

**RE-BLOCKING INFORMAL SETTLEMENTS: INVESTIGATING THE HAZARD AND
RISK REDUCTION STRATEGY FOR LANGAVILLE, CITY OF EKURHULENI, SOUTH
AFRICA**

By

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**SUBMITTED IN PARTIAL FULFILMENT FOR THE REQUIREMENTS OF THE
DEGREE**

MASTER OF DISASTER MANAGEMENT

in the

**THE FACULTY OF NATURAL AND AGRICULTURAL SCIENCES, DISASTER
MANAGEMENT TRAINING AND EDUCATION CENTER FOR AFRICA (DIMTEC)**

at the

UNIVERSITY OF FREE STATE

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2020

DECLARATION OF ORIGINALITY

I, Esther Shadi Morakane Tsebe, present my dissertation according to the partial fulfilment of the criteria for the degree, Master of Disaster Management, for consideration by the Disaster Management Training and Education Centre for Africa (DiMTEC), within the Faculty of Natural and Agricultural Science at the University of the Free State (UFS). The dissertation is my own work. No other person has published a similar study from which I might have copied. The work of other people mentioned in the study is properly acknowledged and referenced per the requirements of the University of the Free State's post-graduate studies. Consent to publish this work must be requested from DiMTEC or myself.

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DEDICATION

This thesis is dedicated to my partner in everything Xabisa Mlokoti, my daughters Oreratile and Ovayo, my son Lesego, my parents Anna Nhope and Elias Moneri Kekana, as well as my brother Moses and the rest of my family.

ACKNOWLEDGMENTS

“But seek first the kingdom of God and his righteousness, and all these things will be given to you as well.” Matthew 6:33

- I want to firstly thank God for granting me wisdom, courage and strength to keep me going especially when I was ready to give up. He has been my rock through and through.
- To my supervisor and mentor, Dr Alice Ncube I would like to take this opportunity to thank and express my deepest appreciation to you. I am grateful for your support and thankful for your academic leadership and for your guidance throughout, your patience and frankness has pushed me this far. It is through your guidance and support that I have managed to complete this part of my journey. May God continue to bless you and your family. Thank you.
- I would like to thank City of Ekurhuleni for affording me the opportunity to do my research at Langaville informal settlement, a special thank you to the Divisional Head: Disaster management Ms. Erika Swart for the continued support.
- To Dr. Adv. Molebedi Sisi, thank you for pushing me and always checking up on me to see how far I have gotten and taking your time to help with my work.
- Dr Olivia Kunguma and Bongeka Mpinke, you have pulled me through this race with love and patience. Thank you for being great friends and pillars of support. I appreciate you.
- To all the participants who trusted me, and who were willing to contribute to the accomplishment of this study: this thesis would have not been successful without your active participation. Thank you for taking your time and completing the questionnaires and participating in the focus group discussion your valuable knowledge and expertise is highly appreciated. May you all be blessed.
- Mampho, Neo, Patience, Tsheko and Staff you are simply the best, you kept me grounded and kept encouraging me to continue and not to lose faith. I appreciate you. To my study team (from Tsakane), thank you for helping me through this study, I want to thank you sincerely.

- To my partner, Xabisa Mlokoti, thank you for pushing me to grow, for being a pillar of strength, thank you for speaking the truth I needed to hear throughout this study. A special mention goes to my children for their patience with me throughout this study.
- To the rest of my friends and family, I would not be here if it were not for your support, your prayers and your encouragement. A special thank you to my mom for all her prayers, they sustained me. This is for all of you.

“I am, because you are”

ABSTRACT

The aim of the study was to investigate re-blocking Langaville Informal Settlement in the City of Ekurhuleni Metropolitan Municipality in the Gauteng Province of South Africa. The study affirms that re-blocking improved the lives of community members in informal settlements in such a manner as to optimally use space to promote the health, safety and well-being of households, with particular focus on promoting accelerated service delivery to informal settlements in the City of Ekurhuleni Gauteng Province of South Africa.

Core of the investigation was hazard and risk reduction strategy. To meet the objectives of the study both qualitative and quantitative research approach underpinned by the theory of risk reduction was used. The study employed a research questionnaire that was used to collect data from randomly selected community participants and a focus group discussion, of which the participants were employees at management level in the City of Ekurhuleni and were identified from service delivery departments. Primary sources of data were obtained from both community participants and managers in service delivery departments. A document review of government documents, legislation and observation was used as secondary data sources. The researcher analysed data based on the findings of the questionnaire dealing with qualitative and quantitative (using SPSS program) study of Langaville Extension 1 from 230 community members and the second part was based on the results of focus group discussion that was conducted with the project team responsible for Re-blocking in Ekurhuleni municipality to arrive at a conclusion and recommendation,

The study concluded that re-blocking did indeed reduce risks within the communities in Langaville informal settlement in the City of Ekurhuleni. It further purported that service delivery water, sanitation, electrification, waste collection and other public space improved in Langaville because of re-blocking. The study indicated that the community of Langaville Informal Settlement was happy with the improvements made through re-blocking.

It also showed that service delivery improved DRR through re-blocking. The advantages of re-blocking were that Informal settlements residents would have improved access to basic services (water, sanitation, electrification, waste collection and other public space improvements) in line with available resources; improved partnership with settlement communities who actively participate in the planning and implementation of projects aimed at making the settlements livable and a safer integrated public realm. Challenges in the communities were also addressed through reblocking i.e., reduced fire incidents and budgetary constraints are addressed through staggering the program. The community of Langaville ext. 1 Informal Settlement was happy with the improvements made through re-blocking and they still felt that the government should assist in building the houses. It is recommended that the existing re-blocking forum be strengthened to enable managers to coordinate all re-blocking interventions and to follow up progress in informal settlements. Regular reporting and control are of utmost importance in ensuring sufficient resources are in place.

TABLE OF CONTENTS

DECLARATION OF ORIGINALITY	i
DEDICATION	ii
ACKNOWLEDGMENTS	iii
ABSTRACT	v
TABLE OF CONTENTS	vii
LIST OF TABLES	xii
LIST OF ABBREVIATIONS	xiii
CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY	1
1.1 Introduction	1
1.1.1 Projection on human habitation in 2030	2
1.2 Background to the study	3
1.2.1 Challenges encountered regarding risk reduction and responding to hazards	4
1.3 Hypothesis	5
1.4 Problem statement	5
1.5 Research questions	5
1.6 Research objectives	6
1.7 Study area	6
1.8 Motivation of the study	11
1.9 Research design and methodology	12
1.9.1 Research design	12
1.9.2 Research methodology	13
1.9.3 Research population and sample	13
1.9.3.1 Population	13
1.9.3.2 Sampling	14
1.10 Data collection method	15
1.10.1 Semi-structured questionnaire	15
1.10.2 Focus Group Discussions (FGDs)	15
1.10.3 Informal observation	17
1.11 Validity and reliability	17
1.12 Limitations and scope of the study	18

1.13 Ethical considerations	19
1.14 Research outline	20
1.15 Summary.....	21
CHAPTER 2: THE CONCEPTUAL AND THEORETICAL FRAMEWORK	23
2.1 Introduction	23
2.2 Disaster risk reduction: A conceptual framework for re-blocking.....	25
2.2.1 Conceptualising Disaster Risk Reduction	26
2.3 Theory of change	29
2.3.1 Advantages of using Theory of Change.....	36
2.3.2 Application of the Theory of Change to the informal settlement understudy (Langaville Extension 1)	37
2.5 Social capital concept	37
2.6 Conclusion	41
CHAPTER 3: LITERATURE REVIEW.....	43
3.1 Introduction	43
3.2 Legislative review.....	44
3.2.1 The Hyogo Framework for Action (HFA) 2005- 2015.....	44
3.2.2 The Sendai Framework for Disaster Risk Reduction	45
3.2.3 Legislative imperatives on housing in South Africa: A historical progression.	47
3.2.4 The Constitution of the Republic of South Africa (Act No 108 of 1996)	48
3.2.5 South African Housing Act No 107 of 1997.....	49
3.2.6 Prevention of Illegal eviction from and Unlawful Occupation of Land Act, No 19 of 1998.....	50
3.2.7 Housing Consumer Protection Measures Act, No 95 of 1998 amended as Housing Consumers Protection Measures Amendment Act, No 17 of 2007.....	51
3.2.8 The Social Housing Act 16 of 2008.....	52
3.2.9 Human settlement policies and programmes.....	53
3.3 Fiscal policies informing the establishment of the USDG.....	54
3.4 Risk reduction strategies.....	55
3.5 Re-blocking best practices	64
3.5.1 Slum upgrading in Kenya.....	64
3.5.2 Slum upgrading in India	67

3.5.3 Upgrading slums in Brazil	69
3.5.4 Re-blocking in South Africa (Cape Town)	72
3.5.5 Re-blocking in South Africa Gauteng: City of Ekurhuleni	75
3.6 Conclusion	76
CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY	78
4.1 Introduction	78
4.2 Research design	79
4.2.1 Quantitative approach.....	79
4.2.2 Qualitative approach	79
4.3 Research population and sampling technique	80
4.4 Research methodology	82
4.4.1 Data collection tools and process	84
4.4.1.1 Questionnaire	85
4.4.1.2 Focus group discussion	86
4.5 Data analysis process	88
4.5.1 Triangulation	88
4.6 Ethical consideration	89
4.7 Limitations of the study	90
4.8 Summary.....	90
CHAPTER 5: DATA ANALYSIS AND PRESENTATIONS OF RESULTS	92
5.1 Introduction	92
5.2 Demographic characteristics.....	93
5.2.1 Gender.....	93
5.2.2 Age distribution of respondents	94
5.2.3 Education status of respondents.....	95
5.2.4 Socio- economic characteristics of the respondents.....	95
5.2.4.1 Household size of respondents	96
5.2.4.2 Source of income.....	96
5.2.5 Impacts of re-blocking at the Langaville ext. 1 informal settlement.....	98
5.2.5.1 Situation after re- blocking.....	98
5.2.5.2 Perceptions of Disaster Risk Reduction after re-blocking.....	100

5.2.5.3 Focus group discussions	102
5.3 Findings from Focus Group Discussion	102
5.3.1 Understanding of re-blocking and Disaster Risk Reduction	103
5.4 Summary.....	112
CHAPTER 6: RECOMMENDATIONS AND CONCLUSION.....	114
6.1 Introduction	114
6.2 Study conclusion.....	118
6.3 Recommendations	118
REFERENCES.....	120

LIST OF FIGURES

Figure 1.1: Map showing Gauteng Province with its municipalities	7
Figure 1.2: Map of Ekurhuleni Metropolitan Municipality	8
Figure 1.3: Topographic Map for Langaville Extension 1	11
Figure 2.1: CoE Human Settlement Re-blocking Programme Theory of Change	33
Figure 5.1: Age distribution of respondents (residents of Langaville ext. 1 informal settlement)	94
Figure 5.2: Level of education of the respondents	95
Figure 5.3: Source of income of the respondents.....	97
Figure 5.4: Open streets in Langaville ext.1 Informal Settlement	99
Figure 5.5 Basic services in Langaville ext.1 Informal Settlement.....	100
Figure 5.6: The layout of Langaville ext.1 Informal Settlement before and after re-blocking.....	101

LIST OF TABLES

Table 2.1: The differences between Theoretical and Conceptual Frameworks	24
Table 5.1: Distribution of respondents by gender	93

LIST OF ABBREVIATIONS

CBO's	Community Based Organisations
CCA	Common Country Analysis
CoE	City of Ekurhuleni
DMA	Disaster Management Authorities
DRR	Disaster Risk Reduction
IDP	Integrated Development Plan
HFA	Hyogo Framework of Action
MDG	Millennium Development Goals
MIG	Municipal Infrastructure Grant
MRC	Medical Research Council
MSA	Municipal System Act, Act 32 of 2000
NDMF	National Disaster Management Framework
NGO's	Non-Governmental Organisations
NUSP	National Upgrading Support Programme
SADC	Southern African Development Community
SDBIP	Service Delivery Budget Implementation Plan
SDG	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction
ToC	Theory of Change
UN	United Nations
UNDG	United Nations Development Group
UNDAF	United Nations Development Assistance Framework
USDG	Urban Settlement Development Grant

CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

Rapid urbanisation is a phenomenon that is experienced globally. It entails the migration of people from less developed areas to more developed areas in search of better jobs and a better life (Cooper and Yue, 2008). South Africa is not unique to this global phenomenon; it is also faced with the problem of urbanisation. South Africa's population is urbanised at a rate of 64%, higher than China's, at 54% and in Africa, Nigeria, at 47%. South Africa's urban population is predicted to increase to 71% by 2030 (Chibba, 2019; Parliamentary Monitoring Group [PMG], 2019). The majority of the South African population is moving from less developed cities, termed "*rural areas*" to more developed areas termed "*urban areas*". There is also migration of thousands of people from other countries into South Africa (Segatti, 2011).

According to Segatti (2011: 85) and the Parliamentary Monitoring Group [PMG], (2019) migration, whether domestic or cross-border into South Africa, has a negative impact on the South African economy because the quality of service delivery is compromised. Housing officials in South Africa even stated that, "*the more houses you build, the more the influx*", meaning, that they are struggling to cope with the influx. To be more specific on the service delivery issue due to urbanisation, challenges faced include urban congestion leading to the development of informal settlements in uninhabitable areas, there is an increase in the cost of living, negative impact on culture and the loss of the original fabric of life. In summary, migration has a negative impact and the government faces the mammoth task of also providing service delivery in informal settlements.

South African informal settlements are exposed to extreme weather events and natural hazards like flooding, fires, higher wind speeds, sink holes, heavy precipitation, water logging and landslides (Mokgosi, 2018; Raphela, 2011). This exposure is attributed to the unplanned nature of the informal settlements, such as haphazard placement, unpaved, unnamed and narrow roads, unnumbered dwellings, no or poor street lighting and hazardous materials used to build the dwellings (Socio-economic rights institute of South

Africa [SERI], 2018; Chikoto, 2009). Therefore, in an endeavour to mitigate the risks informal settlements are exposed to, the World Bank pioneered a project termed “*re-blocking*” in the 1970’s. The same project has been adopted by international non-governmental organisations (NGOs) Shack Dwellers International (SDI). Re-blocking is about the creation of pathways, paved roads (vehicular access), public and semi-public spaces that facilitate the provision of absent infrastructure and services in informal settlements. Re-blocking resonates with South Africa’s comprehensive plan for ‘phased in situ upgrading approach to informal settlements’ (Department of Housing, 2004:12; Bolnick, 2012).

1.1.1 Projection on human habitation in 2030

By 2030, it is estimated that 1 in 4 people on the planet will live in a slum or other informal settlement because of population growth and the migration trend from rural areas to cities. These informal settlements are clearly here to stay and the following are the world’s biggest informal settlements:

- Orangi Town in Karachi (Pakistan): 2,400,000
- Neza (Mexico): 1,200,000
- Dharavi in Mumbai (India): 1,000,000
- Kibera in Nairobi (Kenya): 700,000
- Khayelitsha in Cape Town (South Africa): 400,000

The rapid expansion of cities throughout the world has been accompanied by equally rapid growth of informal settlements often known as slums (The University of Dublin, Trinity College, 2015). According to UN-Habitat (2015:2) informal settlements are caused by a range of interrelated factors, including population growth and rural-urban migration, lack of affordable housing for the urban poor, weak governance, economic vulnerability and underpaid work, discrimination, marginalisation and displacement caused by conflict, natural disasters and climate change. Innes, Kentridge and Perold (1992:171) maintain that the increased mobility of informal dwellers and the rapid formation of shanty-towns are facilitated by administrative confusion, institutional restructuring and the absence of

clear policy, all of which have left a vacuum in which informal settlements have been able to flourish.

Hermanson (2016) states that the growth of informal settlements during the latter part of the 20th century and continuing more rapidly in the 21st century, raises serious concerns. The growth affects the large number of people living without basic requirements for a decent life and has wider implications of those living situations for cities, their countries and indeed the world. Communities of people living in informal settlements are spatially and psychologically isolated from the cities in which they reside. Such issues include health pandemics, national and global insecurity, political instability and mass migration.

1.2 Background to the study

According to the United Nations World Cities Report 2016 (Hutt, 2016), the number of informal settlements in developing countries increased from 689 million in 1990 to 880 million in 2014. In some cities in the developing world, informal settlement residents make up more than half of the population and rarely have adequate shelter, clean water, sanitation, education and healthcare. The study is about re-blocking informal settlements: a risk reduction strategy for mitigating hazard impact in the City of Ekurhuleni Metropolitan Municipality, Gauteng Province, Republic of South Africa.

South Africa is not immune to the development of informal settlements and according to the 2011 census, approximately 1.25 million or 8.5% households in South Africa are living in an informal settlement. These households in the informal settlement live in extremely poor conditions, which is often life threatening. It is home to one of the biggest informal settlements in the world, which is called Khayelitsha, housing a total population of 400 000. The risks they are exposed to are health hazards; floods and fires, limited access to water and sanitation.

The high housing backlog in the City of Ekurhuleni and the increase in population due to migration, has led to a rapid growth of informal settlements. Even though informal settlements provide shelter for thousands of people, the inhabitable nature of the

dwelling and environments in which the settlements are built place the settlers at a high risk of various hazards causing vulnerability. In turn, emergency services and other services struggle to mitigate risks in these areas and are incapable of responding effectively in the event of an incident. Hence, this study explores the re-blocking strategy implemented in the City of Ekurhuleni Metropolitan Municipality as a way of improving the livelihoods of the settlers.

1.2.1 Challenges encountered regarding risk reduction and responding to hazards

According to UNISDR (2014: xiv) risk reduction faces challenges due to poor coordination between stakeholders, and a lack of information sharing, risk assessment, monitoring and evaluation, early warning, disaster response and other Disaster Risk Management (DRM) activities. Another challenge refers to how climate change issues are integrated into DRM (e.g. risk assessment, research, building codes and land use planning) given that climate change leads to shifts in risk patterns. The most critical one is Disaster Risk Management (DRM), policymakers having difficulty in obtaining political and economic commitment due to other competing needs and priorities.

UNISDR (2014:5) cited Bangladesh as an example of a country with developed sound policies and frameworks, but lacking the capacity to implement all aspects of policies and frameworks due to capacity challenges. These challenges include inadequate staffing, financial bottlenecks and a lack of technical resources such as space-based technology. South Africa is also experiencing similar challenges.

The City of Cape Town is the first city to embark on re-blocking in South Africa. The aim is to better utilize the spaces in informal settlements to allow for better service provision. According to Hennings et.al. (2012:5) re-blocking was done in “clusters” identified by the community, and after implementation, “courtyard” ensured a safer environment for woman and children via neighborhood watches (all shacks face the courtyard), productive places (such as washing lines, food gardens), and provides space for local government to install better services.

1.3 Hypothesis

The premise of this study was to investigate best practices of re-blocking to reduce risk in high-density informal settlements that can improve the lives of the community members. It should be done in such a manner as to optimally utilize space to promote the health, safety, and well-being of households, with particular focus on promoting accelerated service delivery to informal settlements.

Hypothesis 1: Re-blocking is a means of mitigating hazards in high-density informal settlements.

1.4 Problem statement

South Africa faces a housing backlog problem, urbanization and growth in population leading to an increase in the susceptibility of informal settlers being exposed to the impact of various hazards. Whilst the department of housing is battling with housing, the City of Ekurhuleni Disaster Management Centre and other Emergency Services departments are battling with effective disaster risk reduction and response to hazard exposure in the informal settlement. The City of Ekurhuleni is the second city to embark on the re-blocking project after the City of Cape Town and the decision to embark on this project was to address the housing backlog and mitigate the impact of hazards and improve the standards of living. However, little or no scientific research has been done on the methodology or processes applied to implement re-blocking and the perceptions of the beneficiaries concerning re-blocking and successes and challenges. This study will address the problem of limited scientific knowledge in the implementation methodology followed in re-blocking and perceptions of the beneficiaries about re-blocking in South Africa.

1.5 Research questions

- The main research question is how has re-blocking reduced hazards within informal settlements and how has it impacted on service delivery?

Sub research questions that will guide this research are summarised as follows:

- How will service delivery improve disaster risk reduction through re-blocking?
- What are the advantages of re-blocking in informal settlements?
- What approach was used to address re-blocking challenges to improve service delivery?

1.6 Research objectives

The main research objective is to determine how re-blocking will reduce risks within the communities in informal settlements and improve service delivery.

To achieve the main objective, the following sub-objectives were identified:

- To ascertain the impact of re-blocking in Langaville informal settlement.
- To explore how re-blocking has improved disaster risk reduction through service delivery.
- To explore and determine the advantages of re-blocking in informal settlements; and
- To identify re-blocking challenges as well as interventions to ensure improved service delivery.
- To propose more efforts on re-blocking as a DRR strategy in informal settlements.

1.7 Study area

The study focused on re-blocking informal settlements: a risk reduction strategy for mitigating hazard impact in the City of Ekurhuleni, Gauteng Province, Republic of South Africa.



Figure 1.1: Map showing Gauteng Province with its municipalities

Source: www.wikipedia.org accessed 8 February 2019

Gauteng is considered the economic hub of South Africa and is a major contributor to the financial, manufacturing, transport, technology, and telecommunications sectors, among others. It also hosts a large number of overseas companies requiring a commercial base in and gateway to Africa. Although Gauteng is the smallest of South Africa's nine provinces - it covers a mere 1.5% of the country's total land area, the province handles a third of South Africa's gross domestic product (GDP). Gauteng generates about 10% of the total GDP of sub-Saharan Africa and about 7% of the total African GDP. Gauteng province is divided into three metropolitan municipalities (Tshwane Metropolitan Municipality (Pretoria), Johannesburg Metropolitan Municipality and Ekurhuleni Metropolitan Municipality) and two district municipalities. The district municipalities are Sedibeng district Municipality and West Rand district Municipality, as shown in Figure 1.1 above.

The city under study is the City of Ekurhuleni Metropolitan Municipality which was established in 2000 in terms of Notice 5215 of 2001 Local Government: Municipal Structures Act, 1998 Amendment of Notice Establishing The Greater East Rand Metro (Gauteng Notice No. 6768 Of 2000 And Mpumalanga Notice No. 309 Of 2000).



Figure 1.2: Map of Ekurhuleni Metropolitan Municipality

Source: www.wikipedia.org accessed 8 February 2019

City of Ekurhuleni Metropolitan Municipality (CoE) is home to OR Tambo International Airport, the busiest airport in Africa, which services the entire continent and links to major cities throughout the world. South Africa's largest railway hub is in Ekurhuleni (Germiston) and links the city to all the major population centres and ports in the Southern Africa region (Integrated Development Plan and Service Delivery Budget Implementation Plan (IDP & SDBIP), 2013/14). The Blue IQ projects situated within the City of Ekurhuleni include the Wadeville-Alrode Industrial Corridor with linkages to the largest logistical hub, the City Deep Container terminal, the Gautrain rapid rail link to Johannesburg and Tshwane and the OR Tambo International Airport Industrial Development Zone (IDZ). All this makes it an attractive destination for employment seekers from inside and outside the country. Ekurhuleni Metropolitan Municipality suffers a huge demand for housing.

The City of Ekurhuleni is a metropolitan municipality that forms the local government of the East Rand region of Gauteng, South Africa. The name Ekurhuleni means place of peace in XiTsonga. Ekurhuleni is one of the five districts of Gauteng province and one of the eight metropolitan municipalities of South Africa. The seat of Ekurhuleni is Germiston. The most common native language spoken by its 3.17 million people is IsiZulu, as of the 2001 Census. OR Tambo International Airport falls in the Kempton Park area of the City of Ekurhuleni. The municipality was established in 2000, superseding the Eastern Gauteng Services Council, the Khayalami Metropolitan Council, and the previous administrations of Alberton, Benoni, Boksburg, Brakpan, Edenvale/Lethabong, Germiston, Kempton Park/Tembisa, Nigel and Springs.

