing have also contributed to the proliferation of informal settlements in Alexandria (Barakat, 2021:11). These informal settlements house approximately 40% of the city's total population and makes up 17.2% of the urbanised area (Barthel *et al.*, 2016:10). High population density, deteriorating buildings and infrastructure and invasion of agricultural and wetlands characterise these settlements; posing health and environmental threat on the inhabitants (Shalaby, Sherif & Altan, 2017). Figure 6-3 depicts the location of these informal settlements within the city context.

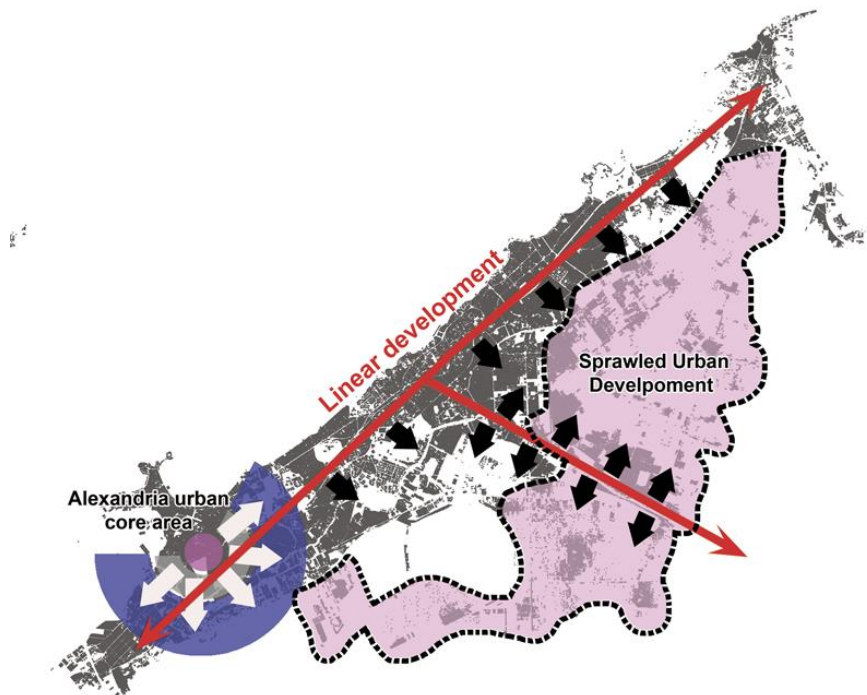


Figure 6-3: Location of informal settlements in Alexandria

Source: Hasan *et al.* (2015:6)

The black area and the linear development arrows illustrate how Alexandria city is “built on a T-shaped peninsula, a land strip caught between the sea, lagoons and former lakes” (Barthel, 2016:8). The arrows in the urban core areas shows the expansion of residential development within the inner districts of the old cities, while the sprawled urban development areas are the agricultural land that has been invaded by informal settlements. The expansion of the informal settlements on the peripheries is based on the affordability to housing development beyond the old city boundaries (Ibrahim & Masoumi, 2018:389). This illustrates how land value has influenced the fragmentation of the urban form in Alexandria City. This is exacerbated by the fact that 8,500 hectares of land is required for future residential developments in addressing informal settlements and only a fraction of this is available inside the urban boundaries (Barthel *et al.*, 2016:10).

6.3.3.2 Alexandria City Development Strategy (CDS)

Though the upgrading programmes have been the same as those at national level, community participation has been a critical component of Alexandria’s informal settlement upgrading initiatives. The Alexandria City Development Strategy (CDS) implemented between (2004-2008) resulted in provision of basic of services; collaboration between inhabitants and organisations; local economic development; tackled key constraints on private sector engagement in development; and created catalyst for investment and planning in informal settlement upgrading

(Cities Alliance, 2008:74). As a result, Alexandria City was lauded for being a pioneer in implementing a CDS in Egypt (Cities Alliance, 2008:74).

The main objectives of the Participatory Strategic Urban Planning for Alexandria City till 2032 (2009-present) to improve livelihood and urban environment in Alexandria city through: “producing a strategic urban plan for the city; improving capabilities of the regional centre and other local partners; and produce an urban management strategy and guidelines (UNDP, 2019:6). This has contributed to progress towards the 2032 goal by yielded the following results:

- short term goal: Make Egypt zero% unsafe areas - 96% achieved as of 2021
- medium term goal: Make Egypt zero% unplanned areas - 38% achieved as of 2021 (Key informant, 2021)

However, continuous changes in governance and miscommunication have been major challenges to this programme. As a result, some citizens have protested government efforts for demolition and relocation of their households to the peripheries of the city (Wallace, 2021). Regardless, Soliman and Soliman (2022:42) opine that the accumulation of capital through market forces, the availability of infrastructure and utilities, political and state power, users and cultural meaning, knowledge and technology, and finally uses and activities are potentialities for spatial sustainability for future urban in Alexandria City. These would have a positive impact on the upgrading of informal settlements.

6.4 Intervention in Bidonvilles of Morocco

6.4.1 Background

Morocco, the fifth largest economy in Africa, has a total population of approximately 37 million people (World Bank, 2021a). The country is highly urbanised with 23.9 million people, that is, 64.8% of the population residing in urban areas (World Bank, 2021b). The proportion of the urban population in living informal settlements has declined from 37% in 1990 to 9% in 2018 (UN-Habitat, 2021b). The urban population in the informal settlements was 4.5 million in 1990 and has declined to approximately two million people in 2018 (UN-Habitat, 2021a). Morocco has been lauded for the decline in the urban population in informal settlements and number of settlements themselves. In Morocco, informal settlements are heavily structured shacks lacking all basic amenities and are mostly built on private land without licences.

6.4.2 Informal settlement intervention: Concept and intervention

Morocco's intervention in informal settlements has led to the decline in the number of informal settlements by 65% in the period from 1990 to 2010 (Boufarsi *et al.*, 2021:1329; UN-Habitat, 2016a:29). Government efforts to address the informal settlement date back to the 1960 Plan when housing provision to all income groups became a government priority (Boufarsi *et al.*, 2021:1330). These ranged from demolition of informal settlements, provision of site-and-services to attempts to provide adequate housing as summarised in Table 6-3.

Table 6-3: Morocco housing and informal settlement policies

Policy or programme	Aims and/or Provisions	Outcome
<i>Trame sanitaires</i> (1960s-1979)	Demolition of slums and the relocation of households to housing estates on the city's outskirts to improve urban hygiene	Housing grid lots and provision of basic services Insufficient government finances to continue providing social housing
	Home ownership through the provision of sites and services equipped basic equipment, sanitation, drinking water and public lighting	Locals could not afford to build their own houses nor buy the houses built by the government
Urban development projects (PDU) (1980's)	City-wide operations to provide basic services as well as socio-collective services	Transfer of ownership of land inhabited by residents, technical support and the introduction of industrial zones to create employment opportunities for the residents
Restructuring policy (1980's)	Restructuring for small and medium-sized slum programs - maintaining the population on the site and introducing the inhabitants to the urban level by densifying the upgraded settlements	38 of 160 identified slums restructured 93 748 beneficiaries of 180 000 inhabitants selected
	Restructuring under-equipped and unregulated residential areas and integrated slum upgrading programs in the subdivisions for 100000 households Rehouse inhabitants into social housing and ensure co-ownership of collective housing	Addressed the financial impediments of a large segment of low-income housings to accessing property
200-000 Housing Programme (1994)	Shift from provision of lots to housing Relocating informal settlement inhabitants to low-cost housing	Did not promote adequate supply of housing for low-income households

Policy or programme	Aims and/or Provisions	Outcome
Cities Without Slums (VSB) Programme (2004)	Addressing the imbalances of previous approaches and promote adequate housing for the urban poor	Details in next section

Source: Adapted from Boufarsi *et al.* (2021:1330-1332), Guarino (2020:16-17)

The mismatch between the surge in the number of households in informal settlements and the supply of low-income housing to address these housing needs in the early 2000's led to the implementation of the Cities Without Slums (Villes Sans Bidonvilles, VSB) programme (Boufarsi, 2021:1332, UN-Habitat, 2020:48). The programme aimed at eradicating all informal settlements, that is, 376022 households in 85 cities and urban centres by 2012 through:

- Allocation of single family and two family lots for incremental building;
- Relocation and in some instances de-densification of informal settlements; and/or
- Upgrading of the informal settlement by providing basic services and security of tenure (UN-Habitat, 2020:50-51).

Although this programme has contributed somewhat to the success of informal settlement interventions nationwide, much traction was gained in Casablanca where the prevalence of these settlement was more rampant, yet much progress was made. The programme was replicated in 83 cities across Morocco (UN-Habitat, 2010:15). The next section reflects on the history of informal settlements in Casablanca and the progress that has been made.

6.4.3 The case of Casablanca

6.4.3.1 Background

Casablanca is the largest city and the economic and business centre of Morocco (*Kingdom of Morocco*, 2014:3; Luthander & Gustavon, 2014:26). The concept of the shack emerged in the 1920's as a prefabricated housing type for local administrators and managers (Guarino, 2020:1). The shack became the most affordable method to house the local and migrant working class; coinciding with the high rate of migration and the ethnic segregation and urban zoning policies in 1914-1922 and 1952-1955 respectively (Guarino, 2020:1; UN-Habitat, 2020:50). The surge in housing demand led to the emergence and proliferation of bidonvilles and shacks were the most viable types of housing. As a result of the urban zoning policies, bidonvilles massive informal districts near industrial areas erupted and still define the current landscape (Luthander & Gustavon, 2014:29).

6.4.3.2 Villes Sans Bidonvilles in Casablanca

The VSB programme was spearheaded by Al Omare, an amalgamation of three government institutions and the takeover of a development and construction company (UN-Habitat, 2016a:38). Under the supervision of the Moroccan Ministry of Housing, Urban Planning and Regional planning, Al Omare contributed to the aforementioned decline in the number of households in informal settlements. This comprised of improved access to decent housing, secure tenancy, basic services, public transport, and socio-economic facilities, decline in unhealthy environmental related diseases and infections, provision of individual property titles, priority housing allocation to most vulnerable groups within communities, mixed used housing products and participatory decision-making processes (UN-Habitat, 2010:5). UN-Habitat (2010:2-7) as well as Beier (2020:8;) attribute the success of this programme to:

- mobilisation of public land for the cities without slums programme;
- establishment of the FOGARIM guarantee fund to facilitate access to credit to low-income or irregular income households and by extending micro-credit mechanisms to social housing;
- engaging in PPPs for social housing provision;
- Mobilising funds from international agencies such as the World Bank, Cities Alliance, USAID and AFD;
- fostering beneficiary contribution to 30% of the costs;
- ensuring the multi-sector engagement of the state, local government and public operators;
- establishing a Solidarity Fund for Housing through which tax on cement contributed to improvements in informal settlements; and
- introducing a third-party system where two families get financial assistance in the construction of a four-storey home in exchange for ownership of part of the property.

According to UN-Habitat (2020:50) the majority of the households are satisfied with the housing structures and services, as well as the location of the projects. UN-Habitat (2016b:8) explains that by ensuring access to basic services, VSB contributed to quality of life since basic services are the main axes for the improvement of living conditions for informal settlement residents. The programme recorded significant success in informal settlements improvement through collaboration between local authorities, civil society and private sector which in turn enhanced service delivery (UN-Habitat, 2016a:27).

However, Luthander and Gustavon (2014:45) noted the inability of some of the inhabitants to enter into land ownership contracts, miscommunication and unmet expectations between local authorities and the residents and the inability of better off residents to qualify for loans as the

major flaws of the VSB programme. Beier (2020:30-32) expands on this by maintaining that contractual disagreements, illegal transactions and complex transfer of ownership within the third-party system would “eradicate a particular undesired and visible form of urban informality, that would merely be replaced by different and hidden form of informality”.

Boufarsi *et al.* (2021:1332-1334) are of the opinion that relocation of the residents to the outskirts of the city further marginalised them from economic opportunities and was a political endeavour to avoid more instability after the 2003 terrorist attacks. Bogaert (2018:234-5, 240-1) concurs that the state’s interest in enhanced market integration of residents through formally registered property titles was more to improve the relationship between the state and the residents than improving their quality of life. Figure 6-4 shows the original location and the relocation sites for the informal settlements in Casablanca.

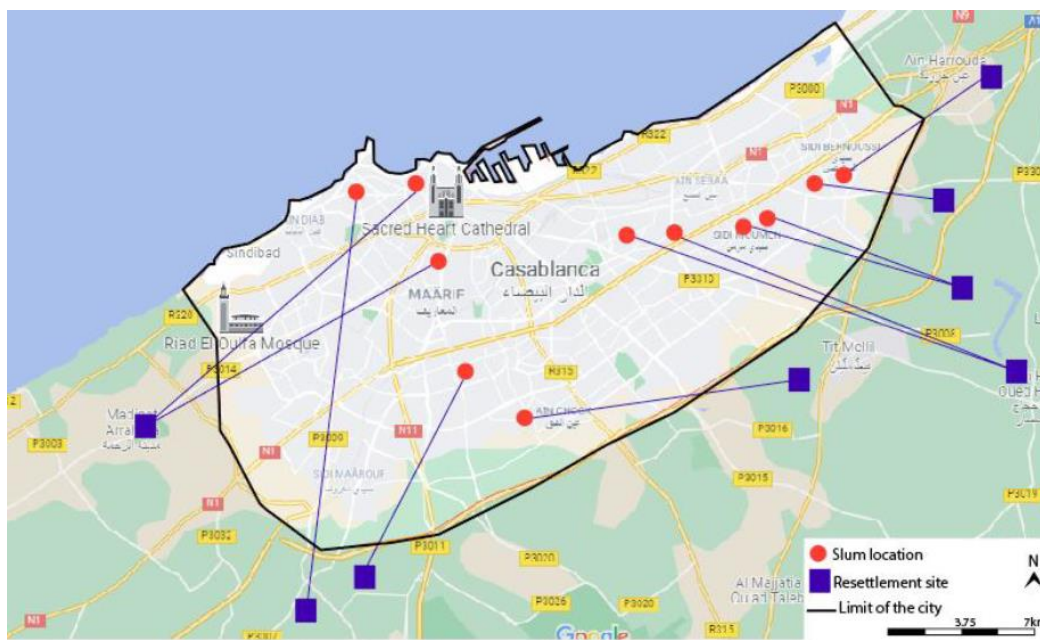


Figure 6-4: Location of informal settlements in Casablanca

Source: Boufarsi *et al.* (2021:1335)

The relocation of the bidonvilles subjected the inhabitants to spatial segregation which culminated in loss of informal economic opportunities, increase in transport costs in accessing jobs within the city limits and exclusion from the urban society and fabric. Semlani (2021:60) extends that the evaluation of the programme based on the use of “basic statistical data such as the number of cities declared bidonville-free, and the number of people displaced” is inadequate as it does not reflect the social and economic impacts of the programme. As a result, the programme did not improve the lives of the inhabitants but reproduced poverty elsewhere. In this current status, Casablanca represents a fragmented urban form.

Regardless, the programme won the UN-Habitat Scroll of Honour for the Cities Without Slums Program “Villes Sans Bidonvilles” in 2010 and has been a benchmark for successful informal settlement intervention programmes (UN-Habitat, 2016b). Supporting programmes such as the “Urban Agriculture Casablanca” Project (2008-2013) have also contributed to improving the living conditions of the inhabitants of informal settlement through job creation and food supply (*Kingdom of Morocco*, 2014:24).

6.5 Conclusion

This chapter examined the legislation, policies and strategies that have been implemented to address informal settlements within large cities in Egypt and Morocco. Egypt has the most marginal decline in the proportion of the urban population in informal settlements. Intervention in informal settlements has evolved from neglect, site-and-services to informal settlement upgrading with emphasis on the categorisation of the settlements. Though emphasis has been on the provision on basic services, other initiatives have contributed to improvements in the socio-economic aspects of informal settlements. The Alexandria CDS is lauded for pioneering improved access to basic services, enhanced stakeholder collaboration, catalysts for investment as well as achieving tremendous progress towards the 2032 goal.

Morocco has also experienced a marginal decline in the proportion of urban population in informal settlements since 1990. Addressing informal settlements has evolved from demolition, sites and services to allocation, restructuring and relocation of informal settlements in new towns. The Cities Without Slums (VSB) programme implemented in Casablanca, is one of the most successful internationally and has been replicated in 83 cities across Morocco. Despite criticism about perpetuating urban sprawl, spatial marginalisation of the inhabitants and concentrating more on achieving a political goal, the programme improved the lives of the inhabitants, introduced sustainable financial mechanisms and enhanced stakeholder and multi-sector collaboration.

Therefore, this Chapter provides insight into informal settlement interventions from an international perspective; to identify best practises that can guide informal settlement upgrading in South Africa and within the GCR. Table 6-4 summarises the key points from this Chapter. Chapter 7 focuses on the policies and legislation that are instrumental in informal settlement intervention in South Africa and the GCR.

Table 6-4: Chapter 6 summary table

International Case Studies		
	Egypt	Morocco
Reason for selection	Availability of data and comparability to South Africa	
	Classification of informal settlements	Decline in population in informal settlement despite high urbanisation rate
	Alexandria	Casablanca
	Spatial fragmentation due to increasing demand for housing Pioneered City Development Strategy	Spatial fragmentation due to planning policies Pioneered City Without Slums Programme
Informal settlement's intervention	Egypt	Morocco
	Classification into unsafe and unplanned areas Unsafe areas further categorised into four groups	Allocation of single family and two family lots for incremental building; Relocation and in some instances de-densification of informal settlements; and/or Upgrading of the informal settlement by providing basic services and security of tenure
	Alexandria	Casablanca
	• provision of basic of services; • collaboration between inhabitants and organisations; • local economic development • tackled key constraints on private sector engagement in development; • and created catalyst for investment and	• mobilisation of public land • grant for access to credit • PPP • International funding • Multi-sectoral approach • Tax on cement • Third party system
Success	Reduction in unsafe and unplanned areas	Enhanced collaboration Reduce number of people in informal settlements and the settlements themselves
Criticism	Further marginalisation of the inhabitants of informal settlements Not improving livelihoods	Further marginalisation of the inhabitants of informal settlements Not improving livelihoods
<i>Chapter 7: Planning tools for sustainable spatial planning and community development in the formalisation of informal settlements in South Africa</i>		

Source: Own construction (2022)

CHAPTER 7 PLANNING TOOLS FOR SUSTAINABLE SPATIAL PLANNING AND COMMUNITY DEVELOPMENT IN THE FORMALISATION OF INFORMAL SETTLEMENTS IN SOUTH AFRICA

7.1 Introduction

South Africa's human settlement mandate seeks to ensure dignity, security of tenure and safety; reshape and integrate spatial order; and align social and economic imperatives by developing human settlements in well located strategic spaces (Mfeketo, 2018). However, the challenge in reaching this mandate and the realisation of the right to adequate housing, especially in informal settlements, lies in the inefficient implementation of plans, lack of coordination within the regulatory framework and insufficient support from the legislative, institutional and fiscal apparatus to ensure a consistent implementation of planned solutions (NUSP, 2015a:4; SERI, 2018:5). Therefore, the essence of investigating the **“extent to which government planning instruments are effective in ensuring spatial sustainability and SCD in the addressing of informal settlements”** (Refer to Section 1.4 of the study).

This chapter examines the policies and legislation that influence informal settlement intervention in South Africa. This entails an analysis of the *Constitution* of the Republic of South Africa, national development planning, spatial planning, human settlement, governance, and supporting policies and legislation as instruments for SCD in informal settlement intervention. Though the SDGs and the New Urban Agenda are international strategies, they are discussed in this chapter due to their impact on the national strategies. The structure of this Chapter is presented in Figure 7-1.

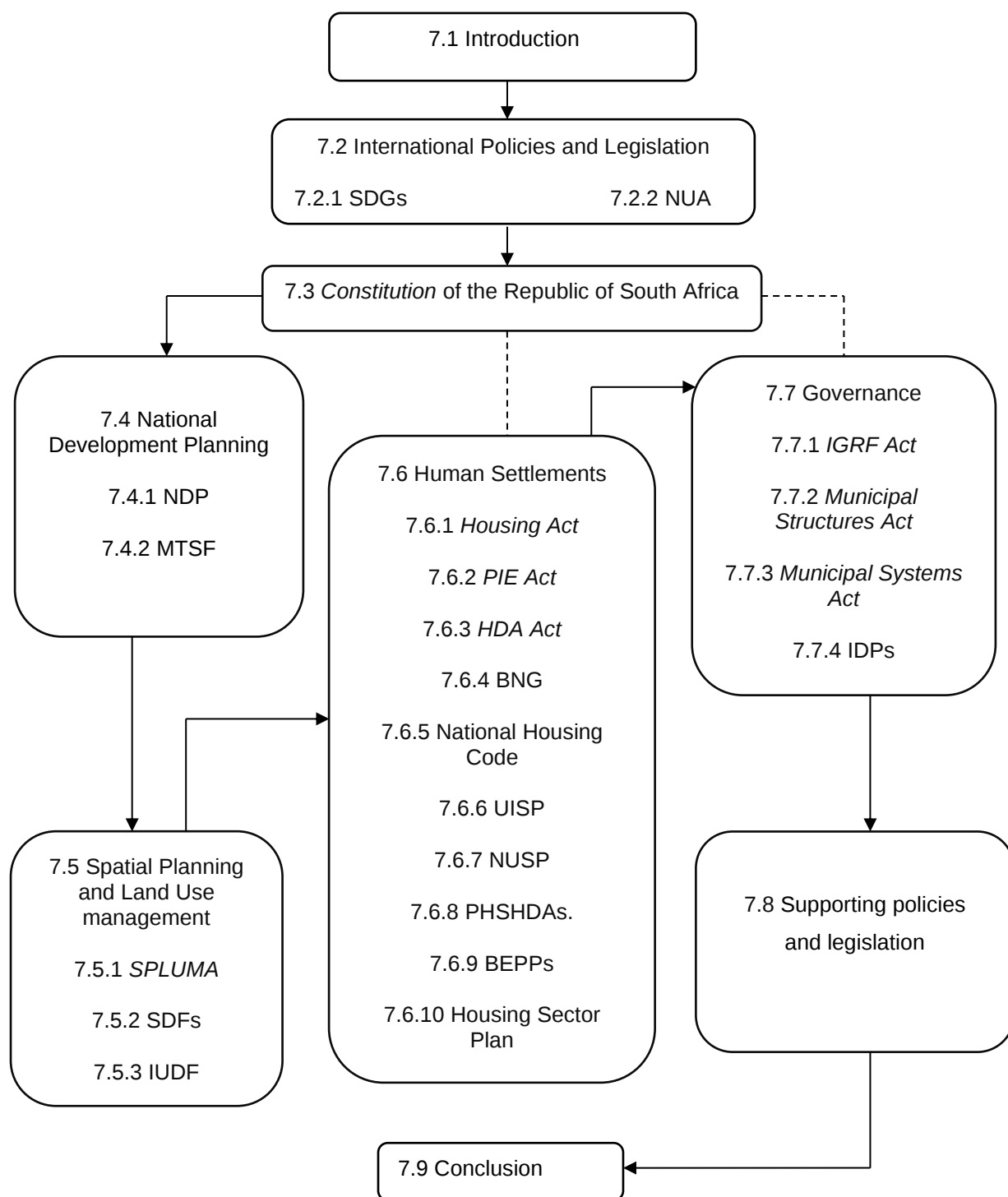


Figure 7-1: Chapter 7 flow diagram

Source: Own construction (2022)

7.2 International Policies and Legislation

7.2.1 Sustainable Development Goals

The Sustainable Development Goals (SDGs) are a long term-term, comprehensive strategy to tackle the world's greatest challenges to achieve goals to achieve a better and more sustainable future for all by 2030 (UN, 2016?). The SDG provide a global blueprint for dignity, peace and prosperity for people and the planet, now and in the future. Almost all the SDGs have a bearing on addressing the challenges faced in informal settlements, except for Goals 14, 15 and 17. However, it is SDG 11 that directly mentions and seeks to address informal settlements. The broad goal is to “make cities and human settlements inclusive, safe, resilient and sustainable”. This directly influences and guides the achievement of SCD in addressing informal settlements.

7.2.2 New Urban Agenda

The New Urban Agenda (NUA) is an action-oriented document that provides the global principles, policies and standards required to achieve sustainable urban development, to transform the way we construct, manage, operate and live in cities (World Economic Forum, 2016). According to UN-Habitat (2016:9) the NUA is a “framework designed to steer the world towards sustainable urban development for the next 20 years by rethinking how cities and human settlements are planned, built, managed, and inhabited”.

The NUA guides the implementation of all SDG's, including SDG Goal 11. This is based on the NUA vision to ensure that cities and human settlements contribute to the progressive realisation of the right to adequate housing through access to basic services and socio-economic facilities, food security, improved transport and mobility, encourage participation and civic engagement especially of women and girls, promote safety, inclusivity and accessibility of public spaces and meet the challenges and opportunities for present and future generations (UN, 2017:16-18). These principles align with the elements and principles of SCD. The NUA also places emphasis on these principles to end discrimination, promote equality and improve quality of life particularly in informal settlements. Therefore, the NUA lays the foundation for promoting SCD in addressing informal settlements at local, national, regional and global level.

7.3 Constitution of the Republic of South Africa 1996

The *Constitution of South Africa (1996)* (*Constitution* hereinafter) is the overarching law in South Africa; guiding all planning carried out within the country. Improving the quality of life for all citizens is one of the main focus areas of the *Constitution* as prescribed in the Bill of Rights. This study examines the following themes as provided in the *Constitution*: access to housing as a basic

human right; the roles of the three spheres of government in the realisation of this right and community engagement in the upgrading of informal settlements.

7.3.1 Access to adequate housing as a basic human right

According to Section 26(1) of the *Constitution* “everyone has the right to have access to adequate housing”. This clause recognises the significance of security of tenure, affordability, habitability, availability of services, materials, facilities and infrastructure and accessibility as key components of housing as a basic need (OHCHR, 2020). This means that all measures should be taken to address the housing needs within informal settlements to preserve the dignity and well-being of the residents of the settlements.

This is supported by Section 26 (2) which mandates the government to “take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of the right to adequate housing. This poses an obligation on the government to address and not neglect informal settlements by any means possible.

The essence of dignity as an element of this human right is supported by Section 26(3) which states that “no one may be evicted from their home, or have their home demolished, without an order of court made after considering all the relevant circumstances”. This is further reinforced under the Bill of Rights in Section 10 of the *Constitution*. It states that “everyone has inherited dignity and has the right to have their dignity respected and protected”. In this regard, illegal and unlawful evictions from informal settlements are in contravention with the provisions of the *Constitution*.

7.3.2 Intergovernmental intervention

While Sections 152 and 153 of the *Constitution* recognise the developmental role of local municipalities, Section 40 emphasises unity among the three spheres of government in addressing development issues. Sub-sections (1) and (2) emphasises the distinctive, interdependent, and interrelated nature of the three spheres of government and the directive for all spheres to adhere to the principles of co-operative and intergovernmental relations as provided in Section 41 of the *Constitution*.

Intergovernmental intervention is critical in addressing informal settlements to ensure a holistic and coordinated approach. Though the *Constitution* clearly stipulates the essence of intergovernmental coordination, there has been a gap in practice as government departments often address informal settlements in silos. Therefore, there is need to ensure that this mandate from the *Constitution* is adhered to.

7.3.3 Community participation

The *Constitution* recognises that community participation is a critical component in addressing informal settlements and the realisation of SCD. Section 152 (1) (e) mandates local municipalities to encourage the involvement of communities and community organisations in the matters of local government. Maphazi *et al.* (2013:57) provide that community/public participation should not only be pursued to comply with legislation but carried out in a way that enhances the public/communities knowledge of government operations and the issues under discussion. This will in turn promote community empowerment and effective participation in the upgrading of informal settlements and SCD.

7.4 National Development Planning

7.4.1 National Development Plan 2030

The National Development Plan 2030 (NDP) is a long-term plan that aims to eliminate poverty and reduce inequality in South Africa by 2030. The NDP outlines the vision, general and specific targets, policy and planning priorities and implementable actions of the state that should ensure the realisation of the defined goals and objectives. According to National Planning Commission (2013:38), the following are the core elements to ensure the achievement of a decent standard of living as provided in the NDP:

- Housing, water, electricity and sanitation;
- Safe and reliable public transport;
- Quality education and skills development;
- Safety and security;
- Quality health care;
- Social protection;
- Employment;
- Recreation and leisure;
- Clean environment; and
- Adequate nutrition.

The NDP can be lauded for acknowledging the need to transform human settlements and the national space by recognising the role played by informal settlements and the need to enhance the existing national programme for upgrading informal settlements by developing a range of

tailored responses, including Rapid Assessment and Appraisal of all informal settlements. The NDP also recognises the need to: build sustainable communities, address the spatial fragmentation that defines South Africa's landscape and create normative principles to ensure that spaces are liveable, equitable, sustainable, resilient and efficient, and support economic opportunities and social cohesion (National Planning Commission, 2013:203-204, 259-289).

Though the above are factors that could promote efficiency and SCD in upgrading of informal settlements, the NDP fails to provide a clear connection amongst the issues; which would contribute to changes within the current status quo. Regardless, the NDP utilises the Medium-Term Strategic Framework for the implementation of the goals and objectives set in the plan.

7.4.2 Medium Term Strategic Framework

A Medium-Term Strategic Framework (MTSF) is the Government's strategic plan that sets out the actions the government will take and the targets to be achieved in order to fulfil the commitments made in the election manifesto and priorities and strategies identified in the national long-term strategic plan (Department of Planning, Monitoring and Evaluation, 2014:4; The Presidency, 2009:1)

The priorities of the current MTSF are:

- A capable, ethical and developmental state;
- Economic transformation and job creation;
- Education, skills and health;
- Consolidation of the social wage through reliable and quality basic services;
- Spatial integration, human settlements and local government;
- Social cohesion and safer communities; and
- A better Africa and world.

Some of the issues raised in the MTSF that impact on SCD in addressing informal settlements are listed in Table 7-1.

Table 7-1: MTSF (2019-2024) relevant priorities and commitments

Priorities	Commitments
Cross-cutting focus areas	Recognising the role of women, youth and people with disabilities in development
	Promoting greater access to employment and socio-economic opportunities
	Improving access to essential disability and other support services
	Ensuring that women, youth and people with disabilities are active players in building the economy through expanded access to finance and incentives including those in the informal sector
Priority 3: Education, Skills and Health	Improving access to early childhood development to education and training
	Improving access to learner support materials, school facilities and infrastructure, including sanitation and basic facilities, modern media and connectivity
	Ensure universal health coverage and double the number of community health workers deployed in villages, townships and informal settlements
Priority 4: Consolidating the Social Wage through Reliable and Quality Basic Services	SCD interventions including ensuring food and nutrition security
	Develop minimum psychosocial support and norms and standards for violence against women and children, families and communities.
	Scaling up treatment and rehabilitation strategies to increase the number of people accessing prevention and treatment programmes for drug and substance abuse
	Prioritising the social protection of children
Priority 5: Spatial Integration, Human Settlements and Local Government	Spatial transformation through multi-programme integration
	Adequate housing and improved quality living environments
	Improving the capacity of municipalities to deliver services and infrastructure
	Make the public transport system more accessible, affordable, safe and reliable.

Source: Adapted from Department of Planning, Monitoring and Evaluation (2019:18-150)

The target for the MTSF (2014 – 2019) was to upgrade 750 000 households and provide basic services in 2200 informal settlements. The achievement of these targets is detailed in Section 8.2. The priorities and targets set by the MTSF provides the basis for which SCD can be achieved within South Africa.

However, though the MTSF recognises the need to address the needs of the marginalised groups in society, there are no targets that focus specifically on the groups in informal settlements. The absence of informal settlement specific targets for example women, children youth and the disabled present a gap with which these inhabitants of informal settlement may not benefit from the programmes. Also, challenges such as gender-based violence and drug and substance abuse are significantly prevalent in informal settlements; hence there is need to set priorities and targets to address these issues within informal settlements.

7.5 Spatial Planning and Land Use Management

Planning law gives birth to planning instruments that shape economies and influence social and political life in cities and towns as well as in rural areas (De Visser and Poswa, 2019:2). In terms of planning law:

- Spatial planning generally refers to the articulation of a spatial vision for a particular area or jurisdiction.
- Land use management refers to the management of land use through the granting of land use rights to individuals or legal entities that seek to develop land (De Visser and Poswa, 2019:2).

7.5.1 Spatial Planning and Land Use Management Act (SPLUMA)

The *Spatial Planning and Land Use Management Act 16 of 2013* (SPLUMA) is legislation that governs spatial planning and land use management in South Africa, providing principles for land use planning and creating a system for policy formulation from a sustainable development perspective. SPLUMA aims to “develop a new framework to govern planning permissions and approvals, set parameters for new developments and provide for different lawful land uses in South Africa” (FN INC, 2015:1). The following main themes from SPLUMA are applicable to this study:

- Development principles;
- Land use management;
- Intergovernmental support;
- Land Development; and
- Spatial Development Frameworks

7.5.1.1 SPLUMA Development Principles

SPLUMA provides guidance for spatial planning in the form of development principles as enshrined in Section 7 of the Act. Table 7-2 illustrates the development principles and their applicability to the study.

Table 7-2: SPLUMA Development Principles

Principle	Applicability/ Implication
Spatial Justice	- Communities in informal settlements have the right to improved access to and use of land to redress past spatial imbalances. - Informal settlement intervention should include be based on legal recognition of the settlement and provision of secure tenure as part land use management schemes and land development procedures.
Spatial Sustainability	Informal settlement intervention should result in the protection of the environment; compact and economically sound development; equitable functioning of land markets; development that promote easy access to facilities and resources while limiting urban sprawl.
Efficiency	- Where possible, informal settlements intervention should ensure that households are located close to existing infrastructure to reduce costs. - Maximise on the existing household, community, and government resources in addressing informal settlement. - Reduce the bureaucratic and timely procedures which may delay intervention.
Spatial resilience	Spatial planning instruments should make flexible provisions to curb the impacts of the social, economic and environmental shocks which may affect informal settlements while promoting robustness, rapidity, redundancy and resourcefulness within these communities.
Good governance	- Intervention in informal settlements should be carried out in an integrated approach based on inputs from all relevant sectors and spheres of government. - The relevant authorities should ensure that the legislative land development requirements met timeously and there is transparency in all processes of public participation and any other procedures.

Source: Own construction based on SPLUMA (2022)

The *SPLUMA* development principles align with the elements and principles of SCD. The principle of spatial sustainability aligns with the SCD principle of balancing social, economic and environmental aspects as pertains to informal settlement interventions. Spatial resilience through the implementation of spatial planning instruments reflects the 4R's of resilience as discussed in Section 4.4.2.3. Good governance in *SPLUMA* aligns with good governance in SCD with more

emphasis on government spheres for the former. Efficiency reflects the housing and built environment as well as the economic elements of SCD. Spatial justice principally emphasises access to secure tenure through the right to occupying spaces. However, the elements of social and cultural are not clearly provided in the development principles unless otherwise implied within the others.

7.5.1.2 Land use management

In South Africa, one of the instruments for land use management is zoning through the implementation of a land use scheme. In terms of Section 24 (2) of the Act, a land use scheme should include categories of land use zoning including informal settlements, slums and areas not previously subject to a land use scheme.

Prior to the implementation of the Act, informal settlements had been considered temporary and had been excluded from land use scheme until the settlement had been formalised through township establishment. This exclusion from formal planning frameworks heightened their unequal status as citizens of a municipality (Gorgens & Denoon-Stevens, 2013:88), left the inhabitants liable to evictions and exacerbated the inhabitants vulnerable to social, health, environmental, and security threats; due to the strict building and health regulations.

Nel (2015: 81) argues that the very informality of informal settlements the absence of surveyed sites or individual property boundaries and registered 'owners' of those sites present a challenge to the introduction of land use management. Zoning in its strictest form restricts and permits certain uses while the nature of informal settlements means that there are mixed uses, that is, business, residential and sometimes educational uses on the same erf or piece of land. Fourie (2019:19) adds that the inhabitants of informal settlements may fear the introduction of land use regulations as this negates the advantages of living in an informal settlement.

On the other hand, extending land use management to informal settlement provides an opportunity for legal recognition of the land use 'informal settlement' and this would improve the living conditions within the settlement. This legal recognition can be implemented taking into account the physical, social and economic arrangement of informal settlements while ensuring that several social, health, environmental, and security risks are abated. Royston (2015: 8-9) agrees that the zoning of settlement using a land use management scheme grants legal status to a settlement and provides the platform to for public investment in services and improved tenure security.

In this regard, the land use scheme should make provision for the incremental introduction of land use management and regulations as stated in Section 24 (2)(c) of the Act. This will allow

community consultation and engagement in creating plans for systematic development of the settlements. The compilation of a layout plan, prepared in consultation with residents, allows the determination of permitted activities within the informal settlements (City of Johannesburg Metropolitan Municipality, 2009).

Nel (2015: 89) suggests a functional model of zoning that includes mixed uses, excludes activities deemed to be a nuisance, has varying levels and details of control based on the complexity of the settlement, places emphasis on what is not permitted rather than what is permitted while permitting closer alignment with the spatial plans and regulatory framework for the area. This would promote the spatial justice, spatial sustainability, efficiency, spatial resilience and good governance; and in turn influence SCD. The Municipal Planning By-Laws could be utilised to achieve this.

7.5.1.3 Intergovernmental support

The enactment of *SPLUMA* resulted in the legislative devolution of spatial planning and land use control to local municipality. This allowed local government to address the majority of the spatial planning and land use issues within the municipality, with support from and in alignment with the national and provincial spheres of government. Considering the complexity of issues pertaining to informal settlements and the fact that they are a responsibility for different spheres of government and different departments; there is need for coordination and intergovernmental support in addressing the challenge.

Chapter 3 of *SPLUMA* focuses on intergovernmental support in spatial planning and land use management. Sections 9 and 10 of the Act emphasise that the national and provincial government support, assist and strengthen the capacity of municipalities to implement effective spatial planning and land use management. This also means that the higher-ranking spheres of government should ensure that municipal spatial planning and land use management practices, including the upgrading of informal settlements, align with spatial goals and visions of the national and provincial spheres of government.

Therefore, there should be conscience coordination amongst the three spheres in addressing informal settlements. Schoeman (2015:47-48) recognises the essence of division of functions and classification of functions as strategic, operational, functional or a combination thereof to ensure alignment and integration among all spheres of government. Visser and Poswa (2019:21-22) suggest the joint exercise of powers whereby there is alignment of procedures across different spheres of government and vertically amongst different organs of state for the complete

integration of authorisation decision making. This can also be achieved through coordination in the implementation of the respective Spatial Development Frameworks.

7.5.1.4 Land Development

This brings into perspective the role of Municipal Planning Tribunals in facilitating the timely implementation of land development projects and programmes. One of the major challenges in addressing informal settlements is the lengthy and bureaucratic procedure for the upgrading or relocation of informal settlements. In terms of Section 44 (2) of SPLUMA a Municipal Planning Tribunal should ensure that land development applications are implemented in a timely manner as prescribed by the minister.

However, the Act does not stipulate the consequences of not adhering to the timeframes giving room for delays in development application related to the upgrading of informal settlements. SACN (2015:6) acknowledges the uncertainty and potential controversy over the roles and effectiveness of Municipal Planning Tribunals but provides insight on the less stringent conditions of *SPLUMA* which allow alterations. In this regard, these stipulations could be provided within the respective municipal by-laws to promote accountability as part of land development processes.

7.5.2 Spatial Development Frameworks (SDFs)

Spatial Development Frameworks (SDFs) are mandated guiding documents which serve as effective planning tools to manage spatial growth and promote desired land uses. The Department of Rural Development & Land Reform (2014:14) defines SDFs as frameworks that seek to influence the overall spatial distribution of current and future land use within a municipality in order to give effect to the vision, goals and objectives of the municipal SDFs play a pivotal role in directing municipal spending and private sector investment; thus, they are a critical and integral component of the Integrated Development Plan.

In terms of Section 12 (1) of *SPLUMA* national, provincial and municipal SDFs should include previously disadvantaged areas, including informal settlements; and address their inclusion and integration into the spatial, economic, social and environmental objectives of the relevant sphere. At municipal level, this includes the identification of designated areas where incremental upgrading approaches may be applicable; integration of informal settlement intervention approaches through their inclusion in the housing units demand estimates and the designation of where a national or provincial inclusionary housing policy may be applicable: as stipulated in Sections 21 (k), (f) and (i) of *SPLUMA*.

The municipal SDF should include an implementation plan that indicates the following in terms of informal settlement intervention as stipulated in Section 21 (p) of SPLUMA:

- the budgets and resources for implementation;
- institutional arrangements;
- implementation targets, including dates and monitoring indicators; and
- arrangements for partnerships in the implementations process, where necessary.

7.5.2.1 Support for SDFs

SDFs are often lauded for being the most critical instrument to achieve sustainable development and spatial transformation. According to Spaliviero (2019:236-239) SDFs are critical empirical and pragmatic tools adapted to the conditions of rapidly urbanizing countries with weak planning systems by presenting spatial challenges and critically analysing the reality of the territory. This is applicable to the South African context where rapid urbanisation, the prevalence of informal settlements, spatial inequality and other spatial challenges owe to the apartheid spatial planning system.

SACN (2015:33) adds that SDFs are the primary mechanisms through which the transformation and development principles are to be interpreted for a specific spatial context. This means that spatial justice, spatial sustainability, efficiency, spatial resilience and good governance can be realised in informal settlements intervention through the effective implementation of SDFs. This also promotes sustainable development as all aspects of sustainable development are integrated and presented spatially.

Van Schalkwyk *et al.* (2013:261) agree that the “elements of a SDF are all fundamental to the realisation of sustainability as they address the sustainability pillars of people, planet and profit”. This, coupled with the mandatory public participation processes in the preparation of SDFs, provides the platform for sustainable and resilient community planning and development in informal settlement intervention.

7.5.2.2 Criticism of SDFs

However, in practice, SDFs often do provide detailed analyses of informal settlements and the spatial contexts within which they occur. Instead, SDFs often only include the locations of the settlements and in some cases the number of households within the settlements. The relationship between the location of the settlements and economic opportunities, is not adequately explored. In these cases, SDFs do not adequately promote SCD, and the development principles stipulated in SPLUMA.

SDFs are criticised for their lack of practical alignment with the spatial, social and economic contexts for which they are prepared. According to Odendaal and McCann (2016:405) the framework is based on contradictory conceptualisations of space which disregard the complexity of the local situation, thus impacting on the efficacy of SDFs. Ruhiiga (2014:618) agrees that there is consistent evidence that actual developments on the ground do not appear to respond to the spatial ordering in the SDF's. The desired outcome as reflected in the SDFs often does not consider urban growth process and the exponential rate at which informal settlements often expand, thus compromising informal settlement intervention strategies.

SDFs are also criticised for focussing more on the physical ordering and regulation of land uses rather than the socioeconomic organisation of the city and the well-being of citizens. Though the framework for SDFs is instrumental in township revitalisation, densification and infill; not much is understood about different groups of people locating at any given place, their mobility patterns and the impacts these have on their well-being (Bickford, 2014:11; Dzingai, 2016:77; Musvoto *et al.*, 2016:206).

Reflecting on informal settlements in mining towns, Denoon-Stevens *et al.* (2018:86) note the SDFs lack of foresight in terms of the changing trends and spatio-economic uncertainties related to the mining industry and the implications these may have on the formal and informal communities. This often results in limited flexibility to deal with economic shocks compromising the communities' economic resilience and the general well-being of the residents. In this regard, SDFs appear to be inadequate planning tools for promoting the principle of spatial resilience in addressing informal settlements.

Odendaal and McCann (2016:416-417) attribute the inadequacy of SDFs to address issues of informality in housing, job creation and trade as complex city-building realities to the essentially expert led plan making process, despite a public participation programme. Horn (2020: 594-595) is of the opinion that the credibility and effectiveness of SDFs is compromised by allowing private interests to take precedence in decision making and the reluctance of politicians to stand by decisions that benefit all during spatial policy preparation and amendment. This as well as inadequate engagement with community members renders the provisions of the SDF inadequate in achieving good governance through the use of SDFs.

Based on the above, it can be argued that the preparation of SDFs is more focussed on adhering to policy and legislative regulations that mandate the preparation of these policy documents, rather than addressing the actual spatial issues. Musvoto *et al.* (2016:208) agree that SDFs appear to be mainly driven by process and compliance in meeting municipal planning and

performance management requirements while ignoring the communities they seek to serve through stakeholder support and participation.

The absence of measures to assess the applicability and alignment of SDFs hinders planning for intervention in the addressing informal settlements and creating sustainable and resilient communities. Mashiri *et al.* (2017:155) concur that the absence of mechanisms to measure specific outcomes identified in the SDF are the major stumbling blocks to understanding the efficacy and potency of this delivery instrument.

7.5.3 Integrated Urban Development Framework (2016)

The Integrated Urban Development Framework (IUDF) is a policy framework that guides urban development in South Africa. The IUDF seeks to foster a shared understanding on how best to manage urbanisation and improve living conditions for the people. This is premised on the vision to create “liveable, safe, resource-efficient cities and towns that are socially integrated, economically inclusive and globally competitive” (CoGTA, 2016).

The IUDF calls for the intervention in informal settlements through accelerated informal settlement upgrading and the realisation of better designed, safer, and dignified settlements. Table 7-3 shows the provisions in the IUDF that impact on sustainability and in community development in informal settlement intervention.

Table 7-3: IUDF provisions on informal settlement intervention

Lever	Focus	Provisions and implications
1	Integrated alignment of spatial planning	Intergovernmental collaboration will promote the implementation of integrated spatial frameworks, accessibility to well-located land and sustainability in the provision of social and economic infrastructure
2	Integrated transport and mobility	- Integrated public transport modes and operational subsidies will curb the costs incurred in accessing economic opportunities and services - Public transport should provide quality and safe services especially for women

Lever	Focus	Provisions and implications
3	Integrated and sustainable human settlements	- Accelerate informal settlement upgrading by considering tenure upgrades, provision of services and alternative housing delivery models. - Implementing cross-cutting strategies to promote the inclusion of marginalised or vulnerable groups in creating safer communities
4	Integrated urban infrastructure	- Invest in infrastructure in informal settlements critical in addressing the backlog of basic services as well as in growing the economy. - Public infrastructure and facilities should create conditions for people to have a sense of belonging - Municipalities need to build stronger relations with the private sector, communities and civil society, in order to foster collaborative 'place-shaping' decisions to improve liveability, especially within informal settlements.
	Disaster Risk Reduction and Climate Change	Managing the risks of disasters through the identification of risks within informal settlements and addressing them as a core-component of informal settlement intervention
5	Efficient land governance and management	- Speed up land tenure processes through the implementation of an incremental approach to land tenure - Improve municipal access to land owned by the state- and state-owned enterprises - Improve intergovernmental relations for the acquisition or transfer of state land
6	Inclusive economic development	- Support community-based enterprises and work in townships and informal settlements - Support urban livelihoods as a core principle of inclusive urban management through the inclusion of informal trade and informality into spatial planning policies and economic development policies

Lever	Focus	Provisions and implications
7	Empowered communities active	- Limited public participation due to relatively low level of education and training, poor standards of health and low life expectancy - Government should improve skills and experience for community engagement - Establish forums for dialogue and liaison at neighbourhood and municipal levels.
8	Effective governance urban	- Enhance municipal capacity and municipal differentiation - Streamlining of national monitoring of municipal performance to ensure the provision of accurate, timely and useful information to communities
9	Sustainable Finances	- Incentivise excellence in financial management and improve fiscal management to meet the demands of urban growth such as the proliferation of informal settlements and the ultimate intervention - Explore alternative capital financing instruments especially those that interface with land and housing markets

Source: Adapted from (CoGTA, 2016)

From the table above, it is evident that the IUDF encourages a multi-disciplinary and holistic approach towards informal settlement interventions, and this could promote SCD if implemented effectively and efficiently.

7.6 Human Settlement Development

7.6.1 Housing Act 107 of 1997

The *Housing Act 107 of 1997* regulates the provision of Housing in South Africa. The Act stipulates the roles and responsibilities of the three spheres of government in housing provision, places emphasis on the obligation of municipalities to ensure the access to adequate housing for the respective inhabitants on a progressive basis and the provides for community participation in housing delivery.

