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Governance of infrastructure provision in informal settlements: the electrification of unproclaimed areas in the City of Johannesburg

A thesis submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, in fulfilment of the requirements for the degree of Doctor of Philosophy

Savory Chikomwe

Johannesburg, 2022

Declaration

I declare that this thesis is my own unaided work. It is being submitted for the Degree of Doctor of Philosophy to the University of the Witwatersrand, Johannesburg. The thesis has not been submitted before for any degree or examination to any other University.



Signature of Candidate

30 September 2022

Abstract

An increasing number of informal settlements in South Africa are receiving interim services for extended periods while awaiting permanent upgrading or housing solutions. This thesis explores the complex governance arrangements and challenges that arise around the provision of basic services using City of Johannesburg as a case study, with a focus on three 'unproclaimed' informal settlements that have undergone electrification. These are Stjwetla, Protea South and Slovo Park. The three cases shed light on the modes of infrastructure governance that characterize informal settlement upgrading as practiced in the City of Johannesburg and to some extent in South Africa more generally. Formal grid electrification in the case study settlements is juxtaposed by other temporary basic infrastructure provisioning in a complicated socio-political, institutional and governance context.

The inquiry adopted a qualitative methodology. The case studies of the three settlements and the City of Johannesburg were compiled through an extensive literature and document review and in-depth interviews with key informants. These spanned community leadership, political representatives, experts and officials in municipal, provincial and national departments and state-owned entities. The thesis finds ambivalence, disconnections, misalignments and contradictions in the basic infrastructure provision and upgrading processes within the City of Johannesburg and between the City and central government departments. This was accentuated by the role of the national state-owned electricity company Eskom in one of the three settlements. The thesis finds that the prolonged temporary status of the informal settlements promotes contestations at various levels, including ligation. In the absence of progress towards permanent upgrading, investment in grid electrification ambiguously signals permanence even where there is no state intention to upgrade *in situ*. Within communities, this confusion contributes to tension while also triggering consolidation and in-migration. Differing interpretations across entities of the state about the role of grid electrification in informal settlement trajectories open up space for temporary electrification ultimately to lead towards the pragmatic adoption of permanent in situ upgrading. This notwithstanding, literature reviewed for this thesis points instead toward the necessity for a turn to off-grid electrification technologies for informal settlements.

Dedication

To my wife and partner, Vimbai, our children Tatenda (Tatee), Tapiwanashe (Tapie), Nyasha (Ngenege/Galileo), Ropafadzai (‘ster), Takudzwa (Rodgie) and not least Tafar Savory (Tafrie). You have been my source of inspiration, always sharing with me the upwards and steepness of the PhD journey. God bless you.

To my Overseer and President of the Apostolic Faith Mission of Africa, Rev R. Zulu: Your prayers, manifold love and great things you have and continue to teach me.

To Pastors P. K. Nyabadza (Masvingo) and S.S Mthombeni (Johannesburg): You are exemplary men of God. Thank you for prayers. To Rev Darlington Mushongera, thank you so much!

Last but not least, Evergood Group at Masvingo Church. You are an obedient, God-fearing Group among Groups, that inspiring me. Keep up the good work of God

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Last but least, I thank all my interview respondents both from the communities of Stjwetla, Protea South and Slovo Park as well as institutional respondents from across the City of Johannesburg, government departments and experts/professionals for the generous sharing of information, experiences and suggestions.

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List of Abbreviations

AC	Alternating current
AES	Eletropaulo Metropolitana Eletricidade de São Paulo S.A
AMC	Ahmedabad Municipal Corporation
ANC	African National Congress
ARP	Alexandra Renewal Project
BBBEE	Broad-based black economic empowerment
BNG	Breaking New Ground Policy
CBOs	Community Based Organisations
CES	Centre for Effective Services
CoCT	City of Cape Town
COGTA	Cooperative Governance and Traditional Affairs
CoJ	City of Johannesburg
CRUM	Citizen Relationship and Urban Management
CT & SP	City Transformation and Spatial Planning
CUBES	Centre for Urbanism and Built Environment Studies
DA	Democratic Alliance
DC	Direct current
DoE	Department of Energy
DoH	Department of Housing
DoRA	Division of Revenue Act or Bill
DPE	Department of Public Enterprises
DPME	Department of Planning Monitoring and Evaluation
DPSA	Department of Public Service and Administration,
DME	Department of Minerals and Energy
EIA	Energy Information Administration
EIA	Environmental Impact Assessment
EISD	Environment and Infrastructure Services
ESMAP	Energy Sector Management Assistance Program
FBE	Free Basic Electricity
FIDPM	Framework for Infrastructure Delivery and Procurement Management
GGLN	Good Governance Learning Networks
GWME	Government-Wide Monitoring and Evaluation
HDA	Housing Development Agency
HSDG	Human Settlement Development Grant
IDPs	Integrated Development Plans
IEA	International Energy Agency
INEP	Integrated National Electrification Programme
IPPs	Interdependent Power Producers
IRA	Intergovernmental Relations Act
JW	Johannesburg Water
LPM	Landless People's Movement
MIG	Municipality Infrastructure Grant
MTSF	Medium-Term Strategic Framework
NDoHS	National Department of Human Settlements

NDP	National Development Plan
NERSA	National Electricity Regulator of South Africa
NGOs	Non-governmental organizations
NPC	National Planning Commission
NPM	New Public Management
NT	National Treasury
NUSP	National Upgrading Support Programme
OECD	Organisation for Economic Co-operation and Development
OPECP	Office of the Premier, Eastern Cape Province
OUTA	Organisation Undoing Tax Abuse
PARI	Public Affairs Research Institute
PMG	Parliamentary Monitoring Group
RAC	Rapid Assessment and Categorisation
RSA	Republic of South Africa
REDs	Regional Electricity Distributors
SABS	South African Bureau of Standards
SACN	South African Cities Network.
SALGA	South African Local Government Association
SANS	South African National Standards
SDF	Spatial Development Framework
SDG	Sustainable Development Goal
SEA	Sustainable Energy Africa
SERI	Socio-Economic Rights Institute of South Africa
SIPDM	Standard for Infrastructure Procurement and Delivery Management
SPCDF	Slovo Park Community Development Forum
SPLUMA	Spatial Planning and Land Use Management Act
TRAs	Temporary relocation areas
UISP	Upgrading of Informal Settlement Programme
UISPG	Upgrading of Informal Settlement Partnership Grant
UNDP	United Nations Development Programme
USA	United States of America
USAID	United States Agency for International Development.
USDG	Urban Settlement Development Grant
VIP	Ventilated Improved Pit latrine
WHO	World Health Organisation
WPLG	White Paper on Local Government