The City has 119 informal settlements inhabited by 164 699 households. They are characterised by a lack of formal structure, insufficient public spaces and facilities, inadequate basic services and poor access-ways. The living conditions are the same throughout the informal settlement in the City of Ekurhuleni in particular and country at large. To alleviate the unbearable living conditions of the citizens, the City of Ekurhuleni engaged on a re-blocking project which creates an enabling environment for informal settlements and the municipality to plan and implement community development projects together.

Though, it was on the agenda of the City of Ekurhuleni to re-block the informal settlements and make them habitable, it was in September 2011 when the residents of Langaville informal settlement represented by the Socio-Economic Rights Institute of South Africa (SERI), requested an order directing the City of Ekurhuleni Metropolitan Municipality to provide services. The services included sufficient access to water and basic sanitation recognized in the Constitution of South Africa, through the Water Services Act, Regulation 3 of the Regulations Relating to Compulsory National Standards and Measures to Conserve Water (GN R509 in GG 22355 of 8 June 2001). None of the residents had access to basic sanitation. Some residents relied on hand-dug pit latrines, others used the bushes, whilst others paid a fee to access toilets in the nearby housing settlement. Water supply was one fifth of the minimum supply prescribed by regulations, and

sometimes not enough to drink. According to the Water Services Act, basic sanitation should be provided to formal and informal households.

In the post-1990 period, densification of the urban areas led to Ekurhuleni being a highly concentrated urban complex presently housing the largest number of informal settlements in Gauteng. According to the City of Ekurhuleni Metropolitan Municipality Annual Report (2010 and 2011), many of the informal settlements are situated on land unsuitable for housing and well-located land suitable for housing development is not readily available. Sixty-six (66) informal settlements were located in areas not suitable for development and were earmarked for re-location by the Department of Human Settlements. There are large vacant land parcels in the mining belt around the urban core that causes the City of Ekurhuleni's spatial distribution to be fragmented. This has resulted in an inequitable city and low-development densities, with historically disadvantaged communities situated on the urban periphery (Integrated Development Plan and Service Delivery Budget Implementation Plan, (IDP and SDBIP), 2013/14).

Langaville Extension 1 is an informal settlement in the Tsakane Township. According to the residents, Tsakane was formally established during the early 1960s under the policy of racial segregation. The word Tsakane means 'happiness, joy'. Langaville informal settlement was amongst the initial informal settlements to be re-blocked. Langaville ext. 1 is situated in the southeastern portion of Ekurhuleni, it falls to the north of the Tsakane area in ward 81. The residents of Langaville informal settlement comprised of 395 households.

CoE has a huge housing backlog with 134 000 shacks in 119 informal settlements and 360 000 backyard shacks (Integrated Development Plan and Service Delivery Budget Implementation Plan (IDP and SDBIP, 2015). The backlog continues to increase and CoE is struggling to cope with severe housing shortages set up by the massive influx into the municipality. To improve the living conditions of the people, especially the poorer people, the City of Ekurhuleni, being part of the economic hub of South Africa, Gauteng province introduced re-blocking with the intention to make informal settlements more livable. The

growth of informal settlements has resulted in complex environmental consequences, which results in problems such as people settling in an inhabitable area, environmental degradation, pollution, flooding and fires. Notwithstanding secondary problems such as service delivery, which is sometimes regarded as the cornerstone of DRR, limited service delivery, due to poor road infrastructure, lack of access to public phones, public toilets and limited communal water taps and lack of refuse bins in informal settlements, is a stumbling block to effective DRR.



Figure 1.3: Topographic Map for Langaville Extension 1

Source: CoE: City Planning Department- GIS division, July 2019

1.8 Motivation of the study

The study was motivated by the City's initiative to improve the lives of the communities in informal settlements, in turn, mitigating hazards that can negatively affect people living in informal settlements. Due to high density of informal settlements, communal services are often provided on the outskirts of a settlement, in locations, which are often not accessible

to all dwellings. Informal settlements also experience health hazards due to lack of disposal of grey water, the prevalence of rodents and other environmental health risks. Some informal areas are built on hazardous sites such as unplanned landfill sites, shallow undermining areas, wetlands, power line servitudes and dolomitic areas.

Fires are a high risk to informal settlements as the high density of the settlement and the highly flammable building materials of the dwellings aid the rapid spread of fires. The layout and the density of these settlements make it very difficult for CoE to respond effectively to fires or any other emergencies. While acknowledging that the programme is temporary, it however provides the residents with a dignified glimpse of hope and relief until such time CoE can provide permanent solutions toward the promised sustainable human settlements to the affected communities. The programme is aimed at providing immediate relief by ensuring informal settlements are structured, safe, serviceable, habitable and dignified.

The researcher was touched by the vulnerable communities of the City of Ekurhuleni living in informal settlements and decided to conduct a study and focus on how re-blocking can be beneficial to the affected communities. The study will be submitted in partial fulfilment of the requirements for the Master's Degree in Disaster Management.

1.9 Research design and methodology

To conduct a research study, a suitable research methodology is required. The reason for this is to ensure that the objectives of the study are achieved.

1.9.1 Research design

According to Babbie and Mouton (2001:104) research design is a specific and detailed strategy, including specific steps, to acquire data so that the researcher can come to valid conclusions regarding the subject under investigation. Leedy and Armod (2001) affirms that research design is the strategy adopted to approach a research problem. Research design provides the overall structure for the procedure that the researcher follows, the data collected and analysed. The design is a plan outlining how information is to be

gathered for an assessment or evaluation that includes identifying the data gathering methods. Therefore, the research design adopted in this study is case study design.

1.9.2 Research methodology

Babbie and Mouton (2001:647) further define methodology as methods, techniques and procedures that are used in implementing the research design or research plan. The mixed method is the preferred methodology for this study.

To study all the elements of the research questions in-depth, it is necessary to narrow down the area of study to one informal settlement. In this case, the study looked at mitigating hazards and risks through re-blocking as a solution to improve living conditions in informal settlements. When the subject of study is based on real life, as is this case, it is referred to as an empirical research problem. Therefore, this empirical research study included research questionnaires, focus group, observation of real-life experiences and actions and document reviews.

1.9.3 Research population and sample

1.9.3.1 Population

Leedy and Ormrod (2013:215) and Saunder et al, (2013), state that population refers to the entire group of persons or research subjects under study. McMillan and Schumacher (2006:119) define population as a group of elements or cases, individuals, objects or events that conform to specific criteria. According to Babbie (2013:115) population is all possible participants that can provide information on the subject under investigation. Terre Blanche, Durrheim and Painter (2006:133) maintain that population is referred to as the large pool from which sampling elements are drawn to generalize the findings. A population is a group of individual persons, objects, or items from which samples are taken for measurement (Leedy and Ormrod, 2013:206). Research population refers to the entire group of people, organizations, units, events or things of interest that the researcher wishes to investigate (Bless, 2014:16). Firstly, the population of the informal settlement was taken as it is. This was the households in the study area. Another

population group that was also part of the sample was the members of the committee that undertook the re-blocking exercise. The population for this study consisted of employees who have knowledge of re-blocking projects in the City of Ekurhuleni and residents in the identified settlement under study.

1.9.3.2 Sampling

Multiple stage sampling was used in this study. Sampling involves selecting some elements from a population that represents a target population (Leedy and Ormrod, 2013:206). According to Leedy and Ormrod, 2013:215; Saunder et al., 2013 sampling refers to only collecting information from some members of the population. De Vos, Strydom, Fouche and Delport (2011: 223) explain sampling as a small portion of the total set of objects, events or persons that together comprise the subject of study. Springer (2010:100) points out that sampling refers to strategies that enable one to use a subset of a population as a basis for making inferences about the large group. Creswell (2012: 141) states that sample includes only those who provide data on which the findings and conclusions are based. Firstly, all the committee members/employees in the City of Ekurhuleni will be used in a focus group discussion. Secondly, in the community of Langaville (the informal settlement under study) a sample of 230 out of 395 households was identified. Purposive sampling of the households was done. This entailed surveying those members that were available at the time of the data collection process. The reason being that the community of Langaville is homogenous because it was completely re-blocked.

For this study, the researcher used purposive or judgmental sampling, as this is a strategy in which particular settings persons or events are selected deliberately to provide important information that cannot be obtained from other choices (Maxwell, 1996). The researcher observed the population in a re-blocked informal settlement (Langaville Informal Settlement) in the City of Ekurhuleni and did focus group discussions with the employees that worked as project team members in the re-blocking project or had knowledge in the re-blocking projects in the City of Ekurhuleni.

1.10 Data collection method

According to Burns and Grove (2003:373) data collection is critical for the researcher to ensure that relevant data is obtained by employing methods like interviews, participant observation, focus group discussions, narratives and case studies. The primary sources of data will include research questionnaires and focus group discussions and observation of the reactions of the identified participants (employees) that will be identified as per their area of work and the contributions they make to the discussion of selected areas under study. Document reviews will be used as secondary sources of data. Residents in the identified settlement under study will also be acknowledged as participants to provide valuable experience in the identified settlement of City of Ekurhuleni.

1.10.1 Semi-structured questionnaire

Nachmias and Nachmias, (2008:232) argue that a questionnaire is one of the most important data collection methods in the social sciences. There are two main types of questionnaires, namely structured and unstructured questionnaires. Researchers may use structured questionnaires where questions are pre-designed or researchers may utilize unstructured questionnaires where the questionnaire contains a set of questions which are not structured in advance and which may be adjusted according to the needs of the question period (Mustafa, 2010:194). Leedy and Ormod (2010:189) define a questionnaire as an effective and convenient method of obtaining responses to both structured and unstructured questions.

The research questionnaire were distributed on-site when meeting with participants, to clarify any questions. For a self-completed questionnaire, a range of answers is set out in the questionnaire and the respondent is asked to tick the appropriate boxes.

1.10.2 Focus Group Discussions (FGDs)

Using focus group discussions, the participants were grouped together at their convenience, the place and time of meeting was discussed and communicated in advance. The data is then analysed qualitatively (Harris and Brown, 2010:1).

The study included a structured focus group discussion with the employees in the City of Ekurhuleni that worked as project team members in the re-blocking project or had knowledge of re-blocking projects in the City of Ekurhuleni Metropolitan Municipality. The focus group discussion aimed at obtaining information on the selected informal settlement, what services are currently rendered and what are the desired outcomes for re-blocking. It looked at the challenges with budget allocation and Service Delivery Budget Implementation Plan (SDBIP). This type of focus group discussion assisted for further probing of additional information required in this study. According to Walliman (2001:240), focus groups achieve defined answers to defined questions, while leaving time for further development of those answers. It also allows the researcher to have direction during the discussion, as there are questions set for the focus group discussion process. The researcher arranged a meeting with the participants of focus group discussion well in advance and took a detached standpoint (emotionally) thus avoiding the involvement of personal feelings. This avoids or minimizes researcher's bias.

The researcher conducted a documentary review on legislative framework and other sources of information or documents on the re-blocking programme. In conducting the study, secondary sources, information and data will also be relied upon. These included published textbooks and unpublished reports, municipal reports, journals, local and international magazines and newspapers. Secondary data was gathered from both government and public documents.

The internet and various websites were viewed and used, but with some measure of care and verification on their competences. These materials were useful in the study, as it helped strengthen the analysis presented thereafter. In addition, the focus group discussion substantiated the information collected in the questionnaire as part of the primary data of this study. The survey was a door-to-door type to ensure a higher response rate; a sample of ten percent per informal settlements' households was selected using the stratified sampling method. The sample came from the area that was re-blocked. The questionnaire was distributed to the households, ward committee members and ward councilor.

1.10.3 Informal observation

The researcher observed the behaviour and practices of the participants, both employees and residents in the identified settlements under study. The information obtained through observation was analysed as a means of triangulation of data obtained from the participants. In this study, data obtained from the participants was narrated and analysed using observation, the legislative framework and policy on re-blocking.

1.11 Validity and reliability

To comply with sound research principles and to ensure that inferences and conclusions of the findings could be drawn, the validity and reliability of the results was ensured. Rohilla (2010:79) affirms that validity and reliability are two factors which any qualitative researcher should be concerned about while designing a study, analysing results and judging the quality of study. Merriam in Maree, (2010:38) describes reliability as "results which are consistent with the data collected". Botlhoko (2017:26) indicates that reliability is concerned with the findings of the research study and relates to the credibility of the findings. Reliability is the consistency or uniformity of the research instruments or approach to find out whether the study assessment procedure will yield the same results if repeated every time (Brynard and Hanekom, 2006:48; Gray, 2009:158; Powell and Connaway, 2004:43). According to Brynard and Hanekom (2013:48), validity refers to the potential of a design or an instrument to achieve or measure what it is supposed to achieve or measure. Rohilla (2010:81) provides that the concept of validity is used to determine whether the research really measures that which it intended.

In this study, improving the reliability and validity, multiple sources such as research questionnaire, focus group discussion, observation and document reviews will minimise the margin of error. As the study adopted a mixed approach (qualitative and quantitative methods), triangulation was employed, as it is a powerful way of demonstrating concurrent validity, particularly were focus group discussion, observation and document reviews that will be applied. The triangulation approach through its combination of research questionnaire, focus group discussion, observation and document review enabled the researcher to unearth a wealth of information pertaining to issues of re-

blocking in the City of Ekurhuleni. It will further add value to the study by sourcing information from other stakeholders in addressing issues of re-blocking to improve living conditions in the informal settlements. Further reliability and validity was conducted on documents referred to by the participants during interviews, the information was verified through literature review and document review through policies, legislation etc.

Secondary data that was used in this study was sourced from 2008 SRK study: 2012 Risk and Vulnerability study conducted by Aurecon South Africa and 2016 Metro-wide Disaster Risk and Vulnerability study by Aurecon South Africa, the CoE appointed the company. All Disaster Management personnel in the CoE participated in these sessions, therefore strengthening the reliability of the data as the majority of the personnel are on their Masters level of study and the level of professionalism was high. The study followed a sound research method. The triangulation of the methodology, using both quantitative and qualitative approaches to the study was useful in improving the validity, analytic power and relevance of the findings. This helped in verifying the results, as the data was from different stakeholders who are affected by the same problem. The results from the community were compared with those of the ward committee. Professionals as well as the local government departments were visited for secondary data that is required in this study. By combining multiple respondents, methods and sources, the researcher aimed to overcome the intrinsic bias that comes with a single source and single respondent research (Patton, 1990:90).

In this study, the researcher provided sufficient evidence that the instrument that can be used to measure the variables.

1.12 Limitations and scope of the study

Lutabingwa and Nethonzhe (2006:700) argue that it is the responsibility of the researcher to make sure that the shortcomings in the research are made known to the readers. Like any other study, this study was not immune from limitations. These included the availability of literature, data and figures especially regarding the country under political turmoil. A major limitation of this research work was the dearth of relevant and

contemporary literature on the specific research subject. Another limitation was the researcher's limited professional competence in the area of human settlement and housing by-laws in particular. In summary, this study was almost literature based, but also drawing on exchanges via focus group discussions from relevant stakeholders responsible for delivery of services in the City. It hypothesizes that risk will better be reduced by broader service delivery through re-blocking.

The study was limited to issues of re-blocking as a way of reducing risk in informal settlements in the City of Ekurhuleni. It is against this backlog that the findings of the study cannot be generalised as people who participated on issues of re-blocking were only from the City of Ekurhuleni and the informal settlement under study. Documents that were critical to this study were not available. The other limitation was that it focused on only one (1) of the one-hundred-and-nineteen (119) informal settlement of the CoE, thus, only views of primary respondents from one (1) informal settlement shaped the findings of the study.

1.13 Ethical considerations

As cited by Saunders et al. (2000:135), the data collection stage is associated with a range of ethical issues. Some of these are general issues that will apply to whatever method is used to collect data. According to Welman, Kruger and Mitchell (2005:182), ethical considerations are important elements in research as much as they are in any other field of human activity. Streubert, Speziale and Carpenter (2003:314) state that the researcher has a moral and ethical obligation to consider the rights of the participants who availed themselves for an interview, and those who provided information and documents for the researcher's perusal. MacMillan and Schumacher (2001:196) describe ethics as the study of human conduct when measured against accepted value judgments and the nature of need, duty or obligation to which persons ought to conform. Ethics deal with beliefs of what is right or wrong, proper or improper and good or bad. Grafton and Jones (2010:121) submit that all researchers are subject to ethical considerations.

The ethical measures taken in this study included informed consent, privacy, confidentiality and anonymity as well as the right of the participants to withdraw from the study. In line with the ethical considerations for this study, participants were treated with respect, the information acquired from them through the research questionnaire, focus group discussion and documentary evidence will be used strictly for research. The raw data will not be made accessible to anyone except those who provided the same information.

An ethical clearance certificate was obtained from the Research Ethics Committee and high degree Committee of the University of Free State (UFS), to conduct the study. The City of Ekurhuleni Metropolitan Municipality was approached for permission to conduct this study, and a letter of request was submitted to the City Manager as the accounting officer of the City of Ekurhuleni (see Annexure A). The researcher's appointments with participants were set for individual timeslots that suited each participant, and did not disrupt their work. A letter was presented to each participant with information detailing the nature of the study. Verbal permission (informed consent) was sought from the participants who participated through the research questionnaire and the focus group discussion participants were presented with a letter of approval from the City Manager as an indication that the accounting officer was aware of the study and had permitted the researcher to engage participants about the study.

Brynard and Hanekom (2013:6) affirm that a researcher should, therefore, at all times, and under all circumstances, be ethical when data is collected from respondents and report the truth and should never present the truth in a biased manner.

1.14 Research outline

To facilitate a logical debate, the research was arranged in a systematic form of six chapters.

Chapter One: This is the background to the study that discussed the research problem, the research questions, objectives, research design and methodology. The research

methodology covers the population, the sample, data collection method and tools to be used. The limitations, delimitations, validity and the ethical issues are also discussed. It identified the research problem, gave a background to the study and the research questions, ethical issues, methodology, eligibility and reliability, the aim and objective of the study.

Chapter Two: The theoretical framework applicable to the study was discussed. The theory of change and progression of safety set out the theoretical basis of the research. The section covered legislation (Housing, Disaster Management) and disaster risk reduction theories. The chapter reviewed informal settlements in Gauteng, the IDP and SDBIP and Disaster Management Framework.

Chapter Three: Literature was reviewed, and the focus was on case studies of the best practices in the developing world such as in Africa, India and Brazil. Issues of re-blocking were looked at from research that has already been done globally.

Chapter Four: The research design and methodology was discussed in detail here.

Chapter Five: Focused on analysis of primary and secondary data collected throughout the research study and discussion.

Chapter Six: reviewed the whole study, inclusive of recommendations based on data analyzed, discussions and conclusions on the findings of the study.

1.15 Summary

This chapter discussed the background information to the study; the problem statement and the approach that was employed to collect information to answer the research questions and fulfill the study objectives. The final section of this chapter provided the reader with a clear indication as to the chapter outline of this thesis. The next chapter will focus on the conceptual and theoretical foundations that apply to this study

CHAPTER 2: THE CONCEPTUAL AND THEORETICAL FRAMEWORK

2.1 Introduction

Theoretical and conceptual frameworks guide the paths of research and offer a foundation for establishing its credibility. The overall aim of conceptual and theoretical frameworks is to make research findings more meaningful, acceptable to the theoretical constructs in the research field, and to ensure generalisability. The frameworks assist in stimulating research while ensuring the extension of knowledge by providing both direction and motivation to the research inquiry. Both theoretical and conceptual frameworks provide structure in showing how a researcher defines the study philosophically, epistemologically, methodology, and analytically (Grant and Osanloo, 2014:12). Ravitch and Carl (2016:30) concur that the theoretical framework assists researchers in situating and contextualizing formal theories into their studies as a guide. The theoretical framework consists of theoretical principles, constructs, concepts and tenants of a theory (Grant and Osanloo, 2014:12). Imenda (2014:185) clearly postulates that research without the theoretical framework lacks accurate direction in the search of appropriate literature and scholarly discussions of the findings from the research. According to Camp (2001:27), a conceptual framework is a structure that a researcher believes can best explain the natural progression of the phenomenon to be studied. It is linked with concepts, empirical research, and important theories used in promoting and systemizing the knowledge espoused by the researcher (Peshkin, 1993:23). Table 2.1 shows the differences between a theoretical and conceptual framework.

Table 2.1: The differences between Theoretical and Conceptual Frameworks

Theoretical Framework	Conceptual Framework
It provides a general or broader set of ideas within which a study belongs.	It refers to specific or narrow ideas a researcher utilises in his/her study.
It is based on existing theory/theories in the literature, which have been tested and validated by other scholars.	It is based on the concepts, which are the main variables in a study.
It is in the form of a model that pivots a study, with its exponents and the results of their studies.	It is a researcher's own constructed model that she/he uses to explain the relationship that exists between the main variables in his/her study. It can also be an adaptation of a model in an existing theory, which a researcher adapts to suit his/her research purpose.
It is well developed, designed, and accepted.	Its design is not accepted, but it is a proposal of the researcher's answer to the research problem s/he has defined.
It offers a focal point for approaching the unknown research in a specific field of inquiry.	A framework that shows how the research inquiry is to be undertaken.
It consists of theories that seem interrelated with their propositions deduced.	It consists of concepts interconnected to explain the relationships between them and how the researcher intends to answer the research problem defined
It is used to test theories, to predict and control the situations within the context of a research inquiry.	It is aimed at encouraging the development of a theory that will be useful to practitioners in the field.

Source: Adom, Hussein, Adu-Agyem, 2018

The theoretical framework also guides the kind of data to be collected for a particular study (Lester, 2005:90). The theoretical framework, thus, aids the researcher in finding an appropriate research approach, analytical tools, and procedures for his/her research

inquiry. The theoretical framework guides and should resonate with every aspect of the research process from the definition of the problem, literature survey, methodology, presentation, and discussion of the findings as well as conclusions that are drawn. Eisenhart (1991:101) contends that the theoretical framework helps the researcher in considering alternative theories that might challenge his or her perspective, thereby enriching the strengths of the study. Simon and Goes (2011:75), as well as Maxwell (2004:110), agree that theoretical frameworks deepen the essence of the study.

This chapter will discuss the theories of disaster risk reduction and the theory of change concerning the re-blocking of informal settlements. Though theoretical and conceptual frameworks work hand in hand, they have characteristics that make them different from each other. Grant and Osanloo (2014:90) affirm that the chosen theoretical framework must accentuate the purpose and importance of the study. The differences have been outlined in Table 2.1.

2.2 Disaster risk reduction: A conceptual framework for re-blocking

The conceptual framework presents an integrated way of looking at a problem under study (Liehr and Smith, 1999:81). From a statistical perspective, the conceptual framework describes the relationship between the main concepts of a study. It is arranged in a logical structure to aid a picture or visual display of how ideas in a study relate to one another (Grant and Osanloo, 2014:65). According to Dixon, Gulliver, and Gibbon (2001:90) a conceptual framework shows the series of actions a researcher intends to carry out in a research study. Luse, Mennecke, and Townsend (2012:143) state that the framework makes it easier for the researcher to easily specify and define the concepts within the problem of the study. Miles and Huberman (1994:18) opine that conceptual frameworks can be 'graphical or in a narrative form showing the key variables or constructs to be studied and the presumed relationships between them'. The conceptual framework offers many benefits to research. For instance, it assists the researcher in identifying and constructing the worldview on the phenomenon to be investigated (Grant and Osanloo, 2014:14). It is the simplest way through which a researcher presents the

asserted remedies to the problem they have defined (Liehr and Smith, 1999; Akintoye, 2015:50). It accentuates the reasons why a research topic is worth studying, the assumptions of a researcher, what scholars agree with and disagrees with, and how they conceptually ground their approach (Evans, 2007:72). Akintoye (2015:88) posits that researchers mostly use the conceptual framework when existing theories are not applicable or sufficient in creating a firm structure for the study.