7.6.1.1 Housing provision

Section 2 (1) stipulates the obligations on the three spheres of government to prioritise the poor with respect to housing development; meaningfully engagement with individuals and communities affected by housing development; prohibit unfair discrimination in the housing development process; and provide variety of tenure options that are affordable, sustainable and are implemented in a transparent and equitable manner that upholds principles of integrated development and good governance. Also, Section 2(1) (e) (iii) emphasises the development communities characterised by “safe and healthy living conditions to ensure the elimination and prevention of slums and slum conditions”. These provisions make room for the realisation of SCD in addressing informal settlements as they include all the elements of SCD and emphasise the necessity to curb the proliferation of informal settlements while acknowledging that the needs of the inhabitants should be considered and prioritised.

7.6.1.2 Roles and responsibilities of each sphere of government

Part 2,3 and 4 of the Act detail the functions of each sphere of government in housing provision. Section 3, stipulates that the national government is responsible for developing the national housing, arranging for funding of housing programmes and guiding provincial and local spheres in housing provision. This means that the national government is responsible for the conceptualisation of programmes, policies and plans relating to informal settlement upgrading, should arrange for allocation of funding in the national treasury and the apportionment among provinces. In this regard, the national government is mandated to ensure informal settlement intervention that promotes SCD in programme, policy and plan implementation as well as providing, sourcing or allocating funding hitherto. The preparation of such policy includes the preparation of the National Housing Code which will be discussed in Section 7.6.5 of this study.

In accordance with Section 7 of the Act, the provincial government is responsible for coordinating housing development within the province; in alignment with national policy. This means that the provincial government is responsible for the creating policy for the upgrading of informal settlements that aligns with national upgrading programmes while determining the province’s own policy and legislation. The provincial government should also ensure that municipalities fulfil their roles in informal settlement upgrading while providing guidance and support. Section 7(2)(g) emphasises the preparation of a multi-year plan, which in this case would detail the informal settlement intervention as a component of provincial housing development policy and goals. These roles and responsibilities extend to Metropolitan municipalities as they are accorded the housing function in terms of the Municipal Structures Act (Refer to Section 7.7.2

The roles and responsibilities of the local sphere of government are enshrined in Section 9 of the Act. Municipalities are mandated to ensure adequate provision of housing, promote health and safety and provide basic services to the residents within their jurisdiction including the inhabitants of informal settlements. Section 9 (b)-(f) explain the role of municipalities in setting housing delivery goals, allocation land, ensure financial and social viability of housing development and enable appropriate housing development within the jurisdiction. This means that housing development within the municipality should address the real needs of the residents including those in informal settlements. Intervention in informal settlements should be financially feasible, foster social integration and can be integrated with other housing programmes. In this regard, municipalities as the delivering agent, should ensure SCD in informal settlement intervention. This also applies to metropolitan municipalities.

The Housing Act lays the foundation for assessing planning intervention in addressing informal settlements. The provisions of Section 2 align with the principles and elements of SCD. The stipulation of the roles and responsibilities of the spheres of government guide the analysis of the three spheres of government in informal settlement intervention and the investigation of whether different approaches relate to different municipal categories. Ziblim *et al.* (2013:23) concur that the Act provides for a sustainable process of housing development by laying down the general principles that should govern such processes in all the spheres of government.

7.6.2 Prevention of Illegal Eviction from Unlawful Occupation of Land (PIE) Act of 1998

The *Prevention of Illegal Eviction from Unlawful Occupation of Land (PIE) Act* of 1998 prohibits unlawful evictions from any property and stipulates the procedures for the eviction of unlawful occupants. The Act is an extension of Section 26 of the *Constitution* which emphasises the illegality of arbitrary evictions or demolition of homes without an order of court. The Act seeks to ensure just and equitable evictions of unlawful occupiers, taking into consideration the circumstances of the occupier and the availability of alternative accommodation availed by the state (SERI, 2018:17).

In essence, the Act addresses elements of the right to the city through appropriation and providing a semblance of security in the absence of tenure. However, it should be noted that reference to the invasion of land as unlawful occupation means that there is no basis for the household to invest in home improvements (NUSP, 2015:2). The Act also seeks to protect land owners against unlawful occupation of their properties. Though limited emphasis has been placed on these provisions, the Act recognises the “right of landowners to apply to a court for an eviction order in appropriate circumstances” (South Africa, 1998). Practical recognition of this right would curb the invasion of land and the proliferation of informal settlements.

7.6.3 Housing Development Agency Act 23 of 2008

The *Housing Development Agency Act 23 of 2008* was enacted to “establish the Housing Development Agency, to provide for its functions and powers; and to provide for matters connected therewith” (South Africa, 2008:2). Section 7 (1) (k) mandates the Agency to “assist organs of the state with the upgrading of informal settlements through:

- enhancing capacity support in land assembly
- project preparation and implementation;
- delivering technical services;
- developing good practices, templates, documentation and forms to support approval applications;
- providing land and housing;
- providing statistics of the informal settlements at provincial and national level; and
- The Act covers all the essential aspects of addressing informal settlements making it part of the core of the legislation regarding informal settlement intervention”.

7.6.4 Breaking New Ground: A Comprehensive Plan for the Development of Sustainable Human Settlements (2004)

The Breaking New Ground (BNG) is a comprehensive plan that details the government’s shift from the provision of housing to the development of sustainable human settlements. The BNG provided a major shift from the Reconstruction and Development Programme (RDP) through which the state set an unattainable goal of building million state funded houses for low-income housing (Tissington, 2011:21). The policy document places emphasis on poverty alleviation and job creation through housing delivery, promoting accessibility of property, leveraging economic growth, combating crime and improving quality of life for the poor (Department of Human Settlements, 2004:7

Another major shift in the BNG was the emphasis on the upgrading of informal settlements in desirable locations and relocation where development is undesirable (Department of Human Settlements, 2004:7). The introduction of the incremental approach to addressing informal

settlements created the platform to maximise on what is existing in the communities; thus, ensuring sustainability and resourcefulness through the mobilisation of resources.

The key objectives of the BNG programme also contribute to SCD as they emphasise addressing the spatial, social and economic challenges that generally plague informal settlements. Naidu and Isaacson (2006) agree that BNG made room for holistic development of human settlements by emphasising the provision of social and economic infrastructure. Emphasis on the development of integrated society addresses the social and spatial marginalisation of informal settlement. BNG highlighted the identification of well-located land for in-situ upgrading of informal settlements as a key strategy for spatial restructuring and this promoted densification and integration into the urban fabric (Royston, 2009:63; Tissington, 2010:43).

The plan also stipulates the partnership among national, provincial and local government with the support of the Departments of Home affairs, Education, Public Works, Environmental Affairs and Health (Department of Human Settlements, 2004:17). Emphasis on intergovernmental intervention in the upgrading of informal settlements promotes SCD as all the relevant sectors will be engaged in programme and project implementation. By specifying the role of local government in assuming the responsibility for informal settlement upgrading, the BNG encourages improvement in governance and the realisation of adequate housing through the sphere of government close to the people.

However, BNG does not clearly articulate the process, indicators or criteria through which quality of life will be improved to ensure sustainable human settlements. Charlton and Kihato (2006:129) claim that the key indicators for performance are largely quantitative and focus more housing produced and budget spent. Royston (2009:64) also argues that the BNG does not address the competing notions of municipal financial viability through addressing the housing backlog and sustaining livelihoods through creating opportunities for the poor; and it is apparent that the former takes precedence. As a result, the plan does not guide the improvement of quality of life and in turn sustainable human settlements.

Also, limited emphasis on the environmental aspects of human settlement development impedes SCD. Since the plan does not provide clear direction on curbing the proliferation of informal settlement nor include natural capital in the objectives, natural resources are likely to be compromised in the upgrading of informal settlements. Also, the plan stresses in-situ upgrading and neglects land rehabilitation or any other solution for undesirable sites further subjecting the inhabitants to environmental vulnerability. Regardless, the BNG creates the platform for holistic informal settlement upgrading and SCD if the shortfalls are addressed.

7.6.5 National Housing Code (2009)

The National Housing Code, first published in 2000, is the key national housing policy of South Africa and the procedural guidelines for the effective implementation of housing programmes. The Code “sets the underlying policy principles, guidelines, norms and standards that apply to the Government’s various housing assistance programmes” (Department of Human Settlements, 2009a:1). Part 3 of the National Housing Code stipulates housing programmes that impact on addressing informal settlements in South Africa. These are described in Table 7-4.

Table 7-4: Housing programmes which support informal settlement upgrading

Programme	Applicability
Upgrading of Informal Settlements Programme (UISP)	• Seeks to upgrade living conditions by providing secure tenure & access to basic services & housing. • Recognises community engagement as a critical component of upgrading projects • Promotes socio-economic development by ensuring the access to social and economic amenities • Encourages in situ upgrading of the informal settlements and identifies relocation as the last option
Integrated Residential Development Programme (IRDP)	• Provides for the acquisition of more appropriate land to redress spatial marginalisation of low-income housing • Provides for the servicing of commercial, residential, educational, health care and low- and middle- income housing stands • Encourages land-use and income group mixes to be based on local planning and needs assessment.
Emergency Housing Programme (EHP)	• Provides temporary housing in cases where informal settlement upgrading requires relocation while services are installed, or top structures erected. • Temporary housing for victims of natural or man-made disasters. • Land identified for emergency housing should be contained in the housing chapter of the Municipal (IDP).
Enhanced People’s Housing Process (EPHP)	• Encourages households to participate in provision of their own homes thus saving labour costs, avoiding payment of a profit element to developers and optimising control and decision making. • Provides beneficiaries with organisational, technical and administrative assistance. • Beneficiaries are not drawn from housing registers/waiting lists but are self-selected. • Beneficiaries work with a housing support organisation to produce their own housing solution

Programme	Applicability
Individual Subsidy Programme (ISP)	• Provides access to state assistance to qualifying households wishing to acquire an existing house/vacant serviced residential stand, linked to a house construction contract through an approved mortgage loan. • Encourages growth of secondary residential property market. • Provides access to funding through credit linked subsidies and non-credit linked subsidies.

Source: Taruza (2016:75)

The above housing programmes address the major challenges and opportunities faced in informal settlements. Their combined implementation has relevance on the realisation of SCD as they collectively address the elements of sustainability and resilience in human settlement development. However, this study places emphasis on the UISP since it is the main instrument for addressing informal settlements.

7.6.6 Upgrading of Informal Settlement Programme (UISP)

The Upgrading of Informal Settlement Programme (UISP) is an incremental housing programme that was introduced through the Breaking New Ground policy document to the support upgrading of informal settlements through a phased approach. The UISP places emphasis on in-situ upgrading but promotes relocation only in instances where the occupied land is unsuitable for development and the people participate in the resettlement voluntarily (Department of Human Settlements, 2009b:1). In this regard, the UISP aims to achieve the following outcomes:

- recognition and formalisation of tenure rights of the inhabitants of informal settlements;
- ensuring of health and security through the provision of basic services
- addressing of the social and economic exclusion of the poor through community empowerment and social and economic integration.

The UISP provides guidelines on the roles of each of the three spheres of government, funding opportunities for upgrading, community participation, tenure options, norms and standards, beneficiary identification, project phases, and guidelines for the implementation of projects (Department of Human Settlements, 2009b:1-4). Implementation of the UISP through phases is critical to the incremental approach and this is described in Table 7-5.

Table 7-5: Phases of informal settlement upgrading

Phase	Description
Phase 1: Application	Submission of Interim Business Plans including findings from desktop geotechnical screening, desktop environmental scoping, household counts, draft settlement layout to determine yield/need for relocation, preliminary workplan for and implementation, preliminary costing for the project.
Phase 2: Project Initiation	Activities include land acquisition, community survey, geotechnical survey, environmental impact assessment, installation of interim basic engineering services.
Phase 3: Project Implementation	Establish project management and housing support services capability, initiate planning processes, provide relocation assistance, land rehabilitation, resolution of any disputes, installation of permanent municipal engineering infrastructure, construction of social amenities and infrastructure, submission of final Business Plan.
Phase 4: Housing Consolidation	Finalisation of township establishment, ownership registration (where appropriate), house construction and construction of outstanding social amenities. This phase is administered through incremental housing programmes, as provided in Table 7-4.

Source: Adapted from Department of Human Settlements (2009b:43-44)

7.6.6.1 Support and criticism of the programme

In-situ upgrading of informal settlements acknowledges that inhabitants do not have anywhere else to go and have found a way to make a living where they currently are (NUSP, 2009b:22). This aligns with the principles of the right to the city and in turn creates a platform for SCD. The UISP recognises the significance of community engagement from the onset of the project to ensure the provision of housing that meets the needs of the people. The programme provides details of technical assistance to provinces and municipalities in their efforts to upgrade informal settlements, thus strengthening their capacity to meet the outcome.

However, the programme is also criticised for not recognising constraints in the fairly unpredictable land tenure system. The programme suggests automatic implementation of the successive phases without taking into consideration technical, financial and political constraints. Huchzermeyer (2008:12) points out that “while it promotes leasehold or even collective rather than individual freehold titling, the UISP is still a once-off intervention, assuming that a stable-end

state of formal housing is reached in its fourth phase. Venter *et al.* (2019:5) concur that despite being embedded in policy on housing through emphasis in the BNG, the concept of sustainability is underutilised in practise and upgrading programmes often do not consider regenerative practices within informal settlements. Therefore, the UISP does not promote sustainable community development to an extent.

7.6.7 National Upgrading Support Programme (NUSP)

National Upgrading Support Programme (NUSP) was introduced to support and fast-track the implementation of the UISP towards the realisation of the targets for the eradication of informal settlements. The NUSP provides support to municipalities towards “technical, design and community engagement, project development and integrated planning; and improving the knowledge base around informal settlement upgrading by highlighting best practices, creating networks of practitioners and undertaking research” (The Presidency 2010:18). According to (NUSP, 2016c:26) the following activities encompass the NUSP strategy to strengthen institutional capacity:

- “Active engagements with municipalities around informal settlement upgrade plans and projects (45 municipalities including the Mining Towns in Distress Programme);
- Rapid assessments, categorisation (refer to Table 7-6), and the development of settlement plans; and
- Introductory courses on UISP for municipalities”.

Table 7-6: NUSP informal settlement categories

Category	Description
A: Full conventional upgrade	Full upgrade in terms of services, top structures and tenure is appropriate, affordable, and viable; where full upgrading can take place in the short term.
B1: Incremental upgrade with essential services	Interim basic services provided as a precursor to an eventual full upgrade. These settlements are those which are viable for full upgrading in the longer term but where it is not imminent.
B2: Deferred relocation with emergency services	Sites where long-term formalisation is not viable or appropriate, but relocation is not urgent or possible
C: Immediate relocation	Settlements where there are urgent health or safety threats cannot be mitigated and an alternative relocations destination is readily available

Source: Adapted from (NUSP, 2016d:15-17)

The assessment and categorisation provide insight into the nature of the settlements, suitability of land for upgrading, prioritisation of informal settlements for different responses, allocation of budgets and the technical and related studies for the commencement of informal settlement upgrading. This is critical to SCD as the category determines how the capitals and vulnerabilities within the settlements can be maximised and mitigated respectively. Table 7-7 shows the financial mechanisms to be utilised for the upgrading of informal settlement.

Table 7-7: Financial mechanisms for informal settlement upgrading

Funding Streams	Brief Description	NUSP Category
Core		
Upgrading of Informal Settlements Programme (UISP) grant	Funding interim basic services, land acquisition, permanent engineering services.	A B1
Human Settlements Development Grant (HSDG)	Conditional grant to ensure the creation of sustainable human settlements through the provision of basic services	B1 B2
Urban Settlements Development Grant (USDG)	Finances the provision of serviced land with secure tenure and bulk and internal services for informal settlement upgrading Issued to metropolitan municipalities.	B1 B2
Municipal infrastructure Grant (M.I.G)	The provision of basic services such as water supply, sanitation and roads	B1 B2
Municipal own funding	Funds set aside by the municipality to provide interim or emergency services to informal settlements that are not yet identified to be part of a housing programme.	As determined by municipalities
Consolidation subsidy	Finances the development of top structures	A
IRDP	Engineering services, land acquisition, top structures on a greenfield development	A B2

Funding Streams	Brief Description	NUSP Category
		C
Circumstantial		
People's Housing Process grant (EHPH)	Provision of Top-structures and associated PHP social, planning and capacitation processes.	A B1
Community Rental Units (CRU)	Provision of rental housing typically medium density	A and B1 for potentially for rental housing solutions on densified upgrades B2 and C for alternative rental housing on relocations sites.
Rural Housing	In cases of peri-urban informal settlements located on traditional land	A B1
Neighbourhood Development Partnership Grant	Stimulate and accelerate investment in poor and underserved neighbourhoods including informal areas	As determined by the municipality

Sources: Adapted from Department of Provincial and Local Government (2004:1), Department of Human Settlements (2014a:16), NUSP (2015:10-14)

7.6.8 Priority Human Settlement Programme

The Priority Human Settlement Programme is the formulation of Policy Guidelines, Regulations and an Implementation Plan for the development of Priority Human Settlements and Housing Development Areas (PHSHDAs). The programme is intended to fast track housing delivery by ensuring that housing delivery is “used to restructure and revitalise towns and cities, strengthen the livelihood prospects of households and overcome apartheid spatial patterns by fostering integrated urban forms” Department of Human Settlements (2020:19). The programme focuses on:

- Shelter provision to low-income earners in areas of housing need where there is an established high demand and low supply of housing opportunities,
- Upgrading and/or redevelopment of precincts for purposes of housing to low-income earners in urban areas.

- Accelerating shelter delivery to low-income earners in an integrated manner within mixed uses and income spaces where the pace of delivery is slow, and
- Shelter provision at sufficiently large scale to integrate and re-order precincts without the monotony of design and place.

In this regard, the PSHSDAs seek to synchronise national housing programmes and the principles of the NDP, NSDF and IUDF as indicated in Figure 7-2.

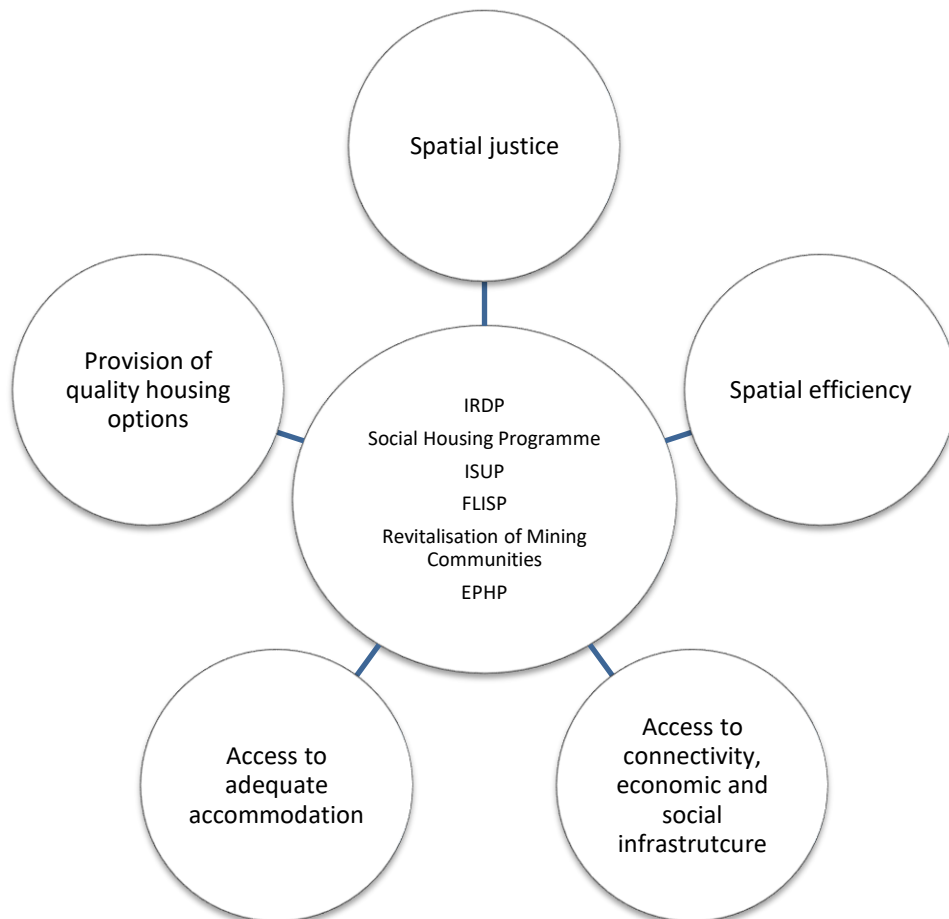


Figure 7-2: PSHSDAs principles and applicability

Source: Own Construction (2022)

These principles and the consolidation of these housing programmes present the opportunities to promote SCD in informal settlement intervention.

7.6.9 Built Environment Performance Plans

Built Environment Performance Plans (BEEPs) are inter-sectoral plans formulated to guide the alignment of the various built environment grants to fully harness the urban dividend within South African metropolitan municipalities. The principle is to enable metropolitan municipalities to

restructure their segregated and exclusionary built environments, based on the concepts of integration and transit-oriented development as articulated in the Urban Networks Strategy (UNS) (National Treasury, 2017a).

Since the UNS provides a hierarchy of prioritised urban nodes and corridors for investment, the BEPP plans identify specific integration zones and catalytic intervention programmes as the focus of future investment programmes across sectors (National Treasury, 2017b). BEPPs, through catalytic programmes, foster outcome-led development that promotes measurable built environment performance towards well governed, productive, liveable, inclusive and sustainable cities. These outcomes extend to informal settlements and align to the key objectives and requirements of BEPPs to ensure effective and sustainable upgrading of informal settlements. In this regard, National Treasury (2021?) provides that BEPPs should:

- “reflect the capacity, ability and progress to achieve MTSF targets;
- demonstrates the extent and quality of informal settlements planning and implementation in the context of spatial targeting;
- provides an opportunity for alignment and prioritisation of funding of informal settlements projects;
- demonstrate effective institutional arrangements and coordination with regard to informal settlements upgrading at city level; and
- reflect operational, and technical capacity infused with social acumen to implement complex upgrading projects”.

In line with the Urban Network Strategy, the City of Ekurhuleni (CoE) identified five (5) Integration Zones (development corridors), marginalised areas (informal settlements, townships and inner-city areas) and growth nodes (commercial and industrial) to ensure focused development in achieving spatial transformation (CoE, 2019:187). The municipal BEPP indicates the location of and the targeting guidelines for informal settlements in relationship integration zones and the budget allocation for upgrading of the informal settlements (EMM, 2017).

These create the platform for SCD as it reflects spatial integration into the urban fabric, socio-economic integration of marginalised communities into society, the impact on the natural environment, and the potential for investment in the upgrading of the settlements. However, the absence of assessment criteria on the indicators and progress made towards governance, inclusivity, productivity and sustainability may hamper the prospects of SCD in the upgrading of informal settlements in Ekurhuleni and all the other metropolitan municipalities.

7.6.10 Housing Chapter of an IDP (Housing Sector Plan)

The Housing Chapter of the IDP also has a significant bearing in housing developments. According to Department of Human Settlements (s.a:5), the purposes of the Housing Chapter are to:

- Ensure effective allocation of limited resources;
- Provide guidance in the prioritisation of housing projects;
- Provide effective linkages between the spatial development locations and the project locations;
- Ensure a definite housing focus in the IDP and SDF with future housing delivery across all social and economic categories; and
- Ensure the contents and process requirements of planning for housing are adequately catered for in the IDP process.

These provide for the integrated planning and development of social, economic and environmental facilities at neighbourhood level concomitant with upgrading activities. The quality of project plans and IDP Housing Chapters needs to be improved to support progressive informal settlement upgrading.

7.7 Governance

7.7.1 Intergovernmental Relations Framework Act 13 of 2005

The *Intergovernmental Relations Framework (IGRF) Act 13 of 2005* was implemented to facilitate institutional arrangements and structures for bilateral and multilateral co-operation within and among the three spheres of government. The Act addresses the provisions of Chapter 3 of the *Constitution* to provide a framework to guide the spheres of government in the coordinated implementation of policies and legislation for coherent government, provision of services and realisation of national priorities (South Africa, 2005).

Since informal settlement upgrading is a cross-cutting issue among all three spheres of government and multiple sectors, the IGRF enables efficient and sustainable intervention. According to Aluwani (2013:55) intergovernmental relations are intended to promote and facilitate co-operative decision-making and ensuring that policies and activities of all spheres of government encourage service delivery and meet the needs of citizens in an effective way. Also,

the principle of a three-tiered relationship where each sphere and line of government retains its unique character while precluded from acting independently (Kotze, 2009:20). Therefore, informal settlement upgrading through intergovernmental delivery will address all constructs of sustainable development, provide for the real needs of the people and ensure timely delivery; thus, contributing to SCD.

However, lack of intergovernmental alignment often hinders the successful project and programme implementation in the upgrading of informal settlements. The disjuncture between municipal and provincial operations is one of the major challenges. According to CoGTA (2016:44-46) insufficient collaboration at this horizontal planning level, complex division of powers and functions among the three spheres of government and the detachment of sectors and departments hinder the opportunity to integrate and align development initiatives such as informal settlement upgrading. Thus, compromising the implementation of a successful and sustainable upgrading programme.

7.7.2 Local Government: Municipal Structures Act (117 of 1998)

The *Local Government: Municipal Structures Act 117 of 1998* (*Municipal Structures Act*, hereinafter) provides for the types and categories of municipalities as well as the appropriate division of functions and powers between categories of municipality. Parts 1 and 2 of the Act define the categories of municipalities and the types of municipalities within each category. In terms of Part 1, Section 2 of the Act, a category A municipality is a conurbation regarded as a single area which is the centre of economic activity and “has strong social and economic ties to its constituents”. This translates to metropolitan municipalities in South Africa. Category B and C municipalities are local municipalities that are not regarded as conurbations and district municipalities, respectively. Since the housing function falls out of the scope of category C municipalities, this study focuses on Category A and B municipalities.

This study argues that municipal categories determine the outcome of informal settlement upgrading programmes. Whereas metropolitan municipalities (Category A) have the housing function, the bureaucratic process for local municipalities (Category B) deters the successful implementation of informal settlement upgrading programmes and projects. Thus, the provisions in this Act guide the assessment of the performance of municipalities in the upgrading of informal settlements.

7.7.3 Local Government: Municipal Systems Act 32 of 2000

The core components of the *Local Government: Municipal Systems Act 32 of 2000* (*Municipal Structures Act* hereinafter) are progressive realisation of social and economic empowerment of

local communities; and promoting access to essential services that are affordable to all. This hinges on enabling community participation, promoting integrated development planning, and carrying out performance management.

7.7.3.1 Community participation

Effective community participation requires a municipality to develop mechanisms to consult with communities and community organisations on development and planning issues such as the upgrading of informal settlements. In adherence to Section 16 of the Act, municipalities should foster community participation through allocation of funds for such participation and contributions to capacity building of the local communities. This empowers communities to understand the issues revolving around them and provide solutions to the challenges.

In terms of Section 17 of the Act, municipalities should employ mechanisms that take ensure that all groups within communities participate in informal settlement upgrading programmes, including those groups with special needs. This will enable the municipality to understand and review the needs of all the groups within informal settlements and municipal priorities and strategies for meeting those needs.

Section 17 also stipulates the processes and procedures to consult with communities and procure their participation in the planning processes. This section solidifies the role of ward councillors and committees as key stakeholders in addressing issues pertaining to informal settlements. However, ward councillors are often fraught with problems which include politics of representation, power play and party politics (Tshoose, 2015:15). This hinders the fulfilment of their role as the bridges between the public and the administrative structures of the local sphere of government.

7.7.3.2 Integrated Development Planning

The Municipal Systems Act emphasises the need for integrated development planning. Section 24 of the Act provides for the significance of alignment of development plans and strategies across all spheres of government and other organs of state. This means that all stakeholders and the subsequent plans and strategies should align in the upgrading of informal settlements. However, the Act does not clearly stipulate the need for co-operation with non-governmental stakeholders within the private sector; yet their contributions to the upgrading of informal settlements cannot be overlooked. The preparation and adoption of Integrated Development Plans (IDPs) is enshrined in Sections 25 to 30 of the Act.

7.7.4 Integrated Development Plans

The IDP is the principal strategic planning instrument which guides and informs all planning and development as well as decisions regarding planning, management and development in the municipality. The five-year plan guides short-term and long-term developments and aims to co-ordinate the work of all spheres of government to improve the quality of life for all the people living in an area. These provisions of the IDP are discussed in the subsequent sections.

7.7.4.1 Meeting basic needs and alleviating poverty

According to Phago (2009:485) “The IDP as a policy framework reduces poverty through multi-sectoral programmes that include a variety of developmental initiatives including provision of services such as water, sanitation, electricity and housing”. Mabuza (2016:30-32) extends that the integrated development planning process provides a forum for identifying, discussing and resolving the real issues in a municipality to a level of detail which is required for realistic intervention and enhances the project implementation process without much delay.

In this regard, priority issues are identified through a process of analysing the existing local situation and focusing on the problems facing the municipality and the people living in the area, as well as its development potentials. The IDP identifies the challenges within the municipality including the prevalence of informal settlements, takes into account the existing conditions and problems and resources available for development, sets a framework for how land should be used, what infrastructure and services are needed and how the environment should be protected; resulting in effective use of scarce resources. Thus, the IDP is a critical tool that promotes effective intervention in addressing informal settlements.

However, the IDP has been criticised for failing to steer the provision of basic services and poverty alleviation. Though basic service provision and poverty alleviation may be listed as the main goals or Key Priority Areas (KPAs) of an IDP, these goals are often not reached in practice especially when it pertains to informal settlements. According to Maake (2016:188-190) the planning and implementation of IDPs does not always result in sustainable service delivery due to lack of alignment between plans contained in the IDP and the allocated financial resources and inadequate stakeholder engagement in the planning and implementation of the IDP.

Mathebula (2018:568-570) concurs that the gaps in the implementation of the IDPs in municipalities affect the state of service delivery and adds that ‘the success of the IDP as a delivery machinery would be on the basis in which it is able to deliver all the services incorporated in’. In this regard, the failure of an IDP to provide basic services and needs as well as alleviating

poverty as stated in document, renders it ineffective as a strategic tool to promote SCD in addressing informal settlements.

7.7.4.2 Integration of various plans, sectors and spheres

The IDP is a critical tool for ensuring SCD in addressing informal settlements through social, function and economic integration; planning for social, economic and environmental sustainability; as well as the co-ordination of departmental and sectoral plans and budgets. Table 7-8 and Figure 7-3 show the elements of integration and sustainability that can be achieved through the implementation of an IDP and the components of an IDP that can be utilised to achieve this integration and sustainability.

Table 7-8: Integration and sustainability through the IDP

	Integration	Sustainability
Functional or Environmental	Ensuring the availability and accessibility of a wide range of services and amenities required for everyday life	Protection of the environment and conservation of non-renewable natural resources
Social	Catering different cultural, age, and income groups through various housing typologies, tenure and financial options	Meeting the basic social needs of all communities and ensuring consequential community engagement
Economic	Catering for diverse income groups through range of different scales of economic activities possibilities and opportunities.	Adequate employment and livelihood opportunities, economic growth and general and individual prosperity

Source: Own construction based on Nelson Mandela Bay Municipality (2007:17-19)

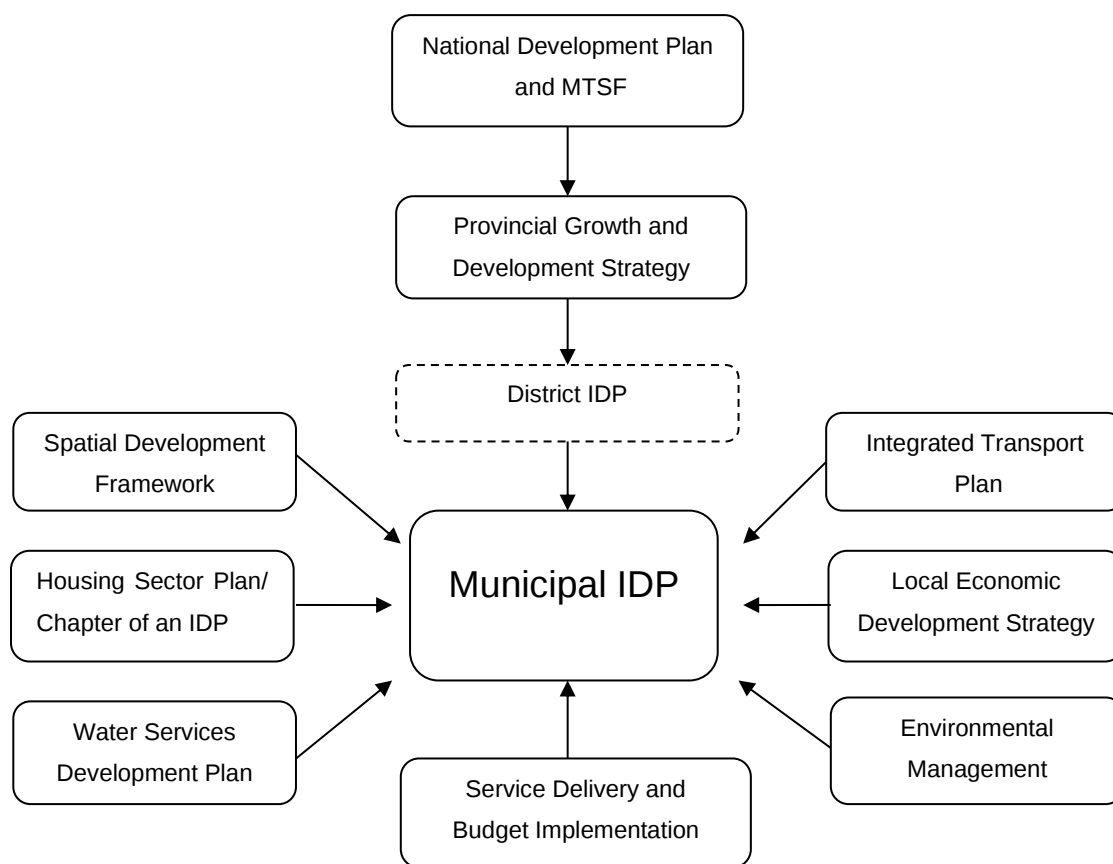


Figure 7-3: Multi-sectoral components of an IDP

Source: Own construction (2022)

According to Sowman and Brown (2006:699) “the integration of diverse sectoral strategies in an IDP allows for the optimal allocation of limited resources between sectors and across communities in a manner that promotes (re)distribution and the empowerment of the poor and marginalised”. Since addressing informal settlements and improving the quality of life within these settlements is a cross-cutting issue among different sector, the IDP can be utilised to ensure SCD in informal settlement upgrading.

7.7.4.3 Public participation

The IDP further promotes SCD through public participation. In terms of Chapter 4 of the *Municipal Systems Act* “a Municipality must encourage and create conditions for the local community to participate in the affairs of the Municipality”, including in “the preparation, implementation and review of its Integrated Development Plan”. In this context, the preparation of the IDP provides the platform for the communities from informal settlements to present and suggest possible strategies and solutions to the challenges they face. This will promote the implementation of sustainable solutions, thus ensuring SCD. According to Fuo (2013:259) promoting public

participation in the design and implementation of the IDP is key in the pursuit of social justice as governments can better understand and prioritise the actual needs of the poor.

However, in practice, the use of the IDP as a participatory tool for SCD is limited. Communities are often excluded from or are unaware of the opportunities to present their challenges as part of the IDP preparation process. Mashaimate and Madzivhandila (2014:229) argue that although the IDP process is regarded as an ideal management tool to promote and enforce participation of communities on issues that affect them, most communities are excluded or are unwilling to involve themselves in matters that affect their lives at municipal level.

This, to an extent, is due to the lack of understanding of the concept of the IDP from both the communities and municipal officials. Dywili (2017:75) recognises the public's lack of knowledge on public participation and the IDP as a hindrance to successful and satisfactory public participation. Dzingai (2016:192) adds that municipal officials often face challenges in conducting meaningful public participation due to lack of understanding the IDP and its entire cross cutting issues.

This in turn, has also led to insignificant and unsatisfactory community engagement as municipalities merely attempt to adhere to the legislative requirements of the Municipal Systems Act. According to De Visser (2005:106) public participation as part of the IDP processes are often unsustainable due to municipalities and consultants conducting public participation "with the Systems Act in mind", resulting in a "technical exercise where officials tick off the relevant sections in the Act after yet another poorly attended public hearing".

Politics also plays a role in hindering successful public participation. Asha and Makalela (2019:7) acknowledge inadequate public participation as an inhibiting factor in the planning and implementation of the IDP and cite violence and civil unrest as the main hindrances towards successful ward consultation meetings for the identification and prioritisation of community needs. Fuo (2013:260) concedes that communities often ignore the mechanisms created for public participation in local governance in favour of street protests. In this regard, there is need to address these issues when planning for public participation as a critical component of SCD in informal settlement intervention using the IDP.

7.8 Supporting policies and legislation

Since informal settlements are multi-dimensional, Table 7-9 provides some of the legislation and policies that also impact on informal settlements and the achievement of SCD.

Table 7-9: Supporting policies and legislation

Policy, Legislation or Strategy	Relevance to study
<i>National Environmental Management Act 107 of 1998</i>	Upgrading or relocation of informal settlements in areas that were not initially designated for residential development requires preparation of EIPs by the National Department of Human Settlements
<i>Disaster Risk Management Act No. 52 of 2002</i>	Any settlements that must be urgently relocated because they are seriously dangerous or hazardous.
<i>Division of Revenue Act No. 9 of 2021</i>	Fosters equitable division of revenue raised annually among the national, provincial, and local spheres of government. This means that the different categories of municipalities should get equitable funding to address informal settlements
<i>Local Government: Municipal Finance Management Act No. 53 of 2003</i>	Establishing norms and standards for ensuring transparency, accountability, and appropriate lines of responsibility in budgeting and funding informal settlement upgrading
Distressed Mining Towns Programme	The aim of the intervention is amongst others to use the development of sustainable human settlements in mining towns to stimulate economic growth and thereby improve the socio-economic conditions of informal settlements in mining towns.
Gauteng Township Economy Revitalisation Strategy (2014-2019)	Identification and maximisation of formal and informal economic opportunities within informal settlements
Gauteng G2055	The vision for 2055 focuses on the creation of a 'liveable, equitable, prosperous and united GCR. This will be attained through sustainable development and infrastructure; equitable growth; social inclusivity and cohesion; and good governance

Policy, Legislation or Strategy	Relevance to study
Gauteng 10-Pillar Programme of Transformation, Modernisation and Re-industrialisation	Addressing of poverty, inequality and unemployment within the GCR
Gauteng Growth Management Perspective (2014)	Spatial, social and economic integration of informal settlements while curbing urban sprawl
Gauteng 25-year Integrated Transport Master Plan (2013)	Subsidised housing provision should be within urban core areas Land-use densification should be in support of public transport Mainstreaming of non-motorised transport
The Municipal Indigent Policy	Intended to guide the national initiative to improve the lives of indigents and to improve access to Free Basic services.

Source: Own construction (2022)

7.9 Conclusion

This chapter examined the policies and legislation as instruments for SCD in informal settlement intervention in South Africa. Although the SDGs and NUA are international policies and strategies, they guide national policies and strategies in addressing informal settlements. The *Constitution* is the overarching legislation and emphasises ensuring access to adequate housing as a basic human right, intergovernmental intervention in addressing and community participation in addressing informal settlements.

The NDP defines the national goals for holistic development and the MTSF stipulates the targets to achieve these goals, including the upgrading of informal settlements. The spatial planning and land use management policies and legislation guide land use management and land development to promote spatial sustainability, justice, efficiency, resilience and good governance in addressing informal settlements.

The focus of the human settlement development policies and legislation is promoting the realisation of adequate housing. This is mainly based on distinguishing the roles and responsibilities for each sphere of government, enhancing tenure security, identification of land and capacitating municipalities, categorisation and upgrading of informal settlements and creating

opportunities for investment in informal settlement intervention. All toward the creation of sustainable human settlements.

The governance policies and legislation emphasise intergovernmental coordination, the roles and responsibilities of the three spheres of government, integrated development planning, and community participation. The supporting policies and legislation guide and provide for environmental management, economic development, disaster risk management, poverty alleviation, integration as well as equitable division of funding and transparency in financial management as pertains to addressing informal settlement.

Overall, the policies and legislation are both lauded and criticised for focusing on the provision of basic services and physical structuring and ordering with less emphasis of the socio-economic aspects of intervention. Therefore, this chapter forms the basis for assessing **extent to which government planning instruments are effective in ensuring spatial sustainability and SCD in the addressing of informal settlements**. More insight is gained through examining the status quo of informal settlement intervention within the GCR in Chapter 8.

CHAPTER 8 INFORMAL SETTLEMENT INTERVENTION WITHIN THE GAUTENG CITY REGION

8.1 Introduction

The GCR is yet to overcome the remnants of apartheid spatial planning which continue to mar South Africa more than 20 years after independence. Spatial, economic and racial fragmentation define concentrations of poor people living on the peripheries of wealthier urban cores, while being excluded from the main economic opportunities the city offers (Gauteng Provincial Government, 2015:14).

While the previous chapter focused on an assessment of the policies and legislation regarding planning intervention in addressing informal settlements, this chapter provides insight into the status of informal settlement intervention within the GCR. This entails an investigation of the progress that has been made by the national and provincial government against the MTSF (2014-2019) targets. At local level, the focus is on the progress made on the upgrading of informal settlements against the municipal and provincial targets and goals.

Informal settlement intervention within Ekurhuleni Metropolitan Municipality and Rand West City Municipality provide insight into the fastest growing but least performing metropolitan and a declining mining town in Gauteng, respectively. For each municipality, a category A or B1 and category C informal settlement is assessed to give perspective on different intervention approaches within a metropolitan (Ekurhuleni) and local (Rand West City) municipality. This is attained through providing the background details of the municipality, examining the general intervention measures at municipal level, and assessing the background, physical attributes, socio-economic profile and governance of two informal settlements within a municipality. Therefore, Chapter 8 reflects on the following questions:

- **What is the current state of informal settlement intervention within the GCR?**
- **Are there different perspectives towards SCD in informal settlement intervention based on municipal categories?**

The flow of this Chapter is illustrated in Figure 8-1.

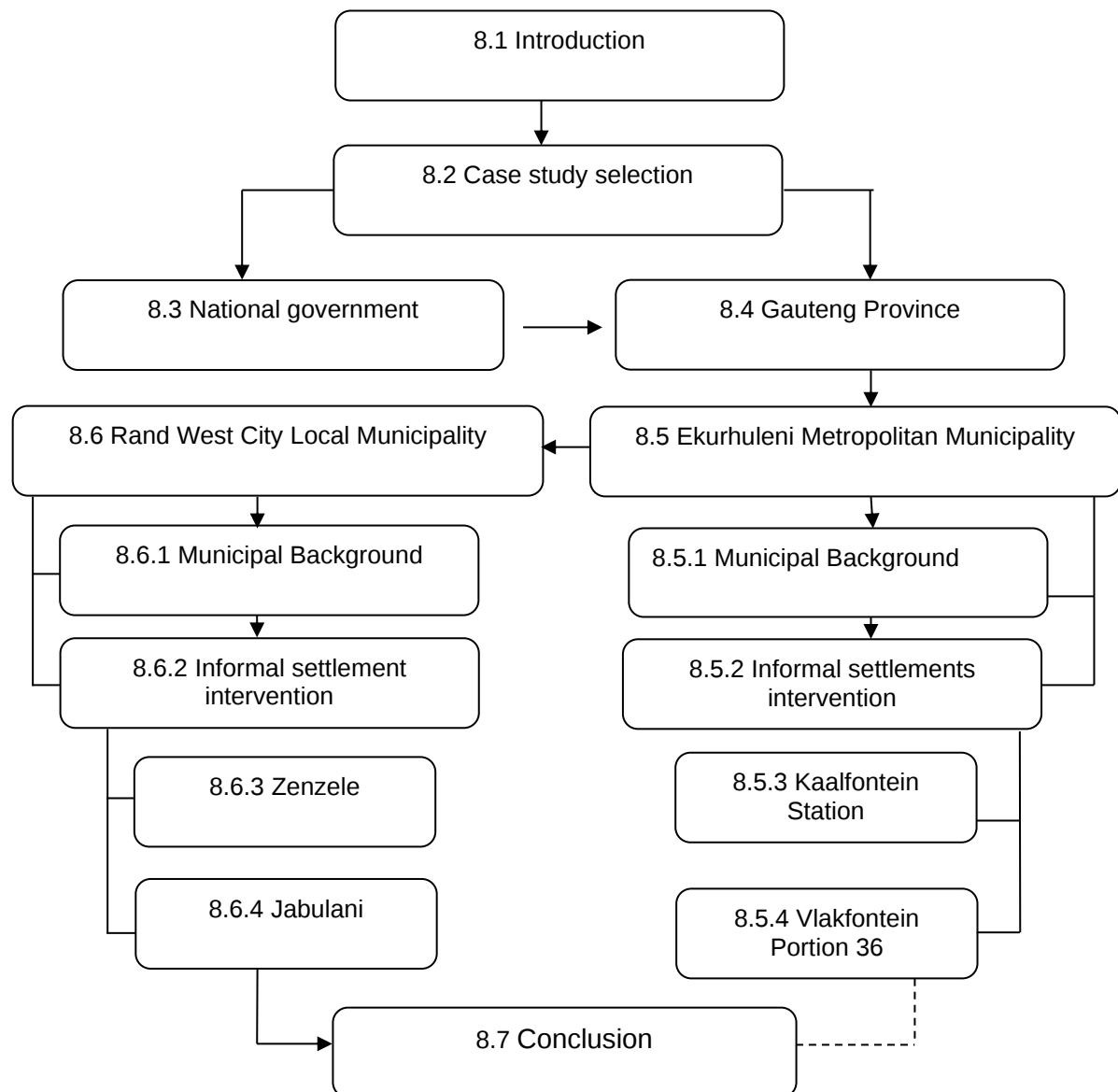


Figure 8-1: Chapter 8 flow diagram

Source: Own construction (2022)

8.2 Case study selection

This study seeks to determine whether there are different approaches in informal settlement intervention based on municipal categories within the GCR. The study is based on the core of the GCR, that is, Gauteng Province to curb the complexity regarding the gathering of data across provinces. Within Gauteng, convenience sampling was used to select the informal settlements under study within the respective municipalities. The main criteria were the availability of data on informal settlement category, spatial and socio-economic elements of the settlements, GIS data for modelling and mapping as well as any other data that could be attained, including secondary data. The settlements were also selected based on the accessibility of community leaders in

alignment with another project that the researcher was participating in. This is detailed in Annexure D.

Due to the differences in data sources and the data formats, the details on the informal settlements are presented under different chapter subheadings. Details from informal settlements within the same municipality are presented in the same format. Regardless, the researcher endeavoured as much as possible to gather data as similar as possible to presents and compare the physical aspects of the informal settlements.

8.3 National government

The number of informal settlements in South Africa has increased significantly since 1994 from 300 to 2 700 settlements. Despite having the largest housing delivery programme in the world, informal settlement upgrades rarely respond directly to government's intent of spatial integration and spatial justice (Department of Planning, Monitoring and Evaluation, 2020:3). As part of the MTSF 2014-2019:

- 2035 of the 2200 informal settlements were assessed (Department of Human Settlements, 2018:33-34);
- 1151 of the 2200 informal settlements upgrading plans were developed (Department of Human Settlements, 2018:33-34);
- 691812 of the 750 000households were upgraded to Phase 2 through the use of USDG and HSDG (Department of Human Settlements, 2020:48-50);
- Nine Provinces and eight Metros were supported with the implementation of informal settlements upgrading programme (Department of Human Settlements, 2020:48-50); and
- Assessments, prioritisation, funding and delivery of 13 657 sites and 307 304 in distressed mining communities as part of the UISP (Department of Planning, Monitoring and Evaluation, 2016b:11).

The summative data from various reports indicates that the government did not meet both MTSF targets as pertains to informal settlements. Still, the upgrading of informal settlement to Phase 2 means that approximately 92% of the targeted settlements had access to basic services, a critical component in the life within these settlements. Though outside the term of the 2015-2019 MTSF, the national government also apportioned funding to prevent, contain, manage and mitigate the spread of COVID-19 in informal settlements in the designated metropolitan municipalities (Department of Human Settlements, 2020:17).

8.4 Gauteng Province

8.4.1 Background

Gauteng is the smallest but most populous province in South Africa's provinces within which 26.3% (approximately 15,81 million people) of South Africa resides (Stats SA, 2019: v). The province comprises 3 metropolitan municipalities (City of Ekurhuleni, City of Johannesburg and City of Tshwane) two district municipalities (Sedibeng and West Rand), and 6 local municipalities (Midvaal, Emfuleni, Lesedi, Rand West City, Mogale City and Merafong City).