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CHAPTER ONE

1.0 Introduction

1.1 Introduction

Infrastructure provision and governance represent a growing challenge in many regions of the global South, where severe shortages of basic services such as water, sanitation, and electricity characterise impoverished settlements. This thesis sets out to better understand infrastructure governance, conceptualised as encompassing, inter alia, decision-making, funding, implementation, and networking (OECD, 2015; Wegrich, et al. 2017), as intervening in infrastructure provision frameworks. Governance is a term that has multiple meanings (Hye, 2000; Pierre & Peters, 2000) and is differently applicable in settings with dissimilar socio-economic, political and institutional contexts. Wegrich et al.'s (2017) review of recent research shows many city administrations are not embracing infrastructure governance. As such, the *modus operandum* of institutions is inherently shaped by political logics, centre-local influences and tensions, and multiple rationalities and irrationalities, including inefficient use of limited resources and corrupt behaviours; these should fundamentally change towards infrastructure governance being a trajectory that is able to secure manifold benefits and opportunities to those most in need (ibid). Other benefits relate to the active interactions between the state, citizen, and other stakeholders (Graham, et al. 2003). Conceptualized as a virtuous notion, governance as a concept represents a situation in which the state is weakening and various forces in society steering; private and civil society organisations are acknowledged as co-producers and not passive subjects (Rhodes, 1997; Ansell & Torfing, 2016). Assduzzaman, et al. (2016) also theorise the shift towards governance as involving a system of democracy that positively reforms state-civil society relationships. In such an environment, infrastructure governance becomes an enabler of the provision of functional public infrastructure, hinging on mutual and active interaction, and technical complementarities in which the public, community and or private sector work together (Graham, et al. 2003).

Based on the foregoing, this thesis analyses the governance of infrastructure in the particular geographical or physical setting of informal settlements referred to as unproclaimed areas in the South African electrification guidelines. The commendable electrification approach, instituted under a universal electrification programme, is juxtaposed with temporary housing sector

infrastructure, namely water and sanitation. The electrification guidelines for unproclaimed areas were introduced due to the significant improvement to impoverished households that access to electricity can make, although this requires high levels of investment and forms a challenge in terms of governance (Hughes, 1983; Migdal, 1988; Star, 1999; Gaunt, 2003; IEA, 2011). Despite the commendable goal of universal electrification, South Africa is faced with an electricity supply conundrum related to its coal-based grid electrification (Jaglin & Dubresson, 2016). This is also deemed unsustainable and inappropriate as primary means for energy provision to informal settlements (Keller, 2012; Tait, 2017; Runsten, et al, 2018). Indeed, for many countries, the unsustainability of grid-supplied electrification is due to high costs, governance, and other reasons (IEA, 2011). In South Africa, grid electrification has been implemented in informal settlements since 2011 under policy guidelines for the electrification of unproclaimed areas, although earlier electrification of informal settlements has taken place. The electrification is provided under the Integrated National Electrification Programme (INEP) through which Eskom, the state-owned electricity utility, distributes in licensed supply areas (DoE, 2018). Metropolitan municipalities can supply electricity in parts of their jurisdiction where the National Electricity Regulator of South Africa (NERSA) issues them a license (ibid). It is in this context that the inquiry sets out to understand the governance of electrification of informal settlements through the energy sector alongside temporary water and sanitation provision through the housing sector. The housing sector infrastructure provision to informal settlements ought to be aligned with the Upgrading of Informal Settlement Programme (UISP) adopted in 2004 into the then Housing Code by the then Department of Housing, renamed Department of Human Settlements in 2009, and also incorporated into the 2009 Housing Code. However, the UISP has seldom formed the guiding approach, with the result that informal settlements have remained and been managed as temporary indefinitely.

1.2 Background

McLennan and Munslow (2009) identify infrastructure provision for marginalised informal settlement communities as a challenge in the third decade of South Africa's democracy. Service delivery protests arising from informal settlements are not uncommon as the state fails to supply much-needed infrastructure (Lemanski, 2019). South Africa, through its Housing Code, has undertaken to provide infrastructure in informal settlements under the UISP to alleviate

vulnerabilities. This builds on the 1996 Constitution, which incorporates basic services as a right. Accordingly, the National Housing Code emphasises that 'the UISP is one of the most important programmes of government which seeks to upgrade the living conditions of millions of poor people by providing secure tenure and access to basic services' (DoHS 2009:16).

Despite the state's commitments to upgrade informal settlements, there has not been significant traction on UISP implementation, despite brokering by courts of law (Chenwi, 2015; Clark & Tissington, 2015). Other state undertakings which also did not materialise in meaningful ways include President Jacob Zuma's 2010 pledge to significantly advance *in situ* upgrading (Cirolia et al., 2016). In this undertaking, the performance agreement was signed with the then Minister of Human Settlements in what was termed the 'first large-scale programmatic response to incremental upgrading of informal settlements in the country' (Tissington, 2012:4). This aimed 'to upgrade 400 000 households in well-located informal settlements with access to basic services and secure tenure' (Fieuw, 2015). Yet to date, very little *in situ* upgrading has taken place in the country.

The electricity provision in the Metropolitan City of Johannesburg (CoJ) embeds a governance challenge as two state-owned enterprises, one national and another municipal, are both distributing electricity under the same jurisdiction of the CoJ, albeit without coordination (see Chapter 8). This siloed approach to electricity and other infrastructure governance, in general, is also mirrored at the national level, where the Department of Energy (DoE) works in isolation of the National Department of Human Settlements (NDoHS), supposedly a key infrastructure department in the informal settlements (see Chapter 8). It is important to state that these challenges are taking place against the background of constitutional and intergovernmental frameworks that advocate for cooperative, coordinated and interactive governance (RSA, 1996; RSA, 2005). Besides the 1996 Constitution and National Development Plan (NDP) 2030 (The Presidency, 2012), the 2005 Intergovernmental Relations Act (IRA) provides mechanisms 'for the national government, provincial governments and local governments to promote and facilitate intergovernmental relations' and reinforces 'concerted effort by government in all spheres to work together and to integrate as far as possible their actions in the provision of services' (RSA, 2005:2). Yet the housing and energy infrastructure sectors are seized with inherent complex intergovernmental disconnections and contradictions.