2.2.1 Conceptualising Disaster Risk Reduction

The main framework of this research is derived from the disaster risk reduction (DRR) approach promoted by the United Nations through the International Strategy for Disaster Reduction - ISDR. Disaster risk reduction is the concept and practice of reducing disaster risks through systematic efforts to analyse and reduce the causal factors of disasters (United Nations Office for Disaster Risk Reduction [ISDR] Terminology). Reducing exposure to hazards, lessening the vulnerability of people and property, wise management of land and the environment, and improving preparedness and early warning for adverse events are all examples of DRR. It also takes into consideration environmental issues as part of risk mitigation and reduction strategies (UN-ISDR, 2002). A general strategy for DRR must first establish the risk management context, criteria and the potential threats to a community and its environment (hazard). Secondly, it should analyse the social and physical vulnerabilities and determine the potential risks from several hazardous scenarios to implement measures to reduce them. The final goal is to reduce present disaster risk and control of future risk by combining structural and non-structural measures that foster risk management as an integrating concept and practice which are relevant and implemented during all stages of a community's development process and not just as a post-disaster response (Lavell, 2000; UN-ISDR, 2002; UNDP, 2004).

Disaster risk reduction includes disciplines like disaster management, disaster mitigation and disaster preparedness, but DRR is also part of sustainable development. For development activities to be sustainable, they must also reduce disaster risk. On the other

hand, unsound development policies will increase disaster risk - and disaster losses. Thus, DRR involves the whole society, government, professional and private sector. Each country has the sovereign responsibility to protect its people, infrastructure and economic and social assets from disasters. The State has the responsibility to ensure the safety and welfare of its citizens, their livelihoods and natural resource endowments. The goal of disaster risk reduction programmes is to reduce disaster risks by building capacity and increasing the resilience of communities at risk, thus enhancing their security and wellbeing. This can be done through increased government commitment to implementing disaster reduction policies and programmes. This implies a central responsibility and commitment by the State in providing a proper and effective institutional framework and capacities for disaster risk management and disaster risk reduction.

Key governance issues in disaster risk reduction include roles in policy formulation, operational capabilities and capacities, and varied forms of relationships among actors. In general, disaster risk governance needs to be guided by the following general principles and objectives:

- elevating disaster risk management as a policy priority;
- generating political commitment which translates into promoting disaster risk management as a multi-sectoral responsibility;
- assigning accountability for disaster losses and impacts;
- allocating necessary resources for disaster risk reduction;
- enforcing the implementation of disaster risk management and reduction; and
- Multi-stakeholder involvement, increasing gender sensitivity, and facilitating participation by civil society and the private sector.

Several international policies and frameworks have been developed since the 1990s. These include the Yokohama Strategy and Plan of Action (1990-1999), the Hyogo Framework of Action: Building the Resilience of Nations and Communities (2005-2015), the African Regional Disaster Risk Reduction Framework and its Plan of Action as well as the draft SADC Disaster Risk Reduction Framework and the Sendai Framework for

Disaster Risk Reduction (SFDRR) (2015-2030). The above are examples of how DRR has become a policy priority for governments worldwide. Such policies are seen as the first stepping-stone towards sound disaster risk governance. A core function of DRR governance is ensuring that the necessary support exists within the government to drive the Disaster Risk Reduction Agenda. There is wide international consensus that government, as the administrative entity, must ensure that DRR becomes a priority. This can be done by the following measures:

- Develop and implement disaster risk reduction policies, laws, regulations, directives and standards;
- Establish adequate structures to govern disaster risk reduction such as national (and sub-national) disaster risk management centres or offices, national multi-sectoral coordinating mechanisms (also called national platforms), political decision-making structures (on all levels of government), civil society structures for disaster risk reduction and engagement with the private sector.
- Conduct nationwide disaster risk assessments;
 - Integrate disaster risk reduction measures into development planning;
 - Encourage research, training, education and public awareness of disaster risk issues;
- Ensure adequate emergency and contingency measures are in place for possible disasters; and
- Provide adequate funding to sustain disaster risk reduction efforts.

Good governance for disaster risk reduction requires a multi-sectoral and multi-disciplinary approach. To be successful, disaster reduction relies on being built into existing and ongoing development projects at every stage of the project management process, vis-à-vis: needs identification, project definition, planning, development of alternatives, implementation and monitoring. For a long time, development programmes were not assessed in the context of disaster risk or disasters, nor the effect of a possible disaster on the development project, or whether the development projects increased the likelihood of a disaster or the potentially damaging effects of a disaster. Without adequate DRR planning as part of development projects (in the form of integrating disaster risk

knowledge and development planning) the results can be catastrophic. It is essential to develop a mind-set of long-term thinking for all actors involved in development programmes including government, professionals (engineers, architects, surveyors, town planners and agricultural extension workers), legislators, inspectors, builders, councillors and ultimately the beneficiaries. Development requires institutional and structural transformations of societies to speed up economic growth, reduce levels of inequality and eradicate absolute poverty.

Over time, the effects of disasters can seriously degrade a country's long-term potential for sustainable development and cause governments to modify their economic development priorities and programmes. At the same time, disasters often provide development opportunities. They can improve a favourable atmosphere for change and create a rationale to establish development projects such as re-blocking in informal settlements, housing construction and land reform.

2.3 Theory of change

According to De Silva, Lee, and Ryan (2015:3) theory of change is an approach to developing, implementing and evaluating programmes of development, and has been applied across a wide range of programmatic contexts. The approach developed somewhat organically, beginning in the 1990s with work undertaken by the Aspen Institute Roundtable, who proposed the theory of change as an approach for evaluating community development programmes. United Nations Development Group (2008:3) confirms that Theory of Change (ToC) is a method that explains how a given intervention, or set of interventions, are expected to lead to specific development change, drawing on a causal analysis based on available evidence. It helps to identify solutions to address the causes of problems that hinder progress and guide decisions on which approach should be taken, considering United Nations (UN) comparative advantages, effectiveness, feasibility, and uncertainties that are part of any change process. The United Nations Development Assistance Framework (UNDAF) approach to the theory of change aims to bring improved clarity and quality to the process of programme design and implementation using a simple, flexible methodology. The first step in developing the

UNDAF theory of change involves selecting key development challenges identified in the Common Country Analysis (CCA) that must be addressed in the medium term to achieve the Sustainable Development Goals (SDGs).

A theory of change is a method that explains how a given intervention, or set of interventions, are expected to lead to a specific development change, drawing on a causal analysis based on available evidence. A 'theory of change' explains how activities are understood to produce a series of results that contribute to achieving the final intended impact. It can be developed for any level of intervention such as an event, a project, a programme, a policy, a strategy or an organisation. A theory of change can be used for strategic, programme or policy planning to identify the current situation (in terms of needs and opportunities), the intended situation and what needs to be done to move from one to the other. This can help to design more goals that are realistic, clarify accountabilities, and establish a common understanding of the strategies to be used to achieve the goals.

Rogers (2014:7) alludes that a theory of change can use a range of qualitative and quantitative data and provide support for triangulating the data arising from a mixed-methods evaluation. According to Rogers (2014:3), a theory of change should begin with a good situation analysis. This involves identifying the problem that the intervention seeks to address, the causes and consequences of this problem; and the opportunities, for example, synergies with other initiatives, or existing resources that can be leveraged or strengthened. Even in situations where the theory of change is being developed or significantly revised well after implementation has commenced, it is important to review the situation that give rise to the intervention to ensure that the intervention attempts to solve the right problem.

The most fundamental purpose of the theory of change approach to programme planning and evaluation is to achieve work that is more effective by planning activities in the context of necessary outcomes. Theory of change is the thinking behind how a particular intervention will bring about results. It subordinates thoughts of "*what we do*" or "*what we are going to do*" to mapping the flow of change in conditions needed to reach the goal.

Once the outcomes' pathway has been drawn and the "causal" relationships between different outcomes theorised diagrammatically, proponents and stakeholders have a logical basis for choosing and coordinating those activities and strategies that seem most likely to achieve the outcomes. The evaluation findings show that the City of Ekurhuleni's Human Settlement Re-Blocking Programme design does not have a programme theory of change or inner logic to define the project objectives and expected results of the programme. A theory of change intervention logic is a causal framework of how and why a change process will happen in a particular context.

The theory of change provides the necessary information for programmes to assess the contribution of a project to the achievement of the specific objectives and results of the relevant priority. This sequence forms the 'pathway' towards the impact of the programme, which is the programs' ultimate goal. However, the evaluation assessment provides findings for the five pathways for change, which the evaluator can develop and reconstruct a theory-of-change logic model in retrospect to apply in structuring the design and implementation evaluation study as indicated in Figure 2.1.

The process for developing a theory of change usually starts with asking the question 'What is our long-term goal or outcome?' For example, the long-term goal for the City of Ekurhuleni's Re-blocking Programme is *"Improved living conditions and Restoration of Human Dignity"*. Once this goal has been identified, the next consideration is: *"What conditions must be in place for the City to reach the goal?"* However, despite the absence of a documented theory of change intervention logic, our evaluation results indicate that to a certain degree the City of Ekurhuleni Human Settlements Re-Blocking Programme was aligned with other contemporary urban informality community development programmes offered locally and internationally. The available data on the strategy of implementation helped this programme to attain its goals and objectives as originally stipulated in its National Upgrading Support Programme (NUSP) funding proposal.

The following Theory of Change Logic Model consolidated and formulated from the data findings of the City of Ekurhuleni's Human Settlement Re-Blocking Programme design

and implementation evaluation study, provided the design and logical structure from which to assess the programme design and from which to monitor and evaluate future programme design cycles of this programme.

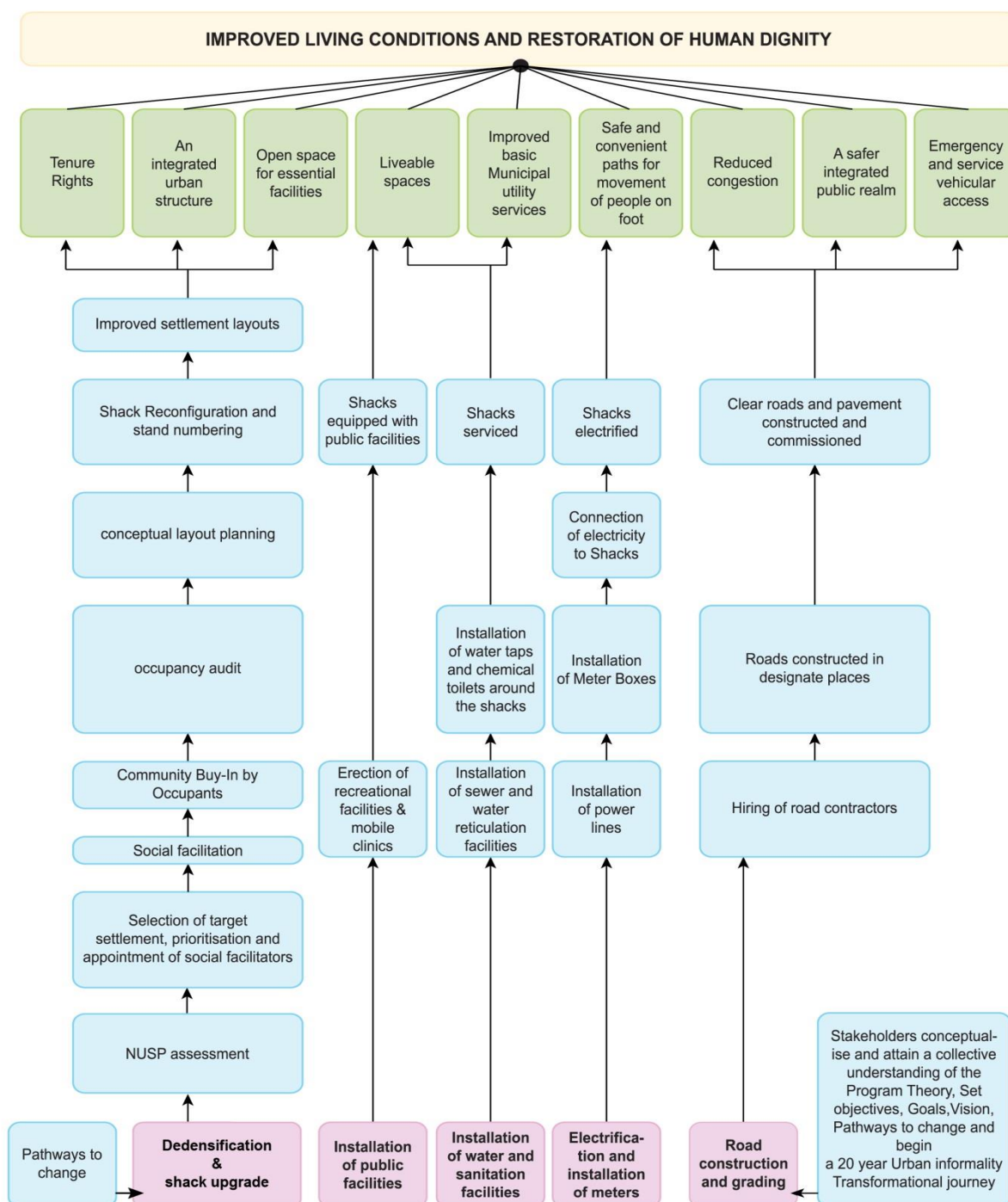


Figure 2.1: CoE Human Settlement Re-blocking Programme Theory of Change
(CoE Human Settlement Department Evaluation feedback report, 2019)

If these nine long-term outcomes are achieved, the City of Ekurhuleni's Human Settlements Re-Blocking Programme will have made a significant contribution to achieving its ultimate vision of bringing about human dignity in Langaville Ext.1 informal settlements. The City's 20-year commitment and holistic approach outlined in its Theory of Change diagram is designed to achieve this vision.

Theory of Change is essentially a comprehensive description and illustration of how and why the desired change is expected to happen in a particular context. It is focused on mapping out or "filling in" what has been described as the "missing middle" between what a programme or change initiative does (its activities or interventions) and how these lead to desired goals being achieved. It does this by first identifying the desired long-term goals and then works back from these to identify all the conditions (outcomes) that must be in place (and how these are related to one another causally) for the goals to occur. These are all mapped out in CoE Human Settlement Re-blocking Programme Theory of Change Outcomes Framework.

The Outcomes Framework provides the basis for identifying what type of activity or intervention will lead to the outcomes identified as preconditions for achieving the long-term goal. Through this approach, the precise link between activities and the achievement of long-term goals are more fully understood. This leads to better planning, in that activities are linked to a detailed understanding of how change happens. It also leads to better evaluation, as it is possible to measure progress towards the achievement of long-term goals that go beyond the identification of programme outputs.

The eight steps proposed in this chapter are a basic approach for guidance through any theory of change process. Each step includes an explanation of its role in the Theory of Change process, which helps to decide how to work with that step. Each step also contains a set of core questions to guide, define the output that should be produced, and

the challenges that may be encountered. The tasks involved in each step are detailed, including reference to additional tools that help to prompt critical thinking required in that step.

Step 1 clarifies the purpose of the Theory of Change process, a clear purpose of going through the theory of change process gives a sense of direction and helps to ensure that the participants start on the same foot. The purpose informs decisions about who should participate in the process, how to shape the process, which levels it needs to encompass, and what type of outputs or products to be achieved and which questions need specific attention in each step.

Step 2 describes the desired change: what you want to change, why, and for whom is the core question of any ToC process. The desired change represents the changes in people's lives and the conditions, relationships in society that are desired to occur in the years to come and the actions required.

Step 3 analyses the current situation. Every change initiative takes place in a context that determines the conditions and opportunities for change. The situation needs to be understood to be able to make strategic choices that increase the chances of success. This step is about analysis of the current situation and the issues that must change: the 'ecosystem' in which the desired change is supposed to take place: which social, political, economic, cultural, ecological, and geographical factors directly influence the issue, its causes or effects, and the desired change process? What are the roles and interests of stakeholders and other actors? Where are power and gender dynamics at play? What are the drivers of change and opportunities?

Step 4 identifies the domains of change. Now the current situation has been explored and mapped, there is a need to identify the domains where important changes have to take place to achieve the overall desired change. Identifying the domains of change helps to manage complexity, determine what matters for the desired change, and for the people who will benefit from that change. It enables role players to decide where best to intervene. To make the desired change possible, changes usually need to happen

simultaneously in many different domains and amongst different groups of stakeholders. For example, changes may be needed in formal institutions and the behaviours and relationships of actors involved in those, like the legal system; changes in the behaviour and relationships that shape people's participation in political processes; changes in the norms and values people have about sexuality; changes in the attitudes of service providers, etc. These changes are substantial, beyond the control of any single actor, and often need to happen in parallel to reach the desired change.

Step 5 identifies strategic priorities. This step is about boundary setting and focus. The main domains of change have been identified. Therefore, a strategic analysis needs to be developed to determine where and how to intervene within those domains, with the best chances of success. The main issue is to define priority change areas where Hivos, with partners and allies, can strategically influence and can realistically make a difference.

Step 6 maps change pathways according to Van Es, Guijt, and Vogel (2015:58) submit that the outcome of the comprehensive situation in step three should be kept in mind and map the change pathways within the domain of change working backward.

Step 7 describes *thinking and working hard to support change*. What has changed, a need for a process to know if and how a project or programme is contributing to the envisaged long-term change and if the underlying theory of change is valid. Tracking and documenting the change process as it evolves forms the basis for monitoring, evaluation, learning about what works, and building an evidence base. The ToC is the frame for distributing iterative learning and critical thinking, not just at the design stage but throughout implementation.

Priorities and process pathways of change are a projection of the envisaged change process into the future, based on what we know of the current situation and our views and beliefs about how change happens. Mapping 'pathways of change' is done by working backward from the long-term desired change, asking ourselves what needs to change for the desired change to occur. At the same time, we are also unpacking and

testing our thinking about how the change process may evolve from the current situation to the future. Pathways of change, or causal pathways, can be pictured as a series of intermediate changes realised, often called ‘results chains’, or in the form of a less linear representation, such as a flow chart, web, or system map. It is essential to indicate the inter-relations between elements, feedback mechanisms, and how the process is expected to evolve, although in real life that will never be linear: think of backlashes and recurrent processes. This means that the pathways and underlying ToC need regular adaptation, in response to developments in the situation and new information.

Step 8 describes the *Uses and Adaptation of Theory of change to be most effective*. Theory of change use needs to be firmly embedded in the process cycle of the project and the organisation. When a ToC is not used to reflect on implementation and is regularly revisited and updated, the investment in developing it is lost. How, then, do you use a ToC during project implementation to plan, navigate strategically, monitor, and learn?

According to Anderson (2006:11), understanding the theories of change that underlie initiatives sharpens planning and implementation, facilitates measurement and data collection, and strengthens the case for change in initiatives. Anderson (2006) forms the backbone for the remainder of the volume since community builders embrace the notion that social capital is an important precursor to and outcome of successful community change work. Anderson (2006) notes that relationships that may be taken for granted serve a larger purpose.

2.3.1 Advantages of using Theory of Change

It embeds the intervention in the real world and helps design an evaluation that will work and be implemented in real-world systems, rather than just an intervention that is possible to evaluate in a research setting. This makes it more likely that the intervention will be effective and scaled up. It provides an overarching theoretical framework that clearly identifies knowledge gaps and assists in the selection of appropriate formative and evaluation research methods within the logical steps of the Medical Research Council (MRC) framework for complex interventions. It integrates process and effectiveness

evaluations into the same study under one theoretical framework and provides a framework for what is to be evaluated and when. It facilitates timely and informative information about the progress of the project that can be understood by a diverse range of audiences.

2.3.2 Application of the Theory of Change to the informal settlement understudy (Langaville Extension 1)

The living conditions of people in Langaville Extension 1 were changed as contemplated through the theory of change. Open space was created through re-blocking and that resulted on basic services such as water, electricity, servicing of ablution facilities and waste management services, emergency services, metro police and SAPS and disaster management being provided due to access that was made easy through re-blocking. Re-blocking changed livable spaces and convenient path for movement was improved through grading of roads and settlement layout leading to each family getting a stand number.

2.5 Social capital concept

Social capital is an important resource for communities to consider as they assess their assets and devise strategies for renewal and improvement. While the case can be made for social networks, sense of community, social cohesion and informal social control as precursors to community empowerment, the field still has not developed a cohesive theory of change about how these elements are related to each other in a causal chain. Understanding how the quality and quantity of social interactions within an urban setting affects the lives and livelihoods of their inhabitants demands an assessment of the relationship between social capital and resilience. While a link between social capital and improved individual, household and community welfare in resource-poor settings has been identified (Grootaert, 1999; Grootaert et al., 2002; Story, 2012; Aldrich and Smith 2015), the contribution that social capital makes to resilience is still unclear (Adger, 2003; Aldrich, 2012; Bene et al., 2015:16; Pfefferbaum et al., 2015). The complexity and diversity of urban social systems combined with the recognition of increasing urban vulnerability provide an ideal testing-bed for exploring this relationship.

Social networks and social ties contribute to informal social control, while neighbouring behaviour is key to the development and maintenance of social cohesion. Anderson (2006) provides a rich discussion of the relationships among these elements and their relationship to other community outcomes. For example, they show that these social factors are positively correlated with civic participation and collective action and are negatively correlated with criminal behaviour in neighbourhoods. It was observed that while limited empirical work regarding effective ways to produce and promote social capital in poor neighbourhoods exists, there is a wealth of practical knowledge that suggests its importance. Anderson (2006) further stipulates that it provides groundwork for exploring how various interventions at the community level can improve conditions for individuals, families, organizations, and the community as a whole.

Such adaptation and validation of approaches to measuring social capital in urban informal settlements is crucial in assisting and aiding communities in their interventions in such contexts. Within the current context in which the humanitarian sector has been exhorted to recalibrate their approaches to take into account the urban dimension, Aldrich and Smith (2015: 6) identify the need to guide and aid community concerning the form of social capital - bonding, bridging or linking - that should be emphasised according to the particularities of a variety of humanitarian settings. Differentiating the forms of social capital is important given the emergence of literature that eschews the unmitigated celebration of social capital and highlights its potential dark side, arising in particular from bonding social capital (Portes, 2014).

Part of the difficulty in explaining the connection between social capital and empowerment is that social capital empowerment is relevant at many levels of analysis. At the individual level, empowerment refers to beliefs about a person's competence, efforts to exert control over the environment, and an understanding of the socio-political environment. At the organisational level, empowerment refers to both the empowering practices of organisations that provide opportunities for people to participate and gain control over their lives, the degree to which organisations are empowered to deliver key resources to

their constituents, and the ability of organisations to be catalysts for change within their sphere of influence. At the community level, empowerment is generally understood as the ability of a community to initiate improvement efforts, respond to threats to quality of life and provide opportunities for citizen participation.

In community settings, residents' participation in collective action drives the empowerment process and is tied more closely than any of the other elements of social capital to empowerment at the individual, organisational and community levels. The pathway of change that promotes residents' empowerment requires the development of a sustainable social network and a sense of community at both individual and group levels. These concepts are intricately related to participation in collective voluntary activities, understood as both a cause and an effect of empowerment.

Though the concept of social capital became fashionable recently, the term social capital has been in use for decades. Keeley (2007) indicates that the term 'social capital' may first have appeared in a book authored by Hanifanin published in 1916. The book discussed how neighbours could work together to oversee schools. The term was used to describe what counts for most of the daily lives of people: namely goodwill, fellowship, sympathy, and social intercourse (Keeley, 2007). Its understanding has evolved over decades resulting in a rich body of literature on social capital. Some of the earlier authors associated with popularizing the concept like Bourdieu, Coleman, and Putnam placed an emphasis on social capital as a collective asset (Lin, 1999). Bourdieu's (1985) contribution concerned the size and strength of networks, while Coleman (1990) considered social capital as a resource that can be deployed by social actors and transformed into other forms of capital, including human capital.

Putnam (1993:2000), on the other hand, was interested in social organisations emphasising the importance of features including norms, trust and networks. Definitions that are more recent focus on the links, shared values and understanding in the society that enables individuals and groups to trust each other and work together (Keeley, 2007). For instance, Siegler (2014) contends that social capital brings about connections that

generate benefits due to tolerance, solidarity and or trust. Scrivens and Smith (2013) argue that the term social capital conveys the idea that human relations and norms of behaviour have an instrumental value in improving different aspects of people's lives. Such aspects play a significant role in shaping individual as well as collective well-being outcomes. Bridging capital facilitates collective action, civic engagement or citizen participation. Such actions, engagement, and behaviours contribute positively to the collective life of a locality, community, or society (Scriven and Smith 2013; Siegler, 2014).