Gauteng contributes 33.9% to South Africa's Gross Domestic Product and is also one of the biggest contributors to the economy of the continent (GCIS, 2021:5). As a result, migrants from all over South Africa and the rest of Africa are attracted to the province to access that better work and education opportunities (Gauteng Provincial Government, 2016:ix). The high rate of urbanisation and the failure of housing system to meet the housing demand has led to the proliferation of informal settlements (Hammann *et al.*, 2018).

These settlements occur primarily on the periphery of the urban structure with few select nodes undergoing densification. The increase in the numbers of informal settlements is marked with land invasion and the heightening of issues around land availability and spatial fragmentation within the province.

8.4.2 Informal Settlement intervention

There are approximately 820 informal settlements within Gauteng (GDHS, 2021). The highest concentration of informal settlement is City of Johannesburg Metropolitan Municipality, closely followed by Ekurhuleni Metropolitan Municipality (GDHS, 2014?:1). GDHS (2019:11) indicates that 43323 households were upgraded, exceed the 41275 MTSF target by 4.9%. Though this target was achieved, all metropolitan municipalities did not meet their targets. This indicates that the rest of the upgrades were implemented by the provincial government on behalf of local municipalities.

However, the metropolitan municipalities faced challenges in achieving their set targets due to under budgeting/ allocation of UISP funds, lack of clear alignment of funding from various funding sources, confusion regarding the setting and reporting of MSTF targets and physical settlement conditions (National Treasury, 2021?). The provincial department has also indicated the following as the factors hampering effective intervention in informal settlements: poor integrated planning across the 3 spheres of government, underperformance of contractors and flaws in contract management, ineffective social facilitation, lack of consistent implementation of funding

agreements and SLAs and accountability, inconsistencies in the management of the beneficiary lists and illegal invasions (GDHS, 2019:19 -21).

8.5 Ekurhuleni Metropolitan Municipality

8.5.1 Municipal Background

Ekurhuleni Metropolitan Municipality (EMM) is a Category A municipality positioned, along with the Sedibeng District as the eastern most administrative region of the Gauteng Province. The city is divided into 6 administrative regions, that is, Regions A to F. With a total surface area of 1975 km², the city functions as the manufacturing heartland of South Africa and is home to diverse industrial complexes and processing facilities as well as the O.R. Tambo International Airport and the logistical hub which surrounds the airport (CoE, 2015:22; IHS Markit, 2020).

The municipality was selected for study because it displays the fastest population growth rate of any of the major metropolitan municipalities in the country and has the third highest number of informal settlements. Table 8-1 shows municipal details that have a bearing on informal settlements and measures to address them in terms of the urban form, household details, levels of poverty, levels of inequality (Gini coefficient), quality of life (Human Development Index), municipal governance and the state of human settlements among other issues.

Table 8-1: EMM Municipal background

Urban form	
<i>Transport access</i>	Well-established transport system - rail, road and air which is a strong resource to attract and accommodate future development
	Functional public transport
	Transit oriented development with the potential to connect the major CBDs to regional, district and local nodes and creates connectivity between historic township localities and the primary economic nodes of the city.
<i>Major nodes</i>	Major regional nodes within the context of the province: Kempton Park, Germiston, Alberton, Boksburg, Benoni, Brakpan and Springs CBD's District nodes: Tembisa, Tokoza, Tsakane and Daveyton
<i>Spatial structure</i>	Most densely populated region in Gauteng - 2023 people per square kilometre
	Dispersed urban footprint exerting pressure on service delivery and transport system
	Challenge to optimise land uses within Integration Zones and achieve the densities that will make public transport more sustainable.
	Mining belt separate poorer areas from affluent areas
	Existing core urban areas insufficient to cater for growing needs of residential areas
	Extensive open space system
	Significant development potential within agricultural areas, which can be utilised to support the aerotropolis
Socio-economic profile	
<i>Population</i>	3.9 million (fifth largest metropolitan municipality)
	2,4 % annual growth
	51% male, 49% female
<i>Migrants</i>	From outside South Africa – 4%
<i>Dependency ratio</i>	45,56040757
<i>Number of Households</i>	1132483
<i>Average household size</i>	2,6
<i>Female headed households</i>	32,8%
<i>Literacy rate</i>	91,5%
<i>Level of education</i>	Matric - 37%
	Tertiary - 15%
<i>Economically Active Population</i>	49%
<i>Employment</i>	Unemployment- 32%. Always higher than the provincial and national rates
	Formal employment - 86% of total employed
	Informal employment - 14% of total employed
<i>Level of income</i>	Average annual household income is R 29 400
	56% of households have an annual household income lower than R40 000
	18% have no income
<i>Poverty</i>	Population below national upper poverty line - 47,7%
	Population below food poverty line - 20,4%
	Poverty gap rate - 30,9%
<i>Health</i>	Life expectancy - 61,2 years for males and 66,7 years for females

<i>Crime</i>	Relatively low recorded rates of most crime types
<i>Gini-coefficient</i>	0,63 (highly unequal)
<i>HDI</i>	0,71 (high)
<i>GVA</i>	Major sector - community service at 40,7%
Governance	
<i>Governance system</i>	Executive Mayor and mayoral committee
<i>Governance Performance Index</i>	Score (Where 1 is best) Overall - 2,05 Planning and monitoring - 1,85 Service delivery - 1,25 Development - 1,7 Administration - 3,5 GPI 2021 Metro Rank - 7 out of 8 Municipalities
<i>CSIR Political Vulnerability Index</i>	High vulnerability to political instability
Human Settlements	
<i>Access to housing</i>	Formal housing - 77,3%
	Informal housing (shack in backyard and shacks not in backyard) - 21,3%
<i>Housing backlog</i>	288433
<i>Informal Settlements</i>	119 informal settlements 494,000 informal housing units
<i>Access to basic services</i>	Water - 98%
	Improved sanitation - 91%
	Refuse removal (weekly or less) - 93,7%
	Access to electricity - 90%

Source: Own construction based on: CoE (2019: xii-xiii, 27-28, 46, 54); CoGTA (2020:17,23,30); Gauteng Provincial Government (2016:77); IHS Markit (2020); SACN (2020:34); Stats SA (2016:22); Stats SA (2020).

8.5.2 Informal settlements intervention

There are approximately 119 informal settlements and 494,000 informal housing units within EMM (CoE, 2019:46). EMM presents a unique scenario where all the informal settlements in EMM are located within the urban growth boundary. On the other hand, approximately 40% of the settlements are underlain by dolomite resulting in the vulnerability of the inhabitants to sinkholes. The location of these informal settlements is presented in Figure 8-2.

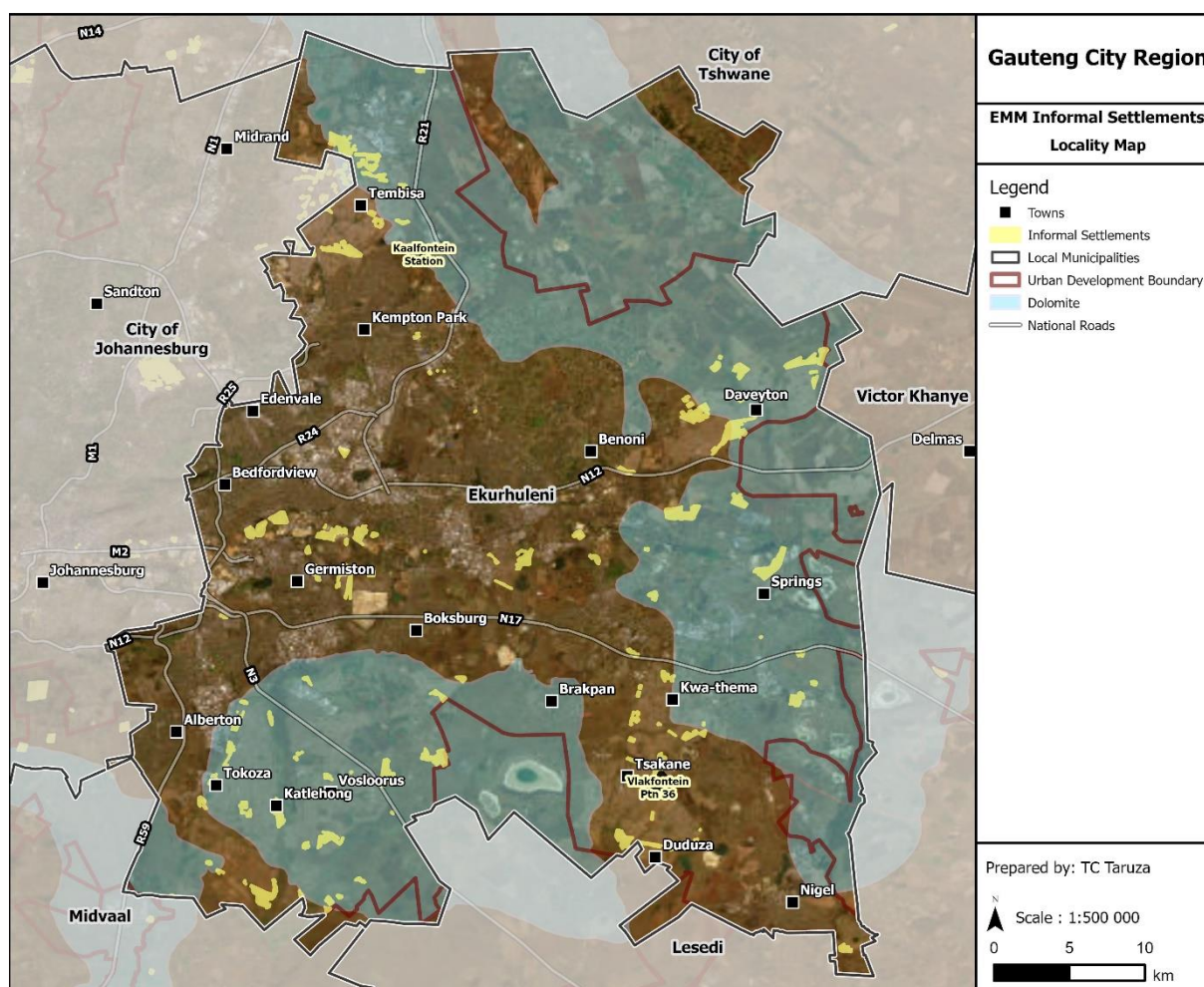


Figure 8-2: Location of EMM informal settlements

Source: Own Construction (2022)

The municipal IDPs indicated that the five-year target was to upgrade 37 informal settlements for the MTREF term (CoE, 2019:304). Table 8-2 provides a perspective on the municipal endeavours to address informal settlements in terms of the relevant three KPAs.

Table 8-2: EMM provision of basic services in informal settlements

KPA	Target	Percentage Municipal Capital Budget	Responsible Department	Source of funding	Progress
Electrification of all informal settlements	Electricity/energy in all informal settlements (100%)	2,79	Energy	USDG	Electrification of informal settlements in Winnie Mandela and many more Installation of photovoltaic 38496 lighting units in informal settlements
Upscale basic service delivery in qualifying informal settlements	Provision of water, sanitation, waste and energy to all informal settlements	0,21	Water and Sanitation	USDG External Loans	Provision of 10899 chemical toilets improving the ratio of chemical toilets to households from 1:10 to 1:5 in some of the informal settlements
Human settlements	Upgrade 37 informal settlements	16,23	Human Settlements	USDG	Eight informal settlements upgraded

Source: Own construction based on CoE (2019:46,318-319); CoE (2018:43-44, 208, 309)

Other measures have been employed to address informal settlements including reblocking and the deployment of municipal police and land to curb the invasion of informal settlements (CoE, 2018:47; SACN, 2021:12; van der Westhuizen, 2017:4). The municipality also aimed to ensure that 1708 households access subsidy units in integration zones that come from informal settlements (CoE, 2018:47).

NUSP produced an Informal Settlement Upgrading Strategy (ISUS), Assignment Implementation Plan, Informal Settlement Assessment and Categorisation, Upgrading Plans and Sustainable Livelihoods Programmes (SLPs), an Integrated Informal Settlement Upgrading Programme and a Close-Out Report for 33 informal settlements within EMM (Aurecon, 2016a:1-1). The next sections provide insight into addressing informal settlements that must be upgraded in-situ and those that have to be relocated.

Please note: The page numbers from most Aurecon 2016 citations represent the Chapter/Series number and the page number in the series; as indicated in the source document. For example, Aurecon, 2016b:13-4-6 whereby 13 represents the Chapter number and 4-6 are the page numbers in the Chapter.

8.5.3 Kaalfontein Station informal settlement

8.5.3.1 Background and physical attributes

Kaalfontein Station is an informal settlement within Region B of EMM. The settlement covers 19.6ha of land that was zoned for agricultural and industrial use and belongs to Transnet and two private owners (Aurecon, 2016b:13-4). The settlement is immediately adjacent to three high order roads namely Sam Molele, Modderfontein and Pretoria Roads and Kaalfontein Metrorail station. Kaalfontein station is located on dolomitic land, with dolomite at surface and is prone to flooding (Aurecon, 2016b:13-4). As a result, the informal settlement is categorised for (Category C), that is, Rapid Relocation (Aurecon, 2016b:13-21). The settlement falls within Integration Zone 1 and the settlement also forms part of the Ekurhuleni Northern PSHDA (CoE, 2019:46). Figure 8-3 and Figure 8-4 show a closer view of the locality and the physical conditions of the informal settlement.

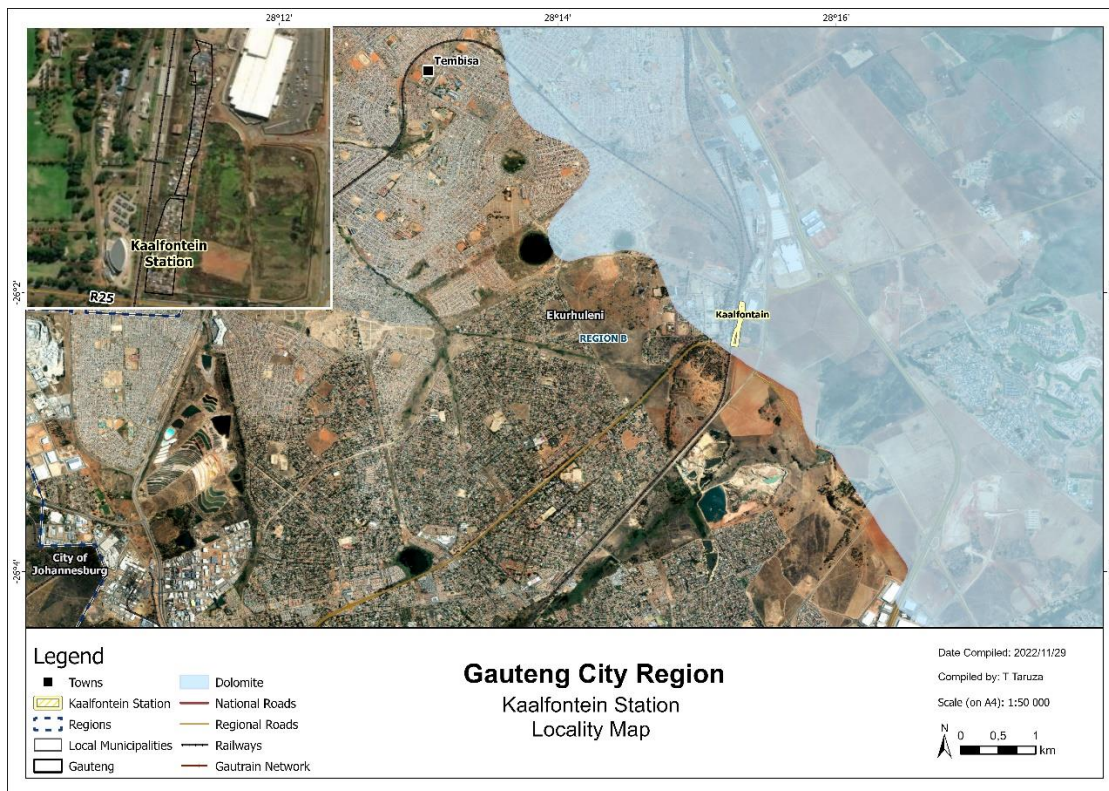


Figure 8-3: Kaalfontein Locality Map

Source: Own construction (2022)



Figure 8-4: Kaalfontein physical conditions

Source: Community visit (2021)

8.5.3.2 Socio-economic profile

Approximately 282 households reside in the informal settlements (Aurecon, 2016c:10-101). It is estimated that 66% of the households are headed by female, showing a greater concentration of female headed households in the informal settlements than the rest of the municipality. The projected population pressure is high growth, meaning that area will experience greater than or equal to 60% population increase between 2011 and 2050 (Le Roux *et al.*, 2019). According to Aurecon (2016c:10-105), 95.2% of households do not have dependants, indicating a low dependency ratio. However, families of approximately six members also form part of the Kaalfontein Station community; with most of them constituting grandmothers looking after their grandchildren (Community visit, 2022). It is reported that 0.4% of the residents have sight disabilities (Aurecon, 2016c:10-133).

Most of the inhabitants are South African nationals with approximately 95% holding South African Identity Documents (IDs). Social ties are a significant component of the settlement as 46.1% have been staying in settlement for more than 10 years, 27.7% have been there for 6-10 years and the rest have been in the settlement between 0-5 years. The occupation status shows that 83.8% of the households own their shacks, 12.9% rent for approximately R350 per month and 3.3% have other arrangements (Aurecon, 2016c:10-101 – 10-135).

The levels of education are relatively low as 1.8% have no formal education, 21.8% reached matric and 0.4% have diplomas without matric (Aurecon, 2016c:10-139). Figure 8-5 shows that the greater proportion of the population is unemployed. Spaza shops and informal jobs such as car repairs dominate the informal sector in this settlement. However, Figure 8-5 shows that they constitute a smaller proportion of the employment status. Most of the residents have access to social grants and 4.6% of the households are potential beneficiaries of household subsidies (Aurecon, 2016c:10-139; Community visit, 2022). Figure 8-6 provides further insight into the household financial capital and potential for qualification for household subsidies.

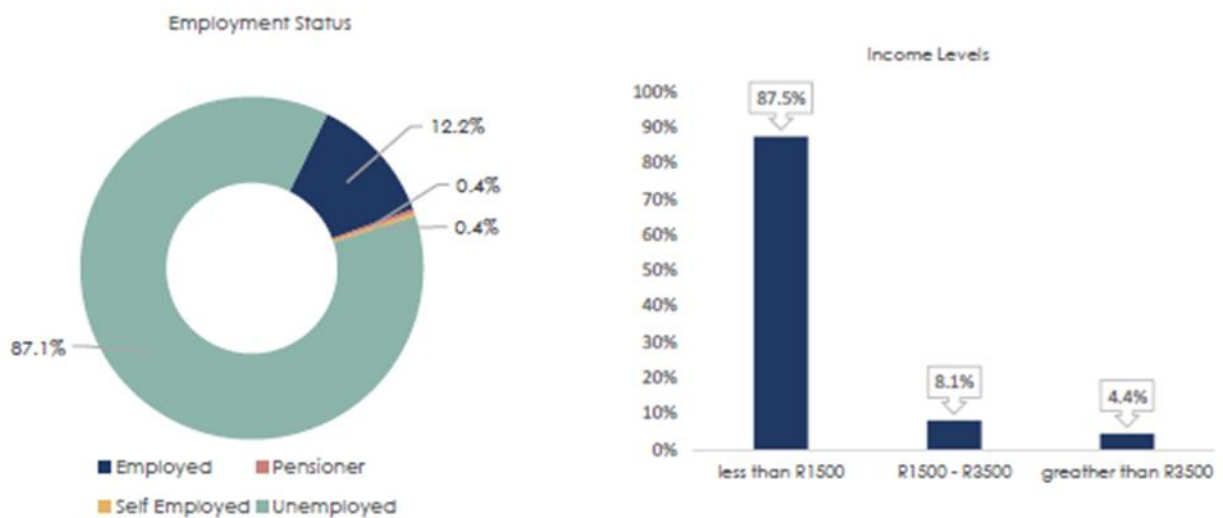


Figure 8-5: Kaalfontein station employment and income levels

Source: Aurecon (2016c:10-139)

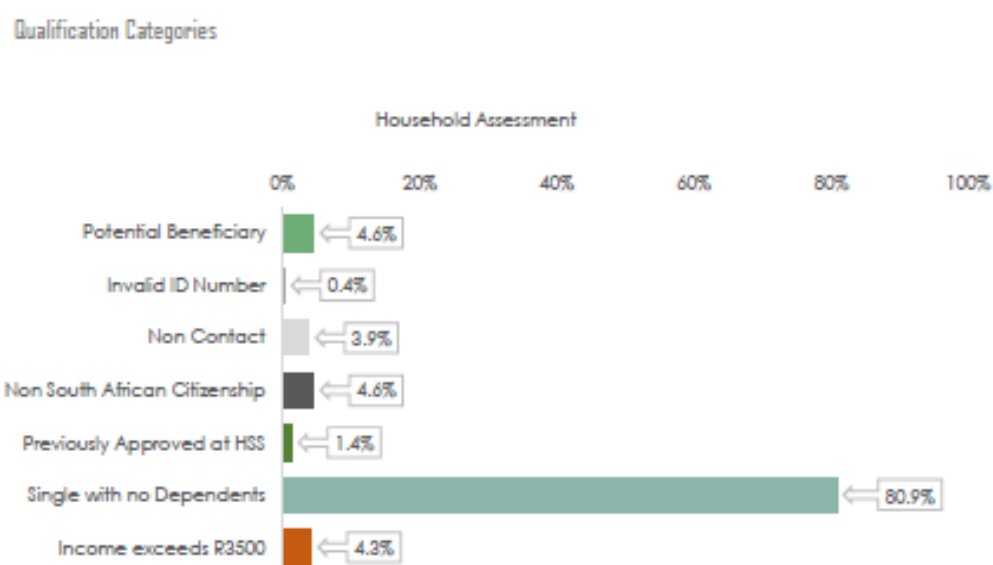


Figure 8-6: Kaalfontein Station qualification for household subsidies

Source: Aurecon (2016c:10-139)

As illustrated by Figure 8-6, about 87.5% of the inhabitants the upper-bound poverty line of R1335 per month. An estimated 95.6% of the inhabitants earn equal to or less than R3500 per month, approximately 40% more than those within the whole EMM. Approximately 4.4% can be regarded as medium to high income earners.

8.5.3.3 Access to basic services and amenities

The housing structures are mainly made of zinc and corrugated iron with asbestos roofing. Plastic covering is often used for protection during the rainy season. The average number of shacks per stand is three. Kaalfontein station is serviced with standpipes, toilets and 3 waste skips that are collected on a weekly basis (Aurecon, 2016c:10-101 - 102). However, some of the waste skips have been converted into houses by some of the residents and large piles of waste were observed during the community visit. Solar power kits have been installed on dwellings for energy (Aurecon, 2016c:10-101 - 103). There are no storm water facilities within the settlements and the untarred roads have caused ponding challenges during the rainy season.

Table 8-3 shows the community's access to socio- economic amenities in terms of the standards set within the CSIR guidelines for the provision of social facilities in South African settlements.

Table 8-3: Kaalfontein access to socio-economic amenities

Facility	Walking (Time)	Approximate Distance (Time)	CSIR Distance (km)	Meets CSIR Standards	Recommendation
Crèche	20 – 25 Mins	30 Mins	2 km	Yes	If upgrading is pursued for this settlement then further investigation of the capacity of the existing facilities are required.
Primary School (5 KM)	30 – 60 Mins	60 Mins	5 km	Yes	
Secondary School (5 KM)	30 – 60 Mins	60 Mins	5 km	Yes	
Tertiary Education	More than 60 Mins	More than 60 Mins	20 km	To be determined	The nearest location of this facility should be determined before recommendation can be made
Special Education	More than 60 Mins	More than 60 Mins	20 km		
Clinic	30 – 60 Mins	60 Mins	5 km	Yes	If upgrading is pursued for this settlement then further investigation of the capacity of the existing facilities are required.
Hospital	More than 60 Mins	More than 60 Mins	30 km	To be determined	The nearest location of this facility should be determined before recommendation can be made
Police	30 – 60 Mins	More than 60 Mins	8 km	Yes	If upgrading is pursued for this settlement then further investigation of the capacity of the existing facilities are required.
Library	30 – 60 Mins	More than 60 Mins	8 km	Yes	
Community Hall	30 – 60 Mins	More than 60 Mins	10 km	Yes	

Source: Aurecon (2016b: 13-14)

8.5.3.4 Governance and intervention

The settlement falls under the leadership of the ward counsellor and 12 community leaders (Kaalfontein Community Representatives, 2021). There have been limited opportunities to present the community challenges to the ward councillor as he is rarely available to attend meetings with the residents (Kaalfontein Community Representatives, 2021). No community organisations can be found within the settlement, however, there are well-established community organisations found in the surrounding CBD's, which could service the settlement (Aurecon, 2016c: 10-137; Community survey, 2021).

According to the EMM Migration Plan, the informal settlement will be relocated to the Birchleigh NorthX4 (Esselen Park) housing project which accommodates 4600 housing opportunities (Aurecon, 2016c:10-102, 108). Though relocation was scheduled for some time around 2018, it has not been implemented yet. On the other hand, the residents indicated willingness to rent formal housing elsewhere if they had access to funding, better employment opportunities and in turn higher income (Kaalfontein Community Representatives, 2021).

8.5.4 Vlakfontein Portion 36 Informal Settlement

8.5.4.1 Background

Vlakfontein Portion 36 informal settlement (Vlakfontein hereinafter) is a Category B1 situated in Region E of the EMM (Aurecon, 2016d:27-244). The settlement is scheduled for incremental upgrading with essential services in line with the NUSP categorisation of informal settlement. Vlakfontein borders an established residential area, and the northern portion of the settlement is situated within the road reserve for route PVW16 (Aurecon, 2016d:27-245). There is a well-established informal road network within the settlement and there are many pedestrian paths which lead to the neighbouring settlement and the two informal open fields. However, there are no public transport facilities within acceptable walking distance of the settlement.

Vlakfontein is located on land that belongs to a private owner. The settlement forms part of a larger area covered by informal settlements. The settlement is located in proximity to the KwaThemaa/Tsakane/Duduza node and also forms part of the Integration Zone 5 For Development. The settlement also forms part of the Brakpan and Tsakane PSHDA (CoGTA, 2021). Figure 8-7 and Figure 8-8 show a closer view of the locality and the physical conditions of the informal settlement.

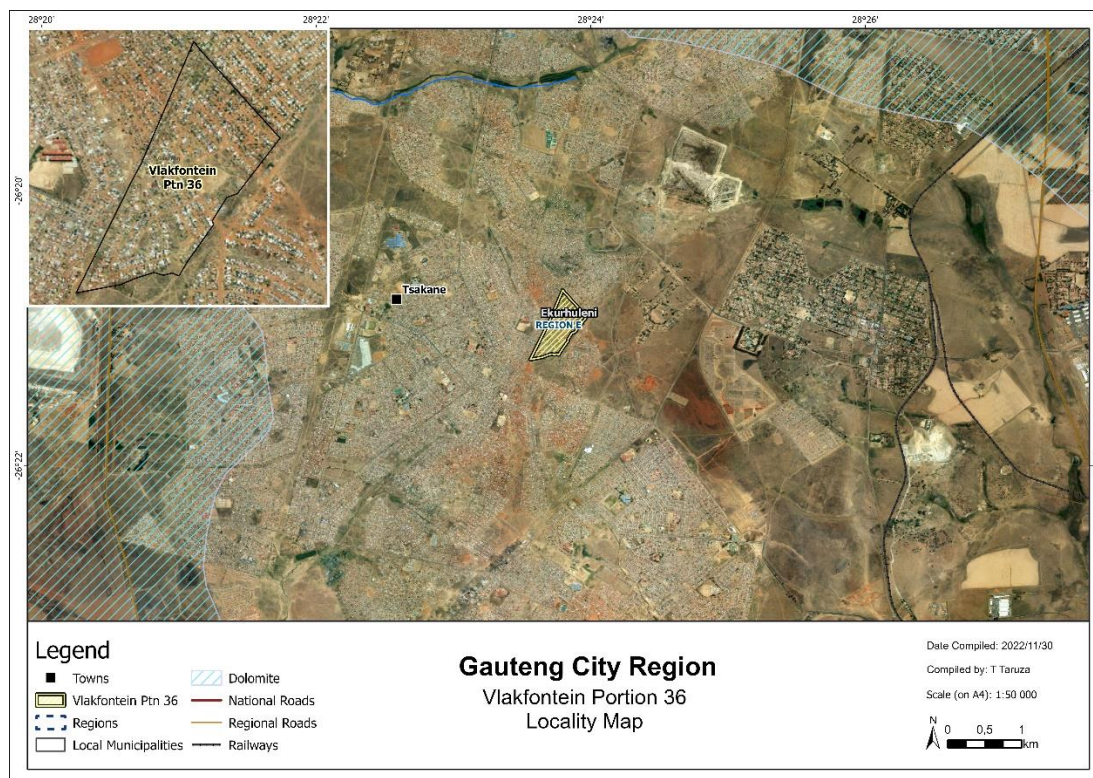


Figure 8-7: Vlakfontein Locality Map

Source: Own construction (2022)



Figure 8-8: Vlakfontein physical conditions

Source: Aurecon (2016d: 27-251)

8.5.4.2 Socio-economic profile

The settlement is made up of 800 households, 49% of which are female headed and 51% are male headed (Aurecon, 2016d:27-249). The projected population pressure is high growth, meaning that area will experience greater than or equal to 60% population increase between 2011 and 2050 (Le Roux *et al.*, 2019). The settlement has a low dependency ratio 44.2% of households do not have dependants, 46% have one to three dependants and 9.8% have four or more. It is reported that 1% of the residents have disabilities (Aurecon, 2016d:27-253)

The majority of the inhabitants are South Africans nationals with approximately 97% holding South African ID's. Social ties are a significant component of the settlement as 48.2% have been staying in settlement for more than 10 years, 25% have been there for 6-10 years and 26.8% been in the settlement between 0-5 years. The occupation status shows that 79.3% of the households own their shacks, 4.2% rent for approximately R350 per month and 16.5% have other arrangements (Aurecon, 2016d:27-249 - 253)

The members of the community of matric, diploma and a university degree constitute 36.4% of the population, 44.2% had access to secondary school education and 4.6% have no formal education (Aurecon, 2016d:27-249- 53). Figure 8-9 shows that the greater proportion of the population is unemployed and earn less than R1500. Approximately 46.5% of the households are potential beneficiaries of household subsidies. Figure 8-10 provides further insight into the household financial capital and potential for qualification for household subsidies.

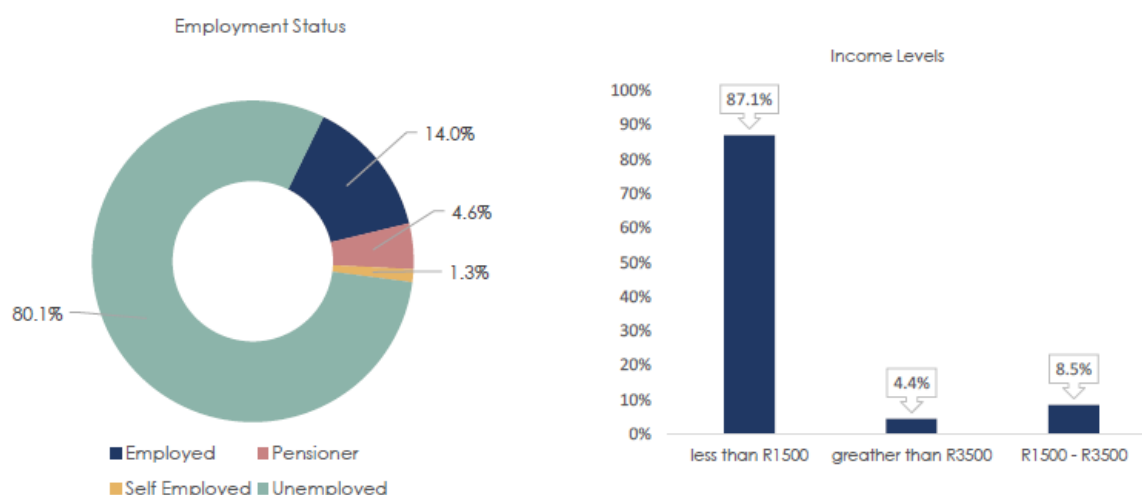


Figure 8-9: Vlakfontein employment and income levels

Source: Aurecon (2016d:27-249-253)

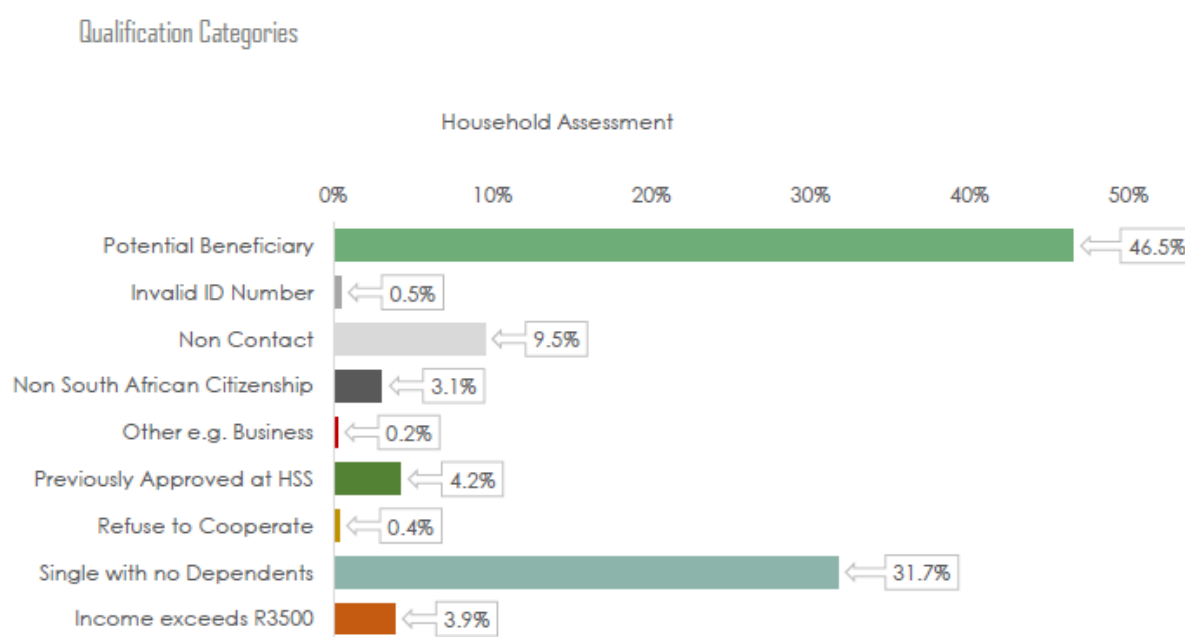


Figure 8-10: Vlakfontein qualification for household subsidies

Source: Aurecon (2016d: 27-249)

8.5.4.3 Access to basic services and amenities

The settlement is well equipped with bulk water and sewerage pipelines which traverse the settlement. However, the community does not have access to improved water and sanitation, waste removal, electricity and stormwater drainage (Aurecon, 2016d:27-250). The settlement is poorly located with regards to community services, facilities and recreational facilities. Only

churches and a mobile clinic can be found within a 15-minute walking distance, the rest of the facilities and services are located further than 30 minutes away. Table 8-4 shows the community's access to socio- economic amenities in terms of the standards set within the CSIR guidelines for the provision of social facilities in South African settlements.

Table 8-4: Vlakfontein access to socio-economic amenities

Facilities	Average threshold	Acceptable travel distance	No of facilities within radius
Small Crèche/ECD Centre	2 400 - 3 000	2 km	8
Primary School	7 000	5 km	10
Secondary School	12 500	5 km	3
Tertiary	Variable	20 km	1
Regional Library	200 000	15km	3
Local Library	20000-70000	8km -10km	
Hospital	2400000	30 km*	1
Primary Health Clinic	24 000 - 70 000	90% of population served within 5 km*	5
Fire Station	60 000 - 100 000	8 - 23 minutes	2
Police Station	10k - 100 000	8 km metro; 15 km peri-urban 24 km other	4
Cemetery	17.2 ha/100 000 people	30 km	2
Community Hall – large	60000	10 km	5
Stadiums	200 000 - 300 000	15km	2

Source: Aurecon (2016e:33-12-17)

8.5.4.4 Governance and intervention

The settlement has been upgraded as Langaville Extension 10 in and around its current position. Installation of services has been completed and EMM are in the process of opening township register. Once fully developed, Langaville Extension 10 will make provision for 1561 housing opportunities (Aurecon, 2016d:27-308-310). The informal settlement has access to 5 community organisations operational focusing on therapy for quadriplegics, a centre for abused children, a karate institution and care centres (Aurecon, 2016d:27-256).

8.6 Rand West City Local Municipality

8.6.1 Municipal Background

Rand West City Local Municipality (RWCLM) is a category B municipality that was established through the amalgamation of the Randfontein and Westonaria Local Municipalities in 2016. The municipality is bordered by Mogale City to the north, City of Johannesburg to the East, Emfuleni to the southeast and Merafong City to the west.

The municipality was selected as a case study in order to understand informal settlement intervention within lagging municipalities as well as to establish the relationship between mining and the proliferation of and intervention in informal settlements. An investigation into the municipal spatial structure, socio-economic profile, governance and human settlements provides context on the conditions within which the informal settlements exist. These are presented in Table 8-5 below:

Table 8-5: RWCLM Municipal Background

Urban form	
<i>Transport access</i>	N12, N14, R28, R41, R558 and a railway line
<i>Major precincts (land use)</i>	Urban residential and economic core Mining precinct Agricultural land
<i>Spatial structure</i>	Dispersed urban structures and mining villages Densification and infill development, with low-income residential development extending from Mogale City towards Randfontein Mining belt which also forms a physical barrier between Randfontein and Mogale City rendering the municipality less accessible to opportunities presented by regional development Underlain by dolomite
Socio-economic profile	
<i>Population</i>	271938 with 1,2% annual growth 51% male, 49% female
<i>Dependency ratio</i>	28%
<i>Number of Households</i>	84167
<i>Average household size</i>	2,5
<i>Female headed households</i>	32,10%
<i>Literacy rate</i>	87,1
<i>Level of education</i>	Matric – 33% Tertiary – 9%

<i>Economically Active Population</i>	52%
<i>Employment</i>	Unemployment- 55%. Increase from 27% in 2008 due to mine closures
	Formal employment – 38%
	Informal employment – 7%
<i>Level of income</i>	No income – 45,4%
	Less than R3200 per month – 82,6%
<i>Poverty</i>	Population below national upper poverty line – 49%
	Population below food poverty line – 21%
	Poverty gap rate – 30,7%
<i>Gini-coefficient</i>	0,6 (highly unequal)
<i>HDI</i>	0,68 (slightly above general median)
<i>GVA</i>	Major sector – mining and quarrying at 19.8%
Governance	
<i>Governance system</i>	Executive Mayor and mayoral committee
<i>CSIR Political Vulnerability Index</i>	Very high vulnerability to political instability
<i>Satisfaction by government services delivery</i>	Frustrated – 26%
	Concerned – 30%
	Satisfied – 37%
	Delighted – 6%
Human Settlements	
<i>Access to housing</i>	Formal housing – 70%
	Informal housing (shack in backyard and shacks not in backyard) – 20%
	Traditional dwellings – 8%
	Other dwelling types – 2%
<i>Housing backlog</i>	25714 households

Source: Own construction based on COGTA (2020:10-11); CSIR (2021); Gauteng Provincial Government (2016:32); IHS Markit (2020); RWCLM (2016:12); RWCLM (2019:55); RWCLM (2021:38-39,41;50,63); Stats SA (2011)

8.6.2 Informal settlement intervention

There are 18 informal settlements within the municipality, most of which are located far from economic opportunities or on land unsuitable for residential development (refer to Figure 8-11) (RWCLM, 2019:63, WRDM, 2020:127). Various interventions have been made to address informal settlements including the rapid assessment and categorisation of the settlements, relocation of settlements including those on land underlain by dolomite, and the funding of projects

to provide water infrastructure to informal settlements and the preparation of an informal settlement upgrading policy and strategy (Aurecon, 2016f; WRDM, 2020:127).

Additionally, all the informal settlements form part of the 31 sites that have been identified as municipal Priority Housing Development Areas (PHDAs). The PHDAs will contribute a total of 172188 units in the short to medium term and an additional 50000 units in the long term (RWCLM, 2019:64-65). This supply is adequate to address the current backlog and the potential population growth, thus curbing the proliferation of informal settlements. As part of the Revitalisation of Distressed Mining Towns Programme, the municipality also received funding through the HSDG in 2019 for electricity installation in 3 settlements including the two informal settlements under study and to date 98% of the work has been completed (GDHS, 2021:29).

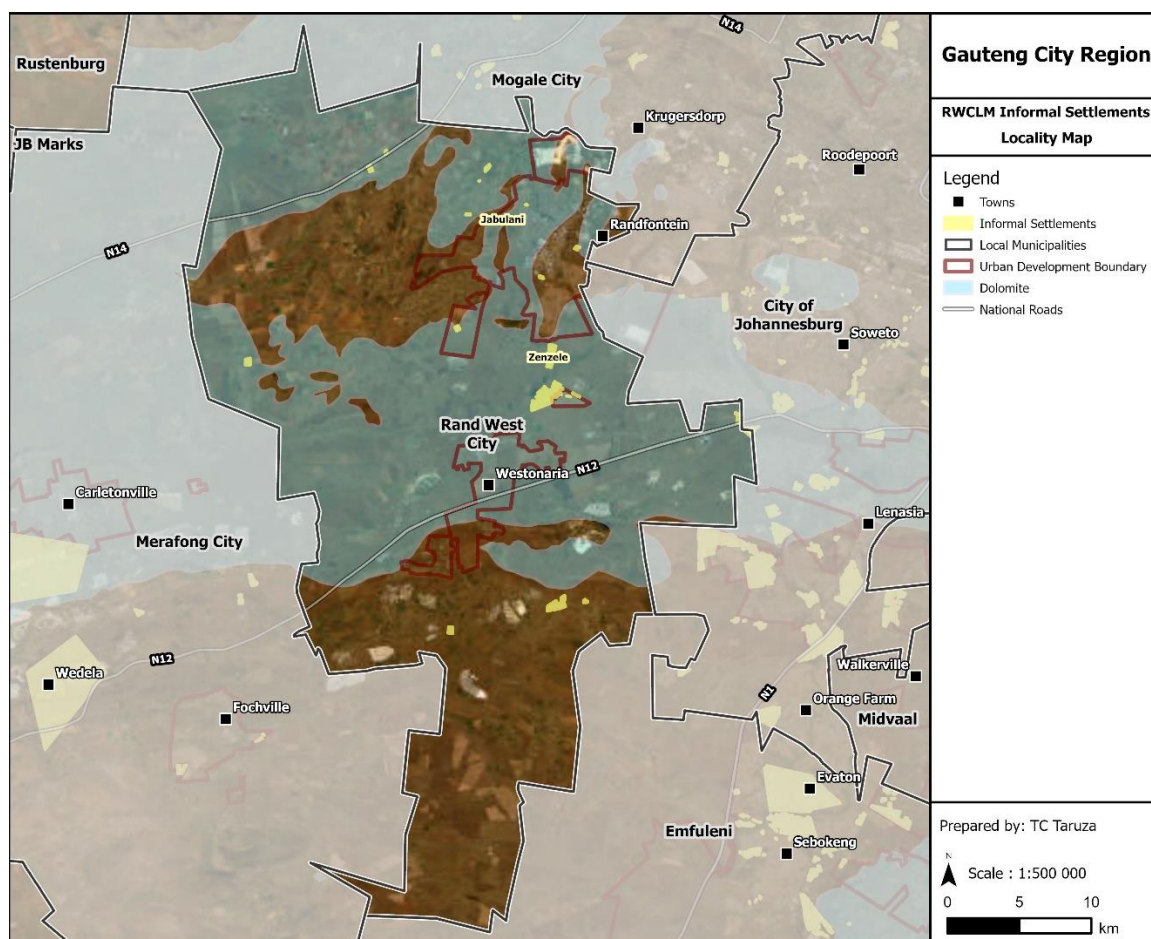


Figure 8-11: Location of informal settlements in RWCLM

Source: Own construction (2022)

However, the municipality's low ranking on the GPI indicates challenges in service delivery, administration, development and planning and monitoring (Good Governance Africa, 2021:14); which may hinder successful intervention in human settlement programmes. Nonetheless, the

following sections provide insight into informal settlement intervention within the municipality; by detailing the background, issues and status of a category B2 and a category A informal settlement.

8.6.3 Zenzele informal settlement

8.6.3.1 Background

Zenzele informal settlement is one of the largest informal settlements within RWCLM. The settlement was established around 2001, as a transit camp for evicted farm workers and has expanded over the years (Aurecon, 2016f:90). The settlement is located beyond the urban edge and the expansion of the settlement can be attributed to proximity to the Rand Uranium mine shaft (Aurecon, 2016f:90, RWCLM, 2019:78). Figure 8-12 shows a closer view of the locality of the informal settlement.

The settlement is located on municipal land measuring approximately 107 hectares with an estimated density of 65 dwelling units per hectare (Aurecon, 2016f:90; Google Earth, 2022). Zenzele is categorised B2, that is, Deferred relocation with emergency services (Aurecon, 2016f:103; RWCLM, 2019:63). However, some data sources such as Informal Settlements data from the H.D.A indicate that the settlement is categorised for Rapid Relocation (Category C). Regardless, the settlement has been declared unsuitable for human settlement development due to its location on land underlain by dolomite (Aurecon, 2016f:42; RWCLM, 2019:78).

The settlement is structured in a grid pattern, as shown in Figure 8-12; allowing improved accessibility within the settlement. The settlement has a density of 65 dwelling units per hectare, with each household occupying an average of 240m² of land (Google Earth, 2022; NUSP Report 1, 2016:11). The housing structures are mainly made of zinc and corrugated iron with asbestos roofing. The number of rooms per shack ranges from one to four with an average of two rooms per household. These aspects are displayed in Figure 8-13.

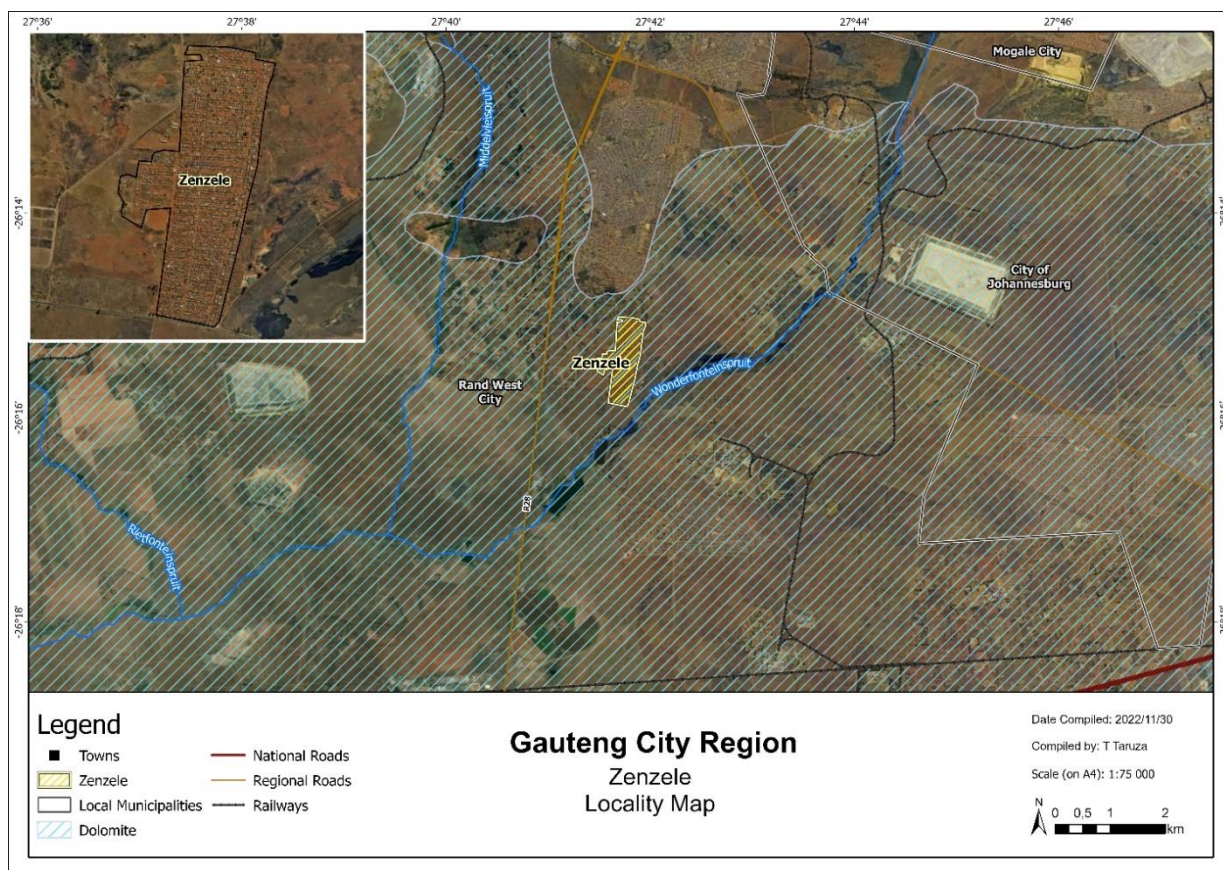


Figure 8-12: Zenzele Locality Map

Source: Google Earth, 2022



Figure 8-13: Zenzele physical conditions

Source: Community visit (2021)

Zenzele is home to more than 6000 households (ESRI, 2020; Community Visit, 2021; RWCLM, 2019:63). Figure 8-14 shows that most of the households are single person households and the percentage of people per household decreases with the increase in the number per household. Based on this information, the total population is estimated to be approximately 24 000 people.