Apart from earlier critique of electrification, there is a paradox in terms of the unwitting connotation of permanence, which on-grid electrification brings about (Gaunt et al., 2012; Runstein et al., 2018). Unlike basic and communally provided water and sanitation, the "big" networks and their high investments in the form of poles, overhead distribution, transformers and metered connections to the temporary shack dwellings create an assurance of permanence (see Runstein et al., 2018). The implication of this sense of permanence is further concretised by the so-called 're-blocking' that entails realignment and re-organising of spontaneous informal settlement layouts to enable the installation of basic services including the grid electricity infrastructure (Basson, 2019). However, Kiefer and Ranganathan (2018:1) argue the re-blocking paradigm is '[t]hough not without structural and long-term challenges… [and] provides an alternative to eviction and resettlement' implying that it is proving to be a permanent solution. Furthermore, re-blocking 'is the latest iteration of *in situ* slum upgrading. Re-blocking differs from previous *in situ* approaches influenced by John Turner and others in the degree to which space is physically reorganized' (ibid:1). Taken together with high capital investment argument, electrification is perceived as a permanent measure allowing the *de facto in situ* upgrading process. In this way, the UISP and INEP are perceived as contradictory in common purposes, as the former is maintaining temporary infrastructure provisions.

In the context of the above background of contradictory infrastructure provision and unclear upgrading policies, I discuss how the electrification programme for the unproclaimed areas is manifesting in the CoJ. The inquiry also pays close focus to tensions, contestations and disconnections among central government organisations, the CoJ and state residents, where some informal settlement communities have resorted to litigation for intervention in the infrastructure provision. As Anheier (2013:11) conclude about infrastructure governance, not all arrangements are 'well grounded, let alone well guided. Some innovations would likely do more harm than good; others … fraught with unknown consequences.'

1.3 Problem statement and rationale

This inquiry is instigated by unclear infrastructure governance configurations that manifest in the implementation of a well-intentioned informal settlement infrastructure provision through a state-approved UISP. The informal settlement residents have been waiting for the infrastructure delivery and permanent settlement upgrading, which, however, is not forthcoming except for empty

promises since the onset of the UISP in 2004. In particular, the CoJ is disfavouring UISP for relocation of residents to greenfield developments leading to contestations and intervention of the judiciary. Yet the CoJ is not complying fully with court judgements and orders that are compelling the City to upgrade *in situ* and engage the inhabitants in more meaningful ways. In adopting the relocation strategy, the city seems to have the support or blessing of the DoHS, which is not intervening in that process. This makes the informal settlement upgrading in the CoJ complex, difficult to understand and worth investigating. Relatedly, the stuck upgrading processes are leading to rather permanent brick-and-mortar self-consolidations ostensibly activated by the seemingly permanent electrification albeit without the approval of the CoJ, altogether leading to a complicated informal settlement upgrading trajectory.

In terms of rationale, the study is motivated to contribute knowledge in infrastructure governance for informal settlements by making a systematic engagement with and analysis of underlying driving policy and institutional arrangements as well as community-level factors that hinder or promote infrastructure provision in South Africa. Thus, the study hopes to make a specific contribution to knowledge based on a comprehensive study of infrastructure provision challenges in informal settlements in the CoJ. There is also little specific literature on formal electrification of informal settlements, with much of the existing literature focusing on energy services to urban poor (Gaunt, 2003; 2008; ESMAP, 2011; GNESD, 2013; Singh, et al., 2015), optimal arrangements, ownership, and operations (Jaglin & Dubresson, 2016) and informal electrification in informal settlements (Gaunt et al, 2012).

1.4 Aims and objectives of the study

The research provides deeper insights into infrastructure governance configurations that perpetuate inadequate infrastructure provision in the complicated interface between interim electrification and other interim services in informal settlements. To achieve this aim, the inquiry analyses how the energy and housing sectors' policies and programmes are manifesting at implementation level. The thesis also seeks to assess how community governance, organisation and forming alliances promote or hinder infrastructure provision in that settlement.

1.4.1 Sub aims

The research has the following objectives:

i. To contribute to the understanding of infrastructure provision in relation to the improvement of conditions in informal settlements in post-apartheid South Africa.
ii. To determine the contributions of the institutional framing for electricity in infrastructure provision and informal settlement upgrading processes and assess the interactions between institutional stakeholders and informal settlement residents in the informal settlement upgrading processes in Johannesburg.
iii. To examine the methodologies for infrastructure governance in South Africa and how the the arrangements are intervening in the infrastructure challenges with regards to informal settlements.
iv. To understand the unintended complexities brought about by electrification of unproclaimed areas and how the dynamics are governed.

1.5 Research questions

This study is based on the following research question:

How is infrastructure provision in informal settlements, in particular electrification, governed in South Africa?

The above question is broken down into the following sub-questions, which guided this research:

i. How is infrastructure provided in informal settlements in post-apartheid South Africa?
ii. How is electricity institutionally framed, and in what ways does the structure manifest in informal settlement upgrading in Johannesburg?
iii. What arrangements exist for the governance of infrastructure provision in the informal settlements in South African cities? How are these interventions mediating in the infrastructure challenges?
iv. What dynamics are triggered in the implementation of the electrification of unproclaimed areas, and how are these governed?

1.6 Working hypothesis

The working hypothesis for the governance of provision of electrification and related infrastructure in informal settlements was formulated around an awareness of limited interactions between government entities and between the entities and residents or their representative organisations.

This, I assumed, was culminating in disconnected implementation and infrastructure governance processes, in which critical stakeholders, especially community-based organisations, are then required to take proactive and direct roles. Indeed, the study found that there are limited interdepartmental collaborations in the CoJ, inter-sectoral tensions and the state institutions in stalemate with the residents in the settlements. The impasses are partly responsible for the residents ultimately resorting to struggles including judicialising infrastructure governance against the state.

With regard to sub-question (i), I expected that it would not be easy to establish exactly how infrastructure is provided to informal settlements, and that this would vary from one settlement to the next. However, the unconditional cooperation I got across all key informants made it relatively simple to determine how water-sanitation-electricity infrastructures are provided in all the three settlements under study. The ideal of the UISP is not, in all cases, the basis of infrastructure provision, but this is implicitly guided under the pragmatist policy of the DoE and the ambivalent and unrealistic DoHS housing policy. Regarding research question (ii), I expected to find an ambiguous institutional framing that was not aiding informal settlement upgrading in the City of Johannesburg. This hypothesis was confirmed with three key departments responsible for housing, planning and infrastructure are working in siloes or misalignment. So are the two national infrastructure sectors. For sub-question (iii), my working hypothesis was that different infrastructure governance arrangements may be present for the infrastructure provision in each settlement, and that those with stronger community involvement and most direct relationship with the City (i.e., not being electrified by the national electricity enterprise Eskom) might be better mediating infrastructure challenges. This supposition was partly correct as the two groups of settlements administered by the CoJ (Stjwetla and Slovo Park) and Eskom (Protea South) have different infrastructure governance principles. Overall, however, material infrastructure management concerns of all the three communities were similar and unabated. Regarding sub-question (iv), I expected to find dynamics at various levels, including possibly a level of disregard or lack of adherence to the policy frameworks at implementation level, resulting in (and in part due to) institutional fragmentation, confusion and contestations among the various institutional entities and between these entities and stakeholders involved in the process. For this, important dynamics were found. They pertain not only to scarce or no implementation of UISP but also to tension interpretation and implementation of the infrastructure sectoral policies, inherent

horizontal sectoral fragmentation and the connotations of permanence that the interim electrification is triggering.