Civic engagement includes activities such as volunteering, political participation, and other forms of community action (Grootaert and Bastelaer, 2001; Siegler, 2014). Evaluation of bridging capital requires examination of such aspects of community governance and decision-making; identification of community institutions; characterisation of community-institutional relationship; and assessment of institutional networks and organisational density (Krishna and Shrader, 1999). This means bridging capital is mainly assessed at the meso-level (Grootaert and Bastelaer, 2001; Scriven and Smith 2013; Siegler, 2014), to achieve a more focused observation of local institutions, collective actions and civic engagement. Due to the diversity of the localities and the complexity that comes with the definition and types of community, the focus within Preparedness and Resilience to address Urban Vulnerability (PRUV) will be on the locality.

The City of Ekurhuleni design and implementation partners set five pathways to change; performance indicators with nine pre-conditions or programme outcomes for which they are accountable.

The five pathways to change:

- De-densification of residential areas;
- Installation of public facilities;
- Installation of water & sanitation facilities;
- Electrification of informal settlements; and
- Construction and grading of community settlement gravel roads;

The nine programme outcomes:

- An integrated urban structure;
- Open space for essential community facilities;
- A safer integrated public realm;
- Improved basic municipal utility services;
- Occupants' tenure rights (Address);
- Emergency & service vehicular access;
- Reduced congestion in settlements;
- Safe and convenient paths for movement of people on foot; and
- Livable informal settlements with reduced crime and illicit activities.

Programme performance indicators:

- The following were indicators set for programme performance and accountability:
- De-densified residential areas;
- Completed gravel roads in between settlements thereby enabling improved movement within the settlements;
- Installation of one functional water tap with running water facilities catering for five families per tap;
- Installation of one functional chemical toilet catering for five families per toilet;
- Installation of one waste bin/container catering for five families per facility;
- Functional electrical wiring per shack with electricity per occupant;
- Allocation of stand numbers per shack in an auditable sequence; and
- Development and enforcement of municipal bylaws distributed per occupant per informal settlement.

2.6 Conclusion

This chapter discussed the importance of theoretical and conceptual frameworks in research and gave justifications on why their inclusion in research is indispensable,

namely, to heighten the quality of research. In addition, it explained the meaning of the two frameworks; the distinctive roles they play in the research process, their differences and how they are constructed. Chapter three will focus on the literature review.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

This chapter reviews literature concerning risk reduction measures, the legislative framework governing human settlement in South Africa and a comparative study on best practices on re-blocking in South Africa (Cape Town), Kenya, India and Brazil. This was done to contextualise the research problem and find information that justifies the rationale for this study. It is an important part for the understanding of the research case far beyond a single practice of re-blocking itself, but the larger scope of why there is a need for informal settlement upgrading in Ekurhuleni. The review aims to identify information that is available regarding the re-blocking of informal settlements as well as relevant legislation, guidelines and principles to determine if re-blocking reduces hazards and if service delivery is improved because of re-blocking.

According to De Vos et al., (2011:64) literature study and the analysis of relevant theories form the basis of any scientific research and are the primary phases to discover new knowledge. Mouton (2012:6) submits that the importance of a scholarly literature review is to determine what has previously been done in the field of study. Babbie (2013:498) argues that a literature study will guide and teach the researcher to acquire knowledge from other scholars on how they theorize and conceptualize in the field of scientific research. According to Saunder, Lewis, and Thornhill (2013:100), a literature review is a structured and systematic process that finds all the relevant sources and critically evaluates them against the research topic. Mouton (2001:87) affirms that the literature review helps the researcher to plan and execute a study in a more defined manner and putting the researcher in touch with others working in the same field.

In an attempt to understand the CoE's Human Settlement Re-Blocking Programme, it is necessary to provide the legislative imperatives that paved the way for such initiatives from a South African context. However, it is important to note that, the discussion that follows on the legislative imperative of housing in South Africa is not designed to be an exhaustive presentation of the various legislative perspectives on housing. It is not to

necessarily pick a preferred perspective over others, but to paint a picture of the progression of legislative changes that may have influenced the birth of the CoE Human Settlement Re-Blocking Programme.

3.2 Legislative review

The South African government embarked on legislative transformation with the promulgation of the Disaster Management Act, (Act no 57 of 2002) and its amendment (16 of 2015), as well as the National Disaster Management Policy Framework of 2005. Section 26(g) of the Municipal Systems Act (Act No 32 of 2000) dictates that “*applicable disaster management plans*” are a core component of the Integrated Development Plan (IDP) of a municipality. The policy framework for disaster management in South Africa includes Key Performance Area (KPA) 3, which deals with DRR. The Key Performance Indicator (KPI) 3.2.3 (identifying the most vulnerable areas), states that once disaster risk management planning is undertaken, priority must be given to those (vulnerable) areas where communities and households are exposed to natural or other threats and have the least capacity to resist and recover from the resulting impacts.

3.2.1 The Hyogo Framework for Action (HFA) 2005- 2015

The Hyogo Framework for Action (HFA) 2005- 2015 was a key document emerging from the UNISDR conference on reducing disaster risk, held in Japan in January 2005. It was accepted by 168 governments and has five key components:

- Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation;
- Identify, assess and monitor disaster risks – and enhance early warning systems;
- Use knowledge, innovation and education to build a culture of safety and resilience at all levels;
- Reduce the underlying risk factors; and
- Strengthen disaster preparedness for effective response at all levels.

The purpose of the framework is to describe the five-fold nature of the actions required to reduce the suffering associated with disasters. Action is required at all levels – from

international cooperation on issues such as warning systems down to contingency planning at the community and family level which enables people to respond to those warnings. Currently, a wide range of effective methods for identifying and analysing the different facets of human vulnerability and capacity are available for a variety of disaster and development contexts (Cannon et al., 2003). The framework further offers guiding principles, priorities for action and practical means for achieving disaster resilience for vulnerable communities. It has become increasingly clear that disasters are one of the key factors holding back progress towards halving poverty and the other Millennium Development Goals (MDG).

Cannon (2007:2) mentions that although there have been a number of initiatives aimed at examining how to integrate disaster risk reduction into the MDGs, these have not included a revision of the UN Millennium Project Needs Assessment guidelines in the light of the Hyogo Framework for Action (HFA). Cannon (2007) further alluded that a large proportion of the urban poor are likely to live in informal, squatter or 'illegal' settlements, some of which may even breach existing land-use planning or zoning. Therefore, land use planning that is aimed at risk reduction for hazards must take account of the needs of the people that may take higher priority over disaster risk reduction. Moreover, Cannon (2007), emphasized that it is only by linking risk reduction with the wider context of access to livelihoods that urban planning and risk reduction can work.

3.2.2 The Sendai Framework for Disaster Risk Reduction

The SFDRR was born out of the HFA as it was noted that the MDGs were not fully attained. The Sendai Framework is a 15-year voluntary, non-binding agreement, which recognizes that the State has the primary role to reduce disaster risk, but that responsibility should be shared with other stakeholders including local government, the private sector, and other stakeholders. It aims for the substantial reduction of disaster risk and losses in lives, livelihoods and health and the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. It is the outcome of stakeholder consultations initiated in March 2012 and inter-governmental negotiations held from July 2014 to March 2015, which were supported by the United Nations International Strategy for Disaster Reduction (UNISDR) upon the request of the UN General Assembly. The Sendai Framework for Disaster Risk Reduction charts the global course over the next fifteen (15) years. During the consultations and negotiations that led to its finalisation, strong calls were made to develop practical guidance to support implementation, ensure engagement and ownership of action by all stakeholders and strengthen accountability in disaster risk reduction.

Priority 1: Understanding disaster risk

Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.

Priority 2: Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery and rehabilitation. It fosters collaboration and partnership.

Priority 3: Investing in disaster risk reduction for resilience

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health, and cultural resilience of persons, communities, countries, and their assets, as well as the environment.

Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction

The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better, including integrating

disaster risk reduction into development measures. Informal settlements offer poor people an important foothold into towns and cities, i.e. a place where they can live relatively cheaply and access economic and/or social opportunities. While they want to have better living conditions for themselves and their families, there are very few, if any, viable alternatives.

The goal is to ensure that poor people will have a better and secure place of residence by 2030: in livable neighbourhoods that offer basic conditions that allow people to inhabit the settlement with dignity and security. Furthermore, integrated neighbourhoods offer a wide variety of public services to people from different social, cultural, and economic backgrounds, who see themselves and their neighbours as part of the same neighbourhood. Vibrant neighbourhoods have a thriving socio-economic environment, underpinned by good quality urban infrastructure, public space, and services; the neighbourhoods are resilient and can withstand natural shocks and stresses, such as flooding and climate change.

According to High Level Political Forum (2018:11) inadequate housing impacts negatively on urban equity and inclusion, urban safety and livelihood opportunities, and causes negative health conditions. Petrovic, Bosnjak and Nedeljkovic (2017:31) affirms that sustainable development goal 11, Target 11.1 indicates that by 2030 all people must have access to adequate, safe and affordable and basic services and upgrades in slums. The City of Ekurhuleni is currently planning to re-block most of the informal settlements, hence the study is trying to deduce whether re-blocking works in terms of reducing risk and improving service delivery.

3.2.3 Legislative imperatives on housing in South Africa: A historical progression

Beall and Fox (2009: 76) insist that scholars often consider urbanisation as a positive factor for the economic growth of developing countries. Unfortunately, economic growth and urban poverty may co-exist. The current housing situation in South Africa is strongly influenced by the apartheid era as stated by Marais (2005:1) that apartheid policy divided South Africa into 'white' and 'black'. White South Africa consisted mainly of serviced and

planned urban areas, while black South Africa comprised poorly serviced urban and rural areas. Del Mistro and Hensher (2009:333) confirm that the state-sponsored housing and settlement interventions like hostels for migrant workers, the establishment of dormitory towns, and forced relocations of families to residential areas classified by race form part of long-lasting memories of apartheid policy. This has led to a racial divide, huge socio-economic inequalities, spatial fragmentation, exclusion as well as a lack of housing.

The Group Areas Act No. 41 of 1950 and the Population Registration Act No. 30 of 1950 were two key instruments to achieve complete separation. While under the Population Registration Act No. 30 of 1950 the entire population was classified according to race and ethnicity, the Group Areas Act was used to establish residential segregation in urban areas according to the previously identified racial classes. After the Influx Control Act No. 68 of 1986 was repealed, the apartheid regime established site and service areas to accommodate the surging numbers of black people migrating to cities in the 1980s and early 1990s (Del Mistro and Hensher, 2009:334). Ongoing debates on urban informality in the past decades have been matched by an equivalent development of various policies and strategies to address it. However, Fiori and Brandao, (2010: 89) argue that, despite these considerably innovative policy approaches, there has been a failure to curb this problem with the number of informal settlements and people living in them increasing.

3.2.4 The Constitution of the Republic of South Africa (Act No 108 of 1996)

The right to housing is enshrined in the Constitution as the right of access to adequate housing' thus, guaranteeing the right to 'adequate shelter' for all citizens within available state resources. Section 26 of the Constitution (1996), provides that "everyone has the right to have access to adequate housing. The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right; and, no one may be evicted from their home, or have their home demolished, without an order of court made after considering all of the relevant circumstances; no legislation may permit arbitrary evictions". Moreover, section 26 makes provision for housing and section 24 of the constitution sanctions the right to live in a suitable environment free of harm to health or well-being. The environment must be protected for

the benefit of both the current and the future generations through the appropriate application of rules to prevent pollution and environmental degradation, promote conservation and maintain ecological sustainability (RSA, 1996). Mubangizi (2005:76) declares that it is, therefore, the responsibility of the state to protect and ensure livable environments for all South Africans.

3.2.5 South African Housing Act No 107 of 1997

The White Paper on Housing, 1994, identified the lack of an overall housing strategy and the multiplicity of housing and development legislation as key constraints. The government inherited a diversity of housing and development legislation, which was based on apartheid ideology. This resulted in the lack of an overall focused housing development strategy and resulted in a fragmented, poorly focused, and inequitable housing funding mechanism.

The general aims of the Housing Act were to facilitate a sustainable housing development process in which national, provincial and local governments, the business sector, the citizens and permanent residents of the republic cooperate: progressively realise the right to access adequate housing, as set out in section 26 of the Constitution, 1996.

The key objectives of the Act were to

- Clearly define the roles and functions of the three spheres of government;
- Provide a comprehensive new regulatory framework to enable the effective delivery of housing for poor and disadvantaged households in South Africa;
- Provide for the establishment of a national housing data bank and information system; ensure that provincial and local governments are empowered to administer national housing programmes and provision is made for the financing of such initiatives; make provision for the abolishment of the National Housing Board and replace it with the South African Housing Development Board;
- Oblige the Minister of Housing to phase out the housing subsidies of the previous dispensation within one year of the promulgation of the Act; and

- Make provision for the establishment of a National Housing Code to ensure an official basis for the publication of national housing policy and frameworks determined by the Housing Minister.

In summary, the Housing Act No. 107 of 1997 was an important milestone in moving the country towards a uniform, equitable, and sustainable housing development programme. The Act was a product of extensive consultation, negotiation, and deliberation with many role players in the housing sector including national, and provincial housing departments, national and provincial housing boards, the private sector, civil society, and organized local government. The Housing Act No. 107 of 1997 and the National Housing Code 2009 were intended to give effect to the state's duties enshrined in the Constitution of 1996. The Act aimed to ensure that all apartheid housing legislation was abolished and replaced with a single Housing Act, which reflects the priorities of the current government.

3.2.6 Prevention of Illegal eviction from and Unlawful Occupation of Land Act, No 19 of 1998

The South African Constitution in section 26(3), determines that "no one may be evicted from their home or have their homes demolished without a court order made after considering all the relevant circumstances" and "no legislation may permit arbitrary evictions". Furthermore, section 25(1) of the constitution states that "no one may be deprived of property except in terms of the law of general application, and no law may permit arbitrary deprivation of property". In line with these constitutional requirements, the "Prevention of Illegal Eviction from and Unlawful Occupation of Land Act No. 19 of 1998" was passed by Parliament in 1998. This Act replaces the unconstitutional and highly contentious "Prevention of Illegal Squatting Act 52 of 1951".

The aims of the Act are to:

- Repeal the unconstitutional "Prevention of Illegal Squatting Act, 52 of 1951" and replace it with a statute that is in line with the Constitution;
- Criminalise unlawful evictions; and
- Create a new and fair procedure for the eviction of unlawful occupiers.

In addition, the objectives of the Act are to:

- Prevent anyone from encouraging people to unlawfully occupy land;
- Put a mechanism in place to evict persons who are occupying land unlawfully;
- Put urgent proceedings in place for eviction; and
- Put procedures for mediation in place.

In summary the Prevention of Illegal Eviction from and Unlawful Occupation of Land Act No. 19 of 1998 seeks to strike a balance between the needs of landowners who are faced with illegal land occupations and the poor, homeless, and landless who are often victims of evictions through actions over which they have no control. This Act protects both the landowner and those suffering from illegal evictions.

3.2.7 Housing Consumer Protection Measures Act, No 95 of 1998 amended as Housing Consumers Protection Measures Amendment Act, No 17 of 2007

The National Record of Understanding and the 1994 White Paper on Housing called for the establishment of a central, self-regulatory defects warranty scheme for new houses. To date, the National Home Builders Registration Council (NHBRC), a non-statutory body since June 1995, is fulfilling this role. In the past, few places were available to provide consumers with help in their fight with a builder/contractor. Whilst many contractors/builders are good, service orientated companies, the actions of the bad elements usually give the building industry a poor reputation. In this context, therefore, it was deemed necessary to create legislation, which could give statutory recognition to the NHBRC in its role. For the same reason, there was an urgent need to remove uncertainty regarding the scope of activities of the NHBRC and to prevent the undermining of a key component of the housing delivery programme.

The aim of the **Housing Consumers Protection Measures Amendment Act, No 17 of 2007** is to regulate the activities of people who are involved in the home building industry. The objectives of the Act are to:

- Create a national registration board with the powers to regulate the home building industry effectively;

- Provide consumers with protection by creating a home builders warranty that forms part of every agreement for a newly built home;
- Establish mechanisms to set minimum national quality standards for all home builders, including the subsidy section;
- Enable subsidy housing providers to conclude agreements with the new national regulatory body to monitor the construction quality of registered home builders;
- Create a national fund or more than one such funds to carry out repairs on new homes, on a non-compulsory basis where home builders have failed to honour their warranty obligations to consumers; and
- Make provision for the evolution of consumer protection in the new home building market into a competitive market based on insurance backed warranties.

In summary, the Act has been created to protect buyers of new homes against "*fly-by-night*" builders, who either build unacceptable or poor-quality units or those who refuse to get involved in the rectification of built-in defects in a home. The Act provides for the statutory establishment of a regulatory body known as the NHBRC. The NHBRC was meant to cease operations round about June 1999 with a completely new statutory Council to take over. The new NHBRC establishes offers of home warranties to all aspects of the home building industry.

3.2.8 The Social Housing Act 16 of 2008

The Act seeks to:

- establish and promote a sustainable social housing environment;
- define the functions of national, provincial and local governments in respect of social housing;
- provide for the establishment of the Social Housing Regulatory Authority to regulate all social housing institutions obtaining or having obtained public funds;
- allow for the undertaking of approved projects by other delivery agents with the benefit of public money;
- to give statutory recognition to social housing institutions; and;
- To provide for matters connected therewith.

In conclusion, the legislative context of the City of Ekurhuleni Human Settlement Re-Blocking Programme confirms the legitimacy of the programme through National Upgrading Support Programme (NUSP) and Urban Settlements Development Grant (USDG) as it is a direct transfer from national to local government to supplement the metro resources to fulfill local government functions in terms of the Constitution. The Municipal Finance Management Act governs the use of those resources. The main law governing the implementation of the NUSP and USDG is the annual Division of Revenue Act (DORA), which sets out, inter alia, the strategic goal, grant purpose, outcome statements, outputs, allocation criteria and the respective responsibilities of the national government transferring officer and municipal receiving officers.

Although the Housing Act, 107 of 1997 does not directly govern the use of the USDG, it has definite implications for the design and implementation of the grant. It sets out the respective roles of the three spheres of government, including the role for municipalities in creating a public environment conducive for housing development, including the provision of bulk and internal engineering services. The Housing Act also sets out the process for housing accreditation of metros to improve integration of different built environment components to develop sustainable human settlements for the poor. The USDG is explicitly not a National Housing Programme, but is intended to supplement such programmes, as well as other built environment programmes.

3.2.9 Human settlement policies and programmes

The Urban Settlement Development Grant (USDG) was conceived as both a human settlement and a fiscal intervention. A range of policies human settlement and fiscal policies are relevant to the grant. The defining policy for human settlements since 2004 has been the Comprehensive Plan for Sustainable Human Settlement, or 'Breaking New Ground' (BNG), which set out a more flexible approach to housing interventions, introducing a wide range of housing programmes to enable appropriate and diverse settlement interventions, including the National Upgrading Informal Settlements Programme (NUSP). These programmes are enacted by the legislative requirement in

the Housing Code of 2009. To implement the Housing Code, the Human Settlements Development Grant (HSDG) was instituted in 2010. The HSDG is relevant to the USDG because the spending provisions are intended to be mutually exclusive in terms of components, yet complementary in terms of overall product and outcome. The process of accrediting municipalities to perform housing functions is also captured in the Housing Code. This led to the development of the Accreditation Framework for municipalities to administer National Housing Programmes, which was developed in 2004 and later revised in 2012.

In 2010, the roll out of the Presidency's Outcomes Approach included Outcome 8: Sustainable Human Settlements and Improved Quality of Household Life (Guide to the outcomes approach: 27 May 2010:17), which focused on informal settlement upgrading as a means to address the inability of the current housing approach to fully meet the demand for services and shelter. The timing of Outcome 8 and the introduction of the USDG in the following year is significant; the USDG was a conditional financial allocation intended to provide metros with the means to address the land, bulk and connector infrastructure backlogs to achieve the Outcome 8 targets.

3.3 Fiscal policies informing the establishment of the USDG

The Municipal Infrastructure Grant (MIG) was initiated in 2003 as a conditional grant to fund infrastructure to provide for basic level of services. MIG (Cities) was an evolved version of MIG, allowing greater agency in the application of capital funding by metropolitan municipalities to enable them to manage, support and account for built environment outcomes. MIG (Cities) consolidated the built environment responsibility of cities with associated transfers of funds directly to cities. The intention was to promote integrated capital infrastructure investment in urban areas, with expanded potential for the grant to include or complement a variety of other infrastructure-related investment including housing; public transport and land use management. The USDG replaced the MIG (Cities) grant in metros in 2011.

Given the above, the USDG Grant is the basis upon which the city of Ekurhuleni Human Settlement Re-Blocking programme agenda was conceived and designed. The entire programme relies on this grant and all design and implementation activities thereof to mirror the legitimate aspirations and provisions of the USDG.

3.4 Risk reduction strategies

The cornerstone of successful and effective disaster management is the integration and coordination of all role-players and their activities into a holistic system aimed at disaster risk reduction. Disaster risk reduction in South Africa consists of a variety of cross-cutting facets requiring the participation of a host of sectors and disciplines not only from within the spheres of government (national, provincial, and local). It also requires the involvement of the private sector, the civil society, non-governmental organisations (NGOs), community-based organisations (CBOs), research institutions, and institutions of higher learning, to name but a few. In the context of disaster management, none of these role players can act in isolation. Risk reduction measures are most successful when they involve the direct participation of the people most likely to be exposed to hazards, in the planning, decision-making, and operational activities at all levels of responsibility. Local leaders, drawn from political, social, and economic sections of society need to assume primary responsibility for the protection of their own community. There is however, experience to suggest that the involvement of local residents in the protection of their own resources is possible and can work – if sufficient attention and investment is devoted to the subject (United Nations, 2004:141).

Disaster management in South Africa is established as a public sector function within each sphere of government, but it goes beyond pure line function responsibility. The Disaster Management Act defines disaster management as an activity of all levels of government as an integrated, multi-sectoral, multi-disciplinary approach aimed at reducing the risk associated with hazards and vulnerability. It, therefore, needs to become an integral part of service delivery processes to be successful. For this reason, disaster management plans form an implicit part of the Integrated Development Plan (IDP) of each municipality. In the light of the IDP and service delivery processes within the local

government sphere in South Africa, aiming towards sustainable development within local government, the direct link with disaster management is undeniably of strategic importance. Development planning should therefore be assessed according to its contribution towards disaster risk reduction. The eight identified causal factors of disasters (UNDP,1992:20) are poverty, population growth, rapid urbanisation, transitions in cultural practices, environmental degradation, lack of awareness and information, war and civil strife, and misuse and abuse of modern technology. Some of these causal factors of disasters can be directly linked to the up spring of informal settlements.

Rapid urbanisation and inadequate capability to cope with the housing needs of people in urban areas has contributed to the development of informal settlements. Living in these settlements often poses significant risks (health and otherwise). Sanitation, food storage facilities, and drinking water quality are often poor, with the result that inhabitants are exposed to a wide range of pathogens and houses may act as breeding grounds for insect vectors and other hazards such as floods, fires, and dolomite. Access to health and other services may be limited; overcrowding can contribute to stress, violence, and increased drug problems and other social problems. Together, these pose special risks to children both during the prenatal period and after birth. This indicator provides a general measure of these risks.

Severe problems exist both in defining 'informal settlements' and in obtaining reliable data on the number of people who live within them. The definition of informal settlements is context specific. Various definitions have been proposed, but the one suggested by the UN-Habitat Programme is probably the most widely applicable. This defines informal settlements as:

- Residential areas where a group of housing units have been constructed on land to which the occupants have no legal claim, or which they occupy illegally;
- Unplanned settlements and areas where housing does not comply with current planning and building regulations (unauthorized housing).

Problems occur in measuring the extent of defining the boundaries of such settlements. By definition, officially recognized boundaries to these settlements rarely exist, and the settlements themselves often merge almost imperceptibly into formal areas of housing, industrial or rural areas. Similar difficulties occur in obtaining data on the numbers of people who live within these settlements. They are often not covered by formal censuses, and many of the people living in the settlements may not be registered or officially recognized. Most population data are therefore estimates and as such are subject to considerable uncertainties.