According to Le Roux *et al.* (2019), the projected population pressure is medium growth, meaning that area will experience 5 to 49.9% population increase between 2011 and 2050. This may exacerbate the challenges faced within the settlement, which may also impact the neighbouring communities.

Most of the households are made up of nucleus families, with extended families. There is an equal distribution of household heads with 50% being male and 50% female. Figure 8-15 shows that children between the ages of 0 and 4 constitute the greatest proportion of the population and the elderly population makes up approximately 2% of the population. It is estimated that 32% of the population is dependent on the working population, resulting in a dependency ratio of 47%. This is much higher than the dependency ratio within the RWCLM.

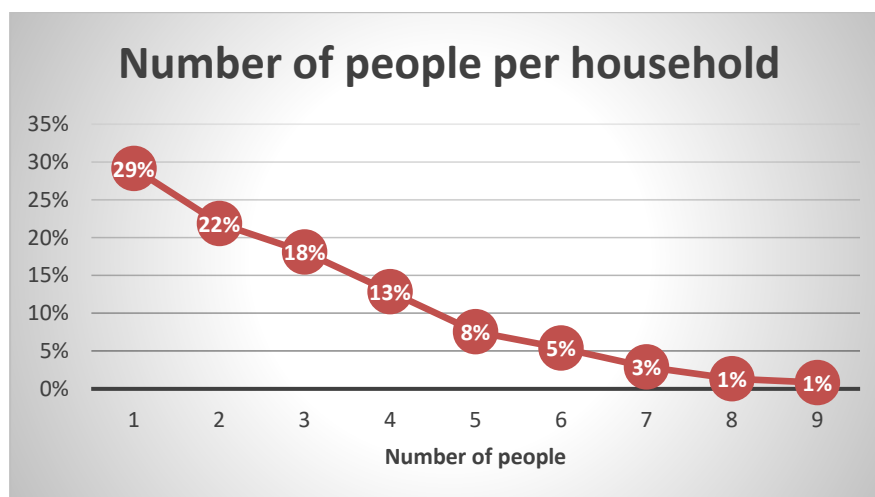


Figure 8-14: Zenzele number of persons per household

Source: ESRI (2020)

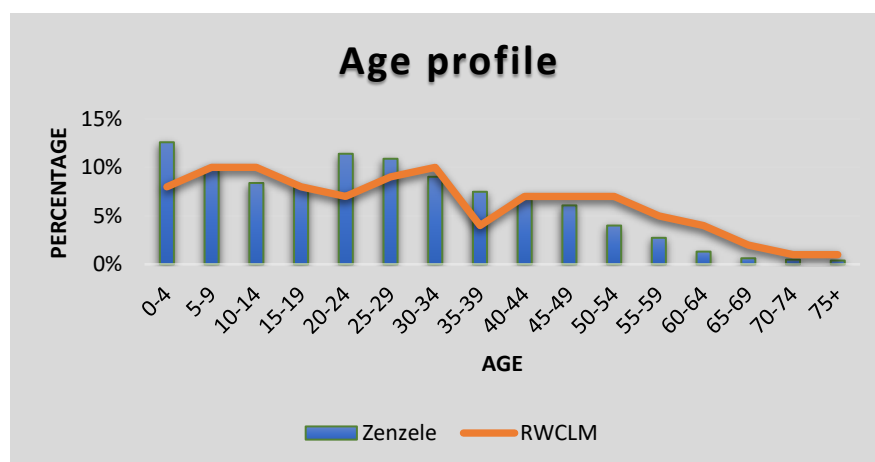


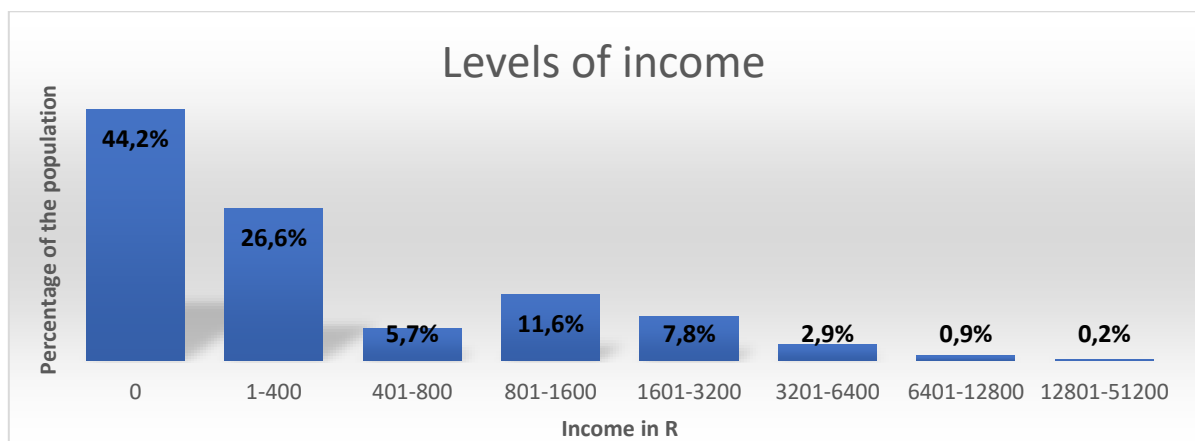
Figure 8-15: Zenzele age profile

Source: ESRI (2020)

Though the exact statistics could not be determined, the discussions with the community representatives gave insight into the low levels of education within the settlement. Based on Figure 8-15, 68% of the residents constitute the economically active population (ESRI, 2020). The greater proportion of the population is either unemployed or self-employed in the informal sector. There has been an increase in the number of unemployed residents due to the closure of the mine. Gender business ownership disparities are high with 75% of the businesses owned by males (GP Economic Development, 2018:18). 47% of all the businesses are owned by South Africans and the rest are owned by foreign nationals (GP Economic Development, 2018:19)

The five most prevalent skills within the settlement are farming, catering, construction and care giving/day-care centres and housekeeping. A group of young entrepreneurs have been trained under the QALISA AFRICA Programme, an initiative by a Non-Profit Organisation called ABBA; and have successfully established small businesses that include a beauty parlour, sewing and design, tutoring services, laundry services and photography services. The ABBA initiative has also sponsored and provided training for establishment of community gardens which have been sources of income and food security, especially during the COVID-19 pandemic.

As illustrated by Figure 8-16, between 71 and 77% of the inhabitants live in extreme poverty, 77% live below the lower-bound poverty line of R890 per month, and between 77 and 89% live below the upper-bound poverty line of R1335 per month. An estimated 96% of the inhabitants earn equal to or less than R3200 per month, approximately 13% more than those within the whole RWCLM. Approximately 4% can be regarded as medium to high income earners.



Note: The figures have been rounded off to the nearest one decimal place

Figure 8-16: Zenzele levels of income

Source: ESRI (2020)

8.6.3.2 Access to basic services and socio-economic amenities

Though there are communal taps within the settlement, water supply is inadequate, and the storage capacity is not adequate to meet future demands and capacity demands (RCM, 2021:80). The residents rely on portaloo facilities for sanitation, a large contrast to the 87% of the municipality with access to improved sanitation (IHS Markit, 2020). However, RCM (2021:80) states that the sanitation in Zenzele is adequate although solid waste capacity is lacking. Municipal services provide weekly refuse collection and this, combined by the efforts of the residents, has led to a generally unpolluted landscape. All the inhabitants have access to electricity. Table 8-6 show the community's access to socio- economic amenities in terms of the standards set within the CSIR guidelines for the provision of social facilities in South African settlements.

Table 8-6: Zenzele access to socio-economic amenities

Facilities	Average threshold	Acceptable travel distance	No of facilities within radius
Small Crèche/ECD Centre	2 400 - 3 000	2 km	4
Primary School	7 000	5 km	12
Secondary School	12 500	5 km	6
ABET/Skill Training	Variable	25 km	No data
Regional Library	200 000	15km	13
Local Library	20000-70000	8km -10km	
Community Health Centre	100 000 - 140 000	90% of population served within 5 km*	0
Primary Health Clinic	24 000 - 70 000	90% of population served within 5 km*	4
Fire Station	60 000 - 100 000	8 - 23 minutes	2
Police Station	10k - 100 000	8 km metro; 15 km peri-urban 24 km other	2
Cemetery	17.2 ha/100 000 people	30 km	7
ICT Access Point	10 000+	5 km	No data
Community Hall – large	60000	10 km	5
Community Park with play equipment	60 000	5 km	1
Local/neighbourhood park	3000-15000	1km	0

Source: Own construction based on data from CSIR (2012:34-37); Department of Health (2021), Department of Education (2021), CoGTA (2021), Zutari (2021), GDHS (2021), Key informant discussion (2021, RWCLM (2019:68)

Zenzele is in close proximity to the Mohlakeng taxi route, providing easy access to transport facilities. According to Aurecon (2016g:17), 41% of inhabitants use taxis as their main mode of transport, and 45% walk to various social facilities. 56% travel less than 1km to work, 8% travel between 1 and 5km, and 8% travelling between 5 and 10km to work. This indicates the proximity of the informal settlement to employment opportunities and a high incidence of home industries and retail linked to residences (Aurecon, 2016g:17).

8.6.3.3 Governance and intervention

In addition to the ward councillor and ward committee, the community is led by a group of informal community leaders, amongst them a pastor from a local church. The community leadership has over the years provided stands for the households and has initiated restructuring programmes to ensure that there is some level of accessibility within the informal settlement. The settlement was relocated by the council from the Sebane Mining Ground to their current location.

Some of the residents of Zenzele have been on the housing waiting list for as long as 25 years and consider the system to be unfair as the allocation of housing opportunities seem to be favour those with connections to the local authorities. The government provided RDP houses/ flats for some of the residents sometime between 2020 and 2021. Though the initiative would have the potential to provide better housing opportunities for the residents, the older beneficiaries rejected the flats as they preferred single dwellings with ease of access while the younger residents perceive single dwellings as a symbol of status. In this regard, the housing provided does not meet the communities' expectations and to an extent, their needs. The residents' reluctance to relocate has been intensified by the claims by the previous mayor refuted the existence of dolomite within Zenzele and provided electricity lines for the community. *"It's been 25 years since the settlement has been claimed to be dolomitic. If we die, we die"* (Zenzele Community Representative, 2021).

On the other hand, 2661 households from Zenzele have been identified for partial relocation to Mohlakeng Extension 12, as part of the municipal ISUS (RWCLM, 2019:63). It is intended to be a mixed-use residential development with accompanied by industrial and business uses, schools and other community facilities (Aurecon, 2016g:15). The intention is to improve living conditions and access to economic opportunities, taking into consideration the existing social and spatial structures. Households from Zenzele are also planned to be relocated to seven PHDAs in the short to medium term.

According to SAMPI data, the residents of Zenzele and the neighbouring areas are extremely dissatisfied with local government services and are concerned about provincial and national

government services on the satisfaction scale (SAMPI, 2020). Community representatives also indicated that there has been limited government intervention since the outbreak of the COVID-19 pandemic. Some residents lost jobs and economic opportunities due to the lockdown restrictions. However, the community did receive food parcels from the government and other groups such as Community Policing Forum (CPF), the Azaadville Muslim Community, as well as Salamaat and Sulie Motors (Anon, 2020). This, together with the services by ABBA, indicate prospects of private sector involvement in addressing the challenges within the settlement in support of government intervention measures. Despite this, proportion of known cases of COVID-19 infection were relatively low though residents could not practise social distancing and continued to interact as usual.

8.6.4 Jabulani informal settlement

8.6.4.1 Background

Jabulani informal settlement is located on Botha Holdings, approximately 3.7km from Randfontein town (Google Earth, 2022). The settlement is situated within the municipal urban edge, on 9.7hectares of land. This land is earmarked for a residential infill area and has been categorised for Full Conventional Upgrading (Category A) (Aurecon, 2016f:19). The land belongs to RWCLM (Aurecon, 2016f:20). The settlement is made up of 87 households and a total population of approximately 257 people (GPDHS, 2019). However, this number varies among sources with some indicating 129 households (RWLCM, 2019:63). Jabulani has a semi-formal grid pattern with a density of 16 dwelling units per hectares (Aurecon, 2016f:20; Google Earth, 2022). The informal settlement is adjacent to the R41. Figure 8-17 and Figure 8-18 show a closer view of the locality and physical conditions of Jabulani informal settlement.

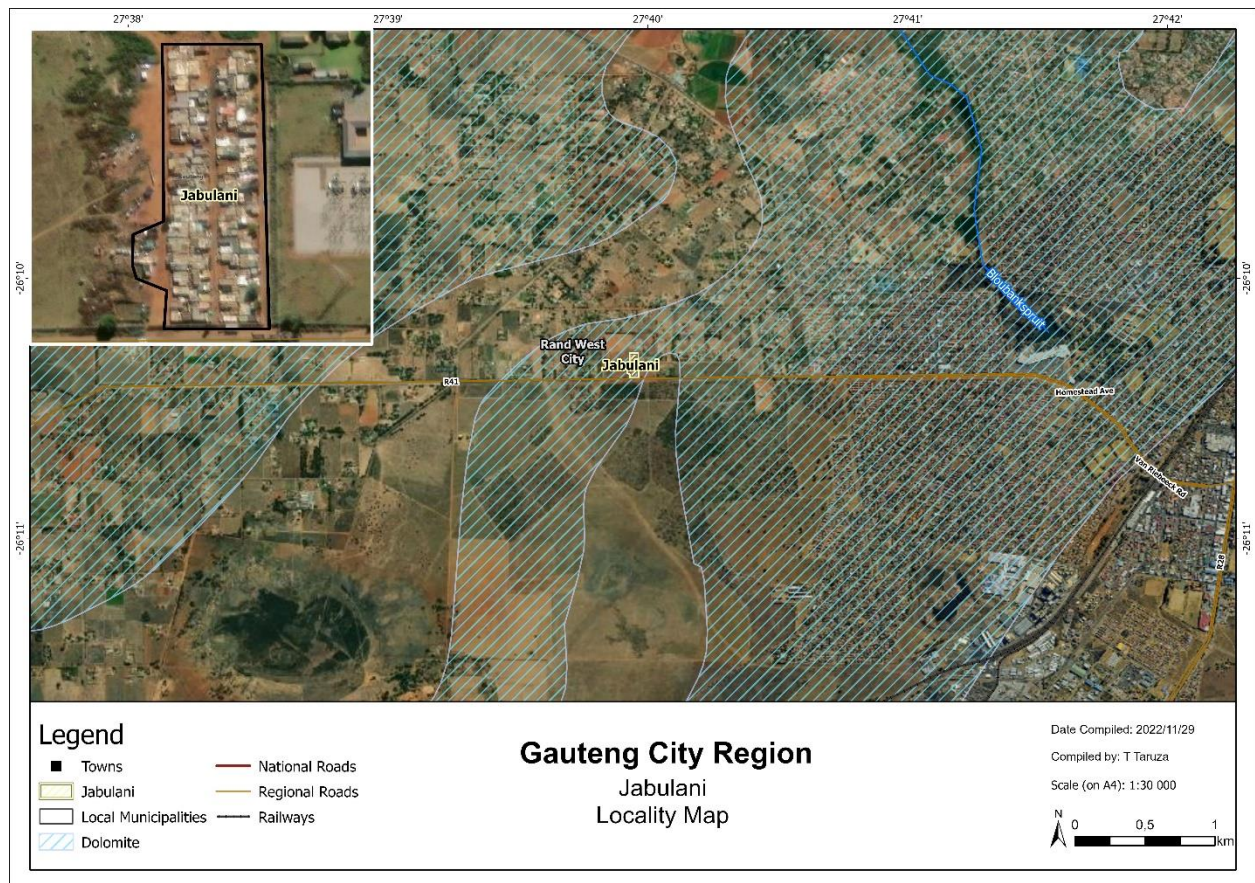


Figure 8-17: Jabulani locality map

Source: Own construction (2022)



Figure 8-18: Jabulani physical conditions

Source: Randfontein Herald (2018)

8.6.4.2 Access to basic services and socio-economic amenities

The housing structures are mainly made of zinc and corrugated iron with asbestos roofing. Water provision through the use of boreholes and JoJo tanks is adequate for the resident due to their locations within the settlements. The residents rely on pit latrines located at the edges of the settlement and which are inadequate for the residents and promote health threats due to the limited hygienic practices. The residents have no access to formal electricity. Communal skip bins that are collected weekly and a dumping site are the main solid waste management measures. The settlement is adjacent to the R41 taxi route, providing easy access to public transportation (GDHS/HDA, 2021; Aurecon, 2016f). Though there are limited socio-economic facilities within Jabulani, facilities can be accessed within neighbouring communities as indicated in Table 8-7.

Table 8-7: Jabulani access to socio-economic facilities

Facilities	Average threshold	Acceptable travel distance	No of facilities within radius
Small Crèche/ECD Centre	2 400 - 3 000	2 km	1
Primary School	7 000	5 km	12
Secondary School	12 500	5 km	8
ABET/Skill Training	Variable	25 km	No data
Regional Library	200 000	15km	8
Local Library	20000-70000	8km-10km	
Community Health Centre	100 000 - 140 000	90% of population within 5 km*	2
Primary Health Clinic	24 000 - 70 000	90% of population within 5 km*	2
Fire Station	60 000 - 100 000	8 - 23 minutes	1
Police Station	10 000 - 100 000	15 km peri-urban, 24 km other	1
Cemetery	17.2 ha/100 000 people	30 km	7 within RWCLM
ICT Access Point	10 000+	5 km	No data
Community Hall – large	60000	10 km	0
Community Park with play equipment	60 000	5 km	4
Local/neighbourhood park	3000-15000	1km	0

Source: Own construction based on data from (Aurecon, 2016g; CSIR, 2012:34-37; Department of Health, 2021; Department of Education, 2021; CoGTA, 2021; GDHS, 2021; RWCLM, 2019:68; Zutari, 2021)

8.6.4.3 Governance and Intervention

Jabulani is generally governed by the ward councillor, ward committee and community leadership. The community leadership received capacity building training from PlanAct, an organisation that provides services to informal settlements among other marginalised groups, as part of the upgrading programme (PlanAct, 2015:19). PlanAct also participated in the establishment of a food garden co-operative and has provided technical and administrative support to the Jabulani Agricultural Cooperative. In support of this, the Department of Agriculture installed water and hydroponic tunnels which have improved agricultural productivity within the community (PlanAct, 2015:38).

The settlement has been identified for in-situ upgrading and conceptual designs indicate that township establishment is anticipated to legalise settlement and accommodate more subsidised units. The entire surrounding land parcel is available for the settlement's upgrade, allowing for a level of dedensification but also for some growth to occur, which may induce the viability economic and social infrastructure (Aurecon, 2016g:20). In line with the vision to eradicate informal settlements, at Jabulani informal settlement, tenure upgrading was effected by the provision of approximately 300 low cost housing units on 10ha of land. Phase 1 was undertaken with the geotechnical investigation and environmental management programme completed (Aurecon, 2016f).

Table 8-8: Jabulani development summaries

Priority Settlement Improvement Actions	
• Install interim basic engineering services conforming with long term settlement. • Township establishment to commence.	
Proposed Development Assumptions for cost estimation of the upgrading/development response	
Average size of stands to be developed:	300m ²
Allowance for streets and open spaces:	20%
Level of service: Water:	Stand pipe within 200m walking distance
Level of service: Sanitation/ Waste Water	Portaloo
Level of service: Roads	Gravel roads
Level of service: Stormwater	Unlined channels
Level of service: Electricity	Not provided
Level of service: Solid Waste Management	Communal skip within 200m walking distance

Sources: Aurecon (2016b:21-25)

The residents of Jabulani drafted a Community Upgrading Plan that will be used as the basis for a layout plan when the settlement is upgraded in-situ. The plan shows erven demarcated for residential 1, 2 and 3 uses, public open spaces, institutions, recreation, business and accommodates the existing substation and buildings. Table 8-9 summarises the provisions of this plan.

Table 8-9: Jabulani upgrading plan

Theme	Description
Proposed Movement Network	The draft layout makes provision for a gridiron layout, with limited access onto bordering higher order roads. It allows for a high level of permeability, especially for pedestrians, and proposes a hierarchical road network.
Housing Typologies	The proposed layout can accommodate 281 single residential erven and makes provision for higher density typologies on four (4) stands along the southern border of the township. The inclusion of higher density residential typologies is fully supported, with a view of offering both ownership and rental stock options
Community Facilities	Additional socio-economic facilities would not be provided since the settlement is not large enough to qualify for most community facilities in terms of the CSIR stipulations. It is planned that public transport facilities be improved to ensure reliable, safe and affordable travel to the facilities in the neighbouring suburbs.
Engineering Services	Install interim services to the informal settlement until upgrading of the settlement. Investigate alternative water and sewer solutions such as a dry sanitation system. Compare alternative solutions to standard water borne systems for example revenue generation through composting
Moving strategy	The municipality to assist residents to move to new stands/ houses in alignment with Part 3 of National Housing Code. Consider prioritisation of residents for example the elderly/disabled or those that have been on the waiting list the longest, in consultation with the residents
Community engagement	Consulting with and keeping the community informed of all major decisions taken.

Theme	Description
Sustainable Livelihoods	Limited business activities to be provided in the core of the new township and higher order goods and services to be provided in nearby Randfontein. Community should be allowed and empowered to also establish small and micro businesses on their plots. Ensure that the relationship forged with Plan Act, an NGO involved in enterprise development projects such as communal gardens, is used as foundation for in-situ upgrading.
Funding	Majority cost is allocated to the installation of bulk and internal services. Beneficiaries should apply for housing construction assistance through housing programmes. If financed by the municipality, it would cost R45 million.
Settlement growth and management plan	Further invasion of the land, particularly sites earmarked for recreational and agricultural purposes, to be mitigated by ensuring that the mentioned activities are implemented/ augmented immediately and not postponed until after the residential component has been formalised.

Source: Aurecon (2016b:21-25)

Though the upgrading of the project had been halted, due to contract constraints, it has been scheduled to resume as part of the 2019-2024 MTSF (GDHS, 2021).

8.7 Conclusion

Chapter 8 gives insight into the status of informal settlement upgrading within the GCR and the different approaches to informal settlement intervention based on municipal and NUSP informal settlement categories. The national and provincial achievements give insight into the broader informal settlement intervention and the basis to assess the performance of the lower sphere of government. The overall goal of the MTSF-2019 was to initiate the upgrading process and provide basic services for the stipulated informal settlements. Though massive progress has been made, the targets were not achieved nationally. At provincial level, the target was exceeded but metropolitan municipalities faced implementation challenges and did not meet the target.

There are 119 informal settlements within EMM. The municipality has also provided electricity, photovoltaic lighting and chemical toilets to some of the informal settlements. Thirty-three (33) of the informal settlements have been identified for upgrading, among them Kaalfontein Station (Category C) and Vlakfontein Portion 36 (Category B1). Kaalfontein has been provided with basic

services while awaiting the scheduled relocated to a larger housing project. Vlakfontein Portion 36 is being upgraded in-situ and installation of services has been completed.

In RWCLM, informal settlements have been assessed, relocated and provided with basic services. All informal settlements have been incorporated into the municipal PHDAs and the municipality has received funding for the revitalisation of mining towns for Zenzele and Jabulani. Zenzele is underlaid by dolomite, has limited access to basic services and social amenities but strong social capital. The settlement will be relocated to a mixed-use development. Jabulani is scheduled for in-situ upgrading but has limited access to basic services. Despite the availability of funding, contractual disagreements have deterred the process. Taking all these into consideration, this chapter lays the foundation for the measurement of SCD in the upgrading of informal settlements in Chapter 9.

CHAPTER 9 ANALYSIS OF SUSTAINABLE COMMUNITY DEVELOPMENT IN ADDRESSING INFORMAL SETTLEMENTS IN THE GCR

9.1 Introduction

The kind of upgrading we speak of is not about land and services alone. This is about realising real citizenship and equality in our cities (CORC, 2018:5). Chapter 8 provided insight into the status quo of informal settlement intervention at national, provincial and municipal level; with emphasis on category A and B2/C case studies. The focus of this chapter is on investigating whether the responses to informal settlements within the GCR promote SCD. This is based on the evaluation of the current status of the four informal settlements under study, against the principles of SCD. Thus, this chapter reflects on the following research questions, as stated in Section 1.4 of the study:

- **How is sustainability measured in terms of spatial planning, community development and informal settlement intervention within the GCR?**
- **To what extent are government planning instruments effective in ensuring spatial sustainability and SCD in addressing of informal settlements?**
- **Are there different perspectives in terms of spatial planning and informal settlement intervention within the GCR?**

This is achieved through the formulation and calculation of a sustainable community index; as relates to sustainability and resilience. The index is based on the quantification and calculation capitals, vulnerability and hazards based on SCD indicators. Principles of the AHP are utilised for the identification and quantification of indicators as well as assessing the rating the sustainability of each settlement. The results are interpreted to evaluate whether the current interventions promote SCD and the extent to which this is determined by the municipal and NUSP informal settlement categories. Figure 9-1 illustrates the structure of this chapter.

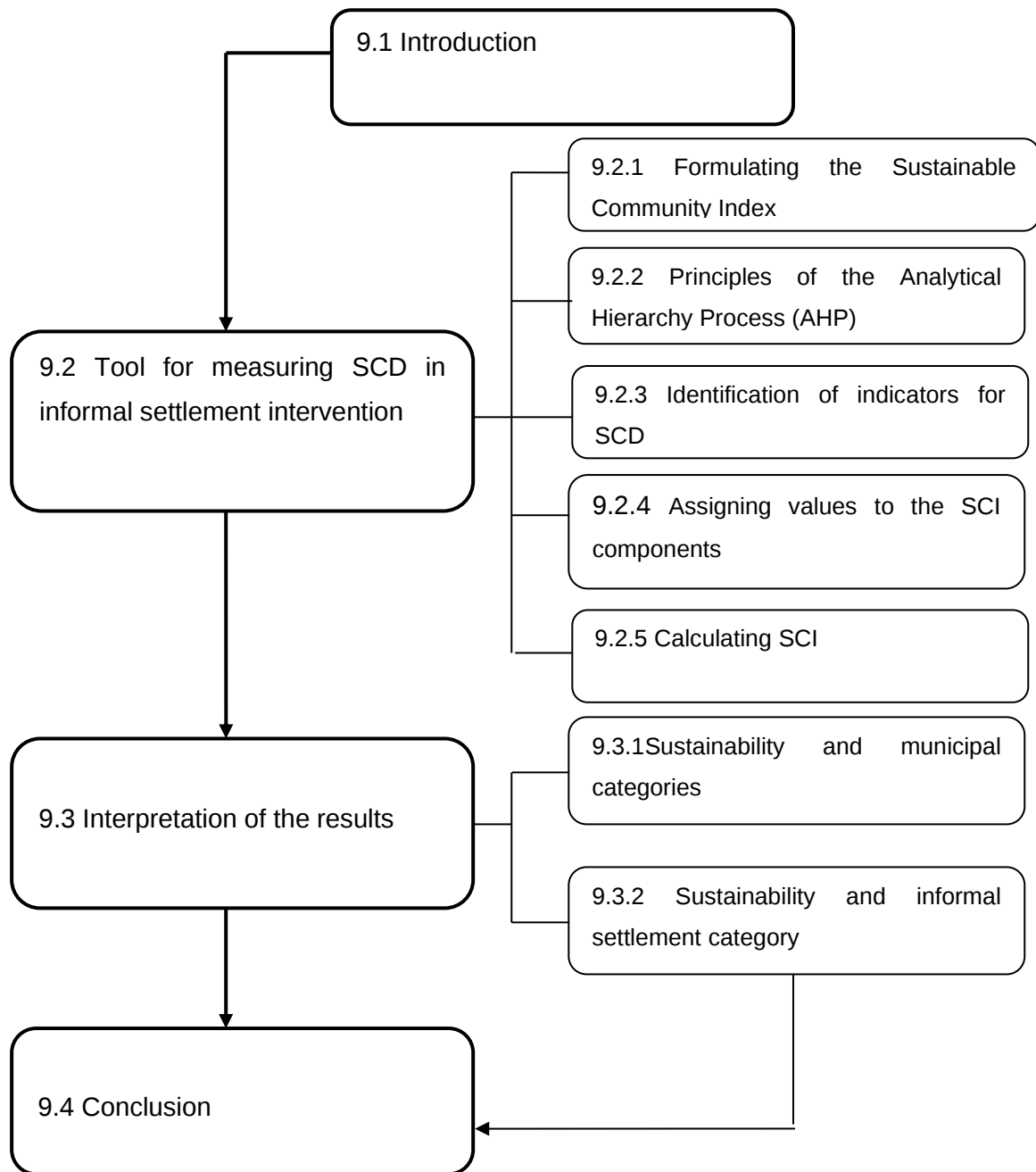


Figure 9-1: Chapter 9 flow diagram

Source: Own construction (2022)

9.2 Tool for measuring SCD in informal settlement intervention

Though there are various indicators for sustainability, resilience and SCD, there is no clear measurement tool especially as pertains to informal settlements. Therefore, this study acknowledges the need for a tool to measure sustainability of informal settlement interventions based on the sustainability and resilience of the settlements.

9.2.1 Formulating the Sustainable Community Index

Due to the absence of a stipulated formula for the calculation of SCD, this study formulates a Sustainable Community Index (SCI) to determine the combined sustainability and resilience of an informal settlement. The index is based on the notion of assessing what is good about a community (capitals) and the negative aspects of that community (vulnerabilities).

This borrows from the SLA concept as described in Section 4.3.2. The SLA seeks to balance capitals and vulnerabilities, whereby an increase in capitals results in a decrease in vulnerabilities. To show this inverse relationship, vulnerabilities are divided by capitals or vice versa. The relationship between the vulnerabilities and capitals also aligns with the principles of resilience as detailed in Section 4.4.2 of this study. The resilience of a community is based on the capitals it has to counter the vulnerability. Thus, reflecting how resilience is a component of SCD as detailed in Section 4.5 of this study.

Since hazards are a major threat to informal settlements and are the component to which the community is resilient, they should also be incorporated into the calculation of sustainability. Traditionally, the relationship between these two elements is used to calculate risk; whereby:

$$\text{Risk (R)} = \text{Hazards (H)} \times \text{Vulnerability (V)} \div \text{Capitals or Capacity (C)}$$

However, since this study seeks to highlight the positive aspects of a community, the formula is inverted, whereby capitals are divided by vulnerability multiplied by hazards. Further, by nature informal settlements have very high vulnerability and hazards, so multiplying these elements would nullify the potential contributions of capitals as the result would always be low. Rather vulnerabilities and hazards are added then divided by two to get the average of these two elements and make them one element, equitable to the capitals. This also follows the logic that the various types of vulnerabilities faced in informal settlements are often related to different types of hazards. So, wherever that vulnerability intersects with a hazard, the threats to the community increase. Therefore, the following formula is utilised:

$$\text{Sustainable Community Index (SCI)} = \frac{\text{Capitals (C)}}{(\text{Vulnerabilities (V)} + \text{Hazard (H)}) \div 2}$$

This formula can be simplified as follows:

$$SCI = \frac{C}{1/2(V + H)}$$

It should be noted that various formulas have been tested for this research as pertains to the relationship among these three components and they yield the same results. For example, giving a double value to the capitals to accentuate them, would result in the same range of SCIs as provided in Table 9-6.

For this study, capitals and vulnerabilities are rated from 1 to 5 where 1 is the worst and 5 is the best score for capitals and 1 is the best and 5 is the worst for vulnerabilities and hazards. This will be discussed in detail in Section 9.2.4. The next section details the identification and selection of the indicators for these capitals, vulnerabilities and hazards using the principles of the AHP.

9.2.2 Principles of the Analytical Hierarchy Process (AHP)

The AHP is a “flexible and yet structured methodology for analysing and solving complex decision problems by structuring them into a hierarchical framework” (Saaty,1990:9). The multi-objective multiple criteria approach provides a framework for the decision-making process to assist the decision makers in selecting the best alternative from the various possible choice alternatives under the presence of multiple priorities (Chandio *et al.*, 2012:3059; Saaty & Vargas, 1991:255). The AHP is often utilised in instances where there is uncertainty and intuition and rationality have to be applied (Palcic & Lalic: 2009:18). This is achieved through:

- a hierarchical analysis of general decision-making problem and division into themes/objectives and indicators (Palcic & Lalic: 2009:18);
- assigning priorities and numerical values to the elements on every level of decision-making hierarchy (Saaty, 2008:83).; and
- analysis and evaluation of possible problem solutions through an overall priority rating (Palcic & Lalic: 2009:18; Saaty, 2008:83).

Though the pairwise comparison matrix is a key element of the AHP, this study assigns equal values to each of the themes and indicators for SCD. This is to avoid distortions through the inflation of scores and to account for the main argument of this study that all capitals and elements of SCD are critical for informal settlements intervention. However, the assignment of weights can be another alternative that would still reflect the various approaches of informal settlement intervention towards SCD. Regardless, this study mainly utilises the AHP for the identification and quantification of objectives or themes and indicators for SCD and the rating of each of the settlements under study.

9.2.3 Identification of indicators for SCD

According to Dizdaroglu (2017:1) indicator selection is often subjective, and the choice of an indicator depends on factors such as whether it is cost-effective, easy to understand, scientifically reliable and internationally comparable. Visvaldis *et al.* (2013:25) add that indicators should be quantifiable, spatially specific and should capture change over time. In terms of SCD, the indicators should also address the relationship between the economy, society, and the environment; provides a long-term view of the community; address policy objectives and development priorities, enable assessment of the performance and dynamics of balanced development and reliable in measuring what the community wants to measure and provide insight into preventing setbacks (Dizdaroglu, 2017:2-4; UN, 2007:3; Visvaldis *et al.*, 2013:28-29).

Therefore, the identification of themes and indicators for this study is based on the review of existing indicators for SCD by the FURB institute, SDG 11 indicators, principles of quality of life, indicators for development as set in the NDP, national and provincial SDFs, informal settlement upgrading principles according to the UISP as well as issues raised during key informant interviews. The principles of measuring community resilience in terms of the ARD-C Toolkit and 6C-4R Framework have also been incorporated in the compilation of these indicators.

Principles of the Indicator Selection Matrix (UN, 2007-32-35), that is, scales of availability and relevance were utilised to assess the indicators' suitability and the need for adjustment. In terms of availability, the indicators would be classified as fully available, potentially available, related available and not available. For relevance, the indicators utilised were either relevant or closely related to the relevant indicator. Due to the unavailability and partial availability of some of the data, some indicators could not be employed in this study. While Annexure E shows the full list of indicators that were identified, Table 9-1 shows the indicators which will be utilised for this study. These indicators are classified as capitals, vulnerabilities and hazards based on their impact on the communities.

Table 9-1: Indicators for SCD in informal settlement intervention

Components	Sub-components	Indicator	Classification	Relevance to study
Housing and the Built Environment	Housing	Proportion of residents in non-classic dwellings	Vulnerability	Households become susceptible to harsh weather conditions, fire incidents and structural collapse
		Densities	Vulnerability	Communities with high densities are more prone to disease outbreaks and dolomite related surface instability (for example sinkholes and subsidence)
		Proportion of people renting their shacks	Capital	Households are willing to invest a proportion of their income in accessing housing opportunities
		Proportion of households with formal title deeds to land and/or residence, agreements or any document as proof of tenure arrangement	Capital	Reduces chances of arbitrary evictions and creates opportunities to access various financial mechanisms and invest in housing
		Alignment with other housing options, spatial integration, transformation, infill and densification areas	Capital	Presents opportunities for integration into the urban fabric
		Proportion of residents satisfied with their housing and condition of the neighbourhood	Capital	Indicates that housing and neighbourhood conditions meet the housing needs

	Location	Vulnerability to accidents	Vulnerability	Residents, especially children, are prone to automobile accidents if the settlement is in proximity with roads and railway
Environment	Green Urban Areas	Access to parks and open spaces	Capital	Promote urban metabolism and can be used as recreational facilities and micro agricultural spaces
		Condition of the open spaces and public spaces	Capital	Influence aesthetics and impact on the health and wellbeing of the residents
	Hazards	Fire - veld and structural	Hazard	Can cause loss of life and assets
		Dolomite	Hazard	Can cause loss of life and assets
		Flooding	Hazard	Can cause loss of life and assets
Local Economy	Education	Level of education of people aged 15 and above	Capital	Higher level of education improves access to economic opportunities, decision making and enable people to cope with and respond to hazards
	Employment	Unemployment	Vulnerability	Reduces level of income and quality of life

		Proportion of population in the informal sector	Capital	Indicates opportunities, skills and knowledges to improve financial capital for local economic development
		Proportion of households qualifying for subsidies	Capital	Indicates opportunities for alignment with other financial mechanisms
	Health	Health status	Vulnerability	Health status enables daily work and usual social activities. Considered a vulnerability because health status is often low in informal settlements
	Food security	Number of households who have had food and did not worry for most days during the year	Capital	Access to food impacts on health and wellbeing
	Household assets and income	Percentage of households that own television, refrigerator, radio and/or DSTV	Capital	Indicate household investments
		Average monthly income	Capital	Key factor for assessing levels of poverty
		Transport and Connectivity	Proportion of household income spent on transportation expenses	Capital
	Roads and public transport system		Proximity to transport facility	Capital

		Proportion of residents who have a positive perception about the transportation services in their neighbourhood	Capital	Demonstrates whether public transport meets the needs of the community including the feeling of security
	Mobility	Time–distance to work and economic opportunities	Capital	Illustrates spatial marginalisation or the absence thereof
	Connectivity	Proportion of households with access to the internet	Capital	Improves communication and access to information
Services	Basic Services	Proportion of households with access to adequate water supply, sanitation, refuse removal, electricity or energy and storm water drainage	Capital	Critical factors for health, well-being and quality of life
	Health facilities	Access to health facilities	Capital	Impacts on the health and wellbeing of a community
	Education services and equipment	Access to educational facilities by level of teaching	Capital	Critical for the skills development and knowledge
	Other services	Access to public facilities (library, fire station, police station, community hall, cemetery, social services)	Capital	Critical for the skills development, knowledge, safety and leisure

Social and Cultural	Leisure, sports and culture	Access to sports and leisure areas or facilities	Capital	Critical for the skills development, knowledge, safety, health and wellbeing
		Participation in sport, leisure or cultural activities in the neighbourhood —average number of activities by month	Capital	Critical for the social capital, skills development, knowledge, safety, health and wellbeing
	Security	Crime rate	Hazard	Details safety, security and wellbeing
		Proportion of residents who have a positive perception on the security in the neighbourhood	Capital	Details safety, security and wellbeing
Equity and Social Capital	Feeling of belonging and involvement with community	Length of stay within the settlements	Capital	Indicates the prospects of social capital and networks that have established
		Proportion of accessible facilities to disabled people	Capital	Indicates proponents of inclusivity
	Community	Community groups and associations (social, religious, financial or other)	Capital	Critical for social, financial and human capital
		Household size and dependency ratio	Vulnerability	Impacts on health, income and the economy

		Disability rate	Vulnerability	Indicates special needs
Governance	Political Vulnerability	Political Vulnerability	Vulnerability	Impacts on stability and service delivery
	Satisfaction with services and leadership	Percentage of population satisfied with government services	Capital	Indicates community's perception on whether government intervention and general services meet their needs
	Information	Percentage of residents who consider themselves well informed about the existing benefits, services and government programmes	Capital	Critical for decision making and inclusion
	Engagement	Frequency of decision-making activities within the community	Capital	Indicates levels of participation
		Is there a sense of peace, security, and effective conflict prevention and mitigation mechanisms, both within the community and with other communities?	Capital	Indicates peace and conflict resolution within the community

		Does the community play a leading role in coordinating preparedness, response and recovery, reaching all affected people – including the most vulnerable through organized and trained volunteers?	Capital	Indicates disaster prepared and the strength of social capital within the community
--	--	--	---------	---

Source: Own construction based on Clark_Ginsberg (2020:5-6); da Costa *et al.* (2013:286-288); de Kadt *et al.* (2021:24 – 99); Department of Human Settlements (2009b:12); Department of Planning, Monitoring and Evaluation (2019:99-101); GP CoGTA (2022:55 – 127); National Planning Commission (2013:38); UN (2007)

9.2.4 Assigning values to the SCI components

The indicators are assigned a score ranging from 1 to 5, based on the principles relating to each indicator. For example, scores for access to socio-economic facilities are based on the principles set in the CSIR guidelines for the provision of social facilities. Buffers created using GIS show the availability and accessibility of these critical facilities and these data are used to score the capital (refer to Figure 2-3). The higher the availability and/or the accessibility of the capital, the higher the score (refer to Figure 9-2). Scores for vulnerabilities and access to basic services are based on data from CSIR vulnerability research. Hazards are scored based on the likelihood (probability), frequency, predictability and magnitude of that hazard. The higher the vulnerability or hazard, the higher the score (refer to Figure 9-2).

Another example is applying the principles of the Likert scale to indicators that relate to perceptions and were not derived from other studies especially those on perceptions. The Likert scale assigns a numerical value to an indicator based on the strength or intensity of an attitude, assuming that attitudes are linear (Sullivan & Artino, 2013:541). The responses from the community representatives would be classified as: Strongly Agree, Agree, Undecided or Neutral, Disagree or Strongly Disagree. Since the indicators are based on positive perceptions, Strongly Agree would get a score of 5 and Strongly Disagree would get a score of 1.

The scores for capitals, vulnerabilities and hazards as pertains to the four informal settlements under study are used to illustrate these concepts; as shown in Table 9-2, Table 9-1 and Table 9-4 respectively.

	Very low	Low	Medium	High	Very High
Capitals	1	2	3	4	5
	Very High	High	Medium	Low	Very Low
Vulnerabilities	5	4	3	2	1
Hazards	5	4	3	2	1

Figure 9-2: Scoring scales

Own construction (2022)

Table 9-2: Scoring the capitals

Theme	Sub-components	Indicator	KS	VL	Z	J
Housing and the Built Environment	Housing	Proportion of people renting their shacks	1	1	1	1
		Proportion of households with formal title deeds to land and/or residence, agreements or any document as proof of tenure arrangement	1	1	1	1
		Alignment with other housing options, spatial integration, transformation, infill and densification areas	5	5	2	1
		Proportion of residents satisfied with their housing and condition of the neighbourhood	1	2	3	2
Environment	Green Urban Areas	Access to parks and open spaces	1	1	1	2
		Condition of the open spaces and public spaces	1	2	4	2
Local Economy	Education	Level of education of people aged 15 and above	4	3	2	4
		Proportion of population in the informal sector	1	1	1	1
		Proportion of households qualifying for subsidies	1	3	1	1
	Food security	Number of households who have had and did not worry about food for most days during the year	3	3	5	3
		Community measures to curb food insecurity	3	2	5	5
	Household assets and income	Percentage of households that own television, refrigerator, radio and/or DSTV	4	4	4	4
		Average monthly income	1	1	2	1
Transport and Connectivity	Household assets and income	Proportion of household income spent on transportation expenses	1	1	1	1
		Proximity to transport facility	5	1	5	5

Theme	Sub-components	Indicator	KS	VL	Z	J
	Roads and public transport system	Proportion of residents who have a positive perception about the transportation services in their neighbourhood	4	1	4	4
	Mobility	Time–distance to work and economic opportunities	3	3	1	3
	Connectivity	Proportion of households with access to the internet	2	2	2	2
Services	Basic Services	Proportion of households with access to adequate water supply, sanitation, refuse removal, electricity or energy and storm water drainage	1	1	2	3
	Health facilities	Access to health facilities	1	2	1	2
	Education services and equipment	Access to educational facilities by level of teaching	3	4	2	3
	Other services	Access to public facilities (library, fire station, police station, community hall, cemetery, social services)	4	2	3	4
Social and Cultural	Leisure, sports and culture	Access to sports and leisure areas or facilities	3	3	1	4
		Participation in sport, leisure or cultural activities in the neighbourhood — average number of activities by month	3	3	3	3
	Safety and security	Proportion of residents who have a positive perception on the security in the neighbourhood	3	3	4	3
Equity and Social Capital	Feeling of belonging and involvement with community	Length of stay within the settlements	4	4	5	4
		Proportion of accessible facilities to disabled people	1	1	1	1
	Community	Capacity building initiatives, community groups and associations (social, religious, financial or other)	3	5	5	5
		Measures against further invasion of the settlements	4	5	3	5

Theme	Sub-components	Indicator	KS	VL	Z	J
	Satisfaction with services and leadership	Percentage of population satisfied with government services	5	1	1	4
	Information	Percentage of residents who consider themselves well informed about the existing benefits, services and government programmes	2	3	3	3
	Participation	Frequency of decision-making activities within the community	3	3	3	3
		Is there a sense of peace, security, and effective conflict prevention and mitigation mechanisms, both within the community and with other communities?	3	3	3	3
		Does the community play a leading role in coordinating preparedness, response and recovery, reaching all affected people – including the most vulnerable through organized and trained volunteers?	4	4	4	4
Total			89	84	89	97

Source: Own construction (2022)

Table 9-3: Scoring the vulnerabilities

Theme	Sub-components	Indicator	KS	VL	Z	J
Housing and the Built Environment	Housing	Proportion of residents in non-classic dwellings	5	5	5	5
		Densities	5	4	2	3
	Location	Vulnerability to accidents	5	1	3	5
Economic	Employment	Unemployment	5	5	4	4
	Health	Health status enables daily work and usual social activities	2	4	2	2
Equity and Social Capital	Community	Disability rate	1	1	1	1
		Household size and dependency ratio	1	4	3	2
Governance	Political	Political Vulnerability	4	4	5	5
Total			28	28	25	27

Source: Own construction (2022)

Table 9-4: Scoring the hazards

Theme	Sub-components	Indicator	KS	VL	Z	J
Environment	Natural Hazards	Dolomite	5	1	5	5
		Flooding	2	3	2	1
		Fire - veld and structural	5	5	5	5
Social and Cultural	Security	Crime rate	3	1	1	1
Total			15	10	13	12

Source: Own construction (2022)

9.2.5 Calculating SCI

The totals of the capitals, vulnerabilities and hazards are divided by the number of the respective indicators to get back to the value of 5. These average scores, as shown in Table 9-5, are used to calculate the SCI based on the formula given in Section 9.2. Based on this formula, 0.2 is the lowest possible and 5 is the highest value. Therefore, the results are assessed based on the 5-point equal interval range given in Table 9-6.

Table 9-5: Sustainable Community Index

Settlement	Capital	Vulnerability	Hazard	SCI
Kaalfontein	2,613333637	3,5	3,75	0,722109533
Vlakfontein	2,470588235	3.5	2,5	0,823529412
Zenzele	2,617647059	3,125	3,25	0,821222607
Jabulani	2,852941176	3,125	3	0,895040369

Source: Own construction (2022)

Table 9-6: SCI ranges

0.2 – 1.16	Very low sustainability
1.17 – 2.12	Low sustainability
2.13 – 3.08	Medium sustainability
3.09 – 4.04	High sustainability
4.05 - 5	Very high sustainability

Source: Own construction (2022)

The results from Table 9-5, show that all the informal settlements have a very low SCI, and they fall within the same range. The capitals, vulnerabilities and hazards also fall within the same range for all the settlements. The settlements all have a low to medium capitals score, high vulnerability and medium to high hazard score. This is more clearly illustrated by Figure 9-3.