1.6 Spatial context, scope, and overview of the research methods

The thesis is spatially framed by a context of apparent zeal and commitment to upgrade informal settlements in South Africa. The key focus, therefore, is to determine how that vision is accomplished using the CoJ as a case study. This makes the research an evaluative assessment of the implementation of infrastructure provision, with the intention to identify bottlenecks to the informal settlement upgrading processes. This research interest arises against the backdrop of perpetually inadequate, impermanent infrastructure provisioning that results in precarious living conditions in informal settlements in the CoJ and South Africa at large, despite professed commitments to upgrading (Cirolia, 2017).

The inquiry is located within a qualitative paradigm, and an interpretive research design has been adopted. In this design, a qualitative case study methodology was used with in-depth interviews and transect walks as the research instruments suitable to understand infrastructure governance in informal settlements. The main case study is the CoJ with context cases of the informal settlements Stjwetla, Protea South and Slovo Park. I made preliminary visits in addition to undertaking literature reviews to get to know these settlements before making my final case study choice. I considered a total of 12 electrified informal settlements in the City. All of these were electrified by City Power except for Protea South, which was Eskom-supplied. I purposively included Protea South in order to compare Eskom- with City Power-supplied areas, given the different governance arrangements. My preliminary visits to the case study sites helped me gain an initial understanding of the institutional setup as it applied in each case. I gained an understanding of the infrastructure situation pertaining to each of the informal settlements as well as the governance context at the level of the community. The in-depth interviews, which spanned national and local government officials, utility companies, political representatives and community leadership complemented the grey literature review.

In terms of delineation, the research does not seek to investigate the entire infrastructure governance arena but concentrates on electrification in unproclaimed areas and connected to this, comparison with basic water and sanitation infrastructure in the same areas. As already mentioned,

the three empirical case studies of the Stjwetla, Protea South and Slovo Park informal settlements, all in the CoJ, were purposively chosen. Beyond the inclusion of Protea South as electrified by Eskom, other criteria were the contrasts and unique aspects across the three settlements in terms of community governance, histories or attempts at relocations and the particular infrastructure provision trajectory in each settlement. In this sense, Stjwetla has experienced partial removals, reversals and removals again in a manner that shows indecisiveness by the state. Protea South has a disjointed community leadership that is self-conflicting, and Slovo Park, a perfect opposite of Protea South, has an organised community leadership that is seemingly quite unique, yet it is struggling in the quagmire of settlement upgrading and related infrastructure provision challenges.

1.7 Organisation of the thesis

The remainder of the thesis is presented in eight chapters, with the next two chapters constituting the literature reviews that provide a conceptual and theoretical understanding of the deeply complex, multi-faceted and elusive informal settlements-related themes of electrification, infrastructure governance and informal settlement upgrading as applicable across the globe, developing countries and in the South African context. Chapter 2 presents key debates in governance and institutional frameworks as they relate to informal settlement upgrading, infrastructure governance and electrification globally, regionally and in South Africa. Giving definitional foundation, the chapter also discusses key conceptual, theoretical and empirical knowledge pertaining to infrastructure governance and state-informal settlement interfaces as they relate to infrastructure provision in informal settlements. It also discusses electrification as an important indicator and driver in informal settlement upgrading endeavours. Chapter 2 ends in a conceptual framework for the thesis.

Chapter 3 builds on the preceding chapter by presenting informal settlement upgrading, governance frameworks, electrification and institutional frameworks in the South African context. The chapter outlines the historical background of informal settlements, upgrading and their governance. It reflects on key aspects of informal settlements, the contestations and litigation against the state's refusal to upgrade. The chapter also details electrification policies and programmes and how state agencies, including Eskom (national player) and City Power (local government), are implementing or are supposed to be implementing in line with legislative and programmatic arrangements. The chapter argues that gaps exist in the governance of electrification

and the other interim infrastructures in the unproclaimed areas, negatively impacting envisioned progress in implementing the upgrading programme.

Chapter 4 introduces the research methods and research approach and the case study contexts of Stjwetla, Protea South and Slovo Park settlements. It outlines the research process of the interpretive qualitative case study approach and data analysis techniques. Chapters 5, 6 and 7 each cover one case study. These findings chapters provide evidence of how infrastructure provision is being governed. Chapter 5 focuses on Stjwetla, which faces multiple governance challenges, including the prospect of a complete relocation through which the costly electrification infrastructure would be rendered obsolete. Chapter 6 presents evidence that Protea South has deeply fragmented community leadership that militates against community cohesion and reluctant state agencies. The judicialisation of infrastructure governance in this case intervened in the infrastructure provision, but community division is masking the efficacies of the litigation strategy. Chapter 7 sets out a community that is exemplary in terms of paving the way for the inclusionary the UISP implementation approach in Slovo Park. The Slovo Park community leadership arrangements have catalysed important breakthroughs and infrastructure negotiations with the CoJ.. Like Protea South, Slovo Park's trajectory also included community-initiated litigation, but this yet to show meaningful results for the community. Chapter 8 turns to institutions of City of Johannesburg that have relevance for infrastructure governance and provision in the City's informal settlements. It also analyses the roles of state institutions beyond the City including national departments, and their relationship with the City. Here disconnections and misalignments surface at interdepartmental and intra-municipality levels.

The thesis concludes with Chapter 9, with the findings showing a complex governance approach, a contradicting and significantly varying trajectory across the three settlements but also in relation to the visions and thrusts of national policies, programmes and legislation. Based on the findings, I argue that there is a need to revisit the frameworks of the UISP and INEP, which are performing poorly in the informal settlements. At its close, the chapter formulates recommendations for policy frameworks and further research.