Highlighted below are some characteristics of informal settlements:

- **Illegality and informality** – the residents of informal settlements live in a state of legal-social insecurity as these settlements lack legal recognition due to unlawful occupation, unauthorised use of land and/or the illegal construction of houses upon land. Primarily because of their illegal status, most informal settlements are characterised by the absence of formal planning and incremental, unplanned growth.
- **Poverty and vulnerability** – since inhabitants of these settlements are mostly poor with basic educational qualifications; they are typically dislocated from the formal labour market. The inhabitants are also vulnerable to high-risk diseases and possible loss of lives due to their poor living circumstances; and
- **Social stress and crime** - the informality of settlements, including high densities, the absence of demarcated roads, poor lighting and under-developed public open space, provides an ideal space for criminal activities. Poverty in these settlements provides fertile ground for social stress, which can manifest itself in high levels of inter-personal crime including domestic violence, child abuse and various social pathologies.

Unfortunately, the current policy and legislation does not provide adequate guidance to municipalities in terms of service delivery for risk reduction. The need to consolidate all risk reduction strategies and service delivery in the disaster management fraternity is therefore imperative. Although this would be the ideal situation, it is not realistic to assume that will be an easy and straightforward approach. In the interim, it would make more

sense to ensure that at least the major components of disaster risk are in a way linked to service delivery.

Service Delivery is about delivering the best services to the customer (public/community). All the Municipalities in South Africa have adopted the Batho Pele Principles, which are aimed at delivering the best service to the customer (the public/the community). It involves determining community needs and providing the best services to meet these needs. For this study, the needs of inhabitants in informal settlements will be dealt with using Risk Reduction Strategies in combination with the below-mentioned principle of Batho Pele. The CoE embraced the Batho Pele Principles in its mission (to provide sustainable and people-centred developmental services that are affordable, appropriate, and of high quality). The Batho Pele (People First) Principles are about delivering the best service to the customer (the public/the community). It involves determining the communities' needs and providing the best services to meet these needs (Batho Pele Principles adopted by the EMM: 2001).

The Batho Pele Framework consists of eight service delivery principles:

- Consultation: Citizens or the community should be consulted about service levels and quality and, as far as possible, given a choice about the services offered.
- Service Standards: Citizens/the community must be informed about the level and quality of services they can expect.
- Access: Citizens/the community should have equal access to the services they are entitled to.
- Courtesy: Citizens should be treated with courtesy and consideration.
- Information: Citizens must receive full and accurate information about their services.
- Openness and Transparency: Citizens/the community should be informed about the key aspects of service delivery that affect them, e.g. budget decisions and service plans.
- Redress: Citizens/the community are entitled to an apology, explanation, and remedial action if the promised standard of service is not delivered.

- Value for money: Public services should be provided economically and efficiently.

Improving the living conditions of poor people is fast becoming the new benchmark by which the advancement of the world is measured. It is measured whether, with the improved conditions of the downtrodden and the vulnerable, the world is advancing either towards peace and security or towards conflict and insecurity, mainly due to the risks that the communities are exposed to. Understandably, when disaster risks are on the increase, service delivery takes the strain as depleted resources are a major concern in most municipalities around the country. Linton (1995:20) proposed five goals to improve the quality of service as a means of building long-term customer satisfaction:

- Expand levels of customer satisfaction.
- Ensure that individuals' outlets can deliver a consistent standard of service that means and even exceeds customer expectation.
- Raise awareness of the significance of customer care and expectations among all staff.
- Ensure that customer focus is built into all training activities and business processes.
- Ensure that customer care activities are tangible and measurable.

The above principle together with Risk Reduction will form part of answering the objectives of this study. In disaster management, disaster risk mitigation cannot be monitored without taking into consideration prevention measures. In other words, disaster risk mitigation and prevention form part of disaster risk reduction (DRR). Disaster Risk Reduction measures or strategies include, first and foremost, vulnerability and risk assessments, as well as several institutional capacities and operational abilities. According to the Disaster Management Act, Act 57 of 2002, Section 42(1) each metropolitan and each district municipality must establish and implement a framework for disaster management in the municipality aimed at ensuring an integrated and uniform approach to disaster management in its area by –

- (a) the municipality and statutory functionaries of the municipality, including, in the case of a district municipality, the local municipalities and statutory functionaries of the municipalities in its area;
 - (b) all municipal entities operating in its area;
 - (c) all non-governmental institutions involved in disaster management in its area; and
 - (d) the private sector:
- (2) A district municipality must establish its disaster management framework after consultation with the local municipalities in its area.
- (3) A municipal disaster management framework must be consistent with the provisions of this Act, the national disaster management framework, and the disaster management framework of the province concerned.

These needs include Disaster Risk Reduction measures. Section 44(1)(b) states that a Municipal Disaster Management Centre must promote an integrated and coordinated approach to Disaster Management in the municipal area, with special emphasis on prevention and mitigation. According to sections 47 and 48 of the Disaster Management Act, Act 57 of 2002, the Disaster Management Centre, in the City must give guidance to the municipality to assess and prevent or reduce the risk of disasters, including

- (a) Ways and means of-
 - (i) determining levels of risk;
 - (ii) assessing the vulnerability of communities and households to disasters that may occur;
 - (iii) increasing the capacity of communities and households to minimise the risk and impact of disasters that may occur; and
 - (iv) monitoring the likelihood of, and the state of alertness for disasters that may occur;
- (b) the development and implementation of appropriate prevention and mitigation methodologies;
- (c) the integration of prevention and mitigation methodologies with development plans, programmes and initiatives; and
- (d) The management of high-risk developments.

The important part of the Act is section 48, which requires the Disaster Management Centre to monitor the implementation of disaster risk reduction. Section 48: Monitoring, measuring performance and evaluating disaster management plans and prevention, mitigation and response initiatives — (1) A municipal disaster management centre must—
(a) monitor—

- (i) progress with preparation and regular updates in terms of sections 52 and 53 of disaster management plans and strategies by municipal organs of state involved in disaster management in the municipal area;
- (ii) formal and informal prevention, mitigation, and response initiatives by municipal organs of state, the private sector, non-governmental organisations and communities in the municipal area, including the integration of these initiatives with development plans; and
- (iii) Compliance in the municipal area with key performance indicators envisaged by section 7 (2) (m); and

(b) From time to time, measure performance and evaluate such progress and initiatives
To determine and implement risk reduction measures, community (informal settlements) needs are important and according to Carter (1990:331) community members need to know the following facts:

- What disaster will do
- The best immediate action to take – personally and by families and other kin groups
- How to help other members of the community
- What the government has planned to do to assist the community
- How to participate effectively in the warning and disaster process
- How to improvise shelter and subsistence until assistance is available.

The Framework for Disaster Risk Reduction applicable to informal settlements must form an integral part of the Framework for Disaster Management for the CoE and should include the following:

- Risk assessments required for the adoption of adequate and successful disaster reduction policies and measures.

- Disaster prevention and preparedness to reduce the need for disaster relief.
- Disaster prevention and preparedness to be integral aspects of development policy and planning at all tiers of government.
- The development and strengthening of capacities to prevent, reduce and mitigate disasters.
- Early warnings of impending disasters and their effective dissemination.
- Preventative measures involving all levels from the local community through the national government to regional level.
- Vulnerability to be reduced by the application of proper design and patterns of development focused on target groups by appropriate education and training of the whole community.
- Environmental protection as a component of sustainable development consistent with poverty alleviation is imperative in the prevention and mitigation of natural disasters.

According to the report, *Living with Risk: A Global Review of Disaster Reduction Initiatives* (2002: 133), informal settlements, where mostly the urban poor reside, tend to be located in hotspots of natural hazards such as floods and fires. The devastating impacts of these natural hazards on such settlements can be attributed to the high levels of physical, economic, social and environmental vulnerability in conjunction with an inadequate and poor level of disaster preparedness. Risk is seen as a function of disaster hazard, vulnerability and exposure (Wolfgang, 2002:88).

According to Bai, Dawson, Ürge-Vorsatz, Delgado, Barau, Dhakal, Dodman, Leonardsen, Masson-Delmotte, Roberts (2018: 23-25) half of the world's population lives in cities, and by 2050, the global level of urbanisation is predicted to rise to 70%. The speed of urbanisation results in extreme challenges for the sustainability and prosperity of cities (United Nations Development Programme, 2018). The urban poor is not only characterised by low-income levels, but by poor quality and overcrowded housing, lack of secure tenure, insufficient access to safe water supplies and sanitation, drainage, and solid waste collection, as well as healthcare, emergency services and policing. They are commonly located in environmentally vulnerable areas, and are most at risk from the

effects of climate change. Because of urban poverty, rapid urbanisation, the decompression of existing poor and crowded urban settlements and the inability of the state or the market to provide affordable housing for the urban poor, worldwide, over 1 billion people reside in informal settlements.

The high level of the dichotomy between the conceptual framing of informal settlements, urban poor and urban resources confounds the ability to define the relationships between these concepts unambiguously. The understanding taken in this study is that the urban poor reside in informal settlements and are usually located on the fringe of urban cities. Risk assessment, mitigation, and evaluation are the three major embodiments of hazard risk management (Usamah, Muhibuddin, Handmer, Mitchell, and Ahmed; 2014: 180). Risk assessments provide a strong basis to commence the process of reducing the negative consequences posed by natural hazards and involve hazard identification and associated risk impacts (Abunyewaha, Gajendrana, and Maunda, 2017:239). The negative effects posed by hazards require prioritisation, implementation and maintenance of appropriate hazard risk-reducing measures recommended from the risk assessment process (Abunyewaha et al., 2017:239). The recommended actions to mitigate the risk from the assessment are then evaluated to ascertain its effectiveness after implementation (Abunyewaha,et al., 2017:239).

Rapid unplanned development in urban areas prone to hazards has concentrated high numbers of vulnerable people in dangerous places since the 1970s (Amnesty international, Haiti: Facts and figures document, 9 January 2014). The urban population in developing countries has increased by 326 percent, compared with 187 percent globally, and an overall population rise of 96 percent (Asian Development Bank, UNDP, and World Bank, India Post-Tsunami Recovery Programme: Preliminary Damage and Need Assessment, ADB, New Delhi, 2005). The urban population in South Asia and Sub-Saharan Africa, the world's two poorest regions, is expected to double over the next two decades (Asian Development Bank, Economic Challenges of Post-Tsunami Reconstruction, discussion paper no. 75, ADB, Manila, 2007). In essence, rapid urbanisation is taking place in countries least able to engage in urban planning and

provide adequate and affordable housing for the poor, and without the ability to limit the risk of displacement caused by disasters.

3.5 Re-blocking best practices

Mouton (2001:154) argues that comparative studies focus on the similarities and (especially) differences between groups of units of analysis. Such 'objects' can include individual organisations, cultures, countries, societies, institutions, and individuals. Scholars can also use this method to compare different theoretical viewpoints (Mouton, 2001:154). A comparative study would increase the validity of the findings. In this study, four areas are identified for comparative study as they have gone through the process of re-blocking informal settlement or slum upgrading.

Informal settlements are complex in terms of their make-up and the particular set of social relationships that operate within them; they are not homogenous (Smit, 2006a and Misselhorn, 2008). Improving the living conditions of informal settlement dwellers is a pressing concern for international agencies like the World Bank, UN-Habitat, the WHO, and national governments alike. According to WHO (2015), living in slums is a major cause of ill health, with health defined as “a state of complete physical, mental and social well-being” (Sheuya, 2008:298). To understand re-blocking worldwide, case studies were reviewed to compare the impact of re-blocking to come up with recommendations based on the case studies. The researcher could not find research internationally that addressed re-blocking, but the closest research found was on slum upgrading which aims to improve the living conditions of people living in slums or informal settlements. South Africa introduced re-blocking in Western Cape (Cape Town being the first pilot) and Gauteng has followed suit in the City of Ekurhuleni. The sampled countries are India, Kenya, Brazil and South Africa (Cape Town). In this case, a slum is an overcrowded urban area inhabited by very poor people.

3.5.1 Slum upgrading in Kenya

Kenya is a signatory to several declarations and treaties that recognise the right to adequate housing of which; it cannot be attained without addressing the issue of slums.

According to The National Slum Upgrading and Prevention Policy (May 2013), a slum or informal settlement is defined as a heavily populated urban area characterised by substandard housing and squalor. The UN-Habitat (2015) 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”*.

UN-Habitat (2015) estimated that the worldwide number of slum dwellers stood at 830 million and is on course to reach 900 million by 2020. In Kenya, it is estimated that over 60% of people in urban areas live in slums. The buildings found there vary from the simplest shack to permanent and sometimes surprisingly well-maintained structures. However, what most slums share in common is a lack of clean water, electricity, sanitation, and other basic services. Major characteristics of slums include inadequate access to safe water; sanitation and other infrastructure; poor structural quality of housing; overcrowding; and insecure residential status. The government of Kenya decided to develop a comprehensive Slum Upgrading and Prevention Policy (NSUPP) aimed at systematically addressing the issue of the slums. The NSUPP is undertaken within many policy and legal frameworks. These include the National Housing Policy 2004, the National Land Policy 2009, the Constitution of Kenya 2010, the Draft National Urban Development Policy (NUDP) and Kenyan Vision 2030. The documents explicitly provide for the need to have a slum upgrading policy.

Kibera, located in the centre of Kenya's capital Nairobi, is one of the largest informal settlements in Africa. Population estimates for the large 225-hectare settlement, adjacent to the Ngong River, vary between 200,000 and 700,000, while around 235,000 to 270,000 seems to be the most realistic estimate (UN-Habitat, 2003: 53, and Lüthi, 2016: 25). Kibera residents face many challenges including unemployment, poverty, insufficient water, and sanitation infrastructure, poor housing, and high rates of crime and insecurity. Kibera was a hotspot of the post-election violence in late 2007 and early 2008. Most

Kibera residents are also subject to significant localised flooding due to poor drainage and solid waste management, as well as river flooding in areas adjacent to the Ngong River and its major tributaries. Joe, Harper, Kipkemboi, Ngobi and Collins (2016:10) mentioned that global climate change is likely to aggravate flood risk in Kibera as the intensity of extreme rainfall events in East Africa is projected to increase, combined with the effect of increased urbanisation in the settlement and upstream.

Similar to the South African Constitution, the Constitution of Kenya 2010 under Article 43 guarantees the right to accessible and adequate housing. Article 21 requires the Government to take appropriate policy and legislative measures including the setting of standards to ensure that the right is achieved. The National Land Policy No.3 of 2009 is also quite explicit on the need for a slum upgrading policy. According to UN-Habitat (2014), major development efforts to improve the living conditions in Kibera included: the Kenya Slum Upgrading Programme (KENSUP), Kibera Pilot, the Nairobi Railway Relocation Action Plan (hereafter Railway Project), and the National Youth Service (NYS)-led Kibera Slum Upgrade Initiative.

These three interventions reflect different approaches to slum upgrading. KENSUP and the Railway Project have introduced multi-story housing to the largely single-story settlement, with the temporary relocation of residents. NYS is a multi-sectoral initiative, targeting the involvement of youth in road widening and paving, water and sewerage, solid waste management and income-generating opportunities. Despite the magnitude of these efforts in Kibera, limited analysis has been carried out regarding the extent to which slum-upgrading efforts can address fundamental risks and the implications for broader resilience building.

According to Mitra, Mulligan, Schilling, Harper, Vivekananda and Krause (2017:30) findings show that slum-upgrading interventions have the potential to reduce conflict and flood risks in highly dense and complex urban environments if they do three things. First, they need to include processes that build the social contract, such as meaningful consultation of residents and social accountability mechanisms like channels to air and

resolve grievances. Second, they need to actively build bridging social capital between ethnic groups and not reduce bonding capital within groups. Third, projects that are multi-sectoral by design have a higher potential for impact and effectiveness. Mitra et al., 2017: 33, concluded that slum-upgrading projects, and by extension development projects, can become a tool for strengthening resilience to risks such as flooding, conflict, and security through building trust – both horizontal, between communities and vertical, between communities and governance providers. Mitra et al., 2017: 40 further stated that development interventions adopting an integrated, multi-sector, consultative approach have stronger potential to increase resilience in multi-risk environments compared to single-sector projects.

3.5.2 Slum upgrading in India

The country has experienced a clear rural-to-urban migration trend, which has contributed to the growth of Delhi from a population of approximately 6 million in 1981 to about 17 million in 2011 (Balachandran, Edouard, Lo, Castaneda, Menold, Shrestha, Snider, Marin and Yalouris; 2018:70). According to the 2011 Census, almost a third of all migrants living in Delhi moved to the city because of employment opportunities, while over 50% moved because of marriage or family reasons. Most migrants (62%) had been in Delhi for at least 10 years, though 20% had been in Delhi for less than four years, which points to population growth that results from internal migration. The pattern of urbanisation is further complicated by the fact that many economic migrants will become homeless because of economic shocks to wages or employment (Balachandran et al., 2018:78).

In the face of the additional demand for housing caused by increased migration and population, the supply of housing and buildable land has not kept pace (Balachandran et al., 2018:85). As a result, Delhi, like many urban centres within India and across the globe, has been faced with two key issues related to housing for the urban poor: the development of informal settlements or slums, as well as a growing homeless population living on the city streets (Balachandran et al., 2018:89). According to United Nations Population Fund (2007:35), for the first time in history, more than half the world's population will live in cities; concentrated on less than 3% of its land area. The huge rise

in numbers of urban dwellers has contributed to the growth of slums; characterised by hyper-congested, sub-standard housing, a lack of safe water and sanitation, low incomes, and physical and legal insecurity. Slums make up 30-70% of urban populations. Slum settlements are not an exception within any city in Africa and South Asia, as slum dwellers constitute the majority of the urban population. In 2005, the estimate of the global slum population was one billion and increasing by 25 million each year. These slums are life threatening, denying even basic human dignity and spreading fast. Daily life in the worst slums ought to be considered a humanitarian emergency and be responded to urgently, as urban populations face both familiar and new city-specific threats from natural and manmade causes. In this sense, the urban poor is living through tomorrow's crises today' (OCHA/IRIN and UN-Habitat, 2007:50).

According to UN-Habitat (2014: 146), the Slum Networking Project (SNP) started in 1995. The main objective of SNP is to integrate slum dwellers into the mainstream society through the provision of basic, physical infrastructure that is connected to city networks and to improve their socio-economic conditions. It further alluded that it aims to cover all slums in the city. The new infrastructure provided in individual slums is linked to that of other slums and to the existing city systems to bring about significant improvements to the city as a whole. SNP is open to all slums in the city under two conditions:

- all households in the slum must agree to contribute to the cost of making individual water supply, sewerage and drainage connections as well as a small contribution towards maintenance expenses and
- The community must form an association.

According to the UN-Habitat (2014: 148), the project has improved the health and well-being of beneficiary households. For example, communal water supply and sanitation have become individual, underground drainage has reduced flooding, solid waste management systems have reduced public health risks and over 80% of households now spend less on health care. Incomes have increased by almost 60% for families while over 30% have made significant improvements to their houses. Slum-dwellers participated more in the formal financial system after SEWA Bank assisted them to use to saving and

using banking services. Furthermore, it mentioned that many of the Neighbourhood Associations that were formed have continued their work and some have developed livelihood activities such as solid waste management. A separate cell was set up within the Ahmedabad Municipal Corporation (AMC) to manage the SNP. The SNP includes an intensive training programme for project staff, community members and NGOs. Neighbourhood Associations and the AMC have entered operations and partnership agreements to maintain the services provided. Some slum communities carry out solid waste collection, road and drain cleaning. Other important factors in favour of the sustainability of the project are:

- The project is not dependent on external aid financing; all funding is local;
- Maintenance and sustainability costs can in principle be met by the current partners;
- The project, although innovative, has been institutionally grounded in existing structures. It falls within the work programme and budget of the AMC. NGOs and neighbourhood associations also contribute.

The SNP started as a pilot project in a slum community of 181 households. When the model of partnership between AMC, community, private sector and NGOs had been tested, it was extended to other slums in the city. In its first ten years, the programme benefited some 10,000 households (approximately 50, 000 people) in 45 slums. In the case of India, both hazards have been reduced and basic services are provided for through the community itself.

3.5.3 Upgrading slums in Brazil

The municipality of Rio de Janeiro is the center of Brazil's second-largest metropolitan region. Like most Brazilian metropolises, the municipality is subject to the consequences of the phenomena of 'peripherisation' and informal urban expansion. As a result of demographic pressure, aggravated by growing urban poverty and the absence of suitable alternatives for settlements and housing poor families, the city has a long history of illegal occupations of public and private land and thus the multiplication and expansion of informal settlements (IBAM, 2002a: 13).

Most of Rio's slums are on steep hillsides and subject to falling stones or rocks, and/or landslides. The others are in flood-prone areas. According to recent data, more than one million people are living in slums in Rio. The Favela-Bairro programme was conceived as an urban policy intervention rather than just a public initiative to help solve the slum problem in the city of Rio de Janeiro. In this respect, it featured two basic principles: a) upgrading as the main public policy for slums; b) housing as an urban issue, and so situated in a broader context.

The Favela-Bairro programme is an integral part of a larger programme known as PROAP-RIO, which involves the upgrading of slums and informal and irregular subdivisions. Initially, public policies sought to eradicate slums and relocate residents to housing projects on the outskirts of the city, and this is still the approach in many areas (Silva, 1994:55). This policy proved ineffective over time as relocated residents often left their new homes and moved back to new slums. Moreover, slum areas have grown considerably, so generalised re-housing was no longer feasible. The Favela Bairro programme began in 1995 and covered 55 squatter settlements and eight irregular subdivisions in four years.

The second phase began in 2000 intending to upgrade another 52 squatter settlements with approximately 25,000 residents and an additional 23,000 residents of irregular subdivisions. The municipality established inter-sectoral coordination in the form of a technical committee to approve and monitor projects; and a coordination committee for the various secretariats involved. Both were under the authority of the Mayor. The selection process for squatter settlements and irregular subdivisions used a rating system based on poverty indicators and the cost efficiency of the investment. An additional criterion was whether operations in squatter settlements in the same geographic area could be combined to enhance the urban impact of the programme (UN-Habitat, 2014: 139). Discussions were held with communities to select infrastructure and other projects (e.g. water supply, sewerage, street systems, storm drainage, public lighting, parks, and recreational facilities, social services and employment-generating components). The

programme also included community development, hygiene, and environmental education and support for land titling.

The second phase included some significant modifications to the first. Surveys of slum residents showed that more diversified social services were wanted, so support services for vulnerable groups (children not in school, single mothers and the elderly, among others) were introduced, plus income generation activities and support for occupational training. Community consultation and participation were considered critical to ensuring programme sustainability. One of the key factors to Favela Bairro's success is that it is fully financed and executed by the municipality. This simplifies execution, as there are a small number of decision-making authorities. To resettle the few families who had to be relocated out of risk areas, the programme generally included the construction of flats in the same area or near the beneficiary settlement.

The programme utilised a unique mechanism of security of tenure: the concession of the right to use but not full ownership of land. Municipal planning authorities declared those favelas undergoing improvements as Special Social Interest Areas with their special planning processes and building codes and the usual regulations were suspended. This was the process for favelas built on publicly owned land. For those on private land, the municipal government assisted in claims where the land had been occupied for at least five years. This kept the land in the public domain and prevented displacement and marketisation of land. Communities were involved in project preparation through workshops, door-to-door visits from community leaders, assemblies and events where they debated and approved settlement development projects. An example of participation was solid waste disposal and community reforestation services being contracted out to community members through the neighbourhood association.

These methods created great popular support and assured the programme's continuity through several different municipal administrations. In Phase 2 of the programme, the municipality decentralised their offices to poor neighbourhoods to offer technical assistance on land tenure regularisation, house construction, maintenance of

infrastructure services, environmental upgrading and community supervision of service providers. These offices were part of the operations and maintenance structure and allowed for continued relationships between the municipality and the community after the programme ended.