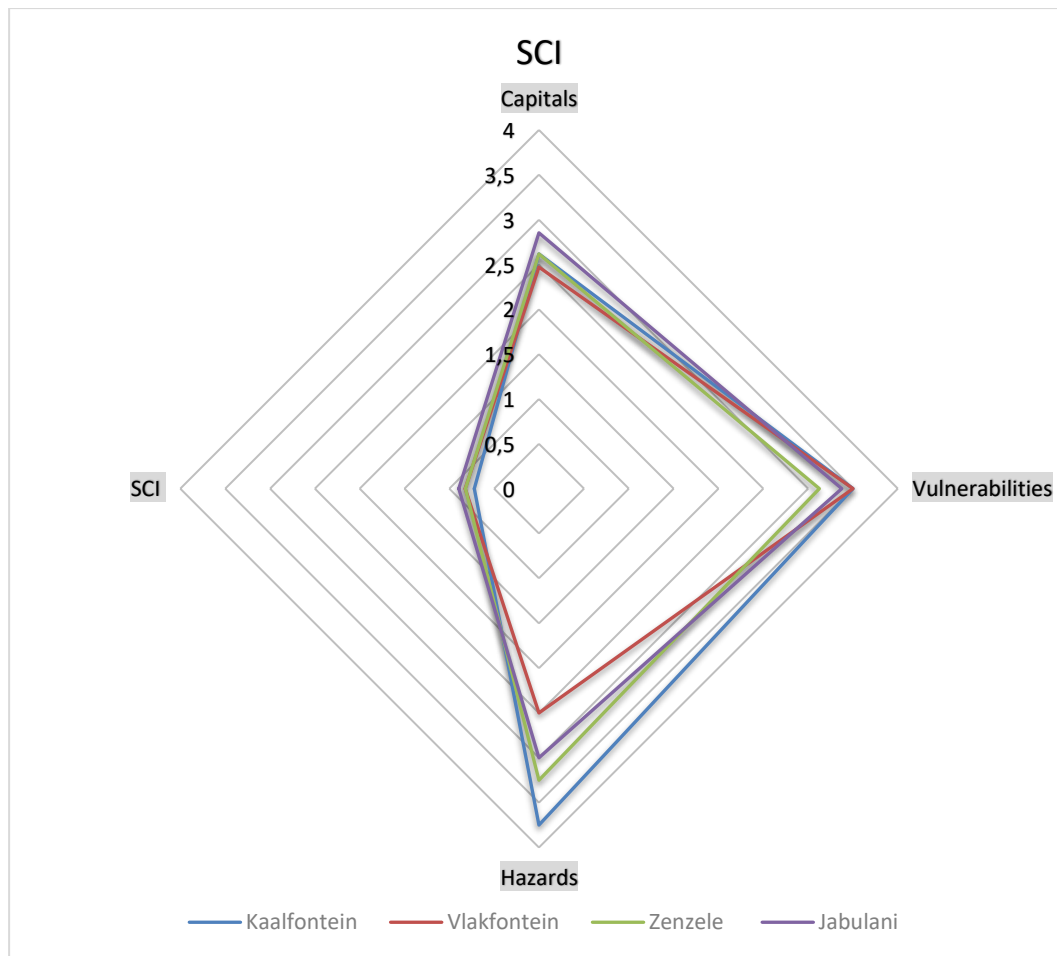


Figure 9-3: SCI radar diagram

Source: Own construction (2022)

All the settlements have low capitals. Jabulani has the highest SCI score and the highest capitals score. Despite having the second lowest capitals score, Vlakfontein has the second highest SCI score. This is mainly due to the lowest hazard score; which is the only one below medium. Zenzele has the lowest capitals score and lowest vulnerabilities score resulting in it ranking third on the SCI. Jabulani has the second highest SCI, second highest capitals, second lowest hazards and third lowest or second highest vulnerabilities. Though Kaalfontein has the second highest capitals score, having the highest vulnerabilities and hazards scores contributed to it having the lowest SCI score.

9.3 Interpretation of the results

The interpretation of the SCI scores aims to reflect whether sustainability in informal settlement intervention depends on municipal category and/or NUSP informal settlement category. The latter also reflects whether current interventions in the informal settlements under study promote SCD.

9.3.1 Sustainability and municipal categories

Overall, all the informal settlements under study have a low SCI score despite municipal or NUSP categories. Regardless, the differences in the scores reflect the extent to which this may be a true reflection of the status quo. Jabulani and Vlakfontein have the highest scores, yet they are situated in different municipalities. An assessment of the capital scores in Figure 9-4 also shows that the ranking of the scores do not necessarily relate to municipal categories. However, individual indicators such as “Access to basic service”, “Alignment with other housing options, spatial integration, transformation, infill and densification areas” and “Unemployment” reflect similarities based on municipality. In any case, if not supported by other indicators, these isolated cases do not support the idea that municipal categories determine differences in SCD in addressing informal settlements.

9.3.2 Sustainability and informal settlement category

The two highest ranking settlements in terms of the SCI are identified for in-situ upgrading. To an extent, this could mean that upgrading of informal settlements influences the sustainability of a community. This would mean that, by virtue of being identified for upgrading, Category A and B1 the informal settlements have higher capitals especially in terms of service delivery, community engagement and security of tenure.

This applies to Jabulani, a settlement identified for full conventional upgrading, which has the highest capitals and the contribution to these accumulated capitals is based on high scores on capitals that relate to informal settlement upgrading. Figure 9-4 shows that Jabulani scores highest on capitals that relate to basic service delivery and community engagement.

However, the same cannot be said about Vlakfontein which has been identified for incremental upgrading with essential services. The informal settlement has the lowest capitals overall, owing mainly to a very low services score and limited basic services as provided in Section 8.5.4.3 and Table 9-2. Yet, the capitals relating to equity and social capital actually have a medium score; which could be attributed to community engagement.

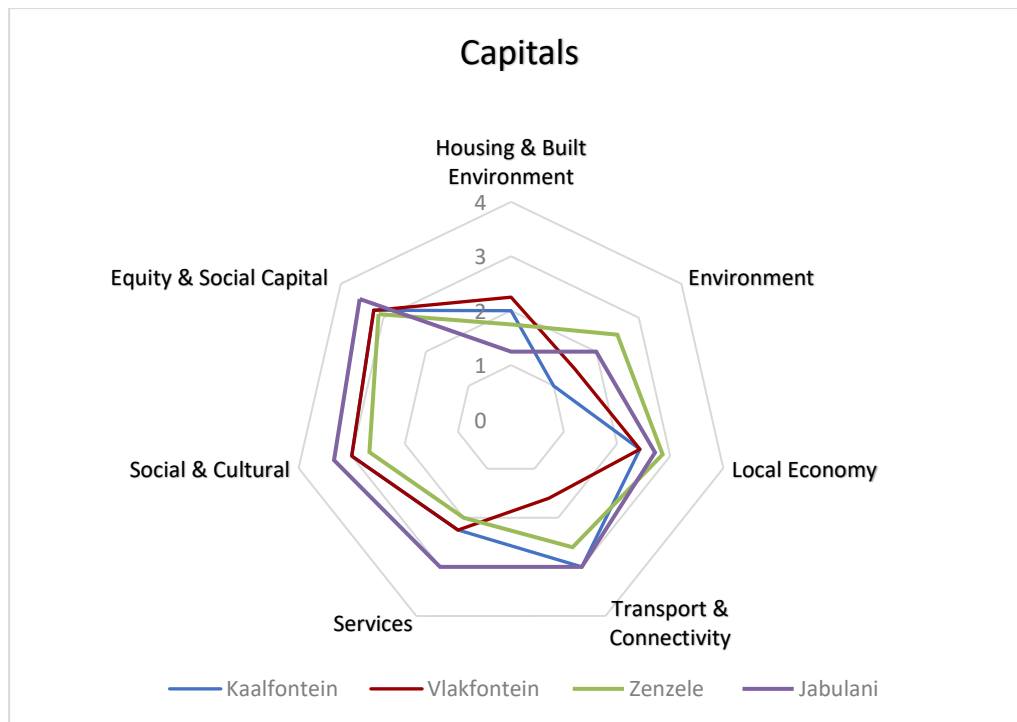


Figure 9-4: Capitals thematic scores

Source: Own construction (2022)

Zenzele and Kaalfontein, the settlements categorised for immediate relocation have higher total capitals scores than Vlakfontein. The scores for Services and Equity and Social Capital for these three settlements are in the same range. This indicates that the provision of basic services does not necessarily result in increased or better capitals. Rather, other capitals such as Local Economy and the Environment, in the case of Zenzele; and Transport and Connectivity in the case of Kaalfontein, also contribute to an overall increase in accumulated or total capitals.

Reflecting on Figure 9-3, the SCI score for Zenzele is close to that of Vlakfontein. The only reason Vlakfontein scores higher than Kaalfontein on the SCI are the hazard scores. It is evident that had it not been for the hazards, the Zenzele and Kaalfontein would score higher than Vlakfontein. Therefore, the current measures in addressing informal settlements do not promote SCD.

9.4 Conclusion

The focus of this chapter was to investigate whether the interventions in addressing the informal settlements within the GCR contribute to SCD. This is achieved by measuring the sustainability of each informal settlement using a formulated SCI. The principles of the AHP are employed to guide the identification and the scoring of the SCD indicators. The indicators are classified as capitals, vulnerabilities and hazards based on their impact on the community. The scoring of these

three components ranges from 1 to 5 when 5 is the best score for capitals and the worst score for vulnerabilities and hazards.

The SCI scores for all settlements indicates that they are within the same range, and all have a low SCI. Overall, municipal categories do not determine the SCI scores for the informal settlement though informal settlements within the same municipality may show the same results. To a greater extent, NUSP informal settlement categories also do not influence the SCI scores for the informal settlement. An examination of the capitals indicates that informal settlement upgrading through the provision of basic services and community participation should be supported by other capitals to ensure the sustainability of a settlement. Therefore, this chapter guides the recommendations of informal settlement intervention towards sustainable community development as provided in Chapter 10.

SECTION E:

Synthesis

CHAPTER 10 SYNTHESIS AND RECOMMENDATIONS

10.1 Introduction

This study argues that current spatial planning approaches to informal settlement intervention within the GCR do not promote SCD. While the previous chapter focussed on the development of a toolkit to measure SCD in the informal settlements under study, Chapter 10 presents a synthesis of the findings of the various aspects of the study in terms of the aims, objectives and research questions and how they relate to another. This chapter presents conclusions derived from the study, based on the relationship between the literature review findings and those from the empirical study. Chapter 10 also proffers recommendations to ensure SCD in informal settlement intervention. The structure of this chapter is illustrated by Figure 10-1.

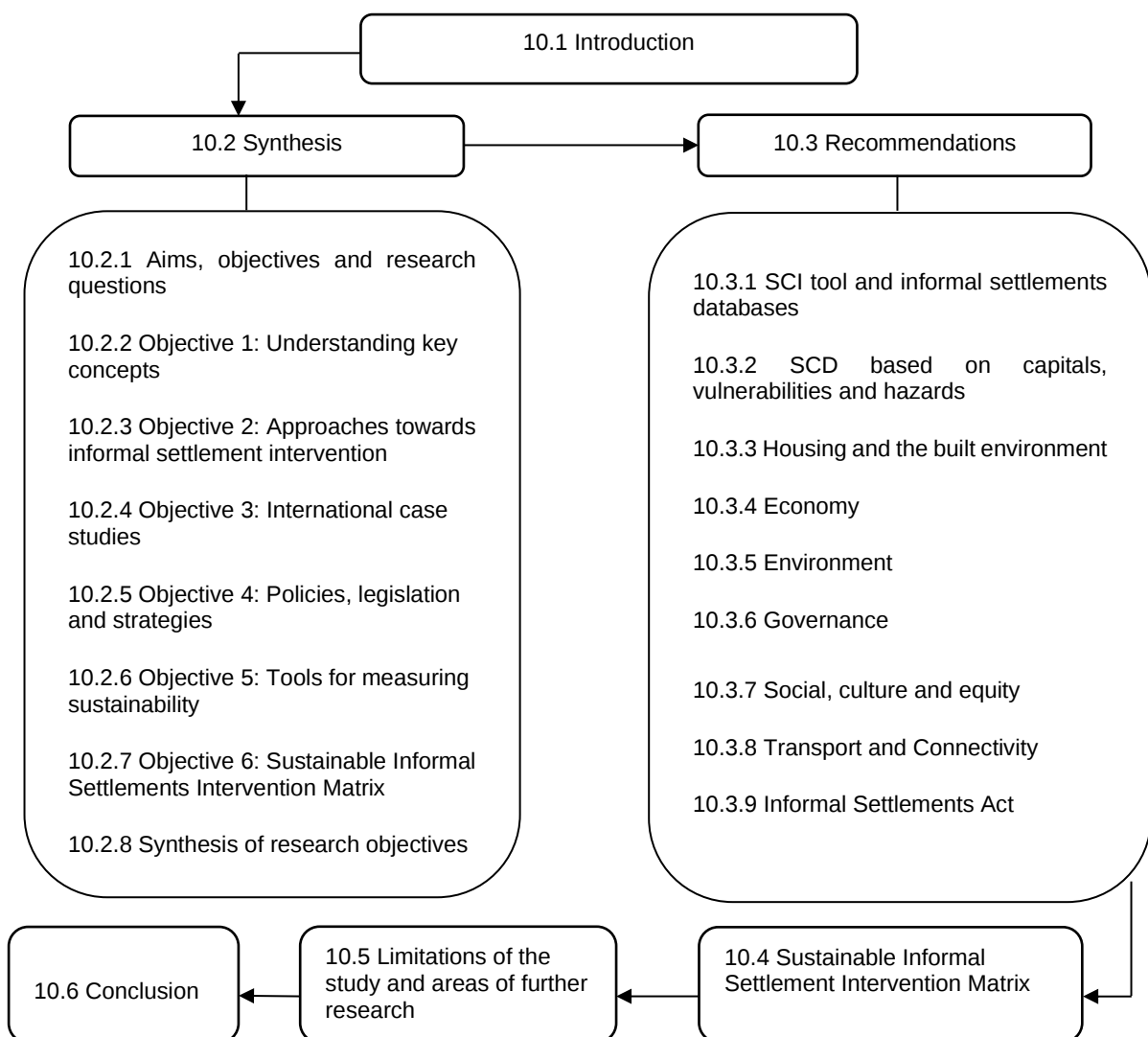


Figure 10-1: Chapter 10 flow diagram

Source: Own construction (2022)

10.2 Synthesis

10.2.1 Aims, objectives and research questions

As stated in Section 1.5, the aim of this study has been to investigate the instrumentality of spatial planning in ensuring SCD in informal settlements interventions within the GCR. The study also attempts to investigate the different perspectives and the factors contributing to the differences in the progress of the formalisation of informal settlement amongst different municipalities within the GCR. Therefore, the overall aim of the study is to investigate the different spatial planning perspectives on informal settlement intervention as relates to SCD.

The aims of the study are divided into objectives which reflect the key principles and milestones guiding the research. The objectives of this study mainly focus on understanding the main concepts under discussion, to determine whether there are different spatial planning approaches to informal settlement intervention, examine the regulatory framework, propose a tool for measuring sustainability in informal settlement intervention and proffer a strategy to guide informal settlement intervention towards SCD. These objectives align with the research questions emanating from the problem statement and are in turn translated into the chapters constituting this study. The interaction among the aims, objectives and research question is illustrated by Figure 10-2.

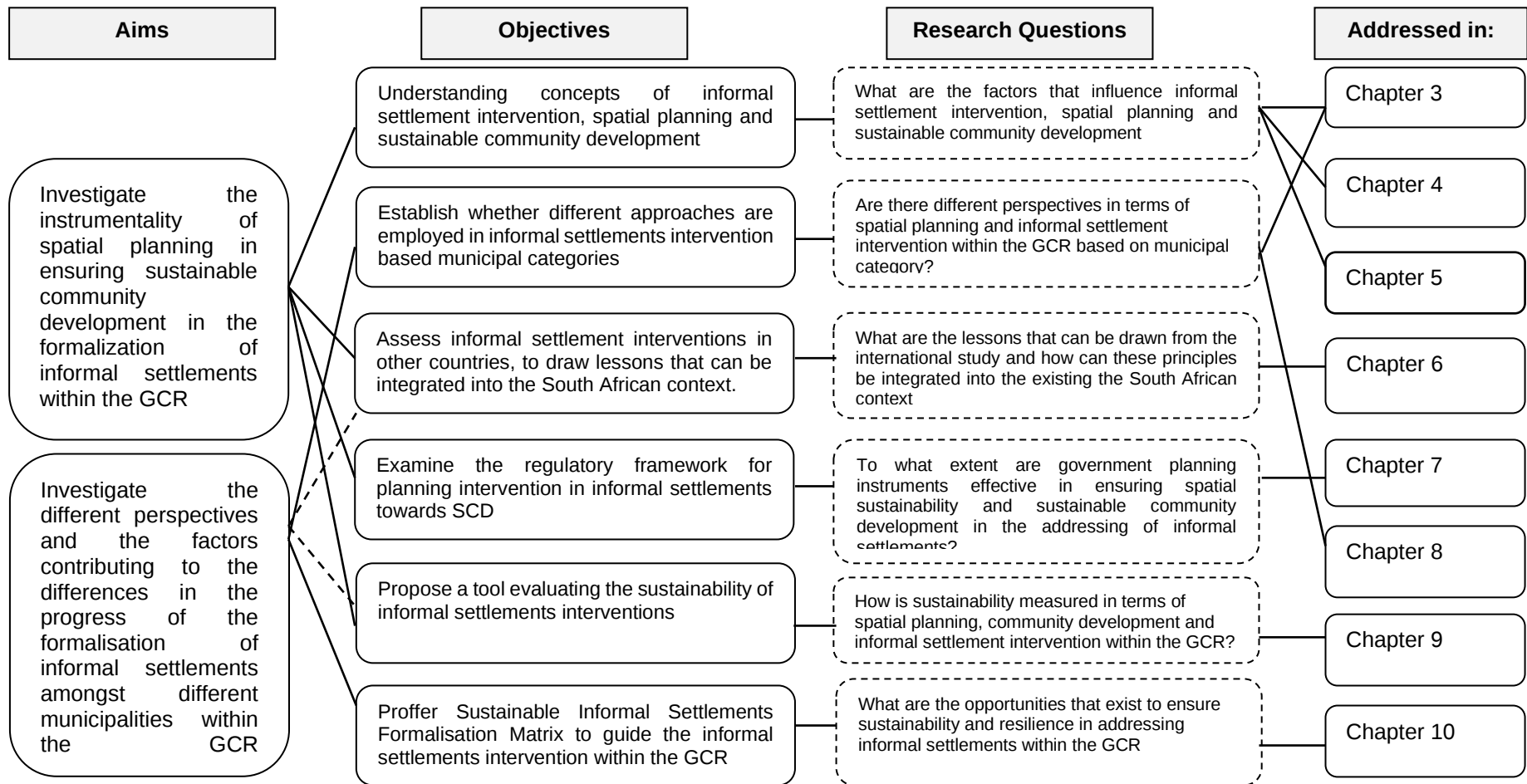


Figure 10-2: Synthesising aims, objectives and research questions

Source: Own construction (2022)

10.2.2 Objective 1: Understanding key concepts

The first objective of this study has been to understand the principles relating to the concepts of informal settlement intervention, spatial planning and SCD. Though is mainly addressed in the literature review in Chapter 3, Chapter 4 and Chapter 5, it also forms the basis for the whole study.

10.2.2.1 Spatial planning

Chapter 3 focuses on spatial planning within a city region. The chapter defines spatial planning as a planning with physical space, policy making tool and a coordinative function. This is reflected in Chapters 6, 7 and 8 which detail spatial planning in informal settlement intervention from an international perspective, spatial planning through policy formulation and implementation and spatial planning through informal settlement intervention within South Africa, respectively.

The focus on regional economic development theories as provided in Section 3.4 is discussed in detail by reflecting on Objective 2. Chapter 3 also details the factor that influence the location of informal settlements within a city region. This aligns with the findings in Chapter 8 since most of the informal settlements are located on dolomitic land, outside the urban development boundary and/or close to industrial facilities. The location of these settlements in the context of the whole municipality also reflects the fragmented urban form, the Apartheid City Model in particular. The location of the informal settlement and the relocation of households to the outskirts of the city in Casablanca and Alexandria also follow the provisions of this theories and models.

10.2.2.2 SCD

The sustainable urban form is the principle underlying this study. The core elements of the Compact City model, that is, compactness; accessibility and mobility; and environmental efficiency and social equity guide the principles and functional elements of SCD. Literature and empirical studies do not provide measures for calculating SCD, but guidance for approached and indicators. This will be discussed in detail by reflecting on Objective 5.

10.2.2.3 Informal settlements, resilience and sustainability

Chapter 5 discusses the theoretical perspectives on informal settlements to determine the factors that underpin the emergence of informal settlements, the lives and livelihoods in informal settlements and the informal settlement interventions. The literature indicates that state provided, and private sector housing does not meet the housing needs of low-income housing and have promoted the emergence and proliferation of informal settlements. PPP present opportunities for sustainable and adequate housing. These claims are supported by the empirical studies in

Alexandria (Section 6.3.3) and Casablanca (Section 6.4.3) as well as the shift in policy in low-income housing from RDP to BNG in South Africa (Section 7.6.4). Also, the rejection of RDP housing by the residents of Zenzele indicates that there is a need for engagement with multiple stakeholders in the provision of housing to meet the needs of the people.

Informal settlement upgrading is the widely accepted and implemented strategy for informal settlement intervention globally. Literature studies indicate that the most aspects of informal settlement upgrading are provision of basic services, incremental security of tenure, community participation and in some instances, socio-economic facilities. The international and South African case studies mirror this with slight variations to the approaches as discussed in Sections 10.2.3 and 10.2.4.

In Section 5.5.2.4, the literature provides that informal settlements are considered slums of hope because they display characteristics of resilience and sustainability. The housing structures, early warning systems, social ties, governance structures, livelihood approaches, multiple uses of spaces all indicate adaptability, redundancy and resourcefulness. All informal settlements under study reveal some level of redundancy and resourcefulness based on the alternative sources of income, governance structures, social ties and playing key roles in disaster preparedness responses. This is indicated in Table 9-2 where the score relating to the aforementioned concepts are high. Yet, emphasis has been placed on the negative aspects of informal settlements. The very definition of informal settlements places emphasis on the vulnerabilities and does not refer to the positive aspects of these settlements. This applies to both literature and empirical studies where perceptions of these settlements are generally negative.

Resilience as a component of SCD means that communities have an inherent ability to withstand shocks and adapt to ensure change and continuity. This is evident in the communities within the Zenzele and Kaalfontein Station informal settlements. Both communities were able to resume their lifestyles despite the disruptions that were caused by relocations for new developments on the original portions of land on which the settlements were located. For Zenzele, the community were able to rearrange their housing and household structures to ensure accessibility within the settlement and reduce household sizes. This aligns with the concept of trajectory where adaptation leads to positive outcome especially in terms of functionality, as provided in Figure 4-5. In Kaalfontein, the residents were able to incorporate micro-enterprises into the informal layout of the settlements.

Zenzele and Jabulani also exhibit resilience through the measures they have taken to ensure food security. The establishment and maintenance of community gardens reflects

resourcefulness which was utilised to address the threats of food insecurity and economic instability as a result of the COVID-19 pandemic.

Though there is limited literature on the concept, residents of informal settlements tend to exhibit high levels of resilience against health-related disasters. Empirical evidence from the COVID-19 pandemic has shown that informal settlements were more affected economically and socially rather than health-wise. However, this is still debatable as the impacts of the pandemic are still under assessment. Also, informal settlements have historically been associated with myriad health challenges relating to the squalor of their conditions and the lifestyles the inhabitants pursue. Whether vulnerability to these other health challenges contributed to resilience against COVID-19 is to be investigated. Regardless, informal settlements can still be perceived as slums of hope based on the resilience to some health challenges.

An aspect of sustainability that is not reflected in literature is the ability of the residents to curb further invasion of the settlement when they have been identified for upgrading or relocation. Jabulani and Vlakfontein have the highest scores in terms of managing further invasion of informal settlements as indicted in Table 9-2. This is due to the measures that the communities have employed in adherence to the stipulations of the upgrading programme. This indicates a sense of ownership and the potential of the communities to promote environmental sustainability.

This also brings into perspective the measures that have been employed in Zenzele to keep the public spaces clean. This improves the aesthetics of the community, curbs hygiene related disease outbreaks and promotes safety. Low crime rates in Jabulani, Zenzele and Vlakfontein are a result of community endeavours to keep the settlement safe for all inhabitants. Therefore, collective action is a key component of sustainability in informal settlement interventions.

10.2.3 Objective 2: Approaches towards informal settlement intervention

Objective 2 seeks to establish whether there are different approaches that are employed in the upgrading of informal settlements depending on the different municipal categories within the GCR. The literature relating to this is provided in Chapter 3 while Chapter 8 constitutes the respective empirical investigation.

From the literature, it can be concluded that there are different approaches to spatial planning between metropolitan and local municipalities. The regional development and growth theories explain that there is uneven development within city regions due to settlement hierarchies, backwash and spread effects, urban bias and policies directed at influencing growth at one centre at the detriment of others. In this regard, the allocation of resources, investment opportunities and

spatial planning instruments would influence higher-level informal settlement intervention in metropolitan municipalities than in local municipalities.

The details in Chapter 8 indicate that there are different approaches to spatial planning and informal settlement intervention between EMM and RWCLM. Both municipalities implemented ISUS's, though the EMM includes Sustainable Livelihoods Programmes (SLPs) while the RWCLM only provides details of the settlements. In RWCLM, informal settlement intervention is to an extent emphasised mostly in the SDF, while in EMM there is equal emphasis in the SDF and the IDP.

Though both municipalities utilise ISUS's, SDFs, IDPs, Housing Sectors Plans and PHSHDAs, EMM also aligns informal settlement interventions with BEPPs where informal settlements such as Kaalfontein Station form part of integration zones which are identified for spatial transformation and catalytic investment. RWCLM does not have similar strategies, curbing the opportunities for equivalent spatial transformation and investment. Also, the presence of more regional nodes and a well-established transport network in EMM creates more opportunities for the integration of informal settlements into the urban fabric, than in RWCLM.

As a metropolitan municipality EMM has additional funding in the form of the USDG, which is not available for RWCLM. Though RWCLM also has access to funding for distressed mining towns through the HSDG, the contributions are outweighed by those of the USDG. Also, differences in municipal categories mean that informal settlement intervention is carried out at local level within EMM and provincial level in RWCLM. The bureaucratic process for intervention in local municipalities often deters progress as it the case of the upgrading of Jabulani informal settlement in RWCLM.

Though not the core focus of this objective, international case studies in Sections 6.3 and 6.4 also reflect the different spatial planning perspectives based on municipal categories. The informal settlement policies and strategies implemented in Casablanca and Alexandria were an extension of those at national level. Hence, the replication in other cities within the respective countries.

However, findings from Chapter 9 indicate that these different approaches do not necessarily yield different results in terms of sustainability in informal settlement intervention. Regardless, this study shows there are different perspectives on informal settlement intervention based on municipal categories and this is equally reflected in literature and empirical studies.

10.2.4 Objective 3: International case studies

The third objective seeks to assess the approaches that have been implemented to address informal settlements in other countries, to draw lessons that can be integrated into the South African context. This study reflects on informal settlement intervention in Alexandria, Egypt and Casablanca, Morocco as cities and countries that have made significant progress in addressing informal settlements.

In Egypt, the decline in the number of households in informal settlement and the number of the settlements themselves owes to the implementation of the ISDF. The classification and categorisation of informal settlements have improved interventions based on prioritisation and allocation of resources and responsibilities to different entities. Interventions for unsafe areas generally include in situ housing replacement with densification or displacement to nearby state-owned land, legalising tenure with charge, provision of alternative housing, monetary compensation, housing rehabilitation, credit for housing improvement.

However, these initiatives did not improve the quality of life for the inhabitants especially since relocations with limitations on livelihoods activities was the main intervention measure. Yet, the PDP implemented by the government ministry MoPIC and GIZ presents prospects of improving quality of life in informal settlement. Therefore, the main government tool for informal settlement upgrading contributes to SCD to a lesser extent but can be enhanced by supporting initiatives.

The Alexandria CDS enhanced interventions through the provision of basic services, emphasising collaboration between inhabitants and organisations, local economic development, improving private sector engagement in development; and creating catalyst for investment and planning in informal settlement upgrading. The major challenge remains the socio-spatial marginalisation of communities through relocations outside the urban boundary and miscommunication regarding these relocations.

In Morocco, the VSB is lauded for placing emphasis provision of lots for incremental building, relocation and de-densification of informal settlements and in-situ upgrading with basic services and security of tenure. However, the success of the Restructuring Policy of the 1980's is indicative of the impact of social housing in mitigating financial impediments to property ownership. The Urban Development's Projects also reflect the significance of improving livelihoods in informal settlement intervention, though in this particular case, it would also promote spatial marginalisation in line with the provisions of the sector model (refer to Section 3.5.3).

The VSB programme spearheaded by Al Omare in Casablanca addressed many of the key themes of SCD. The programme reflects that mobilisation of land, facilitating access to credit and

microcredit mechanisms, PPPs, multi-sector engagement, incentives and subsidies, fostering beneficiary contribution and partnerships with international agencies can be key principles in fostering SCD in informal settlement intervention, if implemented collectively.

Both case studies prove that relocation to the urban peripheries is viewed unfavourably among the inhabitants. Also, the provision of top structures for housing has proved not to meet the demand of housing and sustainable financially. Political systems and government perceptions may also hinder improvement in quality of life in informal settlement interventions. Regardless, the approaches or components of these two case studies can guide sustainable informal settlement intervention in South Africa.

10.2.5 Objective 4: Policies, legislation and strategies

This study seeks to examine the regulatory framework for planning intervention in addressing informal settlements and determine whether the principles of SCD are adequately reflected in policies and legislation. The NUA and SDG 11 guide SCD in informal settlement intervention as the principles of resilience and sustainability are clearly enshrined in the goal to address informal settlements.

10.2.5.1 National development policies, legislation and strategies

The *Constitution of South Africa* guides SCD by emphasising the right to adequate housing for every citizen, to improve quality of life. From the literary perspective in Section 5.6.2, the right to adequate housing promotes SCD as the principles overlap. The *Constitution* also places emphasis on intergovernmental coordination and community participation as the key elements of achieving SCD. Therefore, though the empirical study indicates that all these provisions are not adhered to in practice, the *Constitution* does make provision for SCD.

The core elements of the NDP align with the principles of SCD but the plan does not indicate the alignment between these core elements and informal settlement intervention. The goals of the MTSF are mostly directed at the quantitative goals of providing top structures and basic services rather than improving livelihoods and promoting adequate housing. Therefore, the NDP and MTSF do not adequately reflect the principles of SCD in informal settlement intervention.

10.2.5.2 Spatial planning policies, legislation and strategies

The *SPLUMA* development principles align with most of the functional elements of SCD except for social and cultural as well as food security. The establishment of a Municipal Planning Tribunal fastens informal settlement intervention and, in a way, promotes SCD. Land use through zoning

restricts SCD as it does not give room for the mixed uses that characterise informal settlements. Therefore, *SPLUMA* reflects the principles of SCD in informal settlement intervention to a greater extent.

The Gauteng Spatial Development Framework (GSDF) recognises the prevalence of informal settlements with the provision and the upgrading of informal settlement where necessary is part of its vision. The GSDF also acknowledges the essence of spatial prioritisation, connectivity, integration and understanding the socio-economic and physical factors that contribute to vulnerability in informal settlements. However, this spatial prioritisation in terms of shared economic prosperity through nodal and infill development only applies to informal settlements prioritised for upgrades. This means that the other informal settlements are not considered to have economic potential that could contribute to the provincial and national economy. Further, informal settlements are excluded from economic consolidation imperatives.

The RWCLM SDF states the city's vision to develop new spatial norms and standards to densify cities, improve transport, locate jobs where people live, upgrade informal settlements and fix housing market gaps. The SDF provides the location of the informal settlements, summarises the details of the settlements and shows alignment with other housing programmes, as part of the housing backlog eradication strategy. The plan for addressing informal settlements also indicate integration through relocation of settlements such as Zenzele from outside the urban boundary to the centre of the city. However, the SDF does not show the alignment of informal settlements with economic opportunities nor the plan for the residents that do not apply for the PHDAs housing catering for the majority of the residents from this and other settlements.

On the contrary, the EMM SDF shows the alignment between informal settlement intervention and other spatial and economic programmes. Kaalfontein is aligned with the BEPP, and the identification of the Kwa-Thema node will enhance the economic development of Vlakfontein. Generally, the SDF provides for the infill development to address informal settlements, implement urban farms to create economic opportunities for inhabitants of informal settlements, upgrade informal settlements to reduce the potential negative impacts on industrial areas. Therefore, this SDF caters for the principles of spatial efficiency and spatial sustainability.

In accordance with *SPLUMA*, municipal *SPLUMA* By-laws should guide the implementation of development principles and enforce the municipal land use scheme. The RWCLM *SPLUMA* By-law only recognises the essence of introducing informal settlements as a land use into the land use scheme. The CoE *SPLUMA* By-law seeks to promote inclusivity and equitable development as pertains to informal settlements. This by-law places emphasis on incorporating transitional informal settlements, that is, all informal settlements that have been identified for incremental

upgrading into the land use scheme. The transitional informal settlements are to be supported by socio-economic land uses essential for basic community services. To a greater extent, this promotes SCD as the informal settlements are provided with basic services and those that support livelihoods. The challenge is that the By-law excludes the informal settlements scheduled for relocation, thus thwarting opportunities for SCD within these settlements and overall.

Therefore, the Spatial Planning and Land Use Management policies and legislation promote SCD in informal settlement intervention to an extent. However, the SDFs and the By-laws neglect the economic contributions and needs of informal settlements especially those that have not been identified for in-situ upgrading. As a result, the principles of spatial sustainability and spatial resilience are compromised.

10.2.5.3 Human settlements policies, legislation and strategies

The *Housing Act* makes provision for SCD by emphasising that all three spheres of government ensure accessibility, variety of affordable tenure options, integrations, inclusion, community engagement, good governance, safety, sustainability and transparency in housing development for the poor. The *PIE Act* takes into consideration appropriation as a right to the city but does not provide more insight into unlawful occupation; promoting the proliferation of informal settlements. This in turn thwarts prospects of SCD.

The UISP is the main tool for informal settlement intervention. Through NUSP, the categorisation of informal settlements has created opportunities for effective intervention as it reflects different responses for different categories, allows prioritisation and respectively budgetary allocations. However, it is evident that there are more financial mechanisms directed towards Category A and B1 settlements than B2 and especially C (refer to Table 7-6). This indicates that in-situ upgrading takes precedence over potential relocation in terms of policy context. In any case, the principle of the UISP emphasises in-situ upgrading over relocations. This thwarts SCD as the conditions of the basic services in Category C informal settlements become dire and poses threats to health and well-being as evidenced in Kaalfontein. It is evident from the empirical studies that once government has provided interim basic services to category B2 and especially C informal settlement, limited government attention goes to those settlements including monitoring and evaluating the conditions and adequacy of the services provided.

By placing emphasis on basic service delivery, community participation and security of tenure, UISP neglects other elements that are essential to SCD. Findings from Chapter 9, indicate that there are more aspects to informal settlements that should be taken into consideration to make a community sustainable. For example, the environmental aspects such as the condition of the

environment, economic aspects such as livelihood approaches, unemployment and food security and/or social such as feeling of belonging are critical but not taken into consideration in UISP.

However, some of these are taken into consideration at local level, for example the Jabulani upgrading plan which emphasises establishment of micro businesses on upgraded plots and the alignment of enterprise development projects and in-situ upgrading. The EMM ISUS and the subsequent SLPs for Kaalfontein and Vlakfontein highlight the human, physical, social and financial capitals for each settlement.

In theory, incremental security of tenure creates opportunities for investment, access to credit and home improvements. From the cases under study, the benefits of incremental tenure provision are not evident. The only benefits for the residents of Jabulani and Vlakfontein are protection against arbitrary evictions. Otherwise, the residents do not have any other document or agreement that would allow them to access formal credit or motivate them to improve their housing. Also, despite providing guidelines for beneficiary assessment, it is not clear how the inhabitants that do not qualify as beneficiaries would be addressed. This may encourage further invasion of land which in turn encourages urban sprawling, thwarts environmental sustainability, and subjects more people to hazards and vulnerabilities.

The same applies to the selection of settlements that will be upgraded against the total number of existing informal settlements. Whether this is part of the MTSF, NUSP, UISP, provincial or municipal strategy, it is not clear how the targets for upgrading or rapid assessment and categorisation of informal settlements are set. At national level, 2200 of the 2700 informal settlement were set for assessment and categorisation. In EMM, only 33 of the 119 were selected for upgrading. Also the criteria for the selection of these settlements are not clear.

In conclusion, the major shortcoming of the UISP is the absence of indicators and measurement tool to evaluate the success and sustainability of the upgrading programmes. The findings in Chapter 9 indicate that the current interventions are not promoting sustainability in informal settlement and these conclusions cannot be reached in the absence of indicators and a tool to measure the sustainability of the programme.

10.2.5.4 Governance policies, legislation and strategies

The *IGRF Act* sufficiently provides for SCD by emphasising the roles of each sphere and sector of government as well as alignment, coordination and integration of programmes, policies and operations for development such as informal settlement intervention. However, in practice, there is limited adherence to these stipulations as is evident in the case of Jabulani where misalignment

between provincial and local municipal expectations have led to the delay in the upgrading of the settlements.

From the empirical studies, it is evident that the MTSF goals for the upgrading of informal settlements were not achieved at national and municipal levels. Though the *Municipal Systems Act* stresses the significance of performance management systems, it is not clear whether there are any measures that should be taken for non-compliance or failure to meet set targets and goals. The Act also emphasises the role of ward councillors as key stakeholders in addressing informal settlements. However, there is consensus among government functionary representatives that ward councillors sometimes misrepresent the needs of the communities and prey on the vulnerability of the residents as a political tool to gain votes in the next election.

This is evident in the case of Zenzele where the ward councillors and mayoral representatives had refuted the submissions geotechnical reports that the settlement is underlain by dolomite and have proceeded to provide electricity structures for the inhabitants. Since Zenzele is highly vulnerable to political instability and general unsatisfied with government services (see Table 9-2 and Table 9-3), this could be a ploy to gain the trust of the inhabitants to their disadvantage. This also aligns with the literature claims in Section 5.5.1.4 that the systems relating to the emergence and management of informal settlement are political. Therefore, the Act does not adequately promote SCD by only stating that ward councillors are the key stakeholders for community participation.

The IDPs promote SCD through the prioritisation of basic needs and poverty reduction, integration of various plans, sectors and spheres with budgetary allocations and emphasis community participation. However, literature studies argue that despite having them as KPAs, there is often misalignment of plans and financial resources to address the challenges in informal settlements.

The RWCLM IDP only mentions the provision of electricity and the budget for water infrastructure to informal settlements for only one of the five years. The CoE IDP identifies the electrification, provision of basic services and upgrading of informal settlements as KPAs and aligns these with the municipal capital budget, responsible department and the source of funding. On the other hand, though informal settlements are designated as a component of the strategic zones, there are no indicators to measure the percentage of households accessing subsidy units in integration zones that come from informal settlements. Though community participation is a major component of informal settlement upgrading, both the IDPs do not include it as part of the budget. Therefore, the CoE IDP promotes SCD to a lesser extent, whereas the RWCLM does not.

Overall, the policies, legislation and strategies reflect and guide SCD in informal settlement intervention to an extent. However, this is generally hampered by the inaccurate understanding of the real needs of the communities in informal settlements, ineffective practices, and lack of alignment among the numerous policies and legislation that relate to informal settlement intervention.

10.2.6 Objective 5: Tool for measuring sustainability

Objective 5 focusses on proposing a tool evaluating the sustainability of informal settlements interventions. This is addressed in Chapter 9 where the SCI is formulated to calculate the sustainability for each of the informal settlements under study. The formulation of the index takes into account the principles of the ABCD and SLA approaches to community development that emphasise the positive aspects of a community taking into consideration the negative aspects of the community for the latter approach. This also aligns with the arguments for considering informal settlements as both slums of hope and slums of despair as detailed in 5.5.

The formulation of this index also indicates that resilience is a component of SCD, addressing the gap in literature of the practical applicability of the aspects of resilience. The SCI scores for the four informal settlements show that current approaches to informal settlement interventions do not promote SCD. Informal settlements are highly vulnerable and are impacted by various hazards therefore the sustainability scores will always be low unless there is intervention to increase the individual and cumulative scores for capitals.

10.2.7 Objective 6: Sustainable Informal Settlements Intervention Matrix

This study seeks to proffer Sustainable Informal Settlements Intervention Matrix to guide the informal settlements intervention within the GCR. This strategy can guide informal settlement interventions at national, provincial, local and community level. This is detailed in Table 10-2.

10.2.8 Synthesis of research objectives

Objective 1 places emphasis on understanding the key concepts relating to this study. This forms the basis for the subsequent Objectives. Objective 2 on assessing whether there are different approaches in informal settlement interventions aligns with Objective 3 as policies, legislation and strategies influence different perspectives on spatial planning to ensure SCD in informal settlement interventions. Objective 2 also aligns with Objective 5 since the tool is used to quantify the SCI and determine whether there are different approaches based on municipal categories. The alignment between Objective 2 and Objective 6 is highlighted through municipal based recommendations.

Objective 3 mostly aligns with Objective 6 in guiding informal settlement intervention towards SCD. The alignment between Objective 3 and Objective 4 is the assessment of the instrumentality of planning policies, legislation and strategies in informal settlement intervention. Objective 5 reflects on the provisions of Objective 4 in the identification of indicators which in turn would be used to assess the instrumentality of these policies and legislation in promoting SCD in informal settlement interventions. Objective 6 is based on the provisions and findings of the rest of the objectives of this study. The next section mostly focuses on this alignment of Objective 6 and the rest of the Objectives.

10.3 Recommendations

A sustainable informal settlement is one whose capital contributions outweigh the vulnerabilities in order to reduce, absorb, withstand, bounce back from the impact of hazards. This section provides recommendations for informal settlement intervention to ensure SCD. These recommendations apply at settlement, municipal, provincial and national level and are based on the intersecting themes of SCD.

10.3.1 SCI tool and informal settlements databases

This study proves that there is a need to identify indicators and calculate the sustainability of informal settlement interventions based on the status quo of the settlement and the potential benefits of the implemented interventions. This would improve interventions towards meeting the real needs of the inhabitants whilst enhancing the resilience of the community. Though this study employed a generic weighting method, different weights can be assigned to the themes and indicators of SCD.

The major challenges in carrying out a comprehensive assessment is the unavailability and inaccessibility of data across all four settlements. For this study, some of the relevant indicators that would have contributed to the assessment but could not be used due to data challenges include but are not limited to:

- Household food and nutrition status
- Rate of Gender- Based Violence within the informal settlement
- Prevalence of crimes against women, children and other marginalised groups
- Proportion of foreign residents and attitudes towards foreigners
- Proportion of residents who feel identified with the neighbourhood or community
- Percentage of households covered by medical aid

- Proportion of residents who have a positive perception on the quality of cultural and leisure services in the neighbourhood
- Percentage of children, women and youth who participate in decision-making
- Proportion of total population daily mobility by transportation mode

It should be noted that indicators for SCD can vary based on community needs and expectations, in alignment with the municipal vision. In any case, measures should be taken to ensure that all the relevant data is available and accessible. Partially available and data that can be categorised as not available should be gathered and processed to ensure the use in the calculations. This could also be hampered by numerous data sources, as was the case with this study. Different departments and spheres of government may have different data sets for the same information. For example, data on the number of households in informal settlements from RWCLM, differed from that provided by the H.D.A, Gauteng Department of Human Settlements (GDHS), Department of Cooperative Governance and Traditional Affairs (CoGTA) and the Department of Health.

Therefore, it would be essential to ensure that there is a GIS database at every level of government and the information within each database aligns. The database at national level can have the number and names of informal settlements, categories and sources of funding. The provincial database can have the aforementioned as well as details on the progress on intervention to inform a provincial strategy. At local level, the database should have the aforementioned, demographic data, capitals, hazards and vulnerabilities data, SCI scores and contact details of community representatives.

These databases should be constantly updated, and stringent measures should be employed to ensure that relevant departments submit the relevant data. The Corporate GIS Department at each sphere should be the custodian of these data, in the absence of which the Town Planning Department can assume the role.

10.3.2 SCD based on capitals, vulnerabilities and hazards

Informal settlement intervention should also recognise the contribution of expanding capitals in improving the lives and livelihoods of the inhabitants. An increase in capital sources would reduce vulnerabilities and in turn the impact of the hazards. The UISP should be amended to emphasise expanding human, financial and natural capitals for all informal settlements despite NUSP categories. Despite awaiting eventual relocation, Category C informal settlements can also receive assistance especially in terms of micro-enterprises and programmes that enhance and strengthen social capital. Similarly, the targets for the MTSF should show an alignment between

the physical upgrading of informal settlement and improving the livelihoods, which in turn promotes SCD.

The EMM SLPs should indicate the impacts of vulnerabilities and together with the ISUS, they should present a tool or method for measuring the impact of the informal settlement interventions. The same applies to the RWCLM instruments where there is little or no emphasis on livelihoods and improving quality of life.

10.3.3 Housing and the built environment

The provision of adequate housing is based on meeting the real needs of the community. A housing needs assessment should be carried out before any intervention commences to categorise and prioritise the households needs. Incremental security of tenure should result in the signing of an agreement between households and the relevant officials to encourage investment in the housing. As a principle, low-income housing should not be delivered for free. Rather, all citizens should contribute a portion of their income to access housing. Other aspects of adequate housing are reflected in the subsequent sections within this and other themes. This includes alignment with alternative housing development and improving access to land as part of this section.

10.3.3.1 Rental housing

Rental housing should be explored as an alternative or supplementary to in-situ upgrading of informal settlements. This would reduce the burden on the state to provide fully subsidised housing while creating a sense of ownership and self-actualisation among the inhabitants of informal settlements. Though a small proportion of the inhabitants of the informal settlements under study rent their shacks, the very idea of renting indicates that the households are willing to contribute a portion of their income towards housing. One of the options would be to implement backyard rental housing in formally established settlements. This would ensure densification and infill development and align with the concept of the compact city model. However, measures should be taken to ensure that basic service provision aligns with the increase in the densification of the township.

Rent-to-buy housing can also be considered as an option. This is a housing arrangement whereby households rent a property for a specific period of time at the end of which the lessor can purchase the housing. In most instances, a component of the rental payments goes towards the purchase of the house. The general consensus among the inhabitants of informal settlements is the desire to own housing and this option would allow the inhabitants to easily access formal housing whilst incrementally investing in housing ownership. This option can be provided for households that

earn between R3500-15000, aligning with South Africa's gap market. However, the number of beneficiaries can be expanded to include lower earning households, taking into consideration income from informal employment as well as other grants and subsidies. Table 10-1 presents some of the components that would define this rent-to-buy model.

Table 10-1: Rent-to-own housing model

Developer	Incentivise private sector to participate with the support of government
Financing the development	Any combination of: • Government subsidies • Private sector investment • Grants from international developers
Structure	• Mixed-use development with detached housing, duplex units and flats catering for a variety of household structures • Incremental development of housing structures
Occupiers	Inhabitants from informal settlement and the general public
Pre-approval	Consider both formal and informal sources of income
Tenure arrangements	Lease agreement with stipulations on breach of contract and eventual death
Housing Design and basic services	• Locally available raw materials for construction • Biomimicry designs borrowing from the techniques used to construct the shacks • Solar power, alternative waste and water services
Socio-economic facilities	To be constructed as part of the development if there are no existing ones in the surrounding areas
Capacity building	Provide a skills development and maintenance programme Encourage micro-economic enterprise
Maintenance	Developer and tenants
Stakeholders	Government, (private) developers, financial institutions, occupiers and property managers

Source: Own construction (2022)

For a settlement such as Zenzele, the rent-to-buy model may be appealing to the inhabitants considering the demographic profile of the settlement. The youth may consider this housing option due to the long-term prospects of eventually owning a house. This also aligns with the spatial

vision for the RWCLM to establish social housing to be established within the CBD as part of the Randfontein Regeneration Plan/Small Town/Area Regeneration Programme (Aurecon, 2016f,16). The Jabulani upgrading plan already makes provision for rental housing and this option would align with that vision. The financing for Kaalfontein may be slightly different since it falls within an intervention zone where BEPP funding for housing development is applicable.