CHAPTER TWO

2.0 Key debates in infrastructure governance and institutional frameworks as they relate to informal settlement upgrading and electrification

2.1 Introduction

Infrastructure governance, institutional frameworks, informal settlement upgrading and electrification are key empirical and conceptual themes undergirding the different literature discussions in this thesis. The purpose of this chapter is to review these in a way that allows me to construct a conceptual framing for this thesis. The chapter opens with a discussion of the informal settlement upgrading theme to determine how infrastructure upgrading is done. This theme sheds details about how in informal settlements are differently understood, conceptualised and happening globally and regionally for ultimate comparison with South African approaches. It does so by examining international studies on the implementation and governance of informal settlement upgrading. The second theme reviewed in this chapter is electrification focusing on distribution, electrification typologies and how the infrastructure is governed in informal settlements. This pertinent theme directly anchors and informs the study on South African electrification of unproclaimed areas. The electrification theme is followed by a review of extensive debates on infrastructure governance, key concepts relating to infrastructure, governance, and related theories and principles. The thematic is important to inform South African of best infrastructure governance international practices around the globe and region. Lastly, the chapter reviews literature on institutional arrangements in infrastructure governance, paying attention to institutional interactions, coordination, capacities and challenges. Here the review encompasses the institutional-legal perspective and the role of judicial institutions in infrastructure governance in informal settlements. The institutional-legal thematic is central to determine how state institutions and the legal fraternity are intervening in infrastructure governance, with international insights key to inform local South African trajectories.

2.2 Informal settlement upgrading

The section first looks at how informal settlements are understood and conceptualised in global South contexts which helps this thesis to frame challenges and tensions in the settlements upgrading initiatives. Key debates about informal settlement upgrading and how it is manifesting in the global South and globally more generally are discussed. There also discussions about

informal settlement upgrading policy-practice disjuncture not notwithstanding compelling socio-economic reasons to incremental informal settlement upgrading.

2.2.1 Understandings and conceptualisations of informal settlements

Informal settlements, which is the term this thesis adopts, is not entirely synonymous with the term slum, the latter being a complex, ambiguous international condition encompassing varying forms of vulnerabilities that 'represent the worst of urban poverty and inequality' and informalities across time and geographies (UN-Habitat, 2003:v). Because of these many facets, UN-Habitat (2003) assumes "slum" as an operational definition to unpack the complex global underlying spatial, social, and economic dynamics related to slum phenomena. Informal settlements are seen as a particular type of slum just like squatter settlements, which connote unauthorised occupation of land (Gilbert, 2009). As both 'slum' and 'squatter' convey negative histories and meanings in South Africa (Huchzermeyer, 2014), this thesis henceforth adopts the use of the term informal settlements as much as possible. This is also the term most frequently used in the South African housing policies.

Although informal settlements, just like slums, are important human settlement areas, they are often negatively stereotyped. Slums are identified by their deficits: 'the most intolerable of urban housing conditions, which frequently include insecurity of tenure; lack of basic services, especially water and sanitation; inadequate and sometimes unsafe building structures; overcrowding; and location on hazardous land…[with] high concentrations of poverty and of social and economic deprivation' (UN-Habitat, 2003:vi). UN-Habitat (1999; 2010) characterises the poor human living conditions in informal settlements as not only a manifestation of poverty, squalor and vulnerability but also exclusion, precarious legality and stigmatisation. From a health perspective, informal settlements were responsible for a quarter of respiratory and diarrhoeal diseases among children towards the end of the previous century (WHO, 1998). In Sub-Saharan Africa, a contributing factor to poor living conditions in the settlements is the severest lack of access to piped water on-premises and on-site sewerage (Satterthwaite et al., 2019).

The positive side of the informal settlements' ledger is their being receiving points for immigrants by virtue of providing affordable housing, often built by own means within or on the edge of an existing informal settlement. UN-Habitat (2003) argues that this should be an indication to state authorities of shelter innovation possibilities for the poor urbanites. Furthermore, residents of the

settlements can be seen as 'wellsprings of entrepreneurial energy' and thus important cogwheels of city economies, providing employees, employers and markets to the city (City Alliance, 1999:2). The New Urban Agenda (UN-Habitat, 2016:14) exemplifies this point using a supposition that if the nearly one million residents of Dharavi informal settlement were evicted, that would socially and economically dislocate Mumbai. In that way

> '[T]he city would simply stop working. If the mega slum were to disappear, then Mumbai would lose so many of its drivers, domestic workers, garment manufacturers, garbage collectors and office workers that India's commercial capital would simply cease to function.'

There are several understandings and conceptualisations of informal settlements that frame their tensions between temporariness, upgrading initiatives and permanence. According to Waliuzzaman (2020:1), urban informal settlements are conceptualized as housing of the poor where hegemonic imaginings of "dysfunction", "disorder" and "discursive marginalisations" often influenced by the legacy of coloniality view 'informality as the "problem" of global South cities.' Another analyst attributes the existence and growth of the settlements to failure of past as well as current policies for informal settlements often criticized as rigid, outdated and inappropriate planning instruments (Sietchiping, 2005). Okyere and Kita (2015) and Niva, et al (2019) cite persistent and or uncontrolled processes of urbanization and strong urban growth in African cities, rarely addressed by policymaking, as significantly contributory to the informal settlement phenomenon. For this, urban planners are often blamed for losing control and or overlooking the spatial expansion and growth of the settlements (Sietchiping, 2005).

Given informal settlements are a culmination of multidimensional spatial-temporal urbanization dynamics (Niva, et al, 2019), Sietchiping (2005) suggests that urban planning needs to understand the various motivations behind the proliferation of informal settlements. This conceptualization and the simulation require appraisals to give insights about the settlements locational, development and growth trends, and to predict their 'past, present and probable future location' (Sietchiping, 2005:1). To address the dynamics of informal settlements in developing countries, Sietchiping (2005:1) proposes a Geographic Information Systems-Cellular Automata Informal Settlement Growth Model 'to model, simulate, predict and dynamically visualize the growth' practices. This GIS-linked model providing visual trends is regarded with high potential, sensitivity, usability and reliability and high prediction of slum development, growth and facilitates future planning (ibid).

Unlike the foregoing technocratic solution, Okyere and Kita (2015:101) campaigns for a reconsideration of 'dominant and conventional thoughts on informal settlements to embrace its inherent patterns and processes in Africa…for responsive, inclusive and effective sustainable urban planning strategies in African cities.'

The next section pertains to debates surrounding informal settlement upgrading, experiences and the various ways in which literature suggests the upgrading strategy has been done, treated or could be treated. The discussion forms the basis for establishing a connection to infrastructure and its governance, where informal settlement upgrading is all about infrastructure provision and improvement.