The current approach is to upgrade slum areas, with attempts to keep the community in the same location by building infrastructure and seeking to regularise property titles. The risks involved will determine whether the community stays on the same site or not, relocation may be required when sites are near waste landfills, under overpasses, or are endangered by mudslides or frequent floods in riverside areas (Abiko, 1995:90). Both mitigations of hazards and service delivery were carried out in the slum areas/ informal settlements.

3.5.4 Re-blocking in South Africa (Cape Town)

Handler and Fieuw (2018:26) affirm that the growth of informal settlements and so-called backyard shacks (informal dwellings) has proliferated in the post-apartheid era and remains a consistent feature of towns and cities across the country. In 2004, informal settlement upgrading emerged as a policy priority for the South African government, however, the application and implementation of available funding instruments related to upgrading, has been poor. According to the Community Construction Resource Centre (CORC) Annual Report (2014:25), the number of informal settlements has risen from 300 to 2600 in Cape Town alone since 1994.

Heyer (2015:31) states that Cape Town so far has experienced re-blocking projects, a practice of in-situ settlement upgrading. It initially used four informal settlements as a pilot project for re-blocking. Re-blocking, in short, involves a re-arrangement of shacks to create public space and access roads in the settlement, which led to space for fire security, water, and sanitation, and drainage systems (Hennings, Mollard, Moreschi, Sawatzki and Young, 2012:3). Re-blocking is a community-driven process to reconfigure and reposition shelters that are densely located within an informal settlement according to a plan prepared and agreed upon in the community. Heyer (2015:39) declares that re-

blocking is a “mobilisation tool” for communities to become organized, engaged and educated about their living situation and their opportunities to change. Furthermore, it is the implementation of a design in which the shacks of an informal settlement can be arranged in such a way that there is space for basic services such as water and sanitation. Heyer (2015:71) confirms that re-blocking in the Cape Town area is following these guidelines, communities are involved in all planning processes and create their layout as rather than a top-down master plan, even though the bottom-up process is challenged by the altered role of planners and struggles to mobilize communities in reality.

The following are factors influencing the formation of informal settlements:

- Rural to urban migration or urbanisation, the HSRC Report, June 2017 confirms that following the repeal of oppressive pass-laws in the late 1980s, urbanisation escalated, and by 1994 an estimated 150,000 new informal dwellings were constructed each year.
- Natural growth and smaller households, Handler and Fieuw (2018:30) indicated that a key change between 2001 and 2011 was the increased growth of smaller, one-person households. In an informal settlement, this also indicated the natural growth of shacks as teenagers and young adults leave their parents’ dwellings to establish their own homes.
- Urbanisation of poverty, according to Handler and Fieuw (2018:30), the migration of poor and unemployed people from rural to urban areas drives the formation of informal settlements.
- Poor planning and urban management municipalities are ill-equipped at anticipating and responding to rural-urban migration, the demand for serviced land, and the growth of informal settlements.
- Exclusionary housing markets due to housing market failure to offer more affordable rental and ownership options resulting in low-income families being unable to find formal accommodation.

According to Hennings et.al (2012:3), Mtshini Wam informal settlements in Cape Town experienced advantages and disadvantages during the re-blocking process. They

observed clear benefits concerning fire safety, establishing roads, reducing grey water hazards, creating jobs, and inspiring a sense of pride within the community. Other benefits included new fire-resistant metal structures, coupled with the creation of space between rows of shacks, greatly reducing the risk of fire; the spaces were specifically designed to allow the passage of large emergency vehicles. Hennings et.al (2012:3) further stated that the community's soil compacting efforts and introduction of grading to the settlement appeared to reduce the amount of standing water after rainstorms. When the authorities arrived at the Informal Settlement, there were large pools of grey water in the non-re-blocked clusters that children would play in, while the pools made walking through the settlement a challenge.

Hennings et al (2012:4) further mentioned that during the demolition of old shacks, grey water could be seen pooled underneath residents' shacks, often with rats present as well. The compacted platforms created for re-blocked shacks to stand upon prevent this pooling and have reportedly kept rats from burrowing under community shacks. Living conditions were greatly improved in re-blocked clusters and shacks, which were noticeably less damp. Community members feel healthier since this change in their living conditions as there was a shortage of services present with only three taps and 16 chemical toilets servicing 497 people. At that time only one tap consistently worked and chemical toilets were cleaned infrequently and due to the sheer volume of people using them, they were unpleasant to use and a health hazard. That previous arrangement of the original shacks made installing personal taps and flushing toilets nearly impossible. However, the order that re-blocking introduces to the settlements eased some of the difficulties in service provision. Therefore, there was a clear case of improved service delivery and mitigation of hazards affecting the community in Mtshini Wam.

According to Hennings et. al. (2012:6), there was a partnership with the community workers during all stages of re-blocking and as a result, the community felt a sense of pride and ownership for what they have created, unifying the community, giving job opportunities to those who otherwise may not have one and creating a sustainable

change. As one community leader stated, “we are not just building homes, we are building people.”

3.5.5 Re-blocking in South Africa Gauteng: City of Ekurhuleni

The City of Ekurhuleni currently has 119 informal settlements (with 164 699 households) which are characterised by lack of formal tenure, insufficient public spaces and facilities, inadequate basic services, and poor access-way. The city has identified re-blocking as an interim approach to improve informal settlements communities pending formal intervention processes. The layout and the density of these settlements make it very difficult for the city to respond effectively to fires or any other emergencies. The city recognized the need for new ways of delivering services in informal settlements and the re-blocking programme was implemented. Such new approaches are aimed at building community capacity through participatory planning, design and implementation of services. Informal settlements are characterised by different shapes and sizes, ranging from smaller inner-city settlements located in residential neighbourhoods, to large sprawling settlements on the periphery of cities. Different approaches are needed to effectively transform these settlements into more dignified living spaces and working with communities is paramount to success in upgrading initiatives.

The re-blocking programme is an intervention process of determining alternative ways of thinking through the quality of place, safety and security through improved settlement layouts and better-located services. While acknowledging that the programme is temporary in nature, it has however provided the residents with a dignified glimpse of hope and relief until such time that the City of Ekurhuleni can provide a permanent solution toward the promised sustainable human settlements to the affected communities. The programme is aimed at providing immediate relief by ensuring informal settlements are structured, safe, serviceable, habitable, dignified, and providing the community with a sense of place. The re-blocking programme affords the communities with the following benefits:

- An integrated urban structure.
- A safer integrated public realm.
- Emergency and services vehicular access.

- Safe and convenient paths for the movement of people on foot.
- Open space, where possible, for essential community facilities.
- Improved access to basic municipal services (water, sanitation, electrification, waste collection).
- Improved citizen and municipal partnership for service delivery and payment for services.

The study seeks to view how re-blocking has improved service delivery whilst mitigating hazards that affect the informal settlement under study.

3.6 Conclusion

This chapter discussed the legislative arrangements pertaining to disaster risk reduction and informal settlements upgrades, the best practice cases of informal settlement upgrades from various parts of the world, including re-blocking in South Africa and in City of Ekurhuleni. Documents and legislative framework in the area of human settlements or informal settlements as well as comparative analysis on countries that implemented re-blocking as a means to improve access, safety and clean environment in the informal settlement were reviewed. It is clear from the information reviewed above, that the issue of informal settlement is an old age problem that affects both the developed and the developing countries. The next chapter discusses the research design and methodology applied in the study.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

The purpose of this chapter is to discuss the research design used and methodology followed in the research. According to Leedy and Ormrod (2013:74) research design and research methodology focus on the research process, the tools and procedures to use in conducting a study. Quinlan (2011:175) affirms that research design and methodology explain sampling framework, the instruments used to collect data, and lastly how the data was analysed. Carter and Little (2007:1317) describe research methodology as an approach that justifies methods, which produce data and analyses it, and methods that produce knowledge, in simple terms, it outlines the collection of data and sampling tools.

According to Myers (2009), there are two approaches in scientific research, namely qualitative and quantitative approaches. Morse (2003:191) asserts that in conducting the study, the researcher may opt to employ a mixed-research method which entails, *“strategies derived from qualitative and quantitative methods used within a single project”*. Morse (2003:191) further writes that it is through qualitative research that the researcher can understand people and the social and cultural contexts within which they live. At one level, qualitative and quantitative refers to distinctions about the nature of knowledge, how one understands the world, and the ultimate purpose of the research. On another level of discourse, the terms refer to research methods, that is, how data is collected and analysed, and the type of generalisations and representations derived from the data. In this research, both quantitative and qualitative methods have been used.

This chapter discusses the research design and methodology used in this study to collect reliable data through research questionnaires, and focus group discussion as the primary source of data and document review as the secondary source of data. This study is underpinned by risk reduction and improved service delivery through re-blocking informal settlements, du Plessis and Landman (2002:38).

4.2 Research design

Research designs are an overall action plan or a blueprint of how the researcher intends to conduct the research, which talks to the collection of data intending to respond to the research question, measurement, and analysis of data (Domegan and Fleming, 2007:66; Babbie and Mouton, 2011:74). A research design presents a structured framework that explains how the research process will be conducted to address the research objectives. Welman, Kruger, and Mitchell (2011:188) submit that research design is made up of qualitative and quantitative designs. In this study, the researcher used both qualitative and quantitative designs using a questionnaire, and focus group discussion was also utilised for data collection. Briefly, the research design is applied so that suitable research methods are used to ensure the attainment of the goals and objectives set out in Chapter One. Bless, Higson-Smith and Kagee (2006:71) define research design as operations to be performed to test a specific hypothesis under a given condition.

4.2.1 Quantitative approach

According to Hittleman and Simon (1997:31), quantitative research methods were originally developed in natural sciences to study natural phenomena, it uses questionnaires, surveys and experiments to gather data that is revised and tabulated in numbers, which allows the data to be characterised by the use of statistical analysis. Leedy (1993:4) identifies quantitative research methodologies as dealing with data that are principally numerical. Quantitative researchers manipulate numbers to test the hypothesis with variable constructs. The quantitative approach involves the generation of data in quantitative form, which can be subjected to rigorous quantitative analysis formally and rigidly. The quantitative approach applies to phenomena that can be expressed in terms of quantities. This approach can further be sub-classified into inferential, experimental and simulation approaches to research.

4.2.2 Qualitative approach

McMillan and Schumacher (2006:26) espouse that just like the quantitative design, the qualitative design is methodical, and the only difference is that qualitative designs

emphasis gathering data on naturally occurring phenomena and most of the data is in the form of narratives rather than numbers. Hayhow and Stewart (2006:476) describe *“qualitative research as largely concerned with studying things in a natural setting rather than in manipulating a particular element and then looking at changes that occur as a result”*. Welman et al. (2001:191) describe qualitative research as based on meanings expressed through words and other symbols or metaphor and usually successful in the description of groups (small) communities and organisations by studying cases that do not fit into particular theories. Qualitative methodology refers to research that produces descriptive data. Qualitative research is any kind of research that produces findings not arrived at by employing statistical procedures or other means of quantification.

Jarbandhan and Schutte (2006:672) confirm that qualitative data is not suitable for statistical deduction. According to Delport and De Vos (2011:66), qualitative approaches procedures are not strictly formalised, the scope is more likely to be undefined and the philosophical mode of operation is adopted. Malhotra and Birks (2007:152) submit that the qualitative approach is unstructured research intended to provide insight and understanding based on small samples.

4.3 Research population and sampling technique

In this study, the accessible population comprised of a sample of 230 participants randomly selected out of 395 households from the community in Langaville ext.1 Informal Settlement of the City of Ekurhuleni. Ten managers from the service delivery department in the City of Ekurhuleni who were selected based on their experience on handling issues of re-blocking in the City were also identified and used in the FGD.

Burns and Grove (2009:324) define a population as a group of people who possess common characteristics or conform to a designated set of specifications from whom the researcher wants to collect data. Babbie and Mouton (2006:124) and Bryman (2008:697) insist that a population is a basic cluster on which the sample is designated. Similarly, Polit and Beck (2008:761) acknowledge that the population is comprised of all participants or members with certain characteristics from which data could be collected. According to

Welman, Kruger, and Mitchel (2008:52), a population consists of individuals who fit the description of the research phenomenon and to whom the analysis and specific conclusions drawn by the researcher would apply. Leedy and Ormrod (2013:206) indicate that a population is a group of individual persons, objects or items from which samples are taken for measurement.

The targeted population for this study consisted of ten (10) managers identified in the City of Ekurhuleni and 230 members of the community in Langaville Extension 1 Informal Settlement. In the City of Ekurhuleni, Ten (10) managers were identified from service delivery departments (Disaster and Emergency Management Services (DEMS), Economic Development, Energy, Ekurhuleni Metropolitan Police Department (EMPD), Environmental Resource and Waste Management, Health and Social Development, Human Settlement, Roads and Storms Water, Sports, Recreation, Arts and Culture (SRAC), and Water and Sanitation) to participate in the study through focus group discussion, the selection criteria used by the researcher was based on participants' expertise and the fact that they are dealing with re-blocking of the informal settlement in the City.

Two hundred and thirty (230) randomly selected participants from the members of the community were engaged through research questionnaires that were distributed and collected by the researcher. The researcher further gathered data through documentary review processes, strategic documents and operational plans on implementing re-blocking in the City of Ekurhuleni. Furthermore, legislative framework on human settlement were reviewed.

Walliman (2006:213) defines a sample as a small part of the whole population selected to show what the whole is like. Kumar (2005:164) asserts that a sampling method is a process of selecting a few samples from a bigger group to become a basis for eliminating or predicting the prevalence of an unknown piece of information, situation, or outcome regarding the bigger group. According to Leedy and Ormrod (2013:206) sampling involves selecting some elements from a population that represents a target population.

Govender, Mabuza, Ogunbanju and Mash (2014:2) uphold that it is impossible to collect data from the entire study population; therefore, a representative sample must be selected from which data will be collected.

4.4 Research methodology

According to Schwardt (2007:195), Creswell and Tashakkori (2007), and Teddlie and Tashakkori (2007) research methodology is a theory of how an inquiry should proceed, it involves analysis of the assumptions, principles, and procedures in a particular approach to inquiry. Methodologies expound and describe the kinds of problems that are worth examining; what constitutes a researchable problem and testable theory. In addition,, how to frame a problem in such a manner that it can be investigated using particular designs and procedures; and how to select and develop appropriate means of collecting data. Leedy and Ormrod (2010:12) agree with Babbie and Mouton (2008:74) that research methodology refers to the researcher's general approach in carrying out the research project. Carter and Little (2007:1317) describe research methodology as an approach that outlines collection and sampling tools, it justifies methods that produce data and analyse it. Zikmund, Babin, Carr, and Griffin (2010:66) argue that methods and procedures are determined by the research problem. According to Burns and Grove (2003:488), the methodology includes the design, setting, sample, methodological limitations and data collection and analysis techniques in a study.

The study focused on Langaville Extension 1 Informal Settlement in the City of Ekurhuleni which comprises 395 households. The researcher randomly selected 230 participants and research questionnaires were distributed to all of them during door to door walkabout. This was done after the purpose of the research was explained to all participants in the informal settlement under study. The researcher explained the research questionnaires to participants and informed them that their privacy would be protected and that the questionnaires are for study purposes and further that if anyone wants to withdraw from participating, he/she is free to do so. Research questionnaires distributed to participants are attached as Annexure B and all questionnaires were received even though few were received after three days as was initially agreed with participants.

In this study, a certain approach was followed by the researcher on Part C of the research questionnaire distributed to community members who were randomly selected to participate in this research adopted a qualitative method. The research questions on Part C were open-ended and the responses from the participants were narrated to document the responses to research questions. Furthermore, the researcher invited 10 managers who possess expert knowledge in the service delivery departments in the City of Ekurhuleni to participate in focus group discussion. Stewart (2018:687) declares that a focus group can be defined broadly as a type of group discussion about a topic under the guidance of a trained group moderator'. Bowen (2005:219) postulates that in qualitative research, findings do not result from statistical procedures, correlations, and similar mathematical calculations; instead, they come from an interpretation of non-numerical or largely text-based data, qualitative data involve words.

The focus group discussion followed the qualitative method and the outcome of the discussions was categorised into themes and narrated by the researcher. Agar and MacDonald (1995:81) suggest that a focus group lies somewhere between a meeting (reflecting the fact that it is specifically organised in advance and has a structure) and a conversation (reflecting the fact that the discussion has nonetheless a degree of spontaneity, with individuals picking up on one another's contributions). Anderson (1990) observes that there are two major types of reporting focus group data: First, conducting analysis and reporting a summary of the main ideas; second, giving the subject's words verbatim.

The collection of data from the focus group discussion was gathered according to the following schedule:

Venue: Boardroom 127, 29 Lakeview Crescent, Kleinfontein Office Park in Benoni

Date: 21st October 2020

Time: 12:00 – 14:00

To facilitate the implementation of this discussion, the format was structured according to the following sub-sections: (a) Agenda, the agenda of the focus group discussion was to gather information from practitioners or experts who are handling re-blocking across the City of Ekurhuleni. (b) A facilitator appointed by the researcher led the focus group session. The researcher took notes, used an electronic device to record the proceedings and participated by asking clarity questions in the process of the discussion.

Mack, Woodsong, MacQueen, Guest, and Namey (2011:2) insist that qualitative methods ask mostly open-ended questions that are not necessarily worded in the same way for each participant. With open-ended questions, participants are free to respond in their own words, and these responses tend to be more complex than simply yes or no answers. Part C of the research questionnaire for the community participants was opened ended questions and the responses given by participants were based on their understanding and interpretation of re-blocking in the City of Ekurhuleni Langaville ext.1 Informal Settlement under study. Parkinson and Drislane (2011) postulate that qualitative research is based on participant observation or case studies that result in a narrative, descriptive account of a setting or practice.

4.4.1 Data collection tools and process

Data was collected over a period of three (3) days through administered questionnaires distributed by the researcher to randomly selected participants in Langaville Extension 1 Informal Settlement. The research questionnaires comprise of Part A, B, and C, and all parts were explained to all participants. The researcher further collected data through a focus discussion group that comprised of ten (10) managers identified from service delivery departments in the City of Ekurhuleni. The focus group discussion meeting was arranged by the researcher who recorded the proceedings and at the same time taking notes. Rice and Ezzy (1999:77) submit that in the case of note taking, there is a possibility that note-takers may not be able to record everything discussed within the group. Recording the discussion by tape recorder is important and mostly suggested for all the focus groups. It is advised that an unobtrusive recording device should be used so that

the group atmosphere may not be disturbed. The use of a tape recorder gives the advantage of accessing the full record of a possibly rich source of data. The focus group discussion lasted for two (2) hours it started from 12:00 to 14:00 pm.

Burns and Grove (2003:373) postulate that the collection of data is critical for the research to ensure that relevant data is obtained employing methods like interviews, researcher's observation, focus group discussions, narratives and case studies or document review. In this study, the researcher used research questionnaires and focus group discussion as the primary source of data and documentary review as a secondary source of data.

4.4.1.1 Questionnaire

In this study, the researcher used research questionnaires that were distributed to the members of the community in Langaville ext.1 Informal Settlement under study. The researcher designed a research questionnaire for community participants, which comprised questions in Part A and B formulated through a quantitative approach and Part C with a qualitative approach. Further qualitative questions were formulated to gather data from managers in the service delivery department in the City of Ekurhuleni through focus group discussion.

The research questionnaires were intended to gather participants' responses concerning the impact of re-blocking on reducing hazards and improving service delivery. The researcher gathered data from community members using both qualitative and quantitative methods. The research questionnaire was categorised in three parts as follows:

- Part A focused on demographics that intended to gather data from randomly selected community members who participated in the study, data was gathered on gender, age group, and educational status of the participants.
- Part B focused on socio-economic status, which sought to source data around issues of the source of income and income levels, number of people in the household, and how long they have stayed in the informal settlement under study.

Further information was sourced on the head of the household as well as ownership status.

- Part C focused on open-ended questions based on the understanding of re-blocking by members of the community or participants and the implications of risk reduction through re-blocking and improving service delivery. In Part C, the researcher adopted a qualitative approach method, in that the responses from the community members were narrated and transcribed to analyse data based on community responses.

Data captured from community members through the quantitative method was analysed using statistical package provided by Statistical Package for the Social Sciences (SPSS) and qualitative data was classified into themes and narrated by the researcher.

4.4.1.2 Focus group discussion

The researcher also used Focus group discussion as a means to collect data from ten (10) managers identified as participants from service delivery departments in the City of Ekurhuleni. Focus groups provide insights into how people think and provide a deeper understanding of the phenomena being studied. According to Dilshad and Latif (2013:192) focus group discussion is a qualitative technique for data collection. Denscombe (2007:115) affirms that *“focus group consists of a small group of people, usually between six and nine in number, who are brought together by a trained moderator (the researcher) to explore attitudes and perceptions, feelings and ideas about a topic”*. Mishra (2016:2) declares that focus group discussion (FGD) is a good way to gather together people from similar backgrounds or experiences to discuss a specific topic of interest. Patton (2002) submits that focus group discussion aims at collecting high-quality data in a social context, which primarily helps understand a specific problem from the viewpoint of the participants of the research.

On collecting data from community members and senior managers in the City of Ekurhuleni Metropolitan Municipality, the researcher discussed issues of confidentiality, including the confidentiality of all information shared with and recorded by the researcher

(also covered when obtaining informed consent). In the focus group discussion, the researcher requested that all participants respect each other's privacy by keeping what they hear in the focus groups confidential. The researcher further emphasised ground rules that involved speaking one at a time and avoiding criticising the viewpoints of the other participants.

The researcher took notes and recorded the proceedings of the focus group discussion; the recorded proceedings were categorised into themes, narrated, and later analysed. Casey and Krueger (2000:11) acknowledge that focus group provides *"a more natural environment than that of the individual interview because participants are influencing and influenced by others- just as they are in real life"*.

The City of Ekurhuleni is composed of (27) departments of which (10) of the departments are classified as service delivery departments. The service delivery departments are Disaster and Emergency Management Services (DEMS), Economic Development, Energy, Ekurhuleni Metropolitan Police Department (EMPD), Environmental Resource and Waste Management, Health and Social Development, Human Settlement, Roads and Storms Water, Sports, Recreation, Arts and Culture (SRAC), and Water and Sanitation.

In this study, the researcher approached experts in the service delivery departments to participate in the study by providing information on the re-blocking of Langaville Extension 1 Informal Settlement in the City of Ekurhuleni. The participants were informed that the study is approved by the City Manager and the letter of approval was made available to them. The researcher informed participants of their rights to participate in the study and that they may withdraw from participating at any stage and further that anonymity would be maintained. The information provided by the focus group discussion will be used purely for academic exercise. The researcher observed that the participants were able to follow each other on explaining the role/s played by their departments and that brought synergy to the study. Sherraden (2001:58) affirms that focus groups are an exploratory research tool - a 'structured group process' to explore people's thoughts and feelings and obtain detailed information about a particular topic or issue. According to Anderson (1990:241)

focus group is “a group comprised of individuals with certain characteristics who focus discussions on a given issue or topic”.

4.5 Data analysis process

4.5 1 Triangulation

Christensen (2004:212) contends that when qualitative and quantitative methods are used together, they complement each other, and this enables the researcher to collect various types of data that provides the best understanding of the research problem. For this study the researcher decided to use a triangulation approach that fuses the qualitative and quantitative methods. The researcher opted for a triangulation approach because it enabled more insight and understanding of the study. It is through focus group discussion that the researcher physically interacted with participants and in the process gained more insight and understanding of the dynamics underlying their daily approach to re-blocking. The triangulation approach through its combination of questionnaires, focus group discussion, observations, and documentary review enabled the researcher to unearth a wealth of information about the study by sourcing information from other participants involved in re-blocking within the City of Ekurhuleni.

According to Yin (2003:109), data analysis consists of examining, categorising, tabulating, testing, or otherwise recombining both qualitative and quantitative evidence to address the initial proposition of the study. Data analysis is the process of labeling and breaking down raw data and reconstituting this into themes, patterns and concepts (Mouton, 2001:108). As data is only meaningful when it is analysed, in this study, data was analysed by transcribing audiotapes in verbatim. Common themes were identified from community participants, in particular, their response to research questions on Part C of the research questionnaire as well as from the focus group discussion. Categorisation was conducted by looking at issues that speak to the same phenomena, and also those that are exceptional, to integrate themes and concepts into a detailed interpretation of the research.