However, there is need for more education and awareness to conscientize the inhabitants of the benefits of this housing model. This extends to ensuring that communities and municipalities have the right understanding of Section 25 of the *Constitution*, that the government should ensure that all citizens have access to adequate housing, but this does not necessarily mean that they are obliged to provide top structures for all the citizens. Also, there is need for government intervention to ensure that the higher earning income group does not encroach into and overtake this housing market.

10.3.3.2 Inclusionary housing

Inclusionary housing is a programme that “requires private developers to dedicate a certain percentage of new housing developments to low income and low middle income households, or to households that may not otherwise afford to live in those developments” (CoJ, 2019:2). Also referred to as inclusionary zoning due to conditions attached to land use rights approvals, inclusionary housing may include tax abatements for developers, parking reductions, or the right to build at higher densities.

Inclusionary housing promotes compaction, spatial integration, inclusivity and equity by incorporating low-income households into higher income neighbourhoods. Developers are often required to provide infrastructure, green or open spaces and social amenities thus addressing the environmental and socio-economic aspects of SCD. Inclusionary housing also reduces the financial and management burden on government since it only plays a facilitating role. Therefore, inclusionary housing can supplement informal settlement upgrading.

10.3.3.3 Special Needs Individual Housing

Special Needs Individual Housing (SNIH) is a component of Special Needs Housing (SNH) through which subsidised housing opportunities are provided to old people, people with disabilities, abused women and children and child-headed households (PPT, 2013:3). In Gauteng, housing subsidies are made available only to suitable Non-Profit Organisations (NPOs) which have support of the relevant Provincial Department of Social Development or Health. This programme should be implemented in as part of informal settlement upgrading to ensure that the

needs of these groups of people are prioritised. More funding can also be made available for the construction or renovation of facilities that can be access by people with disabilities.

10.3.3.4 Land readjustment

Access to land is one of the major issues that have promoted the proliferation of informal settlements and hindered successful intervention in addressing the challenge. In this regard, it is essential to implement measures to unblock and mobilise land for affordable housing, as both a preventive and reactive measure against urban sprawl. One of the tools that can be utilised is land readjustment.

Land readjustment involves the assembling of privately owned contiguous land parcels in an urban-fringe or in an inner-city neighbourhood by the government; for housing and infrastructure development (World Bank, 2015). The private owners give away their land and receive a parcel of land of smaller size but increased value from the original land. This would work mostly in instances where government intends to develop mixed use residential with a component of it bringing in high return on investment.

Land readjustment can also be utilised for in-situ upgrading of informal settlements on private owned land; to facilitate neighbourhood transformation. “Within the new neighbourhood design, long- term occupants can be resettled in higher density accommodation, financed by freeing up previously unusable land for the owner to be used for high-value commercial or residential use” (Coliers et al., 2019). However, land readjustment can be contentious and there is need for more research on the feasibility of aligning it informal settlement intervention in the South African context.

10.3.3.5 Spatial integration

All the SDFs relevant to this study should include the above-mentioned recommendations and should ensure alignment with informal settlement intervention. All the By-laws, the GSDF and the RWCLM SDF should show alignment between informal settlements and economic opportunities by including them as part of economic consolidation areas. The RWCLM SDF should include Category A informal settlements as part of capital investment zones.

10.3.4 Economy

The economic aspects of a community are critical capitals for health, well-being, improved quality of life and supporting the housing and the built environment capitals. This is the theme or capital than would strongly support intergenerational equity and sustainability in terms of continuity.

Though emphasis is on informal settlements, the recommendations in this section can extend to municipal level since issues such as unemployment are rife in both municipalities.

Access to educational opportunities should be improved especially in informal settlements like Zenzele. Initiatives such as tutoring services and collaborations between the community and educational institutions to train teachers would improve literacy rate, as has been implemented in Zenzele. The local Department of Education can collaborate with tertiary academic institutions to deploy students in training to assist in these settlements. Career guidance events can also be organised to motivate the residents especially the school going children and the youth.

Small medium and micro-sized enterprises SMMEs are a key component of informal settlements. Enterprise training and development should be at the core of ISUS's. The layout for a settlement should incorporate the need for space for SMMEs on individual erven and communal space within the settlement. In settlements in Zenzele, Jabulani and Kaalfontein where community gardens have improved livelihoods and food security, the local Department of Agriculture should collaborate with the communities to improve access to capital and provide education and training. Communities need to be conscientized on dietary plans and minimising food waste and practices that minimize agriculture's carbon footprint and its impact on natural resources, including soil and water. Communities should endeavour to reduce income inequality and increase social justice by ensuring that people involved in the agricultural sector are fairly compensated.

Financial literacy is a key skill that would improve the financial capital within informal settlements. Forums, events and programmes should be established and organised to offer voluntary or subsidised training towards general budgeting and basic accounting. Savings groups and schemes should be encouraged and supported. These schemes not only improve access short term loans but create a sense of shared identity to the community members especially women and create a platform to discuss other issues relating to the settlement. Micro-credit facilities should be established and these, in conjunction with finances from the savings schemes can be utilised to contribute to housing construction and improvement.

Corporate social responsibility is a crucial tool in improving the lives of the inhabitants of informal settlements. For example, mining companies in RWCLM could contribute to informal settlement interventions by contributing to housing finance, improving access to education, capacity building, healthcare, supporting SMMEs; youth development and/or investment in infrastructure development. Government may offer incentives and/or legislate CSR for informal settlement intervention.

10.3.5 Environment

Implementation of the *PIE Act* should place equal emphasis on unlawful occupation of land and there is need to implement a policy that addresses this including the invasion of land beyond the urban growth boundary. Open public spaces should be provided with the required infrastructure to curb invasion of land. Other municipalities should also budget for and deploy municipal police to destroy newly illegal structures especially those situated on floodlines. Though this may be regarded as contravention of the right to the city, there is need for to curb the proliferation of informal settlements whilst addressing this right.

Communities in informal settlements should also be encouraged to keep their public spaces clean. Community organisations can be developed to manage waste and the general conditions of the settlement. This could also manifest as an employment and capacity building opportunity, for example the concept of the circular economy whereby products and materials are recycled, repaired, and/or refurbished for reuse. Some of these products may even be used for housing constructions like the *Conceptos Plasticos* in Colombia, which uses recycled plastics to build houses. With waste management and its impact on climate change gaining transaction, inhabitants of informal settlements can also be exposed to workshops, conferences and seminars on these roles of waste management.

10.3.6 Governance

Stringent and punitive measures against corruption and non-fulfilment of roles by different spheres and government departments should be employed. From the national level, the Directorate for Priority Crime investigation (Hawks) should be engaged in issues pertaining to procurement for informal settlement intervention. The *Municipal Systems Act* should be amended to ensure that ward councillors are held accountable to their roles of representing the real needs of the people.

At national and municipal level, there is need for alignment of existing financial mechanisms to support SCD in informal settlement intervention. All the relevant IDPs should show an alignment between all aspects of informal settlement intervention especially community engagement with budgetary allocations, sources of funding and implementation framework. Stringent measures in auditing should be employed to ensure that financial mechanisms are ring fenced and utilised for the intended purposes. Also, the proposed Informal Settlements Upgrading Partnership Grant for provinces should not only finance basic services but should extend to supporting economic capitals such as micro-enterprises especially in Category B2 and C informal settlements; which traditionally do not receive much financial assistance.

10.3.7 Social, culture and equity

A task team or settlement committee, in the absence of one, should be established from the members of the settlement in preparation for upgrading or relocation. It is proposed that the settlement committee consist of five (5) members that are responsible for the portfolios of services, housing, health and safety, local economic development respectively. Further, this committee should include children, youth, women and special needs representative to strengthen the participatory process.

Communities should be encouraged to create platforms to address some of the key issues plaguing them such as crime, GBV and drug abuse as well as other issues that could enhance the community's social capital such as mentorship for girls and women. Influential figures in society such as religious leaders and elder members of the community could spearhead these issues as evidenced in Zenzele. For these organisations to thrive, there is need for support from the Department of Social and Community Development or the equivalent within that municipality. There is also need for community facilities for activities and gatherings pertaining to these issues.

Alignment with Non-Profit Organisations is also critical and should be supported by the local sphere of government. Programmes such as the ABBA programme by the ABBA initiative in Zenzele are critical to address issues such as the absence of fathers within the community, which is regarded as one of the root causes for crime and violence within informal settlements. The local and national spheres of government should ensure that there are no barriers to the participation of these organisations.

Planning for migrants and immigrants should also be prioritised in informal settlement interventions. Programmes and initiatives should ensure that immigrants also have unbiased access to socio-economic facilities especially health facilities. Community leaders should discourage ostracism and xenophobia. Data on immigrants within a settlement should be as accurate as possible. The Department of Health in collaboration with the Department of Home Affairs should work towards improved housing opportunities for immigrants particularly for those who possess critical skills. Such as automotive electricians, mechanical services plumbers and boiler makers.

In line with all these, communities should spearhead the upgrading of the informal settlement they live in. As carried out in Jabulani, the settlement should design the physical layout, map out the relocation strategy where applicable, identify the various ways through which livelihoods can be enhanced, define various tenure arrangements that best suit the community circumstances, outline institutional arrangements for environmental development, prescribe settlement

management mechanisms and participate in major decision making. Though the settlement committee may lead this, women should be at the forefront of this initiative.

10.3.8 Transport and connectivity

Access to transport facilities should be improved especially in informal settlements such as Vlakfontein. This entails road construction and ensuring co-operation with the public transport service providers to improve mobility to access economic opportunities. Telecommunication service providers should be encouraged to participate in informal settlement interventions. The government should incentivise the provision of Information and Communication Technology (ICT) access points in those settlements identified for upgrading and/or new rental housing development. These companies may also participate as part of CSR, thus employing some of the inhabitants and leveraging that with access to information technology.

10.3.9 Informal Settlement Intervention Act

Due to the multiplicity of legislation, policies, strategies and stakeholders relating to informal settlements, an Act guiding intervention in these settlements can be enacted. The *Informal Settlement Intervention Act* would combine the principles provided in the *Constitution of South Africa*, *Housing Act*, *PIE Act*, *SPLUMA*, the *H.D.A Act* and related Acts such as the *Rental Housing Act*. The following provisions can be included in the Act:

- Definition of informal settlement which includes the positive aspects of informal settlements;
- Duties of the implementing agency, which can be a newly established department, a unit within the Department of Human Settlements or NUSP;
- Punitive measures for non-performance by the implementing agency;
- Principles of SCD in all informal settlement categories; and
- The essence of measuring sustainability, among other issues

10.4 Employing the Sustainable Informal Settlement Intervention Matrix

The Sustainable Informal Settlement Intervention Matrix is based on the recommendations proffered in this study. The toolkit can be used to guide informal settlement interventions at settlement, municipal, provincial and national level. Table 10-2 shows the details that can be included in the matrix to guide informal settlement interventions. The applicability columns indicate whether the key intervention area is specifically applicable to the four municipalities under study, all informal settlements within EMM, RWCLM, Gauteng or all the informal settlements in South Africa. A detailed matrix is provided in Annexure F.

Table 10-2: Sustainable Informal Settlement Intervention Matrix

Programme/ Project Focus	Key Intervention Area	Applicability								Implementation Responsibility
		SA	GP	CoE	RWC	Z	J	KS	V	
Ensure Sustainable Community Development	Utilise the Sustainable Community Index to guide informal settlement interventions	x	x	x	x	x	x	x	x	- National Department of Human Settlements - Housing Development Agency or NUSP - Provincial and Municipal Departments of Human Settlements
	Incorporate SCD measurement and indicators into UISP and SPLUM By-laws	x		x	x					
	Enact Informal Settlement Intervention Act	x								
Adequate housing provision	Housing Needs Assessment	x	x	x	x	x	x	x	x	- Local and Metropolitan Municipalities - Ward Councillors
	Integrated Residential Housing including:									
	Rent-to-buy housing	x	x	x	x	x		x	x	- Municipal Department of Human Settlements - Provincial Department of Human Settlements - National Treasury - National Department of Human Settlements - National Department of Agriculture, Land Reform and Rural Development
	Special Needs Individual Housing	x	x	x	x	x	x	x	x	
	Inclusionary housing	x	x	x	x	x			x	
	Land readjustment	x	x	x	x	x				
	Spatial integration	x	x	x	x	x	x	x	x	
	Basic Service Provision	x	x	x	x	x	x	x	x	Municipal Departments of Water and Sanitation, Human Settlements, Roads and Storm Water, Waste and Waste Management
	Documentation to indicate administrative tenure arrangement	x	x	x	x	x	x	x	x	- Provincial Department of Human Settlements - Metropolitan Department of Human Settlements
Economy	Improved access to educational opportunities including home or community-based tutoring services					x	x	x	x	Municipal Departments of Education and Housing
	SMME support into strategies and settlement layout design	x	x	x	x	x	x	x	x	- Provincial Department of Human Settlements - Municipal Departments of Local Economic

Programme/ Project Focus	Key Intervention Area	Applicability								Implementation Responsibility
		SA	GP	CoE	RWC	Z	J	KS	V	
										- Development and/or Enterprise Programme Management Office - Municipal Departments of Town Planning
	Sustainable urban agriculture through household and community gardens	x	x	x	x	x	x	x	x	Municipal Departments of Agriculture and Labour
	Financial literacy, savings schemes and micro-credit facilities	x	x	x	x	x	x	x	x	Municipal Department of Local Development and/or Community and Social Development
	Corporate Social Responsibility	x	x	x	x	x	x	x	x	Municipal Departments of Agriculture
Environment	Open spaces, parks and wetlands protection and maintenance	x	x	x	x	x	x	x	x	- Community leadership - Municipal Department of Environment - Municipal Police Department
	Punitive measures through amendment of PIE Act	x								National Department of Agriculture, Land Reform and Rural Development
	Improved Waste Management and Circular Economy	x	x	x	x	x	x	x	x	- Community leadership - Municipal Departments of Environment and Local Economic Development
Disaster Risk Reduction	Align disaster risk reduction and informal settlement intervention	x	x	x	x	x	x	x	x	Departments of Health, Environment, Disaster Management, Co-operative Governance and Traditional Affairs
Transport and connectivity	Mobility and connectivity	x	x	x	x	x	x	x	x	National and Municipal Departments of Transport and Information and Communication Technology
Equity, Culture and Social Capital	Community Task Team	x	x	x	x	x	x	x	x	- Community Leadership - Municipal Departments of Human Settlements
	Crime, violence, exclusion and xenophobia	x	x	x	x	x	x	x	x	- Community Leadership - Municipal Social and Community Development
	Align migrant issues with informal settlement intervention measures	x	x	x	x	x	x	x	x	- South African Police Services - Department of Home Affairs

Programme/ Project Focus	Key Intervention Area	Applicability								Implementation Responsibility
		SA	GP	CoE	RWC	Z	J	KS	V	
Governance	Enforce accountability and anti-corruption measures	x	x	x	x	x	x	x	x	- Justice Crime Prevention and Security Cluster - Municipal Corporate and Legal Services - Mayoral Offices
Data Management	Informal Settlements Database	x	x	x	x	x	x	x	x	- Local, Provincial and National Department of Geographic Information Systems, Department of Human Settlements - National Department of Human Settlements
Intergovernmental Intervention		x	x	x	x	x	x	x	x	National Department of Human Settlements
	Coordination and alignment of plans and policies	x	x	x	x	x	x	x	x	Department of Cooperative Governance and Traditional Affairs Municipal Management Department
	Procurement	x	x	x	x	x	x	x	x	Provincial and Metropolitan Departments of Human Settlements Housing Development Agency

Source: Own construction (2022)

10.5 Limitations of the study and areas of further research

One of the major limitations of the study is qualitative data was primarily based on key informant interviews and did not include household surveys. These surveys would have improved data gathered especially in terms of community perceptions. The unavailability of data due to accessibility constraints also hindered the use of other relevant indicators in the calculation of SCI. Further, the calculation of SCI was based on the total score of capitals, vulnerabilities and hazards; whereas the thematic calculations would have been utilised if the data had been available. For example, a thematic SCI would have been calculated for Housing and the Built Environment against the vulnerabilities and hazards relating to that theme or capital. More insight on the scores based on different municipal and NUSP categories can also be gained by reflecting on more case studies. Therefore, the following may be explored for further research:

- SCD in informal settlement intervention among different Category A and B municipalities within the extended GCR and/or across provinces, including municipalities with a high GPI
- Examining the sustainability of government interventions based on informal settlements that were upgraded
- Modelling structural and population growth to examine the future impact of current interventions
- Resilience, sustainability and COVID-19 health related impacts in informal settlements within the GCR
- Food security and informal settlement interventions in South Africa

10.6 Conclusion

Chapter 10 focuses on the conclusion of the thesis. This is based on the synthesis of the aims, objectives and research questions, the recommendations to ensure sustainability and resilience in addressing informal settlements within the GCR, the description of the limitations of the study and the identification of the areas for further studies.

As part of the synthesis, the findings from the literature review were assessed against the empirical findings to establish the alignment between the two aspects and/or the gap between the two. The recommendations were structured thematically in alignment with the themes of SCD, to address the issues identified in the synthesis at settlement, municipal, provincial and national level. A Sustainable Informal Settlement Matrix was developed to summarise these recommendations and guide informal settlement intervention at each applicable administrative level. In this regard, all the research questions were answered, and the objectives were achieved.

REFERENCE LIST

- Acheampong, R.A. 2019. *Spatial planning in Ghana*. Switzerland: Springer.
- Adell, G. 1999. *Theories and models of the peri-urban interface: a changing conceptual landscape*. London: University College London. Draft for discussion.
- Africa, E., Magwaza, E. & Patel, Y. s.a. *IDP Guide Pack*. Department of Provincial and Local Government (DPLG).
- Agunbiade, M., Rajabifard, A. & Bennett, R. 2013. Modes of housing production in developing countries: the contemporary role of land, labour, and capital in Lagos, Nigeria. *Journal of Housing and the Built Environment*, 28, 363–379.
- Agyabeng, A.N., Peprah, A.A., Mensah, J.K. & Mensah, E.A. 2022. Informal settlement and urban development discourse in the Global South: Evidence from Ghana. *Norwegian Journal of Geography*, 76: 242-253.
- Ahlfeldt, G. & Pietrostefani, E. 2017. Demystifying Compact Urban Growth: Evidence From 300 studies from across the world. (OECD working paper)
<https://newclimateeconomy.report/workingpapers/workingpaper/demystifying-compact-urban-growth/> Date of access: 1 May 2020.
- Akthar, I. 2016. *Research design*.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2862445 Date of access: 25 January 2021.
- Alabi, M., Babalola, T. & Popoola, A. 2021. Tenure insecurity and incremental housing development in the peri-urban interface of Ibadan, Nigeria. *Cidades*, 43.
- Alexander, D.E. 2013. Resilience and disaster risk reduction: an etymological journey. *Nat. hazards earth syst. sci.*, 13, 2707–2716.
- Alexander, E.R. 2016. There is no planning – only planning practices: notes from spatial planning theories. *Planning theory*, 15(1), 91-103.
- Alonso, W. 1964. *Location and land use: towards a general theory of rent*. Cambridge, MA: Harvard University Press.

- Al-shareem, K.M., Yusof, N., Roosli, R.B. & Abdullah, A. 2014. PPPs as a housing delivery for affordable housing development in Yemen. *Business management dynamics*, 3(8): 01-12.
- Altinok, E. & Cengiz, H. 2008. *The effects of urban sprawl on spatial fragmentation and social segregation in Istanbul*. Paper delivered at the 44th ISOCARP Congress 2008.
https://www.isocarp.net/Data/case_studies/1302.pdf Date of access: 13 Jun 2019.
- Anderson, W. P., Kanaroglou, P. S. & Miller, E. J. 1996. Urban form, energy and the environment: a review of issues, evidence and policy. *Urban Studies*, 33(1): 7–35.
- Anon. 2020. Food relief for local informal settlements in pics. *Randfontein Herald*, 13 Apr.
[Food relief for local informal settlements IN PICS | Randfontein Herald](#) Date of access: 02 Feb 2022
- Arnestein, S. 1969. A ladder of citizen participation. *Journal of the American institute planners*, 35(4): 216-224.
- Arnett, R. 2009. Housing policy in developing countries: the importance of the informal economy. In Spence, M., Annez, P.C. & Buckley, R.M., eds. *Urbanization and growth: commission on growth development*. Washington, D.C: World Bank.
- Arribas-Bel, D. & Sanz-Gracia, F. 2014. The validity of the monocentric city model in a polycentric age: US metropolitan areas in 1990, 2000 and 2010. *Urban Geography*, 35 (7), 980–997.
- Asha, A. & Makalela, K.I. 2019. Challenges in the implementation of Integrated Development Plan and service delivery in Lepelle-Nkumphi Municipality, Limpopo Province. *International journal of economics and finance studies*, 12(1): 1-15.
- Ashley, C & Carney, D. 1999. Sustainable livelihoods: lessons from early experience. *London: DFID*.
- Atreya, A. & Kunreuther, H. 2016. Measuring community resilience: the role of the community rating system (CRS). (The Wharton School, working paper).
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2788230 Date of access: 21 Feb. 2021.
- Attia, S. & Khalil, H.A.E. 2015. Urban metabolism and quality of life in informal areas. In: Schrenk, M., Popovich, V.V., Zeile, P., Elisei, P. & Beyer, C., eds. *Conference proceedings*. REAL CORP 2015, Ghent, Belgium. <http://www.corp.at> Date of access: 13 Mar. 2020.

- Aurecon. 2016a. *EMM Informal settlement upgrading strategy* (Chapter 1). Pretoria.
- Aurecon. 2016b. *Chapter 13: Kaalfontein (Kaalfontein Station): assessment and categorisation (feasibility study)*. Pretoria.
- Aurecon. 2016c. *Chapter 10 Kaalfontein upgrading plan*. Pretoria.
- Aurecon. 2016d. *Chapter 27 Vlakfontein portion 36 informal/ Langaville Ext 10 upgrading plan*. Pretoria.
- Aurecon. 2016e. *Chapter 33: Vlakfontein Portion 36/ Langaville Ext 10: assessment and categorisation (feasibility study)*. Pretoria.
- Aurecon. 2016f. *Informal settlement upgrading policy and strategy: participatory based support for informal settlement upgrading in Randfontein, Merafong and Westonaria local municipalities*. Pretoria.
- Aurecon. 2016g. *Informal settlement upgrading plan: participatory based support for informal settlement upgrading in Randfontein, Merafong and Westonaria local municipalities: informal settlement upgrading policy and strategy*. Pretoria.
- Avis, W. R. 2016. *Urban governance (topic guide)*. Birmingham: GSDRC, University of Birmingham.
- Azestop, J. 2019. *Integral human development: challenges to sustainability and democracy*. Eugene: Pickwick.
- Baker, S. & Mehmood, A. 2013. Social innovation and the governance of sustainable places. *Local environment*, 20 (3), 321–334.
- Balbo, M. 1993. Urban planning and the fragmented city of developing countries. *Third world planning review*, 15(1): 23-35.
- Banerjee, S.B. 2022. Transnational power and trans local governance the politics of corporate responsibility. In Maak, T., Pless, N.M., Orlitzky, M. & Sandhu, S. eds., *The Routledge companion to corporate social responsibility*. New York: Routledge. Pp 130-151.
- Barakat, P.N. 2021. *Remodelling informality into sustainable housing prototype, Alexandria case, Egypt*. Paper delivered at the 2nd Arab Land Conference, Cairo.
https://arabstates.gltm.net/wp-content/uploads/2021/03/TechnicalSession5a_Alexandria_Barakat-paper.pdf Date of access: 16 Sep. 2022.

- Barcelona Field Studies Centre. 2020. *Multiplier effect or cumulative causation*.
<https://geographyfieldwork.com/MultiplierEffect.htm> Date of access: 30 Mar 2020.
- Barthel, P., Davidson, L. & Surdakis, M. 2016. *Alexandria: regenerating the city*. S.I.: Agence Française de Développement.
- Barton, H. & Tsourou, c. 2013. *Healthy urban planning*. London: Spon Press.
- Bates, R.H. 1988. *Toward a political economy of development*. Berkeley: University of California Press.
- Beaver, A. 2020. *What is the difference between affordable housing and public housing?*
<https://olympiamanagement.net/2017/08/difference-affordable-housing-public-housing/> Date of access: 23 Jul. 2020.
- Beckmann, M. J. 1969. On the distribution of urban rent and residential density. *Journal of economic theory*, 1(1), 60-67.
- Beier, R. 2020. Resettlement and persisting informality in Casablanca. *Trialog*, 4: 27-33
- Best, J.W. & Khan, J.V. 2006. *Research in education*. 10th ed. Boston, MA: Allyn & Bacon/Pearson Education.
- Bibri, S.E. 2018. *Smart sustainable cities of the future: the untapped potential of big data analytics and context-aware computing for advancing sustainability*. Trondheim: Springer.
<https://books.google.co.za/books?id=tM1NDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false> Date of access: 02 May 2020.
- Bickford, G. 2014. *Transit-oriented development; an appropriate tool to drive improved mobility and accessibility in South African cities?* Paper delivered at the South African Cities Network (SACN) Conference on Spatial Transformation, Johannesburg.
http://www.sacities.net/joburg_spatial_transformation/Downloads/STCBackgroundPaper-MobilityandAccess.pdf. Date of access: 26 Mar 2017.
- Bickman, L. & Rog, D. 2009. Applied research design: A practical approach. In: L. Bickman & D. Rog., eds. *Handbook of applied social research methods*. 2nd ed. Thousand Oaks, CA: Sage. pp. 3–43.
- Bird, K. 2019. *Addressing spatial poverty traps*. Paper delivered at the UNECA Expert Group Meeting on Eradicating Rural Poverty to Implement the 2030 Agenda for Sustainable

Development, Addis Ababa. <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2019/02/Spatial-poverty-traps-by-Kate-Bird.pdf> Date of access: 21 May. 2022.

Black, H.N. 2018. *Food security and interventions: A glimpse at Windhoek's informal settlements*. Johannesburg: University of Witwatersrand. (Dissertation – Masters). <http://hdl.handle.net/10539/26055>

Blickem, C., Dawson, S., Kirk, S., Vassilev, I., Mathieson, A., Harrison, R., Bower, P. & Lamb, J. 2018. What is asset-based community development and how might it improve the health of people with long-term conditions? A realist synthesis. *SAGE*, 1 -13.

Bochnovic, M.A. 2014. An analysis of bid-rent curve variations across American cities. Arizona State University. Tempe: Arizona State University. (Thesis – Masters). <https://keep.lib.asu.edu/items/152829>

Bogaert, K. 2018. *Globalized authoritarianism. megaprojects, slums, and class relations in urban Morocco*. Minneapolis, MN: University of Minnesota Press.

Boshoff, B.C. 1989. *Industrial decentralization and regional development in South Africa*. Johannesburg: University of the Witwatersrand. (Dissertation - Master's). <http://hdl.handle.net/10539/16371>

Boufarsi, S., Aksuku, B.I. & Aysu, M.E. 2021. Slums in Casablanca: assessment of the VSB program, case study: Er-hamna Slum. *Global scientific journals*, 9 (12): 1328–1357.

Brand, A. 2014. *Corridor development in Gauteng*. Stellenbosch: Stellenbosch University (Dissertation - Master's). <http://hdl.handle.net/10019.1/95736>

Bridger, J.C. & Luloff, A.E. 1999. Toward an interactional approach to SCD. *Journal of Rural Studies*, 15: 377- 387.

Brilhante, O. & Klaas, J. 2018. Green city concept and a method to measure green city performance over time applied to fifty cities globally: influence of GDP, population size and energy efficiency. *Sustainability*, 10, e2031. <https://doi.org/10.3390/su10062031>

Briney, A. 2020. *An overview of Christaller's central place theory*. <https://www.thoughtco.com> Date of access: 13 Mar. 2020.

Brodrecht, A. 2010. Slums of despair, slums of hope: ethnographic insight in the reassessment of a dated debate. <https://florida.academia.edu/AnnaBrodrecht> Date of access: 14 May 2018.

Brose, D.A. 2012. *Developing a framework for measuring community resilience: summary of a workshop*. Washington, D.C.: The National Academy Press.

Brown Weiss, E. 1990. Our rights and obligations to future generations for the environment. *American Journal of International Law*, 84(1):198-207.
<https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=2639&context=facpu> Date of access: 28 Sep. 2018.

Brown Weiss, E. 1996. Intergenerational equity and rights of future generations. In: Nikken, P., Cançado Trindade, A. A., eds. *The Modern World of Human Rights: Essays in Honour of Thomas Buergenthal*. San José: Inter-American Institute of Human Rights. pp. 601–619.

Burgess, R. 2000. The compact city debate: a global perspective. In Jenks, M. & Burgess, R. *Compact cities: sustainable urban forms for developing countries*. London: Spon Press. pp 9-24.

Burke, S., Murphy, N., Lanigan, C. & Anderson, L. 2009. *An asset-based approach to skills banking within Respond! communities*. Dublin: Combat Poverty Agency.

Burton, E., Williams, K. & Jenks, M. 1996. The compact city and urban sustainability: conflicts and complexities. In Jenks, M., Burton, E. & Williams, K. *The compact city: a sustainable urban form?* London: Taylor & Francis. pp 200-215.

Cadavid, P.R. 2011. The impacts of slum policies on households' welfare: the case of Medellín (Colombia) and Mumbai (India). <https://pastel.archives-ouvertes.fr/pastel-00711971/document> Date of access: 23 Aug. 2022.

Cai, H.; Lam, N.S.N.; Qiang, Y.; Zou, L.; Correll, R.M.; Mihunov, V. 2018. A synthesis of disaster resilience measurement methods and indices. *International Journal of Disaster Risk Reduction*, 31: 844–855.

Callaghan, E.G. & Colton, Æ, J. 2008. Building sustainable & resilient communities: a balancing of community capital. *Environment, Development and Sustainability*, 10:931–942.

Capello, R. 2011. Location, regional growth and local development theories. *AESTIMUM* 58.
<https://doi.org/10.13128/Aestimum-9559>

Capello, R. 2015. *Regional Economics*. 2nd Ed. New York, NY: Routledge.

Carpenter, S., Walker, B., Anderies, J.M., Abel, N. 2001. From metaphor to measurement: resilience of what to what? *Ecosystems*, 4: 765–781.

Carr, M. 1997. *New Patterns: process and change in human geography*. Cheltenham: Thomas Nelson.

CARRI (Community and Regional Research Institute). 2013. Definitions of community resilience: an analysis. <http://repo.floodalliance.net/jspui/bitstream/44111/1347/1/definitions-of-community-resilience.pdf> . Date of access: 20 Jul. 2018.

Chakwizira, J., Bikam, P. & Adeboejo, T.A. 2018. *Restructuring Gauteng City Region in South Africa: is a transportation solution the answer?* <https://www.intechopen.com/books/an-overview-of-urban-and-regional-planning/restructuring-gauteng-city-region-in-south-africa-is-a-transportation-solution-the-answer-> Date of access: 15 Apr 2020.

Chambers, R. & Conway, G. R. 1991. Sustainable rural livelihoods: practical concepts for the 21st century'. (IDS discussion paper). <https://www.ids.ac.uk/publications/sustainable-rural-livelihoods-practical-concepts-for-the-21st-century/> Date of access: 5 Mar. 2019.

Chandio, I.A., Matori, N.B., WanYusof, K.B., Talpur, M.A.H., Balogun, A & Lawal, D.U. 2012. GIS-based analytic hierarchy process as a multicriteria decision analysis instrument: a review. *Arabian Journal of Geosciences*, 6: 3059-3066.

Charlton, S. & Kihato, C. 2006. Reaching the poor? an analysis of the influences on the evolution of South Africa's housing programme. In Pillay, U., Tomlinson, R and du Toit, J., eds. *Democracy and delivery: urban policy in South Africa*. Pretoria: HRSC Press

Cheruiyot, K. & Mushongera, D. 2018. Testing economic growth convergence and its policy implications in the Gauteng City region. In Cheruiyot, K., ed. *The Changing space economy of city regions: The Gauteng City region, South Africa*. Johannesburg: Springer. pp 213-239.

Childers, T. 1989. Evaluative research in the library and information field. *Library Trends*, 38(2): 250–267.

Chirisa, I. 2009. Prospects for the asset-based community development approach in Epworth and Ruwa, Zimbabwe: a housing and environmental perspective. *African journal of history and culture*, 1 (2): 28-35.

Christaller, W. 1966. *Central Places in Southern Germany*. New Jersey: Prentice-Hall.

Christofakis, M. & Papadaskalopoulos, A. 2011. The growth poles strategy in regional planning: the recent experience of Greece. *Theoretical and empirical researches in urban management*, 6 (2): 5-20.

Cilliers, E.J. 2015. Rethinking urban growth boundaries: following the transportation corridors. In Schoeman, C.B., ed. *Land use management and transportation planning*. Southampton: Witpress. pp.19-40.

Cilliers, J. & Victor, H. 2018. Considering spatial planning for the South African poor: an argument for 'planning with'. *TOWN AND REGIONAL PLANNING*, 72.
<http://dx.doi.org/10.18820/2415-0495/trp72i1.3>

Cities Alliance. 2008. *Alexandria city development strategy: process and result 2004-2008*.
<https://documents1.worldbank.org/curated/ru/945091468026411178/pdf/703370ESW0P089020080Updated0July010.pdf> Date of access: 14 Oct. 2022.

Cities Alliance. 2012. Cities alliance for cities without slums: action plan for moving slum upgrading up to scale. <https://www.citiesalliance.org/cities-without-slums-action-plan> Date of access: 14 Oct. 2022.

Clark, C. 1967. Von Thunen's isolated state. *New Series*, 19(3): 370-377.

Clark, T. A. & Tsai, T.A. 2000. The agricultural consequences of compact urban development: the case of Asian cities. In Jenks, M. & Burgess, R., eds. *Compact cities: sustainable urban forms for developing countries*. pp 63-72.

Clark-Ginsberg, A., McCaul, B., Bremaud, I., Caceres, G., Mpanje, D., Patel, S. & Patel, R. 2020. Practitioner approaches to measuring community resilience: The analysis of the resilience of communities to disasters toolkit. *International journal of disaster risk reduction*, 50.
<https://doi.org/10.1016/j.ijdrr.2020.101714>

CoE (City of Ekurhuleni Metropolitan Municipality). 2015. *Ekurhuleni metropolitan spatial development framework*.

CoE (City of Ekurhuleni Metropolitan Municipality). 2018. *IDP and budget 2018/19 – 2020/21*

CoE (City of Ekurhuleni Metropolitan Municipality). 2019. *Integrated Development Plan (IDP) – 2019/2020 review*.

- Coetzee, G. 2018. *The role of the private sector in providing gap housing in Johannesburg*. Johannesburg: University of the Witwatersrand. (Dissertation - Master's).
- CoGTA (Cooperative Governance and Traditional Affairs). 2016. *Integrated urban development framework*. <https://iudf.co.za/about/iudf/> Date of access: 9 Feb. 2021
- CoGTA (Cooperative Governance and Traditional Affairs). 2020. *District development model: West Rand Municipality*.
- CoGTA (Cooperative Governance and Traditional Affairs). 2021. Fire Stations. [shapefile]
- CoJ (City of Johannesburg Metropolitan Municipality). 2009. Amendment Scheme 9999 Local authority. (Notice 1053 of 2009). *Provincial Gazette*, 24. Jun.
- CoJ (City of Johannesburg Metropolitan Municipality). 2019. *Inclusionary housing incentives, regulations and mechanisms*.
- Cole, R. & De Blij, H. 2007. *Survey of Sub-Saharan Africa: A Regional Geography*. New York, NY: Oxford Press. <https://people.uwec.edu/lvogeler/Travel/Southern%20Africa/apartheid-models.htm> Date of Access: 07 May 2020.
- Colliers, P., Glaeser, E., Venables, T., Blake, M. & Manwaring, P. 2016. *Informal settlements and housing markets*. <https://www.theigc.org/reader/informal-settlements-and-housing-markets/policy-towards-existing-informal-settlements/land-readjustment-schemes/#land-readjustment-schemes> Date of access: 15 Sep. 2021.
- Collins, C.S. & Stockton, C.M. 2018. The central role of theory in qualitative research. *International Journal of Qualitative Methods*, 17: 1–10.
- Collinson, M., Kok, P. & Garenne, M. 2006. *Migration and changing settlement patterns: multilevel data for policy*. Pretoria: Statistics South Africa (Stats SA).
- Collver, C. 2013. *Getting ahead or just enough to get by? the limits of social capital in an asset-based community development model*. Ontario: McMaster University. (Dissertation – Master's). <http://hdl.handle.net/11375/13556>
- Conteh, C. 2017. Concerted action in complex environments: a comparison of industrial restructuring in mid-sized city regions in Canada and the United States. In Jesuit, D.K & Williams, R.A., eds. *Public policy, governance and polarization: making governance work*. Available from Taylor & Francis e-books:

<https://www.taylorfrancis.com/chapters/edit/10.4324/9781315560342-2/concerted-action-complex-environments-charles-conteh> Date of access: 7 Mar. 2021.

Cooke, S., Behrens, R. & Zuidgeest, M. 2018. *The relationship between transit-oriented development, accessibility and public transport viability in South African cities: a literature review and problem framing*. Paper delivered at the 37th Annual Southern African Transport Conference (SATC, 2018). Pretoria, South Africa. pp 365-380.

Cormac, R. 2016, 16 May. Sustainable community development: from what's wrong to what's strong. [YouTube video]. <https://www.youtube.com/watch?v=a5xR4QB1ADw&t=88s> Date of access: 13 Oct. 2018.

Creswell, J. W. 2009. *Research design: qualitative, quantitative, and mixed methods approaches*. 3rd ed. Los Angeles, L.A: SAGE.

Creswell, J.W. & Clark, V.L.P. 2018. *Designing and conducting mixed methods research*. 3rd ed. Thousand Oaks: Sage.

CSIR. 2012. *CSIR guidelines for the provision of social facilities in South African settlements*. Pretoria.

CSIR. 2021. *Green Book*. <https://riskprofiles.greenbook.co.za/> Date of access: 12 May 2022.

Da Costa, E. M., Fumega, J. G. & Louro. A. 2013. Defining sustainable communities: development of a toolkit for policy orientation. *Journal of urban regeneration and renewal*, 6(3): 278-292.

Dale, A. & Sparkes, J. 2010. The agency of SCD. *Community development journal*, 1-17. <https://doi.org/10.1093/cdj/bsq013>

Davis, M. 2006. *Planet of slums*. New York, NY: Verso.

Dawkins, C.J. 2003. Regional development theory: conceptual foundations, classic works, and recent developments. *Journal of Planning Literature*, 18 (2): 131-172.

Dawood, A. 2013, 5 Aug. *Tenure security as an indicator of incremental housing*. [Blog post]. <https://housingfinanceafrica.org/documents/tenure-security-as-an-indicator-of-incremental-housing/> Date of access: 24 Oct. 2022.

De Kadt, J., Hamann, C., Mkhize, S.P. & Parker, A., eds. 2021. *Quality of life 6 (2020/21) Survey: Overview Report*. Johannesburg: Gauteng City-Region Observatory (GCRO).

- De Villiers, R. 2014. Poor living conditions within the Jabulani Informal Settlement. *Randfontein Herald*. Nov, 26. <https://randfonteinherald.co.za/169276/poor-living-conditions-within-jabulani-informal-settlement/>
- De Visser, J. & Poswa, X. 2019. Municipal law making under SPLUMA: a survey of fifteen "first generation" municipal planning by-laws. *PER / PELJ*,22. <http://dx.doi.org/10.17159/1727-3781/2019/v22i0a4658>
- De Visser, J.W. 2005. *Developmental local government: a case study of South Africa*. Utrecht: Institute of Constitutional and Administrative Law.
- Dempsey, N., Brown, C., Raman, S., Porta, S., Jenks, M., Jones, C. & Bramley, G. 2010. *Elements of urban form*. In Jenks, M. & Jones, C., eds. *Dimensions of the sustainable cities*. London: Springer. pp. 21-51.
- Denoon-Stevens, S., Nel, V. & Mpambukeli, T. 2018. Spatial planning for Postmasburg. In Marais, L., Burger, P. & van Rooyen, D. eds. *Mining and community in South Africa: from small town to iron town*. Oxon: Routledge. pp 77-87.
- Department of Education (South Africa) . 2021. Education facilities. [shapefile]
- Department of Health (South Africa). 2021. Health facilities. [shapefile]
- Department of Human Settlements (South Africa). 2004. *Breaking new Ground: A Comprehensive Plan for The Development of Integrated Sustainable Human Settlements*. http://www.dhs.gov.za/sites/default/files/documents/26082014_BNG2004.pdf Date of access: 12 Nov. 2020.
- Department of Human Settlements (South Africa). 2009a. *The National Housing Code: Policy Context*. http://www.dhs.gov.za/sites/default/files/documents/national_housing_2009/1_Simplified_Guide_Policy_Context/2%20Vol%201%20Part%202%20The%20Policy%20Context.pdf Date of access: 28 Nov. 2022.
- Department of Human Settlements (South Africa). 2009b. *Incremental Interventions: Upgrading Informal Settlements*. Part 3 (National Housing Code). http://www.dhs.gov.za/sites/default/files/documents/national_housing_2009/4_Incremental_Interventions/5%20Volume%204%20Upgrading%20Informal%20Settlement.pdf Date of access: 28 Nov. 2022.

Department of Human Settlements (South Africa). 2014a. *Rapid appraisal of outcome 8: output 1. Final report*. Pretoria.

Department of Human Settlements (South Africa). 2020. *2019-2020 human settlements Annual Report Vote 38*.

Department of Human Settlements (South Africa). 2020. Department of Human Settlements: declaration of the priority human settlements and housing development areas (PHSHDAs). (Notice 526 of 2020). *Government Gazette*, 43316:18, 15 May.

Department of Human Settlements (South Africa). 2021. *Baseline evaluation of informal settlements: targeted for upgrading in the 2019-2024 MTsf*.

http://www.dhs.gov.za/sites/default/files/u16/FINAL%20EDITED%2012-2021_BASELINE%20EVALUATION%20OF%20IS%20TARGETED%20FOR%20UPGRADE_SUMMARY%20%281%29.pdf Date of access: 12 Jan. 2022.

Department of Human Settlements (South Africa). 2009c. *Financial Interventions: Accreditation of Municipalities*. Part 3 (National Housing Code).

Department of Human Settlements (South Africa). 2009d. *Technical and General Guidelines*. Part 3 (National Housing Code).

http://www.dhs.gov.za/sites/default/files/documents/national_housing_2009/2_Technical_General_Guidelines/1%20Vol%20%20Part%203%20Technical%20and%20General%20Guidelines.pdf Date of access: 28 Nov. 2022.

Department of Human Settlements (South Africa). 2014. *Rapid Appraisal of Outcome 8: Output 1*. ISBN: 978-0-621-43836-9

<http://www.dhs.gov.za/sites/default/files/documents/Appraisal%20Outcome%208%20Summary.pdf> Date of access: 29 Nov. 2022.

Department of Provincial and Local Government (South Africa). 2004. *The municipal infrastructure grant programme: an introductory guide*. Pretoria.

Department of Rural Development and Land Reform (South Africa). 2014. *SDF Guidelines and Evaluation Framework*.

DFID (Department for International Development). 1999. *Sustainable livelihoods guidance sheets*.

DFID (Department for International Development). 2010. The politics of poverty: elites, citizens and states. London

Dinh, H. & Pearson, L. 2015. *Specifying community economic resilience – a framework for measurement*. Paper delivered at the 59th AARES Annual Conference, Rotorua.
<https://www.anzrsai.org/assets/Uploads/PublicationChapter/Dinh-et-al-Final.pdf> Date of access: 14 Apr. 2018.

Dizdaroglu, D. 2017. The role of indicator-based sustainability assessment in policy and the decision-making process: a review and outlook. *Sustainability*, 9(6).
<https://doi.org/10.3390/su9061018>

Dobrescu, E.M. & Dobre, E.M. 2014. Theories regarding the role of the growth poles in the economic integration. *Procedia Economics and Finance*, 8, 262 – 267.

Doherty, M., Nakanishi, H., Bai, X. & Meyers, J. 2009. *Relationships between urban form, morphology, density and energy in urban environments*. (GEA Background Paper).
http://www.iiasa.ac.at/web/home/research/Flagship-Projects/Global-Energy-Assessment/GEA_Energy_Density_Working_Paper_031009.pdf Date of access: 13 Aug. 2020.

Dovey, K. 2015. Sustainable informal settlements? *Procedia – social and behavioural sciences*, 179: 5–13.

Department of Planning, Monitoring and Evaluation (South Africa). 2014. *Medium Term Strategic Framework 2014-2019*.

Department of Planning, Monitoring and Evaluation (South Africa). 2019a. *Medium Term Strategic Framework 2019-2024*.

Department of Planning, Monitoring and Evaluation (South Africa). 2019b. *Special presidential package - revitalisation of distressed mining communities and labour sending areas*.

Department of Planning, Monitoring and Evaluation (South Africa). 2020. *Bi-annual progress report on the MTSF. Priority 5: spatial integration, human settlements and local government basic services*.

Drakakis-Smith, D. 2012. *Urbanisation, housing and the development process*. 2nd ed. Oxon: Routledge.

Drane, J. 2013. *The state of contemporary property development theory*. Paper delivered at the 19th Pacific Rim Real Estate Society (PRRES) Conference, Melbourne.

<https://www.jondrane.net/wp-content/uploads/2016/08/Drane-2013-State-of-Contemporary-Prop-Dev-Theory.pdf> Date of access: 17 Apr. 2019.

Drobniak, A. 2012. The urban resilience – economic perspective. *Journal of Economics and Management*, (10)

https://www.ue.katowice.pl/fileadmin/migrated/content/uploads/Journal_010.pdf#page=5 Date of access: 9 Mar 2019.

Du Toit, J. 2015. Research design. In Silva, E.A., Healey, P., Harris, N. & Van den Broeck, P., eds. *The Routledge handbook of planning research methods*. NY: Routledge.

Du Toit, J. & Mouton, J., 2013. A typology of designs for social research in the built environment. *International journal of social research methodology*, 16(2): 125-139.

Du Toit, J. L. 2010. *A typology of designs for social research in the built environment*.

Stellenbosch: University of Stellenbosch: (Thesis - PhD). <http://hdl.handle.net/2263/18469>

Dzingai, T..2016. *Integrated Development Plans and its Sectoral Plans in the optimisation of participatory and integrated spatial planning as transformation tools: A case study of Tlokwe Local Municipality*. Potchefstroom: North-West University. (Dissertation - Master's).

<http://hdl.handle.net/10394/17826>

Echenique, M.H., Hargreaves, A.J., Mitchell, G. & Namdeo, A. 2012. Growing cities sustainably: does urban form really matter? *Journal of the American Planning Association*, 78 (2), 121-137.

Edgar, T.W & Manz, D.O. 2017. Starting your research. In *Research Methods for Cyber Security*.

Egan, J. 2004. *The Egan review: skills for sustainable communities*. London: Office of the Deputy Prime Minister.

Ehebrecht, D. 2014. *The challenge of informal settlement upgrading breaking new ground in Hangberg, Cape Town?* Potsdam: Universitätsverlag.