2.2.2 Debates about informal settlement upgrading

Informal settlement upgrading is classified into four (4) broad categories of which one is the do-nothing approach by government motivated by of lack of capabilities, resources or political will to engage with informality (Visagie & Turok, 2020). This is synonymous with adopting a "quiet diplomacy" that ignores the settlements as governments make no claims or responsibilities on infrastructure investments in the settlements (Satterthwaite, 2012). Secondly, the state can choose to evict, relocate or den-densify informal settlements on the grounds of illegality where debates like area inhabited is reserved for a specific development or as a protective measure from environmental hazards can be raised (see Jordan and O'Riordan, 2004; Visagie & Turok, 2020; Tournée and Omwanza, undated). Under this typology, some settlements may be openly bulldozed, often worsening the lives of residents (Tibaijuka, 2005; Huchzermeyer, 2011; Satterthwaite, 2012). The third option is where local authorities provide little basic utilities to alleviate hardship which, at least, signifies state acceptance of the informalities albeit without a clear vision for a better future (Visagie & Turok, 2020). It is in this third category that this study largely falls. The fourth and last possibility is where the state makes bolder commitment to redesign, develop, upgrade as well as manage the settlement developmental approach in partnership with the community (ibid). The last one resonates with what the UISP in South Africa purposes to do.

In the context of the upgrading typologies outlined above, Satterthwaite (2012: 205) defines informal settlement upgrading as measures taken to 'improve the quality of housing and the

provision of housing-related infrastructure and services to settlements that are considered to be (or officially designated as) 'slums' or that developed illegally.' Relocation and or de-densification which both encompass physical removals of residents is one framework of informal settlement upgrading. To undertake relocation/densification, environmental, health hazards, overcrowding among other factors that impact basic or emergency services provision in informal settlements are considered (see Jordan and O'Riordan, 2004; Visagie & Turok, 2020). Excessive population density is, for instance, criticized for speeding up the spread of water and vector-borne sicknesses and raising the risk of the contagious Covid-19 pandemic especially where there is inadequate infrastructure (Satterthwaite, 2011; UN-Habitat, 2015; PlanAct, 2020). In overly populated settlements, complete relocation or de-densification is often contemplated, with most governments tempted to relocate informal communities to affordable state-subsidized housing solutions (Visagie & Turok, 2020). But given formidable numbers of the poor living in informal settlements and limited state resources, for instance in sub-Saharan Africa, some governments end up making exceptional commitments which they may not fulfil (ibid). More often, governments redirect limited financial and human resources to implement temporary residential areas (TRAs) at host sites these often-becoming new sites of marginalization and high social vulnerability (PlanAct, 2020). TRAs are comparable to gray spaces where populations are thrust 'in "permanent temporariness" – concurrently tolerated and condemned, perpetually waiting 'to be corrected' (Yiftachel, 2009:90). Top-down or centrally imposed de-densification solutions lack contextual flexibility, compromise and unanimity hence the process is bound to face resistance and contestation by communities who may not accept disturbance or relocation (Visagie & Turok, 2020). The resistance has been conceptualized under active citizenship (GGLN, 2013) and infrastructural citizenship (Amin, 2014; Lemanski, 2019), being frameworks through which citizens seek improvement in the way infrastructure planning, provision and governance is done. As a matter of procedure, relocations require extraordinary processes including social facilitation, securing the residents' informed consent, acquiring and servicing of well-located land and ensuring minimal disruption on livelihoods (PlanAct, 2020). This implies that if not managed well, de-densification can inflict deep socio-economic and political impacts tantamount to evictions or forced removals, except if the informed consent principle and processes of participation are adhered to in strict sense.

The third option, temporary settlement upgrading, is common where land tenure is not secure and inhabitants susceptible to possible eviction such that government may only provide temporary or provisional infrastructural improvements in form of communal water taps, street lighting or road opening (Satterthwaite (2012); Visagie & Turok, 2020). The sites can include residents carefully chosen problematic land pieces like dumpsites, riparian, rugged and other poorly located land in anticipation of standing a good chance of evading eviction by government (Satterthwaite, 2012; Tournée and Omwanza, undated). Upgrading initiatives are possible after the acceptance and integration 'in local governments' ongoing investment and management programmes' (Satterthwaite, 2012:208). Settlement like Kibera, Mathare and Korogocho, all in Nairobi, Kenya, can be classified under this upgrading trajectory given the temporary and poor drainage infrastructure for example, which poses a health hazard and high proneness to flooding (Tournée and Omwanza, undated). In such circumstances, governments may roll out temporary basic services like communal water, communal disludgeable or bucket sewerage systems, municipal solid waste collection/disposal yet in some instances these may be non-existent (PlanAct, 2020). The underlying problems to the temporary infrastructure provision have been debated as inappropriate overarching legislation or policy that do not recognize informal settlements (Satterthwaite, 2012) or unqualified municipal workforce that lacks resources or ingenuity to implement infrastructure programmes (Waliuzzaman, 2020; Tournée and Omwanza, undated). Sietchiping (2005) and Waliuzzaman (2020) blame rigid colonial-based urban planning and its associated stringent urban by-laws that are not providing an enabling environment conducive for residents showcase their knowledges or capabilities regarding viable infrastructure solutions.

The last of the four approaches discusses *in situ* informal settlement upgrading which Cities Alliance (1999:1 & 3) justified 'as the centrepiece of a global strategy for improving the living conditions of the urban poor.' Extending this argument, UN-Habitat (2017) and Visagie and Turok (2020) emphasize that greater attention should be focused on refashioning informal settlements to improve living conditions, tape into economies of concentrated population that reduce costs to infrastructure provision and stimulate inclusionary and participatory settlement upgrading. *In situ* informal settlement upgrading owes its background in the 1970s when the World Bank championed the funding of site and services schemes which made it to be routinely accepted as a relevant approach by many nations which were induced by the expectation of more funding

(Satterthwaite, 2012). Earlier on in the 1960s, John FC Turner and William Mangin also produced influential writings following their successful upgrading experiences in Lima (ibid). Further motivation to settlement upgrading was exemplified in the large-scale Kampung Improvement Programme, Indonesia, where in 1969, unserviced village-like settlements or kampungs in the city of Jakarta and Surabaya were provided with water, roads, drainage, as well as sanitation. Yet the biggest flaw of the programme then was it did not involve local residents until recently in the 1990s when community participation become integrated (ibid). According to Satterthwaite (2012), the upgrading leads to improvements in reticulated water, sanitation, electricity, education, health facilities, inter alia, and land tenure issues are resolved. The upgrading model presents a holistic approach for governments, communities and or civil society organisations to physically adapt, design and institute incremental upgrades based on residents lived realities (Visagie & Turok, 2020). However, not all governments have accepted the *in situ* upgrading as some have inclined to strong pro-poor approaches that deliver subsidized housing for its poor people, the examples of Chile and South Africa (Cities Alliance. 2019, Satterthwaite, 2012). Yet high poverty levels, high urban population projections, constrained state resources as well as growing backlogs of those living in informal settlements limit the state provision approach (Buckley et al. (2016).