The analysis of the quantitative data collected was prepared using Statistical Package for the Social Sciences (SPSS). This computer application allowed the researcher to plot graphs to illustrate the findings of the study. All analyses were done using the Statistical Package for the Social Sciences (SPSS) software, version 21. The qualitative data analysis technique was used when analysing data collected through research questionnaires and focus group discussion. Relevant data was separated from irrelevant data and information derived from relevant data was converted into phrases and sentences, coded, analysed and interpreted within a particular thematic thrust.

4.6 Ethical consideration

Maylor and Blackmon (2005:280) indicate that research ethics is about how a researcher carries out their work, it concerns the moral principles that determine how a researcher thinks and acts in a particular situation. Grafton and Jones (2010:121) affirm that all researchers are subject to ethical considerations. Welman, Kruger, and Mitchell (2005:182) acknowledge that ethical considerations are important elements in research as much as they are in any other field of human activity. In this study, the researcher engaged participants in compliance with good morals and ethics, and the following ethical consideration were adhered to:

- (a) The City of Ekurhuleni, which is the metropolitan municipality under study was approached by the researcher requesting permission to conduct the study, the permission was granted by the City Manager and the approval is attached as Annexure “A”.
- (b) An ethical clearance certificate was obtained from the Ethics Committee of the University of Free State to conduct the study, a copy of which is attached as Annexure “B” and Reference Number UFS-HSD2020/0899/0809 was issued by the institution on the 08 September 2020.
- (c) The right to participate in the study was explained to participants before undertaking the data collection, the questionnaire was handed out and the same participants in the focus group discussion were also informed of the right including the right to withdraw from the study.

The researcher observed that participants were not coerced to respond to the questionnaire but clarified to them the purpose of the research and requesting them to voluntarily participate in the study. Obtaining permission from the concerned authority to get access to the respondents, on the side of municipal employees was through a letter requesting to conduct study approved by the City Manager and the community participants was through their Ward Councillor. The study was carried out diligently and reported faithfully. The researcher avoided misrepresentation of data and takes responsibility for the findings.

4.7 Limitations of the study

The study was not spared of challenges, which were encountered particularly on securing an appointment for a focus group discussion where all participants had to be present. The focus group discussion was postponed twice due to non-attendance. The challenge was however, overcome through engaging the Head of Departments and presenting approval from the City Manager. The other challenge was on getting buy-in from the ward councillor to engage the community and secure their availability and willingness to participate in the study. The study was limited to the Langaville ext.1 Informal Settlement in the City of Ekurhuleni, it is against this backdrop that the findings of the study cannot be generalised as participants were within the community of Langaville ext.1 Informal Settlement and managers in the service delivery departments in the City of Ekurhuleni.

4.8 Summary

This chapter focused on the research design and methodology, data collection, trustworthiness, and ethical considerations applied to the study. Chapter five focuses on data analysis and the findings of the study. Sequential use of mixed methods was preferred in this study since quantitative and qualitative research methods are complementary rather than opposed approaches. Thus, the combination of the techniques helped to enhance and enrich the current knowledge by filling in the gaps that might have been created by using a singular approach. The next chapter discusses the results from the data collected from 230 randomly sampled participants identified from the community of Langaville Extension 1 and 10 managers in the City of Ekurhuleni

identified from service delivery departments that formed part of the Re-blocking Committee Project.

CHAPTER 5: DATA ANALYSIS AND PRESENTATIONS OF RESULTS

5.1 Introduction

This chapter interprets, analyses and discusses the results from the data that was collected from this study. As already indicated in the preceding chapter, data is interpreted in a descriptive form. The first part is based on the results of the questionnaire, which deals with a quantitative and qualitative analysis of data from the community of Langaville Extension 1. The second part is based on the results of focus group discussions that were conducted with the project team responsible for re-blocking in Ekurhuleni Municipality. The findings were from 230 community members of Langaville and 10 managers that formed part of the re-blocking project. The objectives of the study were to determine how re-blocking will reduce risks within the communities in informal settlements and improve service delivery. To achieve the main objective, the following sub-objectives were identified:

- i. To ascertain the impact of re-blocking on Langaville informal settlement.
- ii. To explore how re-blocking has improved disaster risk reduction through service delivery.
- iii. To explore and determine the advantages of re-blocking in informal settlements; and
- iv. To identify re-blocking challenges as well as interventions to ensure improved service delivery.
- v. To propose more efforts on re-blocking as a DRR strategy in informal settlements

The data from the questionnaires were statistically analysed using the SPSS programme for data analysis. The findings are discussed according to the sections of the questionnaire. The three sections of the questionnaire were: Part A focused on demographics of the participants. Part B focused on socio-economic status and further information was sourced on the head of the household as well as ownership status. Part C focused on open-ended questions based on the understanding of re-blocking by members of the community or participants and the implications of risk reduction through re-blocking and improving service delivery. In Part C, the researcher adopted a qualitative

approach method, in that the responses from the community members were narrated and transcribed to analyse data based on community responses.

5.2 Demographic characteristics

The demographic information of the respondents from Langaville 1 informal settlement is discussed here to give a picture of the people who are in this community. This information indicated the relationship between peoples livelihood strategies and their ability to make decisions (Salifu, 2016). In this section, the age distribution of the respondents, gender, and education status concerning informal settlement were considered in detail.

5.2.1 Gender

One hundred and sixty nine (73.5%) of the respondents were females while 26.5%(N=61) were males as indicated in Table 5.1. This is because most households in the Langaville ext.1 Informal Settlement were owned by women (household heads) and have been staying there for more than six years mostly because of employment needs as they also send money back home (rural areas) as the breadwinners. Few males were found in the households (26.5%) during working hours and consequently, most of the male respondents were staying with relatives as they are looking for employment.

Table 5.1: Distribution of respondents by gender

Gender	Number of respondents (N=230)	Percentage
Female	169	73.5 %
Male	61	26.5 %
Total	230	100 %

5.2.2 Age distribution of respondents

As indicated in Figure 5.1 the majority of youths relocate from rural villages to cities in search of better life opportunities. The bulk movement of youths and the economically active persons into informal settlements could also be attributed to economic vulnerability and comparative economic advantage of the nearest City. Most respondents as shown in Figure 5.1 supported this view. Two hundred and thirty (230) residents from Langaville ext.1 Informal Settlement were asked about their age range and it was found that most of them fell between 25 and 39 years.

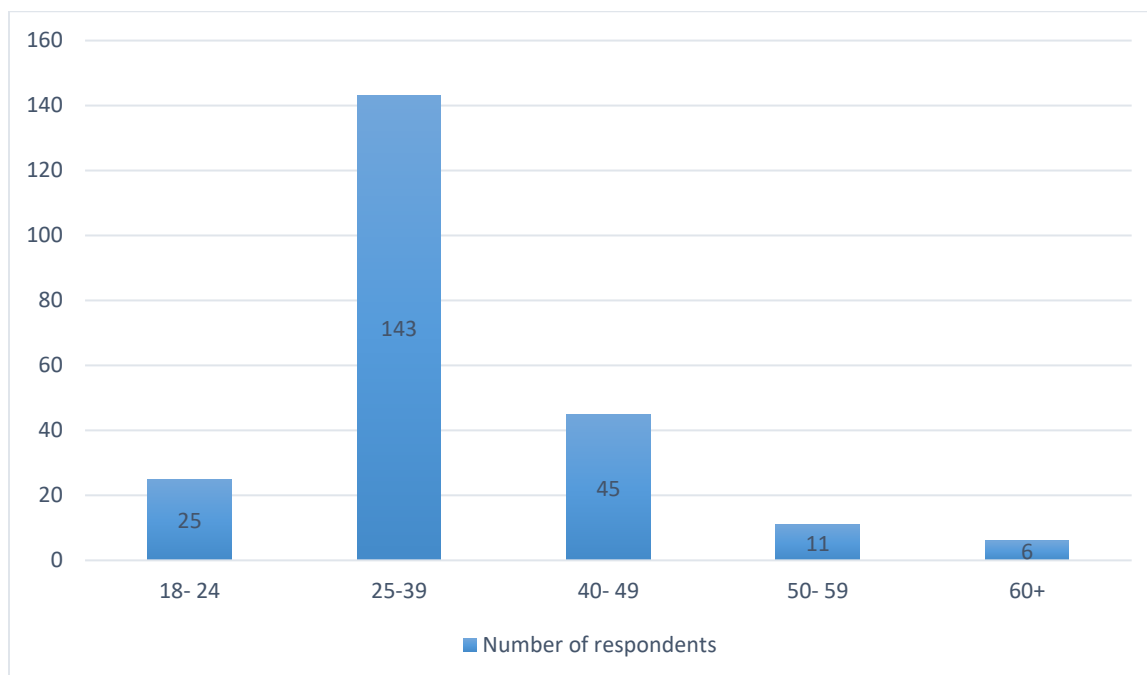


Figure 5.1: Age distribution of respondents (residents of Langaville ext. 1 informal settlement)

Source: Field survey, 2020

The Ekurhuleni metropolitan economy is larger and more diverse than many of the smaller countries in Africa and accounts for nearly a quarter of the Gauteng economy (SERI, 2018). About 7% of country spending and 7.4 % of the nation's production is located in this area. Many South African factories are located in Ekurhuleni where manufacturing accounts for just less than 20% of the gross domestic product of Gauteng. The municipality is home to OR Tambo international airport, the busiest airport in Africa. South African largest railway hub is in Ekurhuleni (Germiston) and links the population of

all major population centres and ports in the southern African region. All this makes it a potential target for employment seekers from inside and outside the country. The majority of the respondents were in the 25-39 age group, which is a productive age emphasising the high unemployment rate in Ekurhuleni.

5.2.3 Education status of respondents

The majority, 73.9 % (N= 170) people in the Langaville ext. 1 informal settlement had secondary level of education, 26 respondents had primary, 21 respondents had no formal education and very few (13) had tertiary qualifications as indicated in Figure 5.2. The results from the respondents are consistent with the findings of Heyer (2015) who found that the employment opportunities next to the informal settlement do not require any formal training or qualifications. Most of the jobs found require unskilled labour and only matric qualifications.

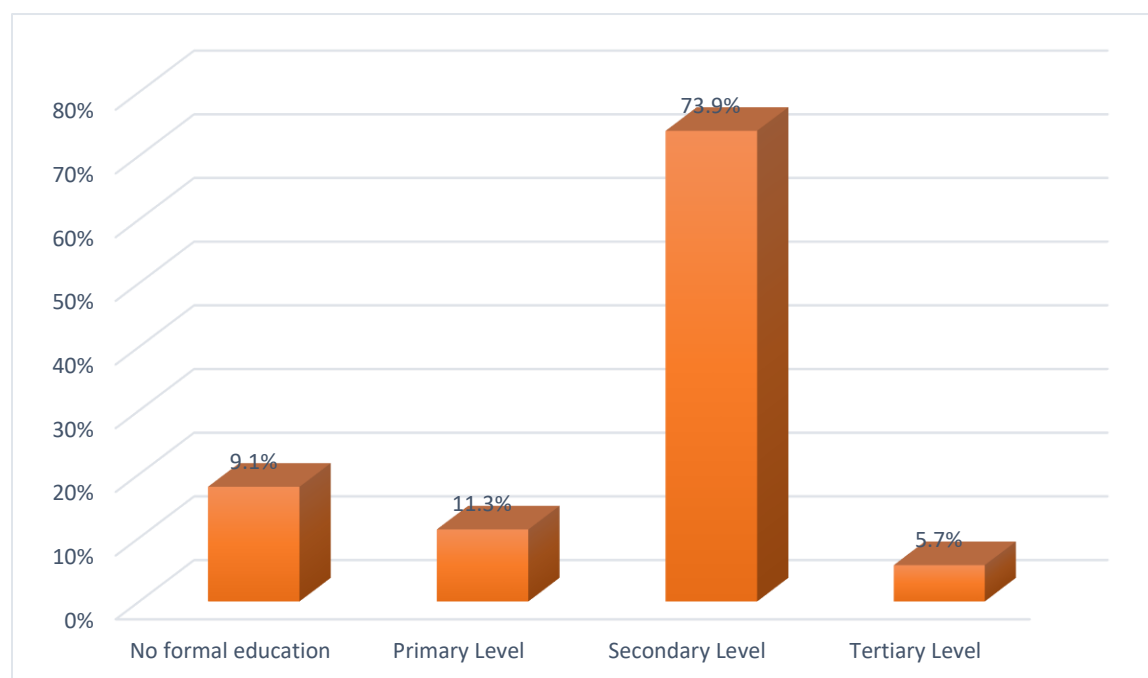


Figure 5.2: Level of education of the respondents

Source: Field survey, 2020

5.2.4 Socio- economic characteristics of the respondents

This section presents the socio-economic status of the respondents to determine poverty status and income gap as well as promoting safety in relation to the environment.

5.2.4.1 Household size of respondents

Most households had a minimum of four and five family members within the 25 to 39 years old group. Some households are taking care of extended family members, which increase the number of household members. This confirmed the increased population trends of the City of Ekurhuleni due to migration of economic active people from rural villages to more urban areas in search of a better life (Cooper & Yue, 2008). Ekurhuleni Metropolitan makes the most densely populated city in the Gauteng province (28%) (City of Ekurhuleni Annual Report, 2010/11:7). Ekurhuleni's dynamic economic development makes it an important destination for work- seekers. From the time the first mine started operating and the first mining villages developed, prospective miners and labourers and entrepreneurs streamed to the region in search of work or fortune.

The Ekurhuleni metropolitan is struggling to cope with severe housing shortages which leads to a huge housing backlog with 124 000 shacks in 122 informal settlements and 360 000 backyard shacks (Ekurhuleni Metropolitan Municipality –IDP, 2015). Hence the City decided to embark on the re-blocking project to alleviate the housing backlog and ensure that service delivery and essential services are maintained reducing the opportunity for violence and crime. It also assist in eradicating inequality by addressing structural conditions like spacing out the shacks to address eminent hazards as a result of overcrowding.

5.2.4.2 Source of income

As a result of the critical lack of affordable housing, many poor and low-income households have had to live in informal settlements (SERI, 2018). This community faces several challenges, with unemployment being a major one. Only 24.3% (N= 56) of the respondents were employed, 2.6% (N= 6) were pensioners, 7.8% (N=18) were self-employed, 47.8% (N= 110) depended on a social grant from the government, and 17.4% (N=40) had no source of income at all. Those who did not have any source of income were too young to benefit from the government grant, the government provides social grants to the children until the age of 18 years and the pensioners according to the Social Assistance Act, no. 13 of 2004, the ages between 19 and 59 do not qualify for social grant

hence the reason for not benefiting from such. This Act provides for the rendering of social assistance to persons such as children under the age of 18 years, the disabled and the elderly; to provide for the mechanism for the rendering of such assistance; to provide for the establishment of an inspecotorate for social assistance.

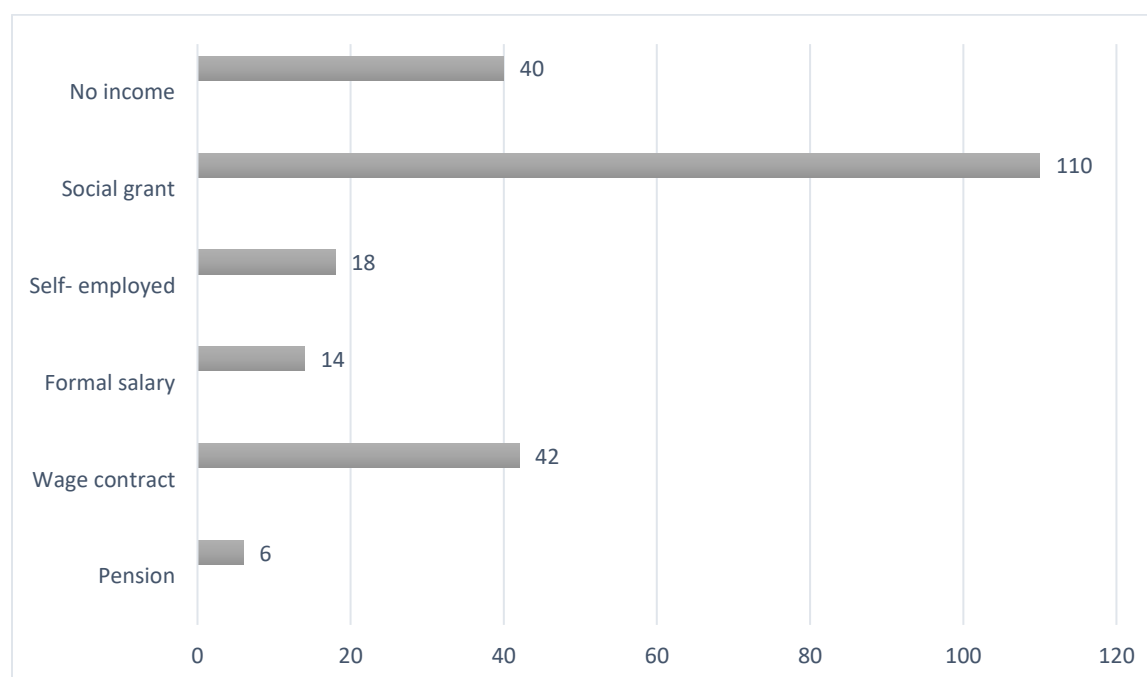


Figure 5.3: Source of income of the respondents

Source: Field survey, 2020

About 47.8 % of respondents depend on government social grants and the total household income ranges from R1001- R4000. The finding of the study represents low household income as the contributing factor to people settling in informal settlements. Many people are unable to afford adequate housing using their financial resources alone. It has become far more difficult for low-income earners to get onto the property ladder. The South African society is largely characterised by extreme poverty which is the major social issue in the continuation of expansive cities. Marutlulle, (2017) suggested that the rate of natural increase is the highest among the poorest communities, which means the poor will constitute an ever-increasing proportion of the total urban population for many years to come. This also confirms the view of Innes et al (1992:181) that socioeconomic realities are such that even the most modest formal house is beyond the reach of the poor, the majority of whom live in informal shelters.

Urbanisation has grown far beyond the economic growth of Ekurhuleni which is failing to accommodate the increased population in terms of jobs, health facilities and education..

5.2.5 Impacts of re-blocking at the Langaville ext. 1 informal settlement

This section discussed the impact of re-blocking in the community, the researcher adopted a qualitative approach method, in that the response from the community members were narrated and transcribed to analyse data based on community responses. Responses to open-ended questions based on the understanding of re-blocking by members of the community or participants and the implications of risk reduction through re-blocking and improving service delivery are discussed.

5.2.5.1 Situation after re- blocking

The objective of re-blocking was to reconfigure the current layout of informal settlement and re-organise the ground plan in such a manner as to optimally utilise space to promote the health, safety, well- being of households, with a particular focus on promoting accelerated service delivery. With this background, the respondents were asked to explain the positive benefits as well as negative aspects they have noticed since the implementation of re-blocking in the Langaville ext.1 Informal Settlement.

Respondents had mixed feeling about the impact of the rearranging project on the basic quality of their livelihood. Some felt that the rearrangement of their shack's layout had made their lives easier and felt worthwhile. In the interview, some respondents said:

'We have water taps on the streets'

'We are out of fire risk because our shacks now are three metres apart'

'We now have streets, and it is easy to get help during an emergency'

'Now is clear to see who is breaking into my neighbour's house'

'We have electricity and there are no longer illegal electric wires lying on the ground'

'Our kids are now free to play everywhere'.

During the field survey, it was observed that the Langaville's had improved movement routes to become comfortable and safe places for everyone. Figure 5.4 shows the open streets in Langaville community after re-blocking. This also confirms the findings made in the Mtshini Wam Informal settlement in Cape Town that re-blocking provides access routes in and out of the settlement (Hennings et al., 2013).



Figure 5.4: Open streets in Langaville ext.1 Informal Settlement

Source: Field survey, 2020

Conversely, some felt the upgrading intervention had not significantly improved their lives because they were expecting to be given RDP houses hence; they are still living in the shacks. They have been told that the stands they are living at are not permanent. Again, they had to buy building material to rebuild their shacks which were damaged during relocations and the majority of people had lost their personal belongings as well as their furniture being damaged during the process of moving. A resident during an interview at Langaville ext.1 expressed her dissatisfaction about losing her furniture and the illegal dumping in the street as follows:

‘Community leaders move our shacks without prior notice to us and with no compensation for that. There is still illegal dumping in the street as the municipality does not collect rubbish bins’.

5.2.5.2 Perceptions of Disaster Risk Reduction after re-blocking

Many researchers confirmed that the re-blocking of informal settlements has the potential to reduce hazards risks such as floods, fire, and conflicts (Mitra et al. 2017; Balachandran et al. 2018; Silva, 1994; Handler and Fieuw, 2018; Heyer, 2015; Hennings et.al, 2012). Despite the improved service delivery, re-blocking is also a mobilizing tool for communities to become organised, engaged and educated about their living situation and their opportunities to change. A significant proportion of residents agreed with the view that Langaville ext.1 Informal Settlement has been rearranged in such a way that there is space for basic services such as electricity, water and sanitation.



Figure 5.5 Basic services in Langaville ext.1 Informal Settlement

Source: CoE: Human Settlement Department, 2019

One of the strategies used to reduce the disaster risk was increasing the distance from one shack to another. It was observed that the shacks had been designed three metres apart and that was a considerable way of reducing shack fire. Hundred and eighty-nine (189) out of 230 respondents said that the settlement is much safer than before. This observation is consistent with the findings of Hennings et al (2012) whose studies into the impact of re-blocking at Mtshini Wan informal settlement in Cape Town found clear

benefits concerning fire safety, establishing roads, reducing grey water hazards and creating jobs. The project also inspired a sense of pride within the community. The changes included new fire-resistant metal structures, coupled with the creation of space between rows of shacks, reduction in the risk of fire, with the spaces specifically designed to allow the passage of large emergency vehicles.

The second approach of the re-blocking project was to relocate households situated within hazardous areas such as households located underneath or within close proximity to electrical cables/substations, flood lines, wetlands, close to pits, open cast, shallow undermined areas, and quarries. Figure 5.6 represents the layout of Langaville ext.1 Informal Settlement before and after re-blocking.



Figure 5.6: The layout of Langaville ext.1 Informal Settlement before and after re-blocking

Source: CoE: Human Settlement Department, August 2017

Conversely, thirty-nine (39) respondents revealed that they did not feel safe because they are still living in a shack and two (2) respondents said there is a big hole near the settlement which looks like an abandoned old mine.

5.2.5.3 Focus group discussions

The researcher further collected data employing a focus group discussion to obtain data from the participants identified from service delivery departments. Focus groups are an exploratory research tool - a 'structured group process' to explore people's thoughts and feelings and obtain detailed information about a particular topic or issue (Sherraden, 2001). The discussion of the focus group was recorded and narrated as a means and a method of analysing data. The members of the focus group discussion were identified from the service delivery departments in the City of Ekurhuleni. The service delivery departments comprised of the following: Water and Sanitation, Human Settlement, Roads and Stormwater, Energy, Sports, Recreation, Arts and Culture (SRAC), Disaster and Emergency Management Services (DEMS), and Ekurhuleni Metro Police Department (EMPD). Senior managers were identified from each service delivery department as expert participants to provide information in the focus group discussion and relevant information for the study. All participants were informed of the date, the time, and the place where the focus group discussion would be held. Attendance registers for participants were kept by the researcher and the minute of the meeting or proceedings were recorded. All participants were informed that the recording was purely for academic purposes and the information would not be used for anything except for the study.

The proceeding from the focus group discussion was narrated by the researcher to reflect the outcome and information provided by participants on the re-blocking of Langaville ext.1 Informal Settlement in the City of Ekurhuleni. All participants have a full understanding of re-blocking as they were part of the re-blocking team in the City of Ekurhuleni. They all knew and understood their roles and responsibilities as an individual department and as a collective. The findings from the focus group are recorded below.