Elfouly, H.A. & El Aziz, N.A. 2018. Physical quality of life benchmark for unsafe slums in Egypt. *Sustainability in Environment*, 2(2). <https://doi.org/10.22158/se.v2n2p258>

- Ellen, R. F. 1984. *Ethnographic research: a guide to general conduct*. New York, NY: Academic Press.
- Ellison, S.L.R., Farrant, T.J. & Barwick, V. 2009. *Practical statistics for the analytical scientist*. Cambridge: Royal Society of Chemistry.
- EMM [Ekurhuleni Metropolitan Municipality]. 2017. *Built environment performance plan (and capital investment framework)*.
- Encyclopaedia Britannica. Garden City. <https://www.britannica.com/topic/garden-city-urban-planning> Date of access: 27 Feb 2020.
- Ennis, G. & West, D. 2010. Exploring the potential of social network analysis in asset-based community development practice and research. *Australian Social Work*, 63(4): 404-417.
- ESRI. 2020. *Demographics* (Data in a box).
- Esri. 2020. Sports facilities. [shapefile]
- Ezz, M. 2018. *How Egypt deals with informal areas*. <https://timep.org/commentary/analysis/how-egypt-deals-with-informal-areas/> Date of access: 26 Oct. 2022.
- Fallah Shayan, N. Mohabbati-Kalejahi, N., Alavi, S. & Zahed, M.A. 2022. Sustainable development goals (SDGs) as a framework for corporate social responsibility (CSR). *Sustainability*, 14 (1222).
- FAO (Food and Agriculture Organisation). 1996. World food summit: Rome declaration on world food security. 13-17 November. http://www.fao.org/wfs/index_en.htm
- Fegue, C. 2007. Informal settlements' planning theories and policy-making in Sub-Saharan Africa – from 'site' to 'people': a critical evaluation of Operations 'Murambatsvina' and 'Garikai' in Zimbabwe. *International Journal for Sustainable Development Planning*, 2(4): 445–460.
- Fiksel, J., Goodman, I., Hecht, A. 2014. Resilience: navigating toward a sustainable future. *Solutions Journal*, 5: 38–47.
- Financial and Fiscal Commission. 2013. *Exploring Alternative Finance and Policy Options for Effective and Sustainable Delivery of Housing in South Africa*. Midrand

- FN INC. 2015. *Spatial planning and land use management act, 2013 (SPLUMA)*.
<https://fninc.co.za/publications/Spatial-Planning-and-Land-Use-Management-Act.pdf> Date of access: 25 Mar 2019.
- Folke, C., Biggs, R., Norstrom, A., Reyers, B. & Rockstrom, J. 2016. Social-ecological resilience and biosphere-based sustainability science. *Ecology and Society*, 21(3):41.
- Food Agriculture Organisation (FAO). 2006. *Food security: policy brief*.
https://reliefweb.int/report/world/policy-brief-food-security?gclid=Cj0KCQiAi8KfBhCuARIsADp-A56lVn_xbuyGc2ggM-Zq4_kzoJycuKCMbFKlhUgTZJL5L8SmF8QbrHgaAj3oEALw_wcB Date of access: 23 Aug. 2019.
- Foot, J. 2012. *What makes us healthy? the asset approach in practice: evidence, action, evaluation*. <http://www.assetbasedconsulting.co.uk/uploads/publications/wmuh.pdf> Date of access: 26 Dec 2021.
- Foot, J. & Hopkins, T. 2010. *A glass half-full: how an asset approach can improve community health and well-being*. Improvement and Development Agency.
<http://www.assetbasedconsulting.net/uploads/publications/A%20glass%20half%20full.pdf> Date of access: 26 Dec 2021.
- Fourie, W. 2019. *Reflecting on SPLUMA requirements and the implications thereof for municipalities in South Africa*. Potchefstroom: North-West University. (Dissertation - Master's).
<http://hdl.handle.net/10394/33098>
- Freeks, F. 2017. Responding to the challenge of father absence and fatherlessness in the South African context: A case study involving concerned fathers from the North West Province. *Stellenbosch Theological Journal*, 3 (1), 89–113.
- Frenzel, F. 2016. *Slumming it: the tourist valorisation of urban poverty*. Zed Books
- Fujita, N. 2004. Gunnar Myrdal's theory of cumulative causation revisited.
<http://133.6.182.153/wp-content/uploads/2016/04/paper147.pdf> Date of access: 3 Jul. 2020.
- Fuo, O.N. 2013. A critical investigation of the relevance and potential of IDPs as a local governance instrument for pursuing social justice in South Africa. *Potchefstroom Electronic Law Journal*, 16(5). <http://dx.doi.org/10.4314/pelj.v16i5.5>
- Furtado, R. 2020. Viewpoint Strategies in Brazilian informal settlements: fighting COVID-19 towards urban resilience. *Town Planning Review*, 92(3). <https://doi.org/10.3828/tpr.2020.73>

Gall, M. D., Gall, J. P., & Borg, W. R. 2003. *Educational research: an introduction*. 7th ed. Boston, MA: Pearson.

Gauteng Provincial Government. 2016. *Gauteng spatial development framework 2030*.

Gavrilla-Paven, I. & Bele, I. 2017. *Developing a growth pole: theory and reality*.

https://www.academia.edu/50257923/Developing_a_growth_pole_theory_and_reality Date of access: 26 May 2021.

GCIS [Government Communications]. 2021. *South Africa Yearbook 2020/21*. 28th edition. Pretoria.

GCRO (Gauteng City Region Observatory). 2015. *Gauteng city region observatory quality of life survey*. <http://www.gcro.ac.za/research/project/detail/quality-of-life-survey-2015/> Date of access: 6 Sep. 2018.

GDHS (Gauteng Department of Human Settlements). 2014?. *Gauteng Human Settlements Spatial Master Plan 2030*.

GDHS (Gauteng Department of Human Settlements). 2019. Human settlements portfolio committee: GP performance report 2019 [PowerPoint]. <https://slideplayer.com/slide/17465886/> Date of access: 7 Mar. 2020.

GDHS (Gauteng Department of Human Settlements). 2021. *First draft 2022/23 multi-year development plan*.

GDHS (Gauteng Department of Human Settlements). 2021. *Government facilities*. [shapefile]

GDHS (Gauteng Department of Human Settlements). 2021. *Informal settlements*. [shapefile]

Geyer, H., Geyer, P. & Geyer, M. 2015. The South African functional metropolis-a synthesis. *Town and regional planning*, 67:13-26.

Gilling, J., Jones.S. & Duncan, A. 2001. Sector approaches, sustainable livelihoods and rural poverty reduction. *Development policy review*, 19(3): 303-319.

Gittelsohn, J., Steckler, A., Johnson, C.C., Pratt, C., Grieser, M., Pickrel, J., Stone, E.J., Conway, T., Coombs, D. & Staten, L.K. 2006. Formative research in school and community-based health programs and studies: "state of the art" and the TAAG approach. *Health Education Behaviour*, 33(1): 25–39.

Good Governance Africa. 2021. Governance Performance Index – South Africa 2021.

<https://gga.org/governance-performance-index/> Date of access: 3 Sep. 2022.

Gorgens, T. & Denoon-Stevens, S. 2013. Towards facilitative and pro-poor land use management in South African urban areas: learning from international experience.

Johannesburg. *Urban Forum*, 24: 85–103 (2013).

Gorjestani, N. 2000. Indigenous knowledge for development. Paper delivered at the e UNCTAD Conference on Traditional Knowledge, Geneva.

https://web.worldbank.org/archive/website00297C/WEB/IMAGES/IKPAPER_.PDF Date of access: 21 Feb. 2021.

GP CoGTA (Gauteng Department of Co-operative Governance and Traditional Affairs). 2022.

Draft review of Gauteng spatial development framework 2030 (approved 2016).

GP Economic Development (Gauteng Department of Economic Development). 2018.

Township baseline study. case: Rand West City.

Grandqvist, K., Humer, A. & Mantysalo, R. 2019. Tensions in city regional spatial planning: the challenge of interpreting layered institutional rules. *Regional studies*, 55.

<https://doi.org/10.1080/00343404.2019.1707791>

Grant, C. & Osanloo, A. 2014. Understanding, selecting, and integrating a theoretical framework in dissertation research: creating the blueprint for your “house”. *Administrative issues journal: connecting education, practice, and research*, 4(2): 12-26.

Grant, U. 2010. *Spatial inequality and urban poverty traps*. London: Overseas Development Institute.

Guarino, L. 2020. *Casabaracca: tracing the origin of the shack as popular, informal and “resistant” dwelling*.

https://www.academia.edu/44325416/CASABARACCA_TRACING_THE_ORIGIN_OF_THE_SHACK_AS_POPULAR_INFORMAL_AND_RESISTANT_DWELLING Date of access: 20 June 2022.

Guest, G., Namey, E.E. & Mitchell, M.L. 2013. *Collecting qualitative data: a field manual for applied research*. CA: SAGE.

Guibrunet, L. & Broto, V.C. *The sustainability of the informal city: an urban metabolism approach*. London: University College.

Haines, A. 2009. Asset-based community development. In: Phillips, R. & Pitman, R.H. *An introduction to community development*. Oxon: Routledge. pp 38-47.

Haley, J., Heeks, R., & Van Belle, J-P. 2021. *Measuring resilience in marginalised urban communities: a South African township pilot study*. (RABIT Working Papers; No. 1).
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3821218 Date of access: 3 Nov. 2022.

Hamann, C., Ballard, R. & Naidoo, Y. 2020. *Mapping three residential types: gated communities, informal dwellings and government projects*. <https://www.gcro.ac.za/outputs/map-of-the-month/detail/mapping-three-residential-types-gated-communities-informal-houses-and-government-projects/> Date of access: 08 May 2020.

Hamann, C., Mkhize, T., Götz, G. 2018. Backyard and informal dwellings (2001-2016).
<https://www.gcro.ac.za/outputs/map-of-the-month/detail/backyard-and-informal-dwellings-2001-2016/> Date of access: 7 Nov. 2019.

Hamdi, N. 1995. *Housing without houses: participation, flexibility, enablement*. London: Intermediate technology.

Hamann, C., Mkhize, T. & Götz, G. 2018. *Backyard and informal dwellings (2001-2016)*.
<https://www.gcro.ac.za/outputs/map-of-the-month/detail/backyard-and-informal-dwellings-2001-2016/> Date of access: 15 Nov. 2021.

Han, H., Hunag, C., Ahn, K., Shu, X., Lin, L. & Qiu, D. 2017. The effects of greenbelt policies on land development: evidence from the deregulation of the greenbelt in the Seoul metropolitan area. *Sustainability*, 9, e1259. <https://doi.org/10.3390/su9071259>

Harelima, J.B. 2017. Towards affordable low-cost housing: strategies of low-cost housing development for the low-income population in Rwanda. *Austin journal of business administration and management*, 1(3), e1015.

Harris, C.D & Ullman E.L. 1945. The nature of cities. *Annals of the American academy of political and social sciences*, 242: 7-17.

Harrison, P., Bobbins, K., Culwick, C., Humby, T., La Mantia, C., Todes, A. Weakley, D. 2014. *Urban resilience thinking for municipalities*. Gauteng city region observatory.

Harrison, R., Blickem, C., Lamb, J., Kirk, S. & Vassilev, I. 2019. Asset-based community development: narratives, practice, and conditions of possibility—a qualitative study with community practitioners. *SAGE*. <https://doi.org/10.1177/2158244018823>

Harvey, D. 2008. *The right to the city*. *New Left Review*, 53: 23–40.

Harvey, J. 1996. The pattern of urban land use. *Urban Land Economics*: 215-228.

Healey, P. 2007. *Urban complexity and spatial strategies: towards a relational planning for our times*. London/New York: Routledge.

Healy, K. 2005. The strengths perspective. In *Social work theories in context: creating frameworks for practice*. Basingstoke: Palgrave. pp. 151-171.

Healy, K. 2006. Asset-based community development: Recognising and building on community strengths. In O'Hara, A & Weber, Z., eds. *Skills for human service practice: working with individuals, groups and communities*. South Melbourne: Oxford University Press. pp. 247 - 258.

Hegazy, I.R. 2015. Informal settlement upgrading policies in Egypt: towards improvement in the upgrading process. *Journal of urbanism*.

DOI:10.1080/17549175.2015.1009845?journalCode=rjou20#preview

Hembd, J. & Silberstein, J. s.a. *Sustainable communities. sustainability and community development*. https://www.sagepub.com/sites/default/files/upm-binaries/33387_Chapter16.pdf
Date of access: 30 Nov. 2022.

Higginson, L. 2016. *Linking economic development and spatial planning in South Africa: a case study of state market relations in Cape Town*. Cape Town: University of Cape Town. (Dissertation - Master's). <http://hdl.handle.net/11427/20368>

Hilal, M., Legras, S. & Cavailhes, J. 2017. Peri-urbanisation: between residential Preferences and job opportunities. *Raumforsch Raumordn*, 76:133–147.

Hildreth, P. & Clark, G. 2005. Working draft position paper for cross departmental, city regions policy residential workshop. Selsdon Park Hotel, 5–6 January.

Holben, D. H. 2002. An overview of food security and its measurement. *Nutrition Today*, 37(4), 156–162.

Holcombe, R. G. 2004. The new urbanism versus the market process. *The review of Austrian economics*, 17 (2/3), 285–300.

Hope, K.R. 1996. Promoting SCD in developing countries: the role of technology transfer. *Community development journal*, 31 (3): 193-200.

Horn, A. 2020. The darker side of muddling through: an analysis of spatial planning policy decision-making and policy termination in Cape Town, South Africa. *Urban Forum*,31:573–598.

Hospers, G. 2004. *Regional economic change in Europe: a neo-Schumpeterian vision*. Munster: Lit Verlag.

Housing Act 107 of 1997.

Howard, E. 1902. *Garden cities of to-morrow*. London: Swan Sonnenschein.
http://www.gutenberg.org/files/46134/46134-h/46134-h.htm#Page_20 Date of access: 24 Apr 2020. E-book

Hoyt, H. 1939. *The structure and growth of residential neighbourhoods in American cities*. Washington: Federal housing administration.
http://heinonline.org/HOL/Page?handle=hein.journals/tlr83&div=67&q_sent=1&collection=journals#2185 Date of access: 9 Mar 2018.

Huchzermeyer, M. 2021. A critical Lefebvrian perspective on planning in relation to informal settlements in South Africa. *Town and regional planning*, 79: 44-54.

Hughes, J.C. 1972. Central place theory and intra-metropolitan distributions. *Transactions of the Kansas Academy of Science*, 75 (2).

Iacono, M., Levinson, D. & El-Geneidy. 2008. Models of transportation and land use change: a guide to the territory. *Journal of Planning Literature*, 20(10). doi: 10.1177/0885412207314010

Ibrahim, M.J. 2017. *Emerging issues in economics and development*.
<https://www.intechopen.com/books/5954> Date of access: 20 May. 2022.

ICOR (The International Consortium for Organizational Resilience). 2019. *Community Resilience Framework*. <https://www.build-resilience.org/community-resilience-framework.php>
Date of access: 7 May. 2019.

Idemudia, U., Tuokuu, F.X.D., Essah, M. & Graham, E. 2022. Corporate social responsibility and community development in Africa: issues and prospects. In Idemudia, U., Tuokuu, F.X.D. & Liedong, T.A., eds. *Business and sustainable development in Africa: medicine or placebo*. Oxon: Routledge. pp. 80-98.

IHS Markit. 2020. *Demographic – population by population group, gender, age*. IHS Markit Regional eXplorer version 1749 (2.6f).

Ikeda, K. & Murota, K. 2014. *Bifurcation theory for hexagonal agglomeration in economic geography*. Tokyo: Springer.

Institute for Sustainable Communities. 1997. *What is a sustainable community?*
<https://sustain.org/about/what-is-a-sustainable-community/> Date of access: 22 Jun 2021.

Intergovernmental Relation Framework Act 13 of 2005

Ioannidis, J.P.A. 2018. Meta-research: why research on research matters. *PLoS Biology*, 16(3), e2005468. <https://doi.org/10.1371/journal.pbio.2005468>

Jabareen, Y.R. 2006. Sustainable urban forms: their typologies, models and concepts. *Journal of Planning Education and Research*, 26 :38-52.

Jamal, H. 2017. *Chrystaller Central Place Theory - Definition and Principles*.
<https://www.aboutcivil.org/Chrystaller-Central-Place-Theory> Date of access: 6 Jan 2019.

Jensen, E. 2009. *Teaching with poverty in mind*.
<http://www.ascd.org/publications/books/109074/chapters/Understanding-the-Nature-of-Poverty.aspx> Date of access: 6 Jan 2019.

Jimmy, E.N., Martinez, J. & Verplanke, J. 2019. Spatial patterns of residential fragmentation and quality of life in Nairobi City, Kenya. *Applied Research in Quality of Life*, 15: 1493-1517.

Johnson, R.B., Onwuegbuzie, A.J. & Turner, L.A. 2007. Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, 1 (112): 112-133.

Joireman, S. F. 2011. *Where there is no government: enforcing property rights in common law Africa*. New York, NY: Oxford University Press.

Jones, G.A. & Corbridge, S. 2010. The continuing debate about urban bias: the thesis, its critics, its influence and its implications for poverty-reduction strategies. *Progress in Development Studies*, 10 (1): 1–18.

Jordan, E. & Javernick-Will, A. 2012. Measuring community resilience and recovery: a content analysis of indicators. <https://ascelibrary.org/doi/abs/10.1061/9780784412329.220> Date of access: 22 Jun 2021.

Jordan, E. & Javernick-Will, A. 2012. *Measuring community resilience and recovery: a content analysis of indicators*.

https://www.academia.edu/20146734/Measuring_Community_Resilience_and_Recovery_A_Content_Analysis_of_Indicators Date of access: 27 May. 2022.

Kaalfontein Community Representative. 2021. Life in the Zenzele informal settlement [Personal interview]. 12 Oct., Kaalfontein.

Kaiser, M.L., Carr, J.K. & Fontanella, S. 2017. A tale of two food environments: Differences in food availability and food shopping behaviours between food insecure and food secure households. *Journal of hunger & environmental nutrition*. Taylor & Francis.

Kamalipour, H. 2020. Improvising places: the fluidity of space in informal settlements. *Sustainability*, 20 (12), art. #2293. doi:10.3390/su12062293

Karki, S. 2021. Sustainable livelihood framework: monitoring and evaluation. *International journal of social sciences and management*, 8(1): 266–271.

Karon, G. & Mikulski, J. 2012. Problems of ITS Architecture and ITS implementation in the Upper Silesian Conurbation in Poland. (In Mikulski, J. *Telematics in the transport environment*: Paper delivered at the 12th international conference of transport systems telematics TST 2012, Katowice-Ustron. https://link.springer.com/chapter/10.1007/978-3-642-34050-5_22 Date of access: 20 Mar. 2020.

Kawakani, M., Shen, Z., Pai, J., Gao, X. & Zhang, M. 2013. *Spatial planning and sustainable development approaches for achieving sustainable urban form in Asian cities*. Dordrecht: Springer.

Keating, A., Campbell, K., Mechler, R., Michel-Kerjan, E., Mochizuki, J., Kunreuther, H., ... Egan, C. 2014. *Operationalizing resilience against natural disaster risk: opportunities, barriers, and a way forward*. Zurich: Flood Resilience Alliance.

Khalifa, M.A. 2015. Evolution of informal settlements upgrading strategies in Egypt: From negligence to participatory development. *Ain Shams Engineering Journal*, 6: 1151–1159.

Khan, S. 2012. *Topic guide on social exclusion*. 2nd ed. Birmingham: Governance and Social Development Resource Centre.

Khanyile, S. 2016. *Development of human settlements and mining areas: 1956-2013*. www.gcro.ac.za/outputs/map-of-the-month/detail/development-of-human-settlements-and-mining-areas-1956-2013/ Date of access: 20 Apr. 2019.

Kim, K. & Choe, S. 2010. In search of sustainable urban form for Seoul. In Sorensen, A. & Okata, J. *Megacities: urban form, governance, and sustainability*. Tokyo: Springer.

Kimengsi, J. N. & Fombe, L.F. 2015. Growth pole strategy as a panacea for Sub-Saharan Africa's regional development challenges: reflections from Cameroon and Nigeria. *Journal of Sustainable Development in Africa*, 17 (8): 79-90.

Kingdom of Morocco. 2014. *Third United Nations conference on housing and sustainable urban development Habitat III - 2016: national report*. Rabat.

Klein, G., Klug, N. & Todes, A. 2012. Spatial planning, infrastructure and implementation: implications for planning school curricula. *Town and Regional Planning*, 60: 19-30.

Kollmair, M. & Gamper, S. 2002. The sustainable livelihoods approach.

<https://www.alnap.org/system/files/content/resource/files/main/sla-gamper-kollmair.pdf> Date of access: 24 Jun. 2022.

Korneychuk, D. 2018. *Sustainable development*.

<https://www.pinterest.at/pin/553872454151505063/?autologin=true> Date of access 15 Apr 2020.

Kotharkar, R., Bahadure, P.N. & Vyas, A. 2012. *Compact city concept: its relevance and applicability for planning of Indian cities*. Paper delivered at the PLEA2012 - 28th Conference, Opportunities, Limits & Needs Towards an environmentally responsible architecture, Lima.

https://www.academia.edu/3780618/Compact_City_Concept_Its_Relevance_and_Applicability_for_Planning_of_Indian_Cities Date of access 15 Apr 2020.

Kreiger, A. 1998. Whose urbanism? *Architecture Magazine*: 73-76.

Kretzmann, J.P. & McKnight, J.L. 1996. Assets-based community development.

Kurucz, E.C., Colbert, B.A. & Wheeler, D. 2008. The business case for corporate social responsibility. In: Crane, A., McWilliams, A., Matten, D., Moon, J. & Seigel, D., eds. *The oxford handbook on corporate social responsibility*. Oxford: Oxford University Press. pp. 83-112.

KYOVA Interstate Planning Commission. 2013. *2040 Metropolitan transportation plan*. Ashland: Kimley-Horn and Associates.

Lategan, L. & Cilliers, J. 2016. Towards more compact South African settlements through informal housing: The case of backyard densification in Bridgeton and Bongoletu, Oudtshoorn. *Town and Regional Planning*, 68: 12-26.

Le Roux, A., Arnold, K., Makhanya, S. & Mans, G. 2019. *Green Book. South Africa's urban future: growth projections for 2050*. Pretoria: CSIR. <https://pta-gis-2-web1.csir.co.za/portal/apps/GBCascade/index.html?appid=5180459a765c4e63bfb3fa527c7302b3> Date of access: 20 July 2022.

Lee, E.D. 2020, 13 Sep. *Introducing the 5 principles of asset-based community development*. [Blog post]. <https://publications.alqasimifoundation.com/blog/introducing-the-5-principles-of-asset-based-community-development> Date of access: 20 July 2022.

Lefebvre, H. 1968. *Le droit à la ville*. Paris: Anthropos.

Lefebvre, H. 1970. *La révolution urbaine*. Paris: Editions Gallimard.

Lefebvre, H. 1991. *Critique of Everyday Life, Vol. 2*. New York, NY: Verso.

Lefebvre, H. 1996. *Writings on Cities*. Oxford: Wiley-Blackwell.

Lehmann, S. 2011. What is green urbanism? holistic principles to transform cities for sustainability. In Blanco, J., ed. *Climate change - research and technology for adaptation and mitigation*. pp: 243-266. <https://www.intechopen.com/chapters/18723> Date of access: 3 Aug. 2021.

Lemanski, C. & Oldfield, S. 2009. The parallel claims of gated communities and land invasions in a Southern city: polarised state responses. *Environment and Planning, A* 41(3):634-648.

Ley, A. 2009. *Housing as governance: interfaces between local government and civic society organisations in Cape Town, South Africa*. Berlin: Universität Berlin. (Thesis – PhD).

Lincoln, Y.S., Lynham, A. & Guba, E.G. 2011. Paradigms and perspectives in contention. In: Norman, K.D. & Lincoln, Y.S., eds. *The Sage Handbook of Qualitative Research*. Thousand Oaks: Sage Publications. pp. 91–95.

Lipton, M. 1984. Urban bias revisited. *Journal of Development Studies*, 20 (3).

Local Government: Municipal Structures Act 117 of 1998

Local Government: Municipal Systems Act 32 of 2000

- Long, C. & Zhang, X. 2009. *Cluster-based industrialisation in China: financing and performance*. <https://ideas.repec.org/p/fpr/ifprid/937.html> Date of access: 20 July 2021.
- Loxley, J. 2013. Are public–private partnerships (PPPs) the answer to Africa's infrastructure needs? *Review of African political economy*, 40(137): 485-495.
- Luthander, J & Gustavsson, K. 2014. Sidi Moumen from terror slum to open city: A participatory urban renewal for Sidi Moumen, Casablanca. https://issuu.com/sarasemlali/docs/sara_semlali_-_final Date of access: 21 Oct. 2022.
- Maake, M.T. 2016. *An analysis of integrated development planning: a case study of Mopani District Municipality*. Hatfield: University of Pretoria. (Thesis – PhD). <http://hdl.handle.net/2263/57160>
- Mabuza, C.A. 2016. *Factors that affect the implementation of the Integrated Development Plan (IDP): the case of Molemole Local Municipality in Limpopo, South Africa*. Polokwane: University of Limpopo. (Dissertation-Master's). <http://hdl.handle.net/10386/2594>
- Madina, A. 2016. *Implications of central place theory: spatial structure analysis in Jilin Central Urban Agglomeration, China based on central place theory*. https://www.academia.edu/23306227/Implications_of_Central_Place_Theory_Spatial_Structure_Analysis_in_Jilin_Central_Urban_Agglomeration_China_based_on_Central_Place_Theory Date of access: 14 March 2020.
- Magdi, S.A. 2018. Towards sustainable slum development: a performance evaluation approach for slum upgrading plans in Egypt. In Catalani, A., Nour, Z.A., Versaci, A., Hawkes, D., Bougdah, H., Sotoca, A., Ghoneem, M. & Trapan, F., eds. *Cities' identity through architecture and arts. Conference proceedings*. International Conference on Cities' Identity through Architecture and Arts (CITAA 2017), Cairo. pp. 317 - 331.
- Magidimisha, H.H. & Chipungu, L. 2019. *Spatial planning in service delivery: towards distributive justice in South Africa*. Switzerland: Palgrave Macmillan.
- Magumdar, S., Mani, A. & Mukand, S.W. 2004. Politics, information and the urban bias. *Journal of development economics*, 75:137-165.
- Mahmood, A. & Bashir, J. 2020. How does corporate social responsibility transform brand reputation into brand equity? Economic and noneconomic perspectives of CSR. *International Journal of Engineering Business Management*, 12: 1–13

- Manomano, T. & Tanga, P.T. 2018. Housing needs: the quality and quantity of housing provided by the government for the poor in the Eastern Cape Province in South Africa. *Social Work/Maatskaplike Werk*, 54(1)(2):19-36.
- Maphazi, N., Raga, K., Taylor, J.D. & Mayekiso, T. 2013. Public participation: a South African local government perspective. *African Journal of Public Affairs*, 6(2).
- Maphosa, S. 2014. *An evaluation of community development projects implemented by the Church of the Nazarene in Orlando East*. Pretoria: University of South Africa. (Dissertation - Master's). <http://hdl.handle.net/10500/13381>
- Marcuse, P. 2009. From critical urban theory to the right to the city. *City*,13:2-3:185-197.
- Marczyk, G., DeMatteo, D. & Festinger, D. 2005. *Essentials of research design and methodology*. New Jersey, NJ: John Wiley & Sons.
- Margis, K. 2010. Community resilience: an indicator of social sustainability. *Society and natural resources*, 23:401–416
- Marx, B., Stoker, T. & Suri, T. 2013. The economics of slums in the developing world. *Journal of Economic Perspectives*, 27 (4):187–210.
- Mashaimate, K. & Madzivhandila, A. 2014. Strengthening community participation in the integrated development planning process for effective public service delivery in the rural Limpopo Province. *Mediterranean Journal of Social Sciences*, 5(25): 225 -230.
- Mashiri, M., Njenga, P., Njenga, C., Chakwiira, J. & Friedrich, M. 2017. Towards a framework for measuring spatial planning outcomes in South Africa. *Sociology and Anthropology*, 5(2): 146-168
- Maslow, A.H. 1943. A theory of human motivation. *Psychological Review*, 50: 370-396. <https://psychclassics.yorku.ca/Maslow/motivation.htm>. Date of access: 20 Oct. 2022.
- Massey, D. 1990. Social structure, household strategies, and the cumulative causation of migration. *Population Index*, 56: 3-26.
- Massey, R.T. 2013. Competing rationalities and informal settlement upgrading in Cape Town, South Africa: a recipe for failure. *Journal of Housing and the Built Environment*, 28(4).

Masum, A., Aziz, H.H.H.A.A & Ahmad, M.H. 2020. Corporate social responsibility and its effect on community development: an overview. *Journal of Business and Management*, 22 (1), 35 - 40.

Mathebula, N.E. 2018. Integrated Development Plan implementation and the enhancement of service delivery: is there a link? *Conference proceedings*. International Conference on Public Administration and Development Alternatives, Saldanha Bay. pp. 563 - 571.

Mathie, A. & Cunningham, G. 2003. From clients to citizens: asset-based community development as a strategy for community-driven development. *Development in Practice*, 13(5): 474-486.

Matthews, S. 2013. *Asset-based, community-driven development (ABCD) in South Africa: rebuilding communities from the inside out*. Paper delivered at the UJ CSBD 4th Annual Soweto Conference, Johannesburg.

McDonald, S., Malays, N. & Maliene, V. 2009. Urban regeneration for sustainable communities: a case study. *Baltic Journal on Sustainability*, 15(1): 49 - 59.

McKnight, J.L. & Rusell, C. 2018. *The four essential elements of an asset-based community development process: what is distinctive about an asset-based community development process?* Chicago: ABCD Institute.

Menshawy, A.E., Aly, S.S. & Salman, A.H. 2011. Sustainable upgrading of informal settlements in the developing world, case study: Ezzbet Abd El Meniem Riyadh, Alexandria, Egypt. *Procedia Engineering*, 21:168-177.

Merriam, S. 2009. *Qualitative research: a guide to design and implementation*. San Francisco, CA: Jossey-Bass.

Meyers, B. 2009. *Walking with the poor: principles and practices of transformational development*. New York: Orbis.

Milder, J. 2012. Sustainable urban form. In E. V. Bueren, H. V. Bohemen, L. Itard, & H. Visscher., eds. *Sustainable urban environments: An ecosystem approach*. London: Springer. pp. 263–284.

Ministry of Human Settlements. 2018. Address by the honourable minister of human settlements, Msnoma India Mfeketo, at the presentation of the department of human settlements budget vote, 2018/19. 10 May.

http://thehda.co.za/pdf/uploads/multimedia/Budget_Speech_10_May_18.pdf Date of access: 2 Nov 2019.

Mkhombo, J.M. 1999. *Perceptions on how informal settlements affect the quality of education in secondary schools*. Johannesburg: University of Johannesburg. (Dissertation – ME.d).
<https://hdl.handle.net/10210/7571>

Mngadi, A. 2018. *The role of theory in research and practice*.
<https://www.grin.com/document/444409> Date of access: 14 Sep 2022.

Mohsin, M. & Anwar, M.M. 2015. Identification of land uses through the application of multiple nuclei model in Bahawalpur City, Pakistan: Planning Perspectives. *Sindh University Research Journal (Science Series)*, 47 (3): 411-414.

Mokgwatsana, E.N. 2018. *The impact of government housing subsidies in Alexandra-Gauteng:1995-2012*. Pretoria: University of South Africa. (Thesis – PhD).
https://uir.unisa.ac.za/bitstream/handle/10500/25386/thesis_mokgwatsana_en.pdf?sequence=1&isAllowed=y

Morse, S., McNamara, N. & Acholo, M. 2009. *Sustainable livelihood approach: a critical analysis of theory and practice*. Dordrecht: Springer.

Moseley, M.J. 1974. *Growth centres in spatial planning*. Oxford: Pergamon Press.

Mouratidis, K. 2018. Built environment and social well-being: how does urban form affect social life and personal relationships? *Cities*, 74: 7–20.

Mouratidis, K. 2019. Compact city, urban sprawl, and subjective well-being. *Cities*, 92: 261–272.

Mueller-Hirth, N. 2016. Corporate social responsibility and development in South Africa: socio-economic contexts and contemporary issues. In: Vertigans, S., Idowu, S.O. & Schmidpeter, R., eds. *Corporate social responsibility in Sub-Saharan Africa: Sustainable development in its embryonic form*. pp. 51–68.

Municipal Finance Management Act 56 of 2003

Municipal Structures Act 117 of 1998.

Municipal Systems Act 32 of 2000.

Murambadoro, M. 2009. How the sustainable livelihoods framework can contribute towards sustainable social development: where are we going? <http://hdl.handle.net/10204/4454>

Musvoto, G., Lincoln, G. & Hansmann, R. 2016. The role of spatial development frameworks in transformation of the eThekweni Municipality, KwaZulu-Natal, South Africa: reflecting on 20 years of planning. *Urban Forum*, 27:187–210.

Mwamba, J. & Peng, Z. 2020. Analysis of informal urban settlement upgrading: the case of Ng'ombe slum upgrading in Zambia. *Current urban studies*, 8, 509-532.

Myrdal, G. 1957. Economic theory and underdeveloped regions.
<https://journals.sagepub.com/doi/abs/10.1177/097492846001600220?journalCode=igga> Date of access: 28 Nov. 2021.

Nadasen, N. 2010. *Conceptualisations and experiences of the presence of informal settlements into formal residential areas. A study of the residents in formal housing of the Clare Estate Area*. Durban: University of KwaZulu-Natal. (Dissertation – M.Sc.).
<http://hdl.handle.net/10413/2741>

Naess, A. 1995. Deep ecology and lifestyle. In: Sessions, G., ed. *Deep ecology for the 21st century*. Boston. pp. 259-264.

Naicker, N., Mathee, A. & Teare, J. 2015. Food insecurity in households in informal settlements in urban South Africa. *South African Medical Journal*, 105(4): 268-270.
<https://doi.org/10.7196/samj.8927>

Naidu, E. & Issacson, M. 2009. *How to build quality houses for R55 000*.
<https://www.iol.co.za/news/south-africa/how-to-build-quality-houses-for-r55-000-466848> Date of access: 23 Oct. 2022.

Narula, S.A., Magray, M.A. & Desore, A. 2017. A sustainable livelihood framework to implement CSR project in coal mining sector. *Journal of Sustainable Mining*, 16(3): 83-93.
<https://doi.org/10.1016/j.jsm.2017.10.001>

Nassar, D.M. & Elsayed, H.G. 2017. From informal settlements to sustainable communities. *Alexandria Engineering Journal*, 57(4): 2367–2376. <https://doi.org/10.1016/j.aej.2017.09.004>

Nassar, D.M. & El-Sayed, M.K. 2016. *Urban challenge meets hidden potentials sustainable development of El-Max Fishermen Village in Alexandria, Egypt*. Paper delivered at the 7th Asia-Pacific International Conference on Environment-Behaviour Studies, Edinburgh, United

Kingdom. Edinburgh: e-International Publishing. pp. 27-30.

[https://www.researchgate.net/publication/327915328 Urban Challenge Meets Hidden Potentials Sustainable Development of El-Max Fishermen Village in Alexandria Egypt](https://www.researchgate.net/publication/327915328_Urban_Challenge_Meets_Hidden_Potentials_Sustainable_Development_of_El-Max_Fishermen_Village_in_Alexandria_Egypt) Date of Access: 15 Mar. 2021.

National Environmental Management Act 107 of 1998.

National Planning Commission. 2012. *National Development Plan 2030: our future make it work.* <https://www.gov.za/issues/national-development-plan-2030> Date of access: 22 Nov. 2020.

National Treasury (South Africa). 2017a. *National treasury cities' support programme technical assistance workshop, South Africa.* [https://csp.treasury.gov.za/CSP-Old/Resource%20 Centre/Conferences/Documents/Catalytic%20Urban%20\(re\)%20Development%20Programs%20and%20Projects/2017%20Workshop%20Summary%20-%20Final.pdf](https://csp.treasury.gov.za/CSP-Old/Resource%20Centre/Conferences/Documents/Catalytic%20Urban%20(re)%20Development%20Programs%20and%20Projects/2017%20Workshop%20Summary%20-%20Final.pdf) Date of access: 17 July 2020.

National Treasury (South Africa). 2017b. *Guidance note: framework for the formulation of built environment performance plans (BEPP).* <https://csp.treasury.gov.za/csp/DocumentsBEPP/BEPP%20Core%20Guidance%20v5.5.pdf> Date of access: 27 Oct. 2022.

National Treasury (South Africa). 2017c. *Built environment performance plans.* <https://csp.treasury.gov.za/csp/knowledge-hub/built-environment-performance-plans> Date of access: 27 Oct. 2022.

National Treasury (South Africa). 2020. *An informal settlement community development programme for South Africa.* https://csp.treasury.gov.za/csp/DocumentsEvents/CDP%20-%20South%20Africa%20-%20Final%20Draft_111320.pdf Date of access: 27 Oct 2022.

National Treasury (South Africa). 2021? *Planning and assessment guidelines for informal settlement upgrading in the context of the integrated human settlements plan (IHSP) and the built environment performance plan (BEPP).* <https://csp.treasury.gov.za/csp/DocumentsToolbox/052.SA.CSP.BEPP.Informal%20Settlement%20Upgrading%20Assessment%20Guidelines.pdf> Date of access: 26 Oct 2022.

Ndalifilwa, R.M. 2019. *Assessing community participation in the upgrade of informal settlements: A case study of the formalisation of the Democratic Resettlement Community,*

Swakopmund, Namibia. Stellenbosch: University of Stellenbosch. (Dissertation – MPA).
<http://hdl.handle.net/10019.1/107145>

Nel, H. 2020. Stakeholder engagement: asset-based community-led development (ABCD) versus the traditional needs-based approach to community development. *Social Work/Maatskaplike Werk*, 56(3). <http://dx.doi.org/10.15270/56-4-857>

Nel, N. 2016. Spluma, zoning and effective land use management in South Africa. *Urban Forum*, 27(1):79–92. <https://doi.org/10.1007/s12132-015-9265-5>

Nelson Mandela Bay Municipality. 2007. *Sustainable community planning guide*.
https://www.nelsonmandelabay.gov.za/DataRepository/Documents/sustainable-communities-planning-methodology-1_6RWt8.pdf Date of access: 7 March 2020.

Nelson, A.C. 2000. Effects of urban containment on housing prices and landowner behaviour. Newsletter of the Lincoln Institute and Land Policy, 12(3).
<https://www.lincolninst.edu/publications/articles/effects-urban-containment-housing-prices-landowner-behavior#:~:text=Most%20economic%20literature%20assessing%20urban,new%20demand%20for%20serviced%20land>. Date of access: 7 March 2020.

Neuman, W. L. 2011. *Social research methods: qualitative and quantitative approaches*. 7th ed. Boston: Pearson.

Neuvel, J.M.M. 2009. *Geographical dimensions of risk management: the contribution of spatial planning and Geo-ICT to risk reduction*. Wageningen: Wageningen University: (Thesis – PhD).
<https://library.wur.nl/WebQuery/wurpubs/383394> Date of access: 30 Oct. 2020.

Ngoran, S.D. & XiongZhi, X. 2015. *Socio-environmental impacts of sprawl on the coastline of Douala: options for integrated coastal management*. Hamburg: Anchor Academic Publishing.

NUSP (National Upgrading Support Programme). 2015. *Introduction to informal settlement upgrading. Section 1: the case for incremental upgrading*.
<https://csp.treasury.gov.za/csp/DocumentsToolbox/004.SA.NUSP.Chapter-1-The-Case-For-Upgrading-May-2016.pdf> Date of access: 14 July 2021.

Odendaal, N. & McCann, A. 2016. Spatial planning in the global South: reflections on the Cape Town Spatial Development Framework. *International Development Planning Review*, 38(4):405-423.

OECD. 2011. *The economic significance of natural resources: key points for reformers in Eastern Europe, Caucasus and Central Asia*. Paris.

Office of the Deputy Prime Minister (United Kingdom). 2003. *Sustainable communities: building for the future*. <https://uk.practicallaw.thomsonreuters.com/0-107-0582?contextData=%28sc.Default%29&transitionType=Default> Date of access: 6 October 2021.

OHCHR (United Nations Human Rights Office of the High Commissioner). 2020a. *The right to adequate housing toolkit*. <https://www.ohchr.org/en/issues/housing/toolkit/pages/righttoadequatehousingtoolkit.aspx> Date of access: 2 Apr. 2020

OHCHR (United Nations Human Rights Office of the High Commissioner). 2020b. *Kenya's informal settlements need safe water to survive COVID-19*. <https://www.ohchr.org/en/stories/2020/04/kenyas-informal-settlements-need-safe-water-survive-covid-19#:~:text=Kenya%20has%20a%20population%20of,in%20Nairobi%2C%20Mombasa%20and%20Kisumu> Date of access: 18 Oct 2022.

OHCHR (United Nations Human Rights Office of the High Commissioner). 2019? *The right to adequate housing*. https://www.ohchr.org/sites/default/files/Documents/Publications/FS21_rev_1_Housing_en.pdf Date of access: 22 Oct. 2022.

Oldfield, S. & Greyling, S. 2015. Waiting for the state: a politics of housing in South Africa. *Environment and Planning A*, 47:1100-1112.

Owusu, G., Agyei-Mensah, S. & Lind, R. 2008. Slums of hope and slums of despair: mobility and livelihoods in Nima, Accra. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 62(3):180-190.

Oxfam. 2013. *The sustainable livelihoods approach: toolkit for Wales*.

Pacino, C. & Rizza, M.O. 2009. Myrdal, growth processes and equilibrium theories. In: Salvadori, N., Pasquale Commendatore, P & Tambari, M., eds. *Geography, Structural Change and Economic Development*. Cheltenham: Edward Elgar Publishing. pp. 183 - 202.

Palci, I. & Lalic, B. 2009. Analytical hierarchy process as a tool for selecting and evaluating projects. *International Journal of Simulation Modelling*, 8:16-26.

- Palinkas, L.A., Horwitz, S.M., Green, C.A., Wisdom, J.P., Duan, N. & Hogwood, K. 2015. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administrative Policy and Mental Health*, 42(5): 533-544.
- Peacock, W.G., Brody, S.D., Seitz, W. A., Merrell, A.V., Zahran, S., Harriss, R.C. & Stickney, R.R. 2010. *Advancing the resilience of coastal localities: Implementing and sustaining the use of resilience indicators*. College Station, TX: Hazard Reduction and Recovery Center.
- Peberdy, S., Harrison, P. & Dinath, Y. 2017. Uneven spaces: core and periphery in the Gauteng City Region. <http://hdl.handle.net/10539/23592>
- Peernet, B.C. 2012. *What is community development?* <http://www.peernetbc.com/what-is-community-development> Date of access: 21 Aug. 2017
- Pekelharing, E.J. 2008. *The urban development boundary as a planning tool for sustainable urban form: implications for the Gauteng City Region*. Potchefstroom: North-West University. (Thesis – Ph.D). <http://hdl.handle.net/10394/2102>
- Perez-Escamilla, R. 2017. Food Security and the 2015–2030 Sustainable development goals: from human to planetary health. *Current Developments in Nutrition*, 1(7). <https://doi.org/10.3945/cdn.117.000513>
- Phago, K. 2009. Integrated development plan in South African local government: the case of the City of Tshwane Metropolitan Municipality. *Journal of Public Administration*, 44(3): 483-491.
- Pijnappels, M. 2009. *Between water management and spatial planning; reflections on cooperation in theory and in Dutch practice*. Wageningen: Wageningen University. (Thesis - MSc). <https://edepot.wur.nl/15169> Date of access: 13 Apr. 2019.
- Pizzo, B. 2015. Problematizing resilience: Implications for planning theory and practice. *Cities*, 43:133–140.
- PlanAct. 2015. *Annual report: 2015 - 2016*.
- Planning Tank. 2016. *Central Place Theory by Walter Christaller (1933)*. <https://planningtank.com/settlement-geography/central-place-theory-walter-christaller> Date of access: 27 Dec. 2019.
- Potocan, V. 2021. Technology and corporate social responsibility. *Sustainability*, 13, e8658. <https://doi.org/10.3390/su13158658>

- Powell, R.R. 2006. Evaluation research: an overview. *Library Trends*, 55(1):102-120.
- Power, A. s.a. *Sustainable communities and sustainable development: a review of the sustainable communities plan*. <https://core.ac.uk/download/pdf/95987.pdf> Date of access: 28 Sep 2019.
- Powoh, T.V. 2018. *Research methods*. Essay: Horizons university.
- PPT (Project Preparation Trust). 2013. *Overview of the use of housing subsidies for special needs group housing in South Africa*. Durban.
- Prevention of Illegal Eviction from and Unlawful Occupation of Land Act 19 of 1998*.
- Purcell, M. 2013. Possible worlds: Henri Lefebvre and the right to the city. *Journal of urban affairs*, 36(1):141–154.
- Purkarthofer, E. & Humer, A. 2019. City regional policies in the planning systems of Finland and Austria: national initiatives and European opportunities. *Belgeo. Revue belge de géographie*, 2. doi: 10.4000/belgeo.32122
- Quinn, J.A. 1940. The burgess zonal hypothesis and its critics. *American Sociological Review*, 5(2):210-218. <https://www.jstor.org/stable/2083636?seq=1> Date of access: 9 Mar 2020.
- Raagmaa, G. & Kroon, K. 2005. The future of collective farms' built social infrastructure: choosing between central place and network theories. *Geografiska Annaler. Series B, Human Geography* 87 B, (3):205–224.
- Rains, E. & Krishna, A. 2019. *Will urbanization raise social mobility in the South, replicating the economic history of the West?* (WIDER working paper, 2019/102). <https://www.wider.unu.edu/publication/will-urbanization-raise-social-mobility-south-replicating-economic-history-west> 12 Jun. 2022.
- Redman, C. L. 2014. Should sustainability and resilience be combined or remain distinct pursuits? *Ecology and society* 19(2), e37. <http://dx.doi.org/10.5751/ES-06390-190237>
- Register, R. 2006. *Ecocities: rebuilding cities in balance with nature*. Berkeley: Berkeley Hills.
- Rehman, A.A. & Alharthi, K. 2016. An introduction to research paradigms. *International Journal of Educational Investigations*, 3(8):51-59.
- Richards, K. 2003. *Qualitative inquiry in TESOL*. New York, NY: Palgrave Macmillan.

Richardson, H.W. & Townpoe, P. M. 1987. Regional policies in developing countries. In: Nijkamp, P., ed., *Handbook of regional and urban economics*. Amsterdam: Elsevier. pp.647-678.

Righa, E.M. 2012. *Factors influencing the growth of informal settlements: a case of Bangladesh Slum, Changanwe Constituency, Mombasa County, Kenya*. Nairobi: University of Nairobi. (Dissertation - Masters).
<http://erepository.uonbi.ac.ke:8080/xmlui/handle/123456789/6672>

Rodrigue, J. 2020. *The geography of transport systems*. 5th ed. New York: Routledge
https://transportgeography.org/?page_id=4908 Date of access: 9 Mar 2020.

Rodriguez-Pose, A. 2008. The rise of the “city region” concept and its development policy implications. *European Planning Studies*, 16(8):1025-1046.

Roger, P.P., Jalal, K.F. & Boyd, J.A. 2008. *An introduction to sustainable development*. London: Earthscan.

Rose, A. 2007. Economic resilience to natural and man-made disasters: multi-disciplinary origins and contextual dimensions. *Environmental hazards* 7(4):383-398.

Roseland, M. & Spiliotopoulou, M. 2017. *Sustainable community planning and development*. Burnaby, BC: Simon Fraser University.

Royston, L. 2009. A significantly increased role in the housing process: The municipal housing planning implications of BNG. *Town and Regional Planning*, 540: 61-70.

Royston, L. 2015. *Informal settlements and SPLUMA: what prospects for upgrading?*
https://csp.treasury.gov.za/csp/DocumentsToolbox/221.SA.SERI_SPLUMA_ISU2015.pdf Date of access: 16 Sep. 2021.

Rudolph, M., Kroll, F., Ruysenaar, S. & Dlamini, T. 2012. *The state of food insecurity in Johannesburg*. <https://scholars.wlu.ca/afsun/20/> Date of access: 10 Oct. 2021.

Ruhiiga, T.M. 2014. Urbanisation in South Africa: a critical review of policy, planning and practice. Supplement on Population Issues in South Africa, 28 (1). <https://doi.org/10.11564/28-0-519>

Rusell, C. 2016. Sustainable Community Development: from what's wrong to what's strong. [YouTube video].

<https://www.youtube.com/watch?v=a5xR4QB1ADw&list=PLepYF6CS4H9VyFta2kImAVFnXBI85WVPK&index=10> Date of access: 9 Sep. 2018.

RWCLM (Rand West City Local Municipality). 2019. Spatial development framework.

Saaty, T.L. 1990. How to make a decision: the analytical hierarchy process. *European Journal of Operational Research*, 48:9–26.

Saaty, T.L. 2008. Decision making with the analytical hierarchy process. *International journal services sciences*, 1(1): 83-98.

Saaty, T.L., Vargas, L.G. 1991. *Prediction, projection and forecasting*. Dordrecht: Kluwer Academic.

SACN (South Africa Cities Network). 2015. *SPLUMA as a tool for spatial transformation*. Braamfontein.

SACN (South Africa Cities Network). 2020. *State of crime and safety in South African Cities Report 2020*. Johannesburg. www.sacities.net and www.saferespaces.org.za Date of access: 24 Aug 2022

SACN (South African Cities Network). 2021. *Ekurhuleni: reblocking programme in Emandleni*. Johannesburg.

Santoso, E.B., Kusuma, S.H. & Siswanto, V.K. 2015. Air space modelling for living arrangement in Surabaya. *Conference proceedings*. International Conference on Intelligent Planning Towards Smart Cities (CITIES 2015), Surabaya, Indonesia. pp. 747-753.
<https://doi.org/10.1016/j.sbspro.2016.06.141>

Sattano, K., Swisher, M.E. & Moore, K.N. 2007. *Defining community food security*. Florida: IFAS Extension, University of Florida.

Scherer, A. G., & Palazzo, G. (2011). The new political role of business in a globalized world: A review of a new perspective on CSR and its implications for the firm, governance and democracy. *Journal of Management Studies*, 48(4):899–931.

Schlebusch, S. 2015. Planning for sustainable communities: evaluating place-making approaches. *Agriculture, Forestry and Fisheries*, 4(4-1):59-72

Schmidt, I.M. & Du Plessis, D.J. 2013. *A critical evaluation of the operational application of various settlement typologies in South Africa*. <http://hdl.handle.net/10019.1/93645>

- Schoeman, C.B. 2015. The alignment between spatial planning, transportation planning and environmental management within the new spatial systems in South Africa. *Town and Regional Planning*, 67. <https://hdl.handle.net/10520/EJC199235>
- Scott, A. J. & Storper, M. 2003. Regions, globalization, development. *Regional Studies*, 37(6–7): 579–593.
- Scott, A.J., 2008. *Social economy of the metropolis. cognitive-cultural capitalism and the global resurgence of cities*. Oxford: Oxford University Press.
- SERI (Socio--Economic Rights Institute of South Africa). 2018. *Informal settlements and human rights in South Africa: submission to the United Nations Special Rapporteur on adequate housing as a component of the right to an adequate standard of living*.
- Serrat, O. 2008. The sustainable livelihoods approach. <https://hdl.handle.net/1813/87754>
- Shalaby, H. M., Sherif, A. & Altan, H. 2017. The impact of the informal area expansion on the urban natural ventilation of Alexandria. *Innovative infrastructure solutions*, 3(8). <https://doi.org/10.1007/s41062-017-0109-0>
- Shaqra'a, E.A.A., Badarulzaman, N. & Roosli, R. 2015. Residents' perception of the affordability of private housing schemes: lessons from Aden, Yemen. *Procedia – Social and Behavioral Science*, 202: 389-399.
- Shen, Z. & Kawakami, M. 2013. Overview: spatial planning for achieving sustainable urban forms. In: Kawakami, M., Shen, Z., Pai, J., Gao, X and Zhang, M. eds. *Spatial planning and sustainable development approaches for achieving sustainable urban form in Asian cities*. Dordrecht: Springer. pp. 1–11.
- Sheng, I. 2013. Free capital mobility and SCD: a theoretical framework. *Habitat International*, 40: 278 - 284.
- Shirazi, M.R. 2020. Compact urban form: neighbouring and social activity. *Sustainability*, 12, e1987. <https://doi.org/10.3390/su12051987>
- Sidoti, C. 1996. Housing as a human right. Paper delivered at the National Conference on Homelessness Council to Homeless Persons, Sydney. https://humanrights.gov.au/sites/default/files/content/pdf/human_rights/housing.pdf Date of access: 21 Jun. 2020.

Simiyu, S., Cairncross, S. & Swilling, M. 2019. Understanding living conditions and deprivation in informal settlements of Kisumu, Kenya. *Urban forum*, 30: 223–241.

Simmonds, R. & Hack, G. 2000. Planning the city region: a short history of western practice. In: Simmonds, R. & Hack, G., eds. *Global city regions: their emerging forms*. New York: Spon Press.

Siyanda, D. 2017. *The role of public participation in the integrated development planning process: Chris Hani District Municipality*. Summerstrand: Nelson Mandela Metropolitan University. (Dissertation-MA). <http://hdl.handle.net/10948/14983>

Soliman, A. M. & Soliman, Y.A. 2022. Exposing urban sustainability transitions: urban expansion in Alexandria, Egypt. *International Journal of Urban Sustainable Development*, 14(1): 33-55.

South Africa Institute of Race Relations. 2015. *South Africa's housing conundrum*, 4 (20). <https://irr.org.za/reports/atLiberty/files/liberty-2013-south-africas-housing-conundrum> Date of access: 21 Jun. 2020.

South Africa. The Presidency. 2010. *For outcome 8 delivery agreements: sustainable human settlements and improved quality of household life*. https://www.gov.za/sites/default/files/gcis_document/201409/delivery-agreementoutcome-81.pdf Date of access: 23 Nov 2021.

South African Government. 2014. *Premier Nomvula Mokonyane launches Gauteng Vision 2055*. <https://www.gov.za/gauteng-premier-launch-gauteng-vision-2055#:~:text=The%20vision%20for%20Gauteng%202055,cohesion%2C%20thus%20ensuring%20sustainable%20development> Date of access: 19 Jul. 2022.

Spaliviero, M., Boerboom, L., Gilbert, M., Spaliviero, G. & Bajaj, M. 2019. The Spatial Development Framework to facilitate urban management in countries with weak planning systems. *International Planning Studies*, 24 (3–4): 235–254.

Speakman, J. & Koivisto, M. 2013. *Growth poles: raising competitiveness and deepening regional integration*. World economic forum.

Spijkers, O. 2018. Intergenerational equity and the sustainable development goals. *Sustainability*, 10(11), e3836. <https://doi.org/10.3390/su10113836>

Standing Conference for Community Development. 2001. *Strategic Framework for Community Development*. Sheffield.

Stats SA (Statistics South Africa). 2016. GHS series volume VII. *Housing from a human settlement perspective: in-depth analysis of general household survey data 2002-2014*. Pretoria.

Stats SA (Statistics South Africa). 2016. *Provincial profile Gauteng: community survey 2016*.

Stats SA (Statistics South Africa). 2019. *Mid-year population estimates 2019*. Pretoria.

Stats SA (Statistics South Africa). 2020. *General Household Survey 2020*.

Stats SA (Statistics South Africa). s.a. *South African COVID-19 Vulnerability Index (SA CVI): Rand West City Local*.

<https://app.powerbi.com/view?r=eyJrIjoiaMTkzMzMxOWEtMDNmNy00NzVhLWJhMzItZDZhODI3NmNkYzMwliwidCI6ImNhMzhhOWU1LTljZTItNDFlOC1hNDFlTY0N2M3YjUwZGI0YSIsImMiOiI9&pageName=ReportSection> Date of access: 10 May. 2022.

Stead, D. 2021. Conceptualizing the policy tools of spatial planning. *Journal of planning literature*, 36(3) 297-311.

Steckler, A., McLeroy, K.R., Goodman, R.M., Bird, S.T. & McCormick, L. 1992. Toward integrating qualitative and quantitative methods: an introduction. *Health education quarterly*, 19(1): 1-8.

Stokes, C. J. 1962. A theory of slums. *Land Economics*, 38 (3): 187-197.

Sullivan, G.M. & Artino, A.R. 2013. Analyzing and interpreting data from Likert-type scales. *Journal of Graduate Medical Education*, 5(4): 541-542.

Sverdlik, A. 2011. Ill-health and poverty: a literature review on health in informal settlements. *Environment & Urbanization*, 23(1): 123 –155.

Taruvunga, B.G. & Mooya, M.M. 2016. *Theorizing speculative low-income housing development in developing countries*. Paper delivered at the 9th CIDB Postgraduate Conference , Cape Town. <https://openbooks.uct.ac.za/uct/catalog/download/5/7/186?inline=1>
Date of access: 28 Nov. 2022

- Taruza, T.C. *An analysis of planning intervention in the formalisation of informal settlements in Ikageng township within the Tlokwe Local Municipality*. Potchefstroom: North-West University. (Dissertation – Masters). <http://hdl.handle.net/10394/21157>
- Tashakkori, A. & Teddlie, C. 1998. Mixed methodology: combining qualitative and quantitative approaches. *Applied social research methods series*, 46. Thousand Oaks: Sage Publications
- The Presidency. 2009. *Medium Term Strategic Framework: a framework to guide government's programme in the electoral mandate period (2009-2014)*.
- Thwala, W.D., Aigbavboa, C.O. & Ramovha, N.T. 2018. *Housing delivery: making sense of the demand for state-subsidised housing in South Africa*. Proceedings of the International Conference on Industrial Engineering and Operations Management, Washington D.C., USA. Washington D.C.: IEOM Society International. pp. 2487 - 2503.
- Tierney, K. 2009. *Disaster response: research findings and their implications for resilience measures*. CARRI Research Report 6. Colorado.
- Tissington, K. 2010. *A Review of housing policy and development in South Africa since 1994*. Socio-Economic Rights Institute of South Africa (SERI).
- Todes, A., Karam, A., Klug, N. & Malaza, N. 2010. Beyond master planning? new approaches to spatial planning in Ekurhuleni, South Africa. *Habitat International*, 34: 414-420
- Tshoose, C.I. 2015. Dynamics of public participation in local government: a South African perspective. *African Journal of Public Affairs*, 8(2): 13-29.
- Turner, J.F.C. 1972. Housing as a verb. In Turner, J.F.C. & Fichter, R., eds. *Freedom to build, dweller control of the housing process*. New York: Collier Macmillan. pp. 148-175.
<http://www.communityplanning.net/JohnTurnerArchive/pdfs/FreedomtoBuildCh7.pdf> Date of access: 20 Oct. 2022.
- Turner, J.F.C. 1976. *Housing by the people: towards autonomy in building environments*. New York: Pantheon.
- Turok, I. & McGranahan, G. 2013. Urbanization and economic growth: the arguments and evidence for Africa and Asia. *International Institute for Environment and Development (IIED)*, 25(2): 465–482.

- Turok, I., Budlender, J. & Visagie, J. 2017. *The role of informal urban settlements in upward mobility*. (Development Policy Research Unit Working Paper, WP 201505), Cape Town.
http://www.dpru.uct.ac.za/sites/default/files/image_tool/images/36/Publications/Working_Papers/DPRU%20WP201701.pdf Date of access: 28 Nov. 2022.
- Turok, I. 1994. Urban planning in the transition from apartheid: part 1: the legacy of social control. *The Town Planning Review*, 65 (3): 243-259.
- UN (United Nations). 2007. *Indicators of sustainable development: guidelines and methodologies*, 3rd ed. New York.
- UN (United Nations). 2008. *Spatial planning key instrument for development and effective governance with special reference to countries in transition*. Geneva.
- UN [United Nations]. 2016?. *Why the SDGs matter*.
<https://www.un.org/sustainabledevelopment/why-the-sdgs-matter/> Date of access: 16 Oct. 2022.
- UNDP (United Nations Development Programme). 2019. *Participatory strategic urban planning for Alexandria City till 2032*. New York.
- UN-Habitat (United Nations Human Settlement Programme). 2021. Urban Population Living in Slums by Country or Area 1990 2018 (Thousands).
<https://data.unhabitat.org/documents/8353acb59a9f468e8d1c2131c7d3d8fe/about> Date of access: 18 Oct 2022.
- UN-Habitat (United Nations Human Settlements Programme). 1987. *Global report on human settlements*. New York: Oxford University Press.
- UN-Habitat (United Nations Human Settlements Programme). 2003. *Handbook on best practices, security of tenure and access to land implementation of the habitat agenda*. Nairobi.
- UN-Habitat (United Nations Human Settlements Programme). 2003. *The challenge of slums*. Nairobi. <https://unhabitat.org/the-challenge-of-slums-global-report-on-human-settlements-2003>
 Date of access: 15 Oct. 2022.
- UN-Habitat (United Nations Human Settlements Programme). 2010. *Al Omrane: leading actor for settlements upgrading*.

UN-Habitat (United Nations Human Settlements Programme). 2015. *Informal settlements*. (Habitat III Issue Paper 22). Nairobi. <https://unhabitat.org/habitat-iii-issue-papers-22-informal-settlements>. Date of access: 9 Oct. 2022.

UN-Habitat (United Nations Human Settlements Programme). 2016. *Country Profile Morocco*.

UN-Habitat (United Nations Human Settlements Programme). 2016. *Urbanisation and development: emerging futures. World cities report 2016*. Nairobi.

UN-Habitat (United Nations Human Settlements Programme). 2018. *Prosperity for all: enhancing the informal economy through participatory slum upgrading*. Nairobi

UN-Habitat (United Nations Human Settlements Programme). 2020. *Informal Settlements in the Arab Region: towards Arab cities without informal areas*. Nairobi.

UN-Habitat (United Nations Human Settlements Programme). 2021b. *Proportion of urban population living in slum households by country or area 1990 – 2018 (percent)*. <https://data.unHabitat.org/documents/GUO-UN-Habitat::proportion-of-urban-population-living-in-slum-households-by-country-or-area-1990-2018-percent-1/about> Date of access: 9 Oct. 2022.

UN-Habitat (United Nations Human Settlements Programme). 2022. *Fact sheet participatory slum upgrading programme (PSUP)*. <https://unhabitat.org/fact-sheet-participatory-slum-upgrading-programme-psup> Date of Access: 24 Oct. 2022.

UN-Habitat (United Nations Human Settlements Programme). s.a. *Women and housing: towards inclusive cities*. Nairobi.

UN-Habitat [United Nations Human Settlements Programme]. 2016. *UN-Habitat support to sustainable urban development in Kenya: addressing urban informality*. Volume 4: Report on capacity building for community leaders. Nairobi.

United Nations. 1987. Report of the world commission on environment and development: our common future. <https://www.are.admin.ch/are/en/home/media/publications/sustainable-development/brundtland-report.html> Date of access: 28 Apr. 2019.

United Nations. 2018. *The World's Cities in 2018*. https://www.un.org/en/development/desa/population/publications/pdf/urbanization/the_worlds_cities_in_2018_data_booklet.pdf Date of access: 23 Mar. 2022.

Urban Landmark. 2013. *Incrementally securing tenure Promising practices in informal settlement upgrading in southern Africa*. Cape Town.

Van Aswegen, M. 2018. *Planning for a resilient peripheral region: a regional policy approach*. Potchefstroom: North-West University. (Thesis -PhD). <http://hdl.handle.net/10394/30653>

Van der Westhuizen, C., van Zyl, A. & Cele, A. 2017. How much does government spend on informal settlement upgrading in South Africa? an analysis of four cities' budgets. International Budget Partnership. <https://asivikelane.org/wp-content/uploads/2020/11/ibp-south-africa-budget-brief-four-city-analysis-of-financing-informal-settlements-upgrading-2017.pdf> Date of access: 9 Jul. 2020.

Van Dijk, T. 2021. Strategic spatial planning through pragmatic blueprints: Forms and levels of adaptivity in modernist planning of the Dutch IJsselmeerpolders. *Future*, 125, art. #102665. <https://doi.org/10.1016/j.futures.2020.102665>

Van Leeuwen, E. S., Hagens, J. E. and Nijkamp, P. 2007. Multi-agent systems: a tool in spatial planning. *disP - The Planning Review*, 170(3), art #19. <https://doi.org/10.1080/02513625.2007.10556986>

Van Schalkwyk, B., Schoeman, C. & Cilliers, E.J. 2013. Sustainable community development as an integral part of sectoral plans in South Africa. *The Sustainable City VIII*, 1: 255-266.

Van Schalkwyk, B.B. 2015. Challenges in realising sustainable community development in rural South Africa. *Agriculture, forestry and fisheries*, 4(4-1):73-79.

Venter, A., Marais, L. & Morgan, H. 2019. Informal settlement upgrading in South Africa: a preliminary regenerative perspective. *Sustainability*, 11(2685): 1-15.

Verma, K.G. & Mallick, K. 1999. *Researching education: perspectives and Techniques*. Philadelphia: Falmer Press.

Visvaldis, V., Ainhua, G. & Ralfs, P. 2013. Selecting indicators for sustainable development of small towns: the case of Valmiera municipality. *Procedia Computer Science*, 26: 21 – 32.

Von Thunen, Johann H. 1826. *Der isolierte Staat in Beziehung auf landtschaft under nationalokonomie* (C. M. Wartenberg, Von Thunen's Isolated State, Oxford, English Trans., 1966). Hamburg: Pergamon Press.

Walker, B. & Salt, D. 2006. *Resilience thinking: sustaining ecosystems and people in a changing world*. London: Island Press.

Wallace, I. 2021. *The campaign to reshape Egypt's cityscapes and eliminate informal housing*. <https://www.jadaliyya.com/Details/42781> Date of access: 28 Oct. 2022.

Wan Mohd Rani, W. & Shamsuddin, S. 2013. Evaluating the urban form elements as determinants of neighbourhood satisfaction in Malaysian cities. *World Academy of Science, Engineering and Technology*, 78.

Ward, H, Fox, T, Wilson, W. & Zarsky, L. 2007. CSR and developing countries: what scope for government action? *Sustainable Development Innovation Briefs*. <https://sustainabledevelopment.un.org/content/documents/no1.pdf> Date of access: 30 Jun. 2019.

Waswa, F., Kilalo, C.R.S. & Mwasaru, M. 2014. *Sustainable community development*. New York: Palgrave.

Watson, V. 2018. *The return of the city region in the new urban agenda: another global imposition on southern cities?* [PowerPoint]. <https://www.regionalstudies.org/wp-content/uploads/2018/12/Vanessa-Watson-1.pdf> Date of access: 8 Mar. 2020.

Waugh, D. 2002. *Geography: an integrated approach*. 3rd ed. Cheltenham: Nelson Thornes.

Weakley, D. 2013. *Recognising Vulnerability and Resilience in Informal Settlements: The Case of Kya Sands, Johannesburg, South Africa*. Johannesburg: University of the Witwatersrand. (Dissertation – MSc). <http://hdl.handle.net/10539/13739>

Weimann, A. & Oni, T. 2019. A systematised review of the health impact of urban informal settlements and implications for upgrading interventions in South Africa, a rapidly urbanising middle-income country. *International Journal of Environmental Research and Public Health*, 16(19). <https://doi.org/10.3390/ijerph16193608>

Weiss, C. H. 1998. *Evaluation: methods for studying programs and policies*. 2nd ed. NJ: Prentice Hall.

Wekwete, K. H. 2001. The impact of national policy on urban settlements in Zimbabwe. In: De Wet, C. & Fox, R., eds. *Transforming settlement in Southern Africa*. <https://doi.org/10.1515/9781474400442-016>

Werner, W.J. 2009. Corporate social responsibility initiatives addressing social exclusion in Bangladesh. *International centre for diarrhoeal disease research, Bangladesh*, 7(4):545-562.

West Rand District Municipality. 2020/2021. *Draft Integrated Development Plan 2016/17 to 2020/21*. <http://www.randwestcity.gov.za/docs/key-docs/2016-2021%20IDP.pdf> Date of access: 28 Nov. 2021.

Wheeler, S.M. 2003. The evolution of urban form in Portland and Toronto: Implications for sustainability planning. *Local Environment*, 8:3: 317-336.

Williams, K., Burton, E. & Jenks, M., eds. 2000. *Achieving sustainable urban form*. London: E & FN Spon.

World Bank Group. 2006. *Brazil - Inputs for a strategy for cities: a contribution with a focus on cities and municipalities (Vol. 2): Background Papers*. Washington, D.C.

World Bank. 2015. *Land readjustment*. <https://urban-regeneration.worldbank.org/node/31>. Date of access: 25 Oct. 2021.

World Bank. 2020. *World development indicators database*. <https://databank.worldbank.org/data/download/POP.pdf> Date of access: 18 Jul. 2020.

World Bank. 2021a. *Population, total*. <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=MA> Date of access: 29 Oct. 2022.

World Bank. 2021b. *Urban population (% of total population)*. <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=KE> Date of access: 19 Oct 2022.

World Bank. 2022. *Kenya informal settlements improvement project (KISIP)*. <https://projects.worldbank.org/en/projects-operations/project-detail/P113542>. Date of access: 19 Oct 2022.

World Economic Forum. 2016. *The New Urban Agenda has been formally adopted. So what happens next?* <https://www.weforum.org/agenda/2016/11/last-month-a-new-global-agreement-to-drive-sustainable-urban-development-was-reached-so-what-is-it-and-happens-next/#:~:text=The%20New%20Urban%20Agenda%20is,and%20live%20in%20our%20cities>. Date of access: 04 Jul 2020.

Yefimov, V. 2004. *On pragmatist institutional economics*. <http://mpira.ub.uni-muenchen.de/49016/> Date of access: 28 Nov. 2022.

Yelling, J. A. 1986. *Slums and slum clearance in Victorian London*. London: Routledge.

Zembe, A. 2017. *An assessment of the integration of food security and disaster risk reduction policies: a case from South Africa*. Potchefstroom: North West University. (Dissertation - Masters). <http://hdl.handle.net/10394/30668>

Zenzele Community Representative. 2021. Life in the Zenzele informal settlement. [Personal Interview]. 9 Sep., Randfontein.

Ziblim, A. & Sumeghy, G. 2013. *The dynamics of informal settlements upgrading in South Africa: legislative and policy context, problems, tensions, and contradictions*. Bratislava: Habitat for Humanity International.

Zimbalist, Z. 2017. Breaking down rural and urban bias and interrogating spatial inequality, evidence from South Africa. *Development Policy Review*, 35(2): 1–24. <https://doi.org/10.1111/dpr.12331>

Ziolo, M., Pawlaczyk, M. & Sawiski, P. 2019. Sustainable development versus green banking: where is the link? In: Ziolo, M & Sergi, B.S., eds. *Financing sustainable development: key challenges and prospects*. Palgrave Macmillan Cham. pp 53-81

Zutari. 2021. PublicEMS. [shapefile]

ANNEXURE A: KEY INFORMANT INTERVIEWS – WARD COUNCILLORS



RESEARCH TOPIC: SPATIAL PLANNING PERSPECTIVES AND SUSTAINABLE COMMUNITY DEVELOPMENT IN THE FORMALISATION OF INFORMAL SETTLEMENTS WITHIN THE GAUTENG CITY REGION

Hello, my name is Takudzwa Charisse Taruza. Thank you for making time to sit with me. The purpose of this interview is to gain insight into the lives of the inhabitants of this informal settlement. This interview sheet is mainly a guide, and the intention is to allow for a free-flowing discussion and use the questions to direct the enquiry. Only some questions will be quantifiable

General settlement questions

1. When was the settlement established?

2. What is the average number of households within this settlement?

3. Average number of people per household and/or stand

4. How would you describe the age structure within this settlement?

5. What is the general household head gender?

6. What is the general employment status:

Unemployed	
Self-employed (Informal)	
Formal (part-time)	
Formal (full time)	

7. Do the people generally own or rent the shacks they live in?

8. What is the proportion of migrants within this settlement?

Household Assets

9. Do the residents of this settlement own any of the following?

Asset	None	Few	About half	Most
Car				
Bicycle				
TV				
Refrigerator				
Sewing machine				
Wash Machine				
Livestock or Vegetable Garden				

Access and use of community facilities

10. How do you access the following basic infrastructure and services?

	Nearby	Very far	Not aware	None
Street Lighting				
Parking Facilities				
Schools				
Place of worship				
Libraries				
Spaza Shops				
Parks & Recreational Facilities				
Community Hall				
Health Facilities				

11. What mode of transport do the residents use to get to place of employment or access economic opportunities?

Mode of transport	None	Few	About half	Most
Walk				
Bicycle				
Car				
Public transport				

12. How much do you pay to access these services? (Transport costs)

13. What telecommunication services can the residents access?

Service	None	Few	About Half	Most
Telephone				
Cellphone				
Internet				

Challenges and opportunities

14. What are the challenges faced in the community?

15. How often do you meet to discuss these challenges or any other issue with the ward councillor/the people?

16. How has the municipality responded to these challenges?

17. How do you feel about these responses and the general service provision by the municipality

Delighted	
-----------	--

Satisfied	
Concerned	
Frustrated	

18. Are there any community groups or organisations involved in development projects?

19. Is anything working in the community or what would you say are the positive things about your community?

20. Do you have any other comments?

ANNEXURE B: KEY INFORMANT INTERVIEWS – TECHNICAL FUNCTIONARIES, CONSULTANTS AND OTHER STAKEHOLDERS



RESEARCH TOPIC: SPATIAL PLANNING PERSPECTIVES AND SUSTAINABLE COMMUNITY DEVELOPMENT IN THE FORMALISATION OF INFORMAL SETTLEMENTS WITHIN THE GAUTENG CITY REGION

Hello, my name is Takudzwa Charisse Taruza. The purpose of this questionnaire is to gain a sense of how you perceive SCD in the formalisation of informal settlements. This interview sheet is mainly a guideline and the intention is to allow for a free-flowing discussion and use the questions to direct the enquiry. Only some questions will be quantifiable

NGO/Consultant	
Academic	
Government	

Date _____

GENERAL INFORMATION

1. How long have you worked/participated in the upgrading of informal settlements?

2. What is your role in the upgrading of informal settlements?

3. How would you rate the progress that has been made towards the upgrading of informal settlements in the Gauteng City Region and why?

-
-
-
4. To what extent has the support given to your company/organisation towards the implementation of informal settlements upgrading programme contributed to progress that has been made thus far and why?

-
-
-
5. What are the challenges that you or your department/organisation have faced in the upgrading of informal settlements?

-
-
-
6. In your opinion, what are the key issues that should be addressed in the formalisation of informal settlements and how can these issues be addressed?

-
-
-
7. What opportunities exist towards the realisation of the sustainable formalisation of informal settlements?

a) At community level

b) At local government level

c) At provincial level

d) At national level

8. Are there opportunities to integrate informal settlement upgrading with other housing programmes?

9. In your opinion, how can we integrate issues pertaining to gender, children, the elderly and migrants in the formalisation of informal settlements?

10. Do you have any other comments?

ANNEXURE C: Ethics Approval



Private Bag X1290, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Fax: 018 299-4910
Web: <http://www.nwu.ac.za>

Senate Committee for Research Ethics
Tel: 018 299-4849
Email: fesiwe.mseleni@nwu.ac.za

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the **Faculty of Natural and Agricultural Sciences Ethics Committee (FNAS-REC)**, the Faculty of Natural and Agricultural Sciences Ethics Committee hereby **approves** your study as indicated below. This implies that the North-West University Senate Committee for Research Ethics (NWU-SCRE) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Spatial planning perspectives on sustainable community development: an analysis of informal settlement intervention within the Gauteng City Region															
Study Leader/Supervisor: Prof JE Drewes															
Student: TC Taruza															
Ethics number:	N	W	U	-	0	1	2	5	7	-	2	1	-	A	9
	Institution				Study Number						Year			Status	
Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation															
Application type: Single				Risk Category:				Minimal							
Commencement date: 01/02/2021															
Expiry date: 31/01/2024															
Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.															

Special in process conditions of the research for approval (if applicable):

- The following documentation are archived by FNASREC and should be complete and kept up to date:
 - Research proposal
 - Signed approval from the scientific committee indicating the proposed risk category
- All researchers involved in the study should submit signed NWU code of conduct statements annually.
- All researchers of low risk studies should submit proof of relevant ethics training every two years.
- All researchers that take part in activities that pose a safety and security threat to the researchers or the environment should submit a risk assessment form annually.
- All research involving human interaction should follow best ethical practise and keep documents as proof. This includes informed consent, questionnaires, incorporation of risk-benefit, and responsible data management.
- Any research at governmental or private institutions, permission must still be obtained from relevant authorities and provided to the FNASREC. Ethics approval is required BEFORE approval can be obtained from these authorities.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- The study leader/supervisor (principle investigator)/researcher must report in the prescribed format to the FNASREC:
 - annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and
 - without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.
- The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the FNASREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.
- Annually a number of studies may be randomly selected for an external audit.
- The date of approval indicates the first date that the study may be started.
- In the interest of ethical responsibility, the NWU-SCRE and FNASREC reserves the right to:
 - request access to any information or data at any time during the course or after completion of the study;
 - to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;
 - withdraw or postpone approval if:
 - * any unethical principles or practices of the study are revealed or suspected;
 - * it becomes apparent that any relevant information was withheld from the FNASREC or that information has been false or misrepresented;
 - * submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or
 - * new institutional rules, national legislation or international conventions deem it.
- FNAS-REC can be contacted for further information or any report templates via Roelof.Burger@nwu.ac.za 018 299 4269

The FNASREC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the FNASREC or the NWU-SCRE for any further enquiries or requests for assistance.

Yours sincerely,



Prof Roelof Burger
Chairperson Faculty of Natural and Agricultural Sciences Ethics Committee (FNASREC)

ANNEXURE D: GCR CASE STUDY SELECTION CRITERIA

Municipality	Reason For Selection	Other details	Category (HDA/ NDHS)	GIS data	Status
City of Tshwane (CoT)	NUSP	232 settlements			
Salvokop	Location Work done by Yeast	Data from Aurecon...also see other Disaster issues from CoT Risk Assessment		Yes	Not visited
Moreleta Park	Location - NIMBY	-			Not visited
Eerste Fabriek	Aligns with COGTA	-			Visited
Mamelodi Ward 10	Aligns with COGTA	-			Interviewed representatives (focus group)
City of Ekurhuleni (CoE)	Upgrading Strategy	Eradication patrol, 163 settlements			
Tsakane (Duduza)	Data on SLP	Lack of basic services,	B1	Yes	Visited
		Close to Kwa-Thema			
Kaalfontein	Aligns with COGTA	Data on SLP	A/ C	Yes	
		Relocated, Proximity to TRANSNET railway and mall, SME's, basic services			Visited
City of Johannesburg (CoJ)	Comprehensive SDF	2nd highest demand for housing, 246 Settlements			

Municipality	Reason For Selection	Other details	Category (HDA/NDHS)	GIS data	Status
Alex - Red Cross	Aligns with COGTA	Density, structures within structures, basic services, ISUP numbers Township Baseline Studies Enumerations			Visited
Alex - 21 1st Street	Aligns with COGTA				Visited
Alex	Aligns with COGTA				Visited
Diepsloot	Aligns with COGTA	Density, solar panels, community structures, location	A&B1	Yes	Visited
		Aligns with GP Mega Human Settlements Prog			
		Not much engagement with representatives			
		Xenophobia			
		At core of discussions in Gauteng			
Kya Sands	Aligns with COGTA	Density, health, crime, location	A&B1	Yes	Visited
Zamimimpilo	Aligns with COGTA	Shack farming, illegal mining, greater proportion of migrants	B1	Yes	Visited
Crown Mines	Aligns with COGTA	Mining, CSR, land reform news			Visited
Joe Slovo	Aligns with COGTA	-	None		Visited
Naledi informal settlement	Aligns with COGTA	-	B1		Not visited
Princess	Aligns with ABBA	CoJ Deprivation Areas	B1		Not visited
		Eradication of Informal Settlements?			

Municipality	Reason For Selection	Other details	Category (HDA/NDHS)	GIS data	Status
Midvaal	Municipal performance	Draft Human Settlements Plan, 36 settlements			
Sicelo Ext 5	Reblocking and de-densification	NUSP Report	B1/B2	Yes	Visited
	PHDA	Aligns with GP Mega Human Settlements Prog			
Boitumelo	Aligns with COGTA	NUSP Report	B2	Yes	Visited
		Predominantly populated by migrants			
Vaal Marina/ Mamello	Aligns with COGTA	NUSP Report	A	Yes	Visited
		Household structures, community initiatives			
Khayelitsha	Aligns with COGTA				Visited
Lesedi		Socio-economic analysis per settlement			
		7 settlements		Yes	
Emfuleni		Informal settlements business plan, 63 settlements		Yes	
Rand West	Lagging Municipality & Mining towns	NUSP Report, Baseline Study, 25 settlements			
Bekkersdal	Upgraded	News	C/B2	No	Not visited
	Aligns with ABBA Initiative	PHDA			
	Dolomite				

Municipality	Reason For Selection	Other details	Category (HDA/NDHS)	GIS data	Status
Zenzele	GP Informal settlements	More details in the WRDM Mig Plan	C/B2	Yes	Visited - get more into from Pastor Thom and Isabel
	Aligns with ABBA Initiative	NUSP Report			
Jabulani		WRDM Mig Plan - number of households			Not visited
		NUSP Report	A		
		PlanAct			
Mogale City	Basic information	54 settlements			
Kagiso	Aligns with ABBA Initiative	Strategy from Aurecon		Yes	Visited
Merafong City		16 settlements		Yes	

ANNEXURE E: INDICATORS FOR CALCULATING SCI

Components	Sub-components	Indicator
Housing and the Built Environment	Housing	Number of households living in informal settlements
		Proportion of one-single family household
		Densities
		Costs with renting or acquisition of dwellings
		Average rent of classic dwellings leased and subleased
		Proportion of residents that are satisfied or not with their houses
		Average cost per m2 of housing according to geographical location
		Proportion of residents in non-classic dwellings
		Proportion of highly degraded buildings
		Proportion of buildings in need of major repair
		Proportion of residents that 5 years before lived in another municipality
		Perception of residents about the condition of the buildings within the neighbourhood
		Perception of residents about the condition of the urban furniture within the neighbourhood
		Proportion of households with formal title deeds to land and/or residence, agreements or any document as proof of tenure arrangement
		Alignment with other housing option
	Green Urban Areas	'Green Urban Areas' — parks and open spaces
		Condition of the open spaces and public spaces
	Land Use	Agricultural Area and Forestry areas (Corine Land Cover)
		'Industrial or Commercial areas' (Corine Land Cover)
		Proportion of the geographical unit

		'Continuous urban fabric area' (Corine Land Cover)
		Proportion of the geographical unit
		'Discontinuous urban fabric areas' (Corine Land Cover)
		Proportion of the geographical unit
		Integration into the urban fabric - integration zones
Local Economy	Education	Level of education of people aged 15 and above — Proportion by level
		Illiteracy rate
		Early school leavers — Proportion
	Employment	Activity rate
		Employment
		Employment rate
		Unemployment rate
		Proportion of population in the informal sector
		Number of units of trade and services by neighbourhood
	Socio-economic status	Percentage of households that own television, refrigerator, car,
		Percentage of households covered by medical aid
	Health	Health status enables daily work and usual social activities
	Food security	Number of households who have had and did not worry about food for most days during the year
		Community measures to curb food insecurity
	Household income	Average monthly income of families by household and expenses
		Proportion of housing expenses in household income
		Proportion of transportation expenses in household income
Transport and Connectivity		Proportion of residents who have a positive or negative perception about the transportation services in their neighbourhood
	Mobility	Average number of trips per day
		Average number of trips per day of total population

		Labour and student daily mobility
		Generation Index: Proportion of active population and students that goes to work or study outside the resident municipality
		Attraction Index: Proportion of active population and students that comes to work or study in the municipality
		Generation Index of Active Population: Proportion of active population that goes to work outside the resident municipality
		Generation Index of students: Proportion of student population that goes to study outside the resident municipality
		Proportion of active population that goes to work in the neighbourhood, in the municipality and outside municipality
		Transportation modes
		Proportion of total population daily mobility by transportation mode
		Proportion of active population daily work mobility by transportation mode
		Proportion of children and young students that go to school by transportation mode
		Spending time for travels
		Average time spent on travel in a workday (min)
		Average time spent on labour movement (min)
		Average time spent on travel for basic goods and services during a day
		Proportion of individuals who spend up to 15 minutes, 15 to 30 minutes and more than 60 minutes in labour movement in a workday
		Proportion of individuals who spend up to 15 minutes, 15–30 minutes and more than 60 minutes on demand for basic goods and services (eg cafe, supermarket, medical care, bank, cinema, sports) (%)
		Residential mobility
		Residential attraction rate — Proportion of population that lived in other municipality five years ago

		Residential repulsion rate — Proportion of population that five years ago lived in our municipality and now lives in other municipalities
	Connectivity	Density of broadband network
		Proportion of households with broadband connection
Services	Satisfaction with services	Perception of residents about the satisfaction with the general services in the neighbourhood — Proportion of residents who have a positive or negative perception
	Basic Services	Proportion of households with access to adequate water supply
		Proportion of households with access to sanitation services
		Proportion of population served by the collective municipal system of solid waste
		Proportion of households with access to electricity
	Health Services and facilities	Number of proximity health facilities by inhabitant
	Education services and equipment	Number of schools facilities by level of teaching
		By inhabitant
		By school level population
		Occupancy rates for schools' facilities
		Time–distance to Public School facilities
		Proportion of dwellings less than 10 minutes' walk from a Public School
		Proportion of residents less than 10 minutes' walk from a Public School
	Other services	Time–distance to several basic goods and services
		Proportion of dwellings less than 10 minutes' walk from several basic goods and services
		Proportion of residents less than 10 minutes' walk from several basic goods and services
		Time–distance to health facilities
		Time–distance to library
		Time–distance to police station
		Time–distance to community hall
		Time–distance to cemetery
Environment	Natural resources	Domestic consumption of electricity per capita

	Recycling	Density of recycling points per m2
		Proportion of population served by the collective municipal system of solid waste
		Perception of residents about the quality of street cleaning in the neighbourhood — Proportion of residents who have a positive or negative perception
Social and Cultural	Services and facilities for leisure sports and culture	Sports
		Leisure
		Time–distance to sports and leisure areas/facilities
	Satisfaction with services	Perception of residents about the quality of cultural and leisure services in the neighbourhood — Proportion of residents who have a positive or negative perception
		Participation in sport, leisure or cultural activities in the neighbourhood —average number of activities by month
		Percentage of population satisfied with national government services
		Percentage of population satisfied with national government services
		Percentage of population satisfied with national government services
	Security	Crime rate
		Perception of residents about their feeling of security in the neighbourhood —Proportion of residents who have a positive or negative perception
Equity and Social Capital	Feeling of belonging and involvement with community	Proportion of residents who feel identified with the neighbourhood or community
		Proportion of residents satisfied with their neighbourhood as a place to live
		Perception of residents about their community/neighbourhood
		Perception of residents about the social environment in the neighbourhood
		Disability rate
		Proportion of accessible buildings to disabled people
	Community	Community groups and associations

		Population density
		Average size of families
		Proportion of population by age group
		Proportion of one-person households
		Renewal index of the working age population
		Dependency ratio
		Proportion of families with children
		Proportion of foreign residents
		Variation of population
Governance	Confidence	Level of confidence of residents with the neighbourhood/community and with major public institutions
	Information	Percentage of residents who consider themselves well informed about the existing benefits, services and government programmes
		Is there an operational early warning system in the community
	Participation	Percentage of residents who consider that their opinion and public participation process can influence local decisions
		Frequency of participation in activities in the neighbourhood in an active way
		Percentage of children, women and youth who participate in decision making
		Is the community leadership committed, effective, and accountable?
		Is there a sense of peace, security, and effective conflict prevention and mitigation mechanisms, both within the community and with other communities?
		Does the community play a leading role in coordinating preparedness, response and recovery, reaching all affected people – including the most vulnerable –through organized and trained volunteers?

ANNEXURE F: DETAILED SUSTAINABLE INFORMAL SETTLEMENTS INTERVENTION MATRIX

Programme/ Project Focus	Key Performance Area	Intervention	Implementation Responsibility
Measure Sustainable Community Development	Sustainable Community Development	Adopt and implement the SCD as a component of informal settlement upgrading programmes	Local, Provincial Municipalities National Department of Human Settlements
		Gather data on missing indicators	National, Provincial and Municipal Departments of Human Settlements and GIS
		Include SCI as part of informal settlement upgrading by-laws and the UISP	Local, Metropolitan and Provincial Municipalities National Department of Human Settlements
		Train officials on how to calculate and implement Sci	Local, Provincial Municipalities National Department of Human Settlements
Adequate housing provision	Housing Needs Assessment	Conduct (proper) housing needs assessment that is not rhetoric	Local and Metropolitan Municipalities Ward Councillors
	Housing Provision	Encourage self-help housing and reduce the provision of finished top structures	National Department of Human Settlements
		Provide technical support for self-help housing	Provincial and Metropolitan Departments of Human Settlements
		Promote Integrated Residential Development	
		Support sustainable backyard rental based on the GDHS Backyard Rental Policy	
		Encourage social (rental) housing for the inhabitants that fall within the middle-income household group	National Treasury
		Provide incentives for private sector participation in social housing provision	

Programme/ Project Focus	Key Performance Area	Intervention	Implementation Responsibility
		Implement inclusionary housing as an alternative housing option and financial mechanism	National Department of Human Settlements Local and Metropolitan Municipalities
	Housing market intervention	Promote micro financial mechanisms and rent to own models	
		Ensure equitable and just beneficiary assessment based on real needs	National Department of Human Settlements Metropolitan and Local Municipalities
		Government intervention should ensure that the middle-income group does not encroach into the low income housing market	National Department of Human Settlements
	Public vs private goods	Ensure equality in accessing housing through: Reducing or removing barrier to participation in accessing housing through the private sector; from the supply side Taking legal action against corrupt individuals and groups that operate and promote self-benefiting housing distribution	National Treasury Gauteng Provincial Department of Human Settlements
	Housing Migrants	Incorporate migrant issues into informal settlement upgrading programmes	National Department of Human Settlements Department of Home Affairs Non - Governmental Organisations
		Integration of international efforts in housing migrants	National Department of Human Settlements
		Create an environment and opportunities for migrants to climb the housing ladder and access diverse housing opportunities	National Department of Human Settlements Department of Home Affairs Department of Health
		Promote dynamic and multi-sectoral integration of migrants through access to better entrepreneurial opportunities, employment, health and educations facilities	Department of Trade, Industry and Competition
		Promote Corporate Social Responsibility for companies employing migrants and all the other residents of informal settlements to contribute towards better health and housing opportunities	South African Police Services (SAPS) Community Leaders Religious Groups

Programme/ Project Focus	Key Performance Area	Intervention	Implementation Responsibility
		Ensure safety against violence and ostracism	Department of Home Affairs Local Municipalities and Regional Offices Community Leaders Religious Groups Non - Governmental Organisations
		Provide education and awareness on migrants' rights and engage host communities in migrant integration processes	(National) Department of Rural Development and Land Reform National Department of Human Settlements
	Incremental security of tenure	Documentation to indicate administrative tenure arrangement	Provincial Department of Human Settlements Metropolitan Department of Human Settlements
	Basic Service Provision	Ensure adequate basic services provision	Municipal Departments of Water and Sanitation, Human Settlements, Roads and Storm Water, Waste and Waste Management
	Housing Design	Allow flexibility in terms of housing design whereby households can change the structure of their housing	Metropolitan and Local Municipal: Department of Human Settlements Town Planning Department
	Land Development and Management	Promote land readjustment	National and Provincial Department of Rural Development and Land Reform
		Integrate urban and rural development to promote counter-urbanisation	National, Provincial and Municipal Departments of Rural Development and Land Reform Department of Cooperative Governance and Traditional Affairs
		Continually update the database and identify other opportunities to provide land for informal settlement upgrading	Metropolitan and Local Municipal Town Planning Department
		Amend the P.I.E. Act to include sections on punitive measures for the illegal invasion of land	National Department of Rural Development and Land Reform
		Utilise GIS spatial modelling for mapping and projecting the growth of informal settlements	National, Provincial and Municipal Town Planning and GIS Department

Programme/ Project Focus	Key Performance Area	Intervention	Implementation Responsibility
		Utilise the functional model of zoning to make provision for the incremental introduction of land use management and regulations in informal settlements	Metropolitan and Local Municipal Town Planning Department
Economy	Financial Management	Promote accountability on the use and stringent measures against the misuse of finances towards informal settlement upgrading, human settlement development and sustainable community development	National Treasury South African Local Government Association Gauteng Department of Treasury Municipal Finance Departments
		Employ participatory budgeting	Municipal Finance Departments
	(Local) Economic Development	Promote entrepreneurship through skills development initiatives, mentorship, capital provision, establishing networks with broader markets	Gauteng Province Department of Human Settlements Metropolitan and Local Municipal Departments of: Local Economic Development Community Development Human Settlements
	Food Security	Integrate food security into informal settlement intervention policies and programmes	National Department of Human Settlements Provincial and Metropolitan Department of Human Settlements
		Incorporate sustainable agricultural activities as part of the informal settlement intervention programme	National Department of Human Settlements
		Allocate space/land for urban gardens or connections with other land owners for communal or household gardens	Metropolitan and Local Municipalities: Department of Human Settlements Town Planning and Land Development Division
		Collectivise and socialise the production, procurement, processing and consumption of healthy foods to develop greater social capital	Metropolitan and Local Municipalities: Health and Consumer Departments
		Budget for and provide or create networks for accessing capital for agricultural processes at household or community level	Metropolitan and Local Municipalities: Finance Departments

Programme/ Project Focus	Key Performance Area	Intervention	Implementation Responsibility
Environment	Environmental Management	Provide education and training for food utilisation, stability and nutrition	Metropolitan and Local Municipal Department of Social Development
		Encourage the planting of fruit trees in Category A settlements	Metropolitan and Local Municipalities: Department of Environment Department of Social Development
		Promote private and community-based waste management	Metropolitan and Local Municipal Department of Environment Community Leaders
		Provide education and training for environmental protection and conservation	
		Implement stringent measures against unnecessary environmental degradation	
Governance	Governance	Ensure that ward councillors are accountable for the well-being of the people	Mayoral Offices
		Engage communities in the planning, mapping, designing and implementation of informal settlement intervention programmes and projects	Metropolitan and Local Municipal Departments of: Human Settlements Community Development
		Identify community leadership structures and utilise them for sustainable community development	
		Promote volunteerism within communities	
		Engage neighbouring communities and land owners in informal settlement intervention	
Equity, Culture and Social Capital	Equity, Culture and Social Capital	Identify and integrate gender, youth, children and the perspectives of people with disabilities	Metropolitan and Local Municipal Departments of: Human Settlements Community Development Social Development Community Leaders
		Embrace and employ the skills and indigenous knowledge from the communities as the foundations for community development	

Programme/ Project Focus	Key Performance Area	Intervention	Implementation Responsibility
		Implement or establish links with existing programmes that address family issues such as Gender Based Violence, absenteeism of father figures within communities, orphanhood as well as other socio-cultural issues such as sexual abuse, physical abuse and substance abuse	
		Incorporate place making as a strategy for inclusion and improving the sense of well-being within the communities	
		Embrace and support the role of religious group in developing social capital, information dissemination and providing platforms to address societal issues	
		Embrace and employ the skills and indigenous knowledge from the communities as the foundations for community development	
Transport and connectivity	Mobility, accessibility and connectivity	Identify ways to ensure that all members of the communities have access to news and information through the use of Information Communication Technology	National and Municipal Departments of Transport and Information and Communication Technology
Disaster Risk Reduction	Disaster Risk Reduction	Align informal settlement upgrading with Disaster Risk Management Strategies	Departments of Health, Environment, Disaster Management, Co-operative Governance and Traditional Affairs
			COGTA
Intergovernmental Intervention	Data Management	Create a national database of informal settlements with standard information that may include location, size, category, household size and provision of services	National Department of Human Settlements
	Coordination	Improve communication between government spheres and departments	Department of Cooperative Governance and Traditional Affairs
	Procurement	Allow consultants to carry out all phases of the upgrading	Provincial and Metropolitan Departments of Human Settlements Housing Development Agency

ANNEXURE G: PROOF OF LANGUAGE EDITING

Declaration

This is to declare that I, Annette L Combrink,
accredited language editor and translator of the South
African Translators' Institute, have language-edited
the thesis with the title

**Spatial planning perspectives on sustainable community
development: an analysis of informal settlements intervention in
the Gauteng City Region**

TC Taruza



orcid.org 0000-0002-7491-9066

A handwritten signature in purple ink, appearing to read 'Annette L Combrink'.

Prof Annette L Combrink

Accredited translator and language editor, South
African Translators' Institute

Membership No. 1000356, Date: 29 November 2022

ANNEXURE F: TURN-IT-IN REPORT

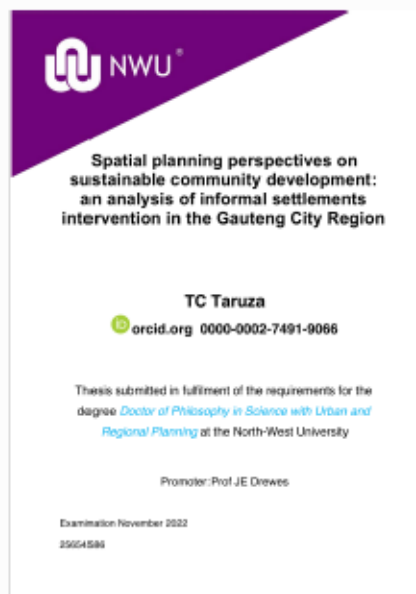


Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: TAKUE TARUZA
Assignment title: Thesis 2022
Submission title: 25654586:Final_Thesis.docx
File name: signments_fee9e192-8164-4d5a-81a4-7f0a764eb42b_Final_T...
File size: 10.82M
Page count: 397
Word count: 97,183
Character count: 585,795
Submission date: 30-Nov-2022 03:01AM (UTC-0800)
Submission ID: 1967153760



Copyright 2022 Turnitin. All rights reserved.