Apart from *in situ* informal settlement upgrading being looked at as an empowering, flexible and participatory planning design approach, it can also accommodate existing housing investments where households would have built houses in their bid to prove 'that their settlement is no longer a "slum" and so avoid eviction' (Satterthwaite, 2012:208). Unlike other forms of upgrades, Satterthwaite (2012) distinguishes the collaborative upgrading as enabling a settlement-wide approach to infrastructure provision. Through the infrastructure installations and or improvements, Cities Alliance (1999:3) argued that upgrading 'makes a highly visible, immediate, and large difference in the quality of life of the urban poor.' Improvement in tenure security which reduces the risks associated with eviction and uncertainty makes 'poor residents, including tenants, enjoy these benefits and are not simply edged out into newer slums' (Cities Alliance, 1999:3). Upgraded serviced plots do not only guarantee security of tenure but also 'acquire a value premium that can be ten times greater than that of comparable unserviced plots' (ibid:3). Commenting on its implementation, Stevens (2020), however, argues that successful upgrades are realistically feasible where there are no intense population densities which allow communities to agree on a

"reblocking" or replanning strategy for the provision of access roads, water, sewerage, electricity and drainage mains servitudes. Generally, African informal settlements are spontaneous in nature lacking adequate space for people-vehicular circulation, infrastructure networks, livelihood-generating initiatives, social as well as recreational facilities (Visagie & Turok, 2020). The spontaneity prompts de-densification in settlements with higher densities. Yet, higher-density challenges could be overcome as happened in Thailand's CODI programme where, in higher densities 'community-directed upgrading was often in the form of two- or three-storey terraces as these can accommodate 200 or more households per hectare' (Satterthwaite, 2012:209). This example underlines the virtues of community-led upgrades to centrally planned non-participative approaches. Highly densified settlements like Dharavi in Mumbai which have above half a million residents in 2 square kilometres or more than 2500 persons per hectare translating to one person per four (4) square meters can consider the Thailand CODI approach.

2.2.3 Informal settlement upgrading entangled in policy-practice challenges

Despite the adoption of upgrading in several countries' policies, there is often a disjuncture between the policy or programme intention and what happens in practice. According to Huchzermeyer (2011:23), the political and bureaucratic engagement with the underlying cause of the growth of informal settlements is often inadequate, culminating in simplistic and 'symptom-oriented' diagnoses of what in reality are complex manifestations of informality and poverty. Huchzermeyer (2011) therefore argues that because of such misconception, politicians and bureaucracies resort to simplistic undertakings of eradication rather than tackling the complex process of informal settlement upgrading. In the context of Bandung, Indonesia, Jones (2017) positions the challenges and complexities of informal settlements in developing countries in relation to *in-situ* upgrading policies and other restructuring strategies. The Bandung city introduced an unsustainable slum upgrading policy that shifted from *in situ* solutions to 'vertical housing towers which appear incompatible in accommodating the way of life practiced in kampung adaptive urbanism contexts' (ibid:1). The storey housing was not in sync with the way the poor live, thus in essence, reshaping and restructuring the residents' lifestyles in line with formal housing markets. In its 2008 edition on *the State of African Cities,* the UN-Habitat provides a further reason for disjuncture between policy and practice. It portrays the East African Region's persistence of informal settlements as being the result of 'the politicizing of informal settlements

and social housing in party lines, current in election years and forgotten as soon as the ballot count is completed' (UN-Habitat, 2008:14). Illustrating the tendency of a negative portrayal of informal settlements mentioned above, UN-Habitat (2008:115) also notes that informal settlements in that region are 'associated by the government and city authorities with illegality and social ills. They are viewed as breeding grounds for crime, prostitution, drug trafficking and disease.'

In sub-Saharan Africa, Zimbabwe is cited as a typical case of unsympathetic governance of informality through the clearances in *Operation Murambatsvina*, a poorly conceived and carried out clean-up operation in 2005 that obliterated informal sector advances on which many livelihoods were based (Tibaijuka, 2005). The operation failed to enrol a people-centred approach resulting in serious social and economic disasters (UN-Habitat, 2008). Huchzermeyer (2011:87) associates the episode with 'the depressing topic of mass eviction in African cities'. Similar informal settlement eviction approaches have also been effected across the African continent becoming 'an epidemic of forced evictions, on an unprecedented scale' (Jean du Plessis, 2006:184 cited in Huchzermeyer, 2011). Another extensive demolition occurred in Abuja, Nigeria, following an 'overly ambitious modern master plan' (Huchzermeyer, 2011:92), which instigated bulldozing of Abuja's flourishing informal settlements (COHRE, 2008 cited in Huchzermeyer, 2011). A similar event occurred in Luanda, Angola, where armed state security forces carried out mass evictions in 2002 (COHRE, 2005b cited Huchzermeyer, 2011), because the government was determined to build 'one million new low-income houses by 2012, rather than to upgrade the existing informal settlements *in situ'* (Huchzermyer, 2011:88).

Conclusions drawn from the case studies in Bangladesh, East Africa and sub-Saharan Africa indicate there is need to reform the bureaucratic and political approaches to informal settlement upgrading that frame illegality and shifting or diverting approved upgrading programmes implementation. There is evidence that collaborative inclusion of the community can produce contextually relevant responses that can bring new insights and reimaginations of complex informal settlement challenges beyond myopic and simplistic conceptualisations. Based on the foregoing discussions, informal settlement upgrading remains a key process through which infrastructure is provided in informal settlements, notwithstanding variation between the original intent of upgrading and actual practice in some global South countries. The debates have provided

a platform to understand how infrastructure governance, the next theme below, is planned and determined for informal settlements.

2.3 Infrastructure governance

This theme addresses the concept of infrastructure as applied in urban setting as well as governance and how it is conceptualized in different global contexts. The section then analyses governance systems in theoretical terms. The other sub-headings discussed are governance of infrastructure and how it is conceptualised under macro-meso-micro infrastructure governance arrangements. The last discussion item is on infrastructure governance and the Principle of the Hiding Hand and other Hands typifying possible governance configurations in different infrastructure provision contexts.

2.3.1 Infrastructure and its criticality to urbanisation

Infrastructure has been defined and understood based on its permeating and interconnecting essence, a network and lifeblood that sustains socio-technical and political systems leading to urban functionality, sociality, and regulation (Graham & Marvin, 2001; Neuman, 2006; Amin, 2014). One typical definition and key referent in this discussion is given by Neuman (2006:6) that infrastructure is

> *'*the physical network that channels a flux (water, fluid, electricity, energy, material, people, digital signal, analog signal, etc.) through conduits (tubes, pipes, canals, channels, roads, rails, wires, cables, fibers, lines, etc.) … with the purpose of supporting a human population, usually located in a settlement, for the general or common good. It consists of a long-lasting network connecting producers and service providers with a large number of users through standardized … technologies, pricing, and controls that are planned and managed by coordinating organizations.'

The conceptualization of infrastructure systems as networked social and spatial provisions of essential services produces a universally networked city (Coutard & Rutherford, 2016). Salient elements about the network ideology are taken as 'the most efficient means of supplying urban services; network performance increases with size….and the solutions to problems created by the networks reside within the networks themselves' (Coutard & Rutherford, 2016:3). In essence, networked city infrastructure provides 'the vital technological sinews of the modern city: its road, bridge and transit networks; its water and sewer lines and waste disposal facilities; and its power…

[that] permit urban functioning and facilitate urban economic development' (Tarr and Konvitz, 1987: 195).

Socio-technically, Guy and Karvonen (2011:1) emphasize infrastructure as a materiality-technicity relational process that provide indelible vitality in 'the messiness of the contemporary city.' In this infrastructure is viewed as mediative and integrative of urban life, yet it can lead to splintered urbanisms (Graham & Marvin, 2001; Graham, et al, 2010). Herman and Ausubel (1988:1) describe urbanisation and infrastructure as:

> 'Cities are…densest expressions of…a set of infrastructures, working sometimes in harmony, sometimes with frustrating discord, to provide us with shelter, contact, energy, water and means to meet other human needs…sharpen[ing] our understanding of the similarities and differences among regions, groups and cultures.'

Networked infrastructures, therefore, significantly contribute to the construction and effective control of modern urbanization processes by facilitating various urban socio-economic and political diversity (Coutard & Rutherford, 2016). In socio-political terms and constant community-led contestations and infrastructure citizenship, infrastructure is looked at as 'a core lens for understanding the city' (Lemanski. 2019:588), also 'as a gathering force and political intermediary of considerable significance in shaping the rights of the poor to the city' (Amin, 2014:137). In the context of informal settlements in Brazil, Amin (2014:137) argues that infrastructures of water, sanitation housing and electricity are 'the staples of life… co-constructed by the poor' to make and unmake residents' livelihoods. In more abstract terms, Star (1999:380) extends the definition of infrastructure as the seemingly 'invisible, part of the background for other kinds of work.' This invisibility makes infrastructure to be regarded as the unseen, the forgotten and the hidden background, or the boring, unexciting technical mechanisms often left only to technical personnel, planners and a host of other implementers (Graham & Marvin, 2001; Wegrich et al., 2017). Altogether, what the above definitions demonstrate is that infrastructure is more complex than simple basic provisions of urban services but fluidly encompasses technical, social, environmental, political and economic contexts.

2.3.2 Debates on conventional networked and non-network types of infrastructure

This section identifies different types of technical or economic infrastructures, what Neuman (2006) and Guy and Karvonen (2011) call the physical infrastructure, with an intention to highlight differences between conventional networked and non-networked infrastructural typologies. According to World Bank (undated:13) different large-scale networked economic infrastructures of power, water and sanitation, waste disposal, transport, among others are vital to livelihoods and economic production. However, Graham and Marvin (2001) and Wegrich et al (2017) analyses networked infrastructures as often overlooked with their criticality surfacing when they fail, break down, destroyed or are disturbed owing to their susceptibility to natural or civil disturbances. The often-monopolized large-scale infrastructures domains, however, require high levels of investments, constant maintenance and accountability to sustain national economic growth as well as citizens' welfare as infrastructure is 'malign in the hands of particular corporates and state interests' (McFarlane, 2010:139). In this McFarlane (2010) critiques infrastructure collapse, dysfunction, and inequalities as chiefly caused by lack of state investment and inefficiencies and the corporatising approach of local governments. In the context of North America, Tighe and Ganning (2015) analyses inequalities and unevenness of infrastructure as begetting a divergent city development trajectory with one section having crumbling and or inadequate infrastructure. For this reason, infrastructure networks should be planned and delivered in systematic ways that avoid arbitrary investment and crises through bottom-up, locally produced and managed ways (Wegrich et al., 2017).

Regarding large-scale public infrastructure projects on water and sanitation in the global South, Wild, Chambers, King and Harris (2012) contend that public infrastructure delivery is limited by commonly recurring underlying governance and political economy constraints. Kenya and Tanzania have been cited as typical examples (ibid). A key limitation contributing to poor infrastructure access, quality, unequal distribution among groups is contradictions in infrastructure policy and or its unintelligibility**.** According to Wild et al (2012:1), there are misunderstandings

> '(both within and across sectors) in policy design, structure and roles causing some part or the entirety of policy design to become unimplementable or unimplemented. [This leads to] confused responsibilities among co-providers and other public bodies… where policies do not have clear implementation plans or funding.'

Earlier on, Star (1999) problematised infrastructure policy design and technological make-up as responsible unequal access to infrastructure. In such instances, the exclusion of target beneficiaries can result from the design of 'a behind-the-scenes policy decision' and the way the policy is implemented, such that '[p]oor people would be effectively barred [from infrastructure], not by policy, but by design' (Star, 1999:389). While the argument that Star (1999) makes can be viewed as controversial, it is instructive of many environments of good policy, yet bad implementation decisions result in policy outcomes that are different from initial policy intentions.

Apart from inherent policy challenges, water-sanitation infrastructure investments are susceptible to political market imperfections that speak to the 'lack of credibility in the political promises politicians make to citizens… and forms of social fragmentation among voters (often manifested as identity politics)' (Wild et al., 2012:1). Additionally, Wild et al., (2012) and Scott and Seth (2013) cite ineffective infrastructure systems performance oversight where formal monitoring or supervision processes are not clearly defined, understood nor enforced (also see Ijeoma, 2010 and Van der Waldt, 2012 in Chapter Three). Countries like Ghana, Vietnam and Sierra Leone have been categorised as having the challenge (Wild et al., 2012). Another characteristic challenge relevant to this study relates to collective action constraints where the spheres of government, infrastructure sectors and other relevant actors fail to work in common purpose and collective self-interest for effective services delivery. Pakistan, Bangladesh and Sierra Leone are typical examples facing this challenge (ibid). For these shortcomings, Coutard and Rutherford (2016) conclude that conventional networked infrastructure in the global South is increasingly criticized and contested for delivering insufficient essential infrastructural services to the city chiefly owing to the untenable institutional and political systems.

Taking the discussion of networked infrastructure further, Scott and Seth (2013:3) analyzes grid-based public electricity infrastructure where its service distribution in the global South is generally impacted by 'the politics and governance of the delivery.' One such constraint is the includability or collective action problematic as electricity provision is