5.3 Findings from Focus Group Discussion

The FGD had interview guide with questions to establish whether re-blocking was a success at Langaville Extension 1 in reducing risks and improving service delivery. The reason of the interview guide was to provide an overall direction for the discussion. The researcher asked specific questions and captured answers during the FGD with the goal

of obtaining as much useful information as possible on how re-blocking will reduce risks within the communities in informal settlements and improve service delivery. The FGD was recorded with the participant's permission during the session and notes were taken. The service delivery departments in the City of Ekurhuleni formed part of the FGD. The outcome from the focus group discussions are below:

5.3.1 Understanding of re-blocking and Disaster Risk Reduction

How would you define Re-blocking?

Senior Manager from Human Settlement responded as follows: Re-blocking is a concept defined as a process of reconfiguring the current layout of informal settlements and re-organising the ground plane in such a manner as to optimally utilise space to promote the health, safety, well-being of households, with a particular focus on promoting accelerated service delivery to informal settlements. It ensures that all informal settlements communities have access to basic services; to reduce the risk of fires developing and spreading quickly over large areas; mitigate the negative impacts of potential disasters and health hazards; improve the safety and security of the residents and contribute to transforming the livelihoods of affected communities. Where possible, create an appropriate conducive environment for the settlement community to promote social cohesion engagements; and to create an enabling environment for informal settlements and the municipality to plan and implement projects together. She further mentioned in the discussion that it must be noted that re-blocking promotes de-densification. The other participants were in agreement and the Senior Manager from Energy further added that re-blocking is the provision of services into the informal settlement in the meantime while waiting for formalised development which the informal settlers will benefit from in future.

What is your understanding of Disaster Risk Reduction (DRR)?

Senior Manager from DEMS said that DRR is a systematic way of identifying and finding mitigation factors that can be used by an organisation or municipality to reduce the risks of disasters. In the event of a disaster there are measures that have to be followed in a systematic approach to mitigate that disaster and dealing with hazards that trigger disasters. A senior manager from Energy continued to say that it is more of mitigation

whereby the identification of a particular risk in an informal settlement is strategically mitigated or reduced. All the other representatives concurred with both the responses given.

How would you link re-blocking to DRR?

An senior manager from Human Settlement mentioned that the two can be linked in the sense that DRR is based on mitigation and re-blocking is based on restructuring informal settlement where it will ensure that space is optimally used. In addition, necessary services are provided like, streets are alight, which in turn will mitigate the spread of risks or hazards hence mitigating disaster. For example, having sufficient space in-between the informal settlements will make sure that if there is a fire in the informal settlement it will not quickly spread to the next shack and will also assist the fire brigade to respond quickly because the roads are accessible to the informal settlement, the senior manager from Environmental Waster and Resource management added on another example that the solid waste trucks can also be able to get into the informal settlement to take empty the rubbish bins which in turn ensures that there is no health-related hazard.

The senior manager from Water and sanitation added by mentioning that based on the current informal settlement, if re-blocking is not done, there are risks associated with that particular informal settlement. The manager also agreed that re-blocking made water accessible as water pipes were installed every 200 meters. The senior manager from Energy mentioned that if re-blocking occurs proper electricity will be installed therefore, helping to avoid cases of shack fires through prima stoves or braziers especially in winter as it's used to warm up the shacks which lead to potential fire hazards. All the other senior managers agreed with the three speakers.

What informed the re-blocking process in Ekurhuleni Municipality?

The senior manager from Human settlement mentioned that re-blocking was informed by the desire to decongest informal settlements and make them livable in the sense that community members have accessibility, are provided with basic services, and trying to mitigate illegal electrical connections. The senior manager from Energy added on to say

that as citizens of the country, there are rights that an individual has and the government must assist with ensuring that the right is adequately met and supplied to all the citizens of the country. He further added by mentioning that the municipalities intend to address the challenges that the informal settlement has in terms of addressing the constitutional rights. The senior manager from Human Settlement added on by mentioning that human settlement has a lot of projects and that demand is more than the supply of housing delivery. However, while the settlers are waiting for proper housing, re-blocking can be used to ensure they have access to basic services.

How was re-blocking implemented?

The senior manager from Human Settlement mentioned that the observations were that the city was spending a lot of money on the informal settlement, if one can look at the statistics before re-blocking and now, the figures should be lower. Service departments can get into the informal settlement to ensure that services are rendered and as part of implementing re-blocking it was also used as a means of checking the amount of money that municipality has spent on such a goal and how much this process would save the municipality in terms of revenue that can finally be collected from the programme and also in terms of decreasing overtime from having departments responding to incidents such as shack fires at night or having to fix water leakages.

By its very nature, the implementation of re-blocking programme did not involve the employment of many people as part of the local labour component. The ward councillor was responsible for selecting the people to work with the service provider. While the project is designed such that it uses a small working team, many people who may not be temporarily employed will always criticise the selection process. Adding on what human settlement manager had said, the senior manager from Roads and Storm water mentioned that there was a criteria used for informal settlements to fit into that programme. The senior manager from SRAC mentioned that the aims of the re-blocking programme have been widely communicated and are shared with communities where the programme is being implemented on an ongoing basis through the various social facilitation avenues available. The senior manager from human settlement further

explained that at the start of the project a public meeting is held, usually addressed by the MMC, Cllr Lesiba Mpya and then the project is launched.

The next phase involves meetings and detailed planning with the Ward Councillor, the Ward Committees and Local or Area Committee. Often the additional public meetings are also held on an ongoing basis as the project is implemented. Where the informal settlement is big, and several implementation phases have been planned, separate meetings are held with the specific section of the community/section that is affected. The senior manager in the Department of Roads and Storm water indicated that re-blocking enables the department to provide services to the community in the informal settlement. The Senior Manager stated that after re-blocking the informal settlement it became easier for the department to prepare the road to allow access for other services, such as emergency services, waste removal trucks and service of temporary ablution facilities. The senior manager further indicated that the department provided furrows to direct and channel water from flooding the shacks in the informal settlement, this decreases floods. The department is now servicing the informal settlement excess road quarterly.

The senior manager for Water and Sanitation stated that the department provided communal water taps within a two hundred meters walking radius, resulting in the increased provision of water services to all communities in the Langaville ext.1 Informal Settlement. The senior manager further indicated that the department provides one chemical toilet per ten families and the toilets are serviced twice a week. There is also constant monitoring of the conditions of the water and sanitation infrastructure and are replaced when needed.

The senior manager from the Disaster and Emergency Management Services agreed with the submission made by the senior manager from Roads and Storm-water and mentioned that a fire hydrant was installed in Langaville to mitigate the risk of fire as and when responding to incidents and further that incidents of fire and floods decreased since re-blocking provided proper space in between shacks. The senior manager from Energy mentioned that since re-blocking, the department provided electrification to each

household which in turn generates income for the City and decreases illegal connections which were identified as a hazard and a major cause of fire incidents in the informal settlement. The department also provided high-mast lighting to mitigate the risk of crime during the night. The senior manager in the Ekurhuleni Metropolitan Police Department affirms that since the installation of high-mast, crime has decreased and access to the informal settlement makes it easy to provide social crime prevention activities.

The senior manager for Human Settlement indicated that Langaville is classified as Category C in formal settlement, which means that there are no short to medium term plans for provision of houses for the community of Langaville, which is the informal settlement under study. The Human Settlement coordinates realignment and/or re-blocking process to enhance accessibility in the informal settlement and also coordinates the provision of services by the relevant departments, who also participated in the focus group discussion.

The senior manager for Health and Social Development affirms that the department assists with the provision of primary healthcare service through a mobile clinic on a fortnight basis and further that they conduct awareness campaign on rodent control to provide a healthy disease-free environment. The senior manager from Environmental Resource and Waste Management submit that the department provides grass cutting, tree felling, and vegetation control quarterly and priority removal of informal structures in environmentally sensitive areas. The community in Langaville who occupied a dolomitic area were relocated to a safer area. The department provided wheelie bins for waste removal collection which is done weekly to avoid transmission of communicable diseases. The senior manager of Health and Social Development concurs that there was a reduction in communicable diseases in the Langaville ext.1 Informal Settlement since measures were put in place to re-block the informal settlement.

The senior manager for Economic Development submits that the department provided designated trading areas for informal traders. This increases the economic viability of the community of Langaville and enables them to pay for water, electricity, and waste removal

services provided by the City of Ekurhuleni. Since re-blocking, the senior manager for Sports Recreation, Arts and Culture indicated that the department developed a temporary sports field (Football ground) and they provide mobile library services where planned visits are executed.

Were there any workshops conducted on re-blocking with the beneficiaries?

The senior manager for Human Settlement said that for the city to be able to do the re-blocking, first they had to engage with the community and explain to them about the process. The community leaders were the first to take the information to the community as to how the re-blocking is going to unfold. The councillors were also involved in the meetings so that they could also take the information to the community for the re-blocking process to go smoothly. With the small re-blocking team, efforts were made to engage the community as far as possible.

One of the biggest challenges of the participatory processes is that consultation cannot always be successful when the above-mentioned group – the “owners”- do not want to let the tenants go. These ulterior motives would always rear their heads when their interests are threatened. The lesson learned from this is that the existence of this group means that the programme will always be viewed negatively by “owners” while the “tenants” welcome their freedom from the grip of “owners”. It was therefore for the above reason that whatever the level of social facilitation it will never be positively received by those whose tax-base is threatened. This group always tries to imply that their needs were not addressed. This dichotomy has always been ignored and poses a serious threat to those who are on the receiving end with an ongoing pressure on them to pay “rent” to “owners”.

How was re-blocking financed?

The senior manager from Human Settlement mentioned that funding is one of the main problems that Human Settlement has, but most of the funding comes from grants and in terms of which informal settlement needs to be re-blocked that is informed by the MMC based on the urgency of the community that needs to be re-blocked, there is also a budget allocated but it is not enough. The senior manager from Energy department added that

funds are made available nationally, one for electricity installation, Department of Energy provided funding and other services were provided for in part by the department and the agencies that provide grants.

What were the challenges faced and achievements before re-blocking?

All the senior managers concurred that there are challenges that they faced before re-blocking like when they engaged with the community, some did not agree with the programme and opposed re-blocking for selfish reasons such as owner and tenant issues raised in the previous response. There were also different groups of community leaders who started by complaining without engaging or consulting with the other leaders first. Furthermore, there is challenges of land invasion and self-allocation of stands and land parcels. Some people have big yards, so when re-blocking occurs and their yards are reduced, it poses a challenge as some have tenants. The achievement was the adoption of the selection criteria from the onset to confirm that the programme is nonpolitical by nature and would protect it from any partisan interests. This is a significant factor in the public's perception of the programmes' transparency.

In brief what were the challenges faced and achievements during re-blocking?

All participants agreed when the senior manager from Human Settlement mentioned that in almost all the informal settlements there is a core group that is credited with the initiation and/or establishment of the informal settlements. This core group then goes on to become gatekeepers who either provide or “sell” stands to newcomers. Some newcomers eventually become “tenants” as they rent “accommodation” from “owners”. Whenever re-blocking is introduced the “owners” are threatened by the attempts aimed at decongesting the area and spreading out of the shacks to promote access and the demarcation of each stand. This is seen as “taking away their rental money base”, although it can simply be interpreted as the oppression of the poor by the poor/slumlords. The biggest intervention required from the CoE is that this crisis should be attended to and resolved.

During the re-blocking process, community members feel it is a must to employ them even if they do not have the necessary skills for the project so they block the re-blocking

from happen. In the case of funding, usually the funds are not sufficient to re-block the whole settlement, so a certain portion is re-blocked. The community members would come with the petition that they were left out not understanding that there was a shortage of funding, moreover, the following are challenges identified by the City of Ekurhuleni Human Settlement Re-blocking Programme managers: budgetary constraints; the programme is under-budgeted, inadequate capacity and resources; the project is under-resourced with manpower, community resistance to the formalisation of the informal settlements, land invasion by informal settlement dwellers, self-allocation of stands by the informal settlement dwellers and uncoordinated planning.

How these key challenges were dealt with: Budgetary constraints the strategy to deal with budgetary constraints was based on staggering the program implementation and systematic selection of participating informal settlement. Priority was given to settlements that were on municipal land as opposed to those occupying privately owned land thereby avoiding costly legal battles and lengthy negotiations. In addition to this, service providers were subjected to a tender process whereby the lowest quotation from a service provider who fulfilled all the evaluation criteria was sourced as the preferred provider. This process helped to bring about significant cost savings.

Inadequate capacity and resources; the project is under-resourced with manpower. In this area, the implementation team engaged in robust interdepartmental engagement for a concerted effort among the implementing stakeholders within the establishment of the City of Ekurhuleni. Some of the issues identified included uncoordinated planning, enforcement of monthly interdepartmental meetings and enhanced communication among stakeholders and community resistance to the formalisation of the informal settlements: In the case of community resistance to the formalisation of the informal settlements, the CoE implementation team use the services of the Red Ants (The eviction squad service provider) to disperse protesting and resisting community members to allow for the implementation of the programme to take place. The team also used an approach of social facilitation to educate the community about the negotiations between government departments as opposed to those settlements occupying privately owned

land. In addition; they employed a strategic dimension. An additional criterion should favor occupants located in the same area to increase the urban impact of the re-blocking intervention.

In brief what were the challenges and achievements faced after re-blocking?

The participants concurred with each other on the following in terms of the challenges faced is that some of the informal settlement are located on a non-environmentally safe place like wetlands or dynamites places. The surveillance from community members must be clear always so that when there are problems, repairing can happen as soon as possible. Some settlements cannot be re-blocked because they are sitting on private land and it's deemed as unauthorised land for re-blocking to done. The participants mentioned that achievements made through re-blocking are that, some community members offer to re-block themselves and the process was mostly a success.

What are the disadvantages and advantages of re-blocking?

All participants agreed on the following advantages for re-blocking; there is accessibility (Fire tankers, Ambulance can access the settlements easily); provision of basic service is made possible (i.e. electricity, water. etc.); reduction in communal diseases. Job creation and skill transfers through the different projects/programmes taking place with the settlements.

Would you recommend re-blocking generally for South Africa?

All participants mentioned that they would recommend re-blocking generally because it makes provision of basic services possible for example, the provision of water, electricity, waste removal services, emergency services and it also means that the city will have paying customers, which increases revenue for the city.

Would you recommend re-blocking to other informal settlements as a way of improving service delivery in South Africa?

A senior manager from the Energy department mentioned that he believed that this initiative does contribute positively to the lives of people living in the informal settlements as such he will recommend it, all the other departments echoed the same sentiments.

What would you have done differently on the re-blocking project?

All departments concurred in saying that in an informal settlement there are a lot of limitation in terms of what one can achieve (i.e. provision of formal housing structure, etc.). A lot of regulation is triggered while trying to make the settlement livable, they believe because the City operates under strict regulation, it leaves little room for improvements.

5.4 Summary

This chapter discussed the demographic characteristics of respondents and socio-economic variables of the respondents. The chapter further analysed the effects of re-blocking on the livelihoods of Langaville ext.1 Informal Settlement in terms of disaster risk reduction. Based on the results of the interviews with the occupants in the re-blocked informal settlement and the focus group discussion the City of Ekurhuleni Human re-blocking programme is a suitable and relevant intervention. According to the researcher's opinion, re-blocking can be recommended to all the informal settlements provided that the informal settlements meet the standards for re-blocking which related to informal settlements in category A. Category A refers to informal settlements situated on council owned land where in-situ upgrade will be implemented. The City of Ekurhuleni has 4 categories as adopted according to the National upgrading Support Programme. The whole aim of re-blocking is to make informal settlements livable therefore ensuring that all the basic needs of the community are met such as access to water and sanitation, electricity, waste collection, health care through mobile clinics or emergency services vehicles having access to the community as and when needed. It also reduces fires which are a high risk in densely populated informal settlements therefore mitigating impacts of potential disasters.

CHAPTER 6: RECOMMENDATIONS AND CONCLUSION

6.1 Introduction

This chapter provides the recommendations and conclusion based on the findings from the study on how re-blocking reduces risks at Langaville ext 1. Informal settlements and improve service delivery. The purpose of this study was to investigate the best practice of re-blocking as a means of risk reduction in high-density informal settlements. The aim is to improve the lives of the community members in informal settlements in such a manner as to optimally utilise space to promote the health, safety and well-being of households, with particular focus on promoting accelerated service delivery for informal settlements. The study was limited to one informal settlement (Langaville) in the City of Ekurhuleni. The City of Ekurhuleni's Human Settlement re-blocking programme is an intervention whose objective is to reconfigure and reposition the current layout of informal settlements for livability. Through re-blocking, shacks are rearranged and aligned in organised clusters that create more space so that the municipality can build the necessary infrastructure such as water and sanitation pipelines and electric lines to improve services in informal communities.

In fulfilling the human settlement constitutional mandate the City of Ekurhuleni embarked on a strategic and constitutionally aligned programme of realigning of irregular shacks and the implementation of an urban informality intervention to provide infrastructure and municipal social services that address social and economic challenges in the informal settlements by the implementation of a re-blocking programme. Access to housing is a constitutional right for all South Africans in terms of Section 26. The principles of the Humanitarian Charter and Minimum Standards (2011) can be summarised as follows:

- that all possible steps should be taken to alleviate human suffering that arises out of conflict and calamity, and
- that those affected by a disaster have a right to live with dignity and therefore a right to assistance.

These principles should also be adhered to when implementing cost-effective mitigation measures in informal settlements. With the increasing rate of population growth,

migration, unavailability of land, and increasing costs, the current state-driven approach for housing provision is unable to meet all community needs inclusive of social and economic support. Due to the compactness of informal settlements, communal services are often provided on the outskirts of a settlement, in locations that are often not accessible to all dwellings. Informal settlements also face health hazards due to the lack of disposal of greywater, the prevalence of rodents, and other environmental health risks. There is also a great risk of the effects of disasters. Some informal areas are built on hazardous sites such as unplanned landfill sites, shallow undermining areas, wetlands, power line servitudes and dolomitic areas.

Fires are a great risk to informal settlements as the high density of the settlement and highly flammable building materials of the dwellings aid the rapid spread of fires. The layout and the density of these settlements make it very difficult for the City of Ekurhuleni to respond effectively to fires or any other emergencies. The City recognised the need for new ways of delivering services in informal settlements, for example the re-blocking programme. Such new approaches are aimed at building community capacity through participatory planning, design and implementation of services.

The re-blocking programme is an intervention process of determining alternative ways of thinking through the quality of place, safety and security through improved settlement layouts, and better located services. Re-blocking is an interim response to this human right as indicated in the constitution of South Africa. Based on the findings within this study, the following conclusions are drawn:

- Informal settlements are increasing in South Africa. The people in the informal settlements are exposed to risks and disasters because of their vulnerability.
- Local government (the City of Ekurhuleni) is the closest to the communities they serve and is, therefore, apart from binding legislation, the fittest to serve the needs of the communities.
- The legislative context of the City of Ekurhuleni Human Settlement Re-Blocking Programme confirms the legitimacy of the programme through National Upgrading Support Programme (NUSP) and Urban Settlements Development Grant (USDG).

It is a direct transfer from national to local government to supplement the metro's resources to fulfill local government functions in terms of the constitution, prevention of illegal eviction from and unlawful occupation of land act and housing legislation. Sustainable development goals furthermore confirm the importance of making cities and human settlements inclusive, safe, resilient and sustainable from goal 11 and it's further emphasized through target 11.1 that states that by 2030, governments must ensure access for all to adequate, safe and affordable and basic services and upgrade slums. Goal 9 further emphasizes the building of resilient infrastructures, promotion of inclusive and sustainable industrialisation and fostering of innovation relating it to target 9.1. Target 9.1 states governments must develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with the focus on affordable and equitable access. This must be in line with the Sendai Framework for Disaster Risk Reduction 2015- 2030 specifically on Priority 4 that deals with enhancing disaster preparedness for effective response and to *"Build Back Better"* in recovery, rehabilitation and reconstruction, which is what re-blocking aims to do. It aims to build back better infrastructure that is safe, affordable and has the provision of basic services and with upgraded slums/ informal settlements. Re-blocking achieved risk reduction because it ensured that the shacks were constructed with spaces in-between to avoid major incidents that ultimately lead to disasters and ensured that basic service delivery needs were delivered to the community of Langaville Extension 1.

While acknowledging that the programme is temporary in nature, it has however given the residents hope and relief until such time that the City of Ekurhuleni can provide a permanent solution toward the promised sustainable human settlements to the affected communities. The programme is aimed at providing immediate relief by ensuring informal settlements are structured, safe, serviceable, habitable, dignified, and providing the community with a sense of place. The key assumptions underlying the theory of change for this support are as follows:

- that upgrading of the Shacks will lead to an integrated urban infrastructure, occupants tenure rights and will create open spaces for essential facilities
- that installation of public facilities like recreation facilities, mobile toilets and schools will lead to livable spaces for human habitation
- that installation of sewer and water and sanitation facilities such as taps, chemical toilets in and around the settlements will lead to improved basic municipal utility services in the settlements
- that electrification of the shacks and the entire settlements will lead to safety and will create convenient paths for movement of people on foot
- that the grading, construction of roads and pavements will lead to reduced congestion, a safer integrated public realm, and provide for emergency and service vehicular access for first responder organisations to provide the required service in the settlements as and when it is required
- that the entire programme of re-blocking will depend entirely on the USDG grant.
- From these interviews, the researcher documented the following as findings: that densified residential areas with shacks and settlements arranged in compact but near one another with municipal services clearly installed. There were completed graded gravel roads enabling improved walkability within settlements by foot and vehicular access. Functional water reticulation services with running water facilities catering for five families per facility were installed as well as functional chemical toilets catering for the families. Waste collection bins/containers were catering for five families per facility. Functional electrical wiring and electrical meter boxes per shack were installed with electricity per occupant and stand numbers on each shack in auditable sequence even though the majority would much rather have proper brick and mortar house. There were noticeably reduced fire occurrence statistics per settlement as per emergency services statistical fire response case scenario records.

6.2 Study conclusion

In conclusion, the main research objective was addressed as the study showed that re-blocking positively impacted on the community by reducing the hazards and the risks within the communities in the informal settlement and improved service delivery. It also showed that service delivery has improved DRR through re-blocking. The advantages of re-blocking were that Informal settlements residents had improved access to basic services (water, sanitation, electrification, waste collection and other public space improvements) in line with available resources; improved partnership with settlement communities who actively participate in the planning and implementation of projects aimed at making the settlements livable; a safer integrated public realm. Challenges as indicated by the focus group such as budgetary constraints; the programme is highly under-budgeted, inadequate capacity and resources which were also addressed through a strategy to deal with budgetary constraints, for example, staggering the programme implementation and systematic selection of participating informal settlement. Priority was given to settlements that were on municipal land as opposed to those occupying privately owned land thereby avoiding costly legal battles and lengthy negotiations. In addition to this, service providers were subjected to a tender process whereby the lowest quotation from a service provider who fulfilled all the evaluation criteria was sourced as the preferred provider. The community of Langaville ext.1 Informal Settlement, overall was happy with the improvements made through re-blocking and at the same time, they still felt that the government should assist in providing them with formal housing.

6.3 Recommendations

The following recommendations were made by the researcher:

- From responses made by Langaville residents they said the City should involve the informal settlement communities from design of the re-blocking programme interventions so that they may bring in their ideas of how the re-blocking project can be beneficial.

- From the observation made by the researcher it is recommended that the City establish strong community leadership (councillor, ward committee members, and community leaders) structures in the informal settlements where the re-blocking programme is implemented. This structure should work directly with the design and implementation team in the implementation of this programme whereby the councillors shall only act as Ex-officials to oversee the programme implementation. This will reduce perceived corrupt practices and render councillors who are not interested in the progress of this initiative irrelevant.
- From observation, it was recommended that unemployment should be addressed by creating local economies in the informal settlements to bridge the gap of unemployment priority group, as they do not qualify for social grants.
- It is recommended that the existing re-blocking forum be strengthened to enable managers to coordinate all re-blocking interventions and to follow up progress in each informal settlement. Regular reporting and control are of utmost importance in ensuring sufficient resources are in place.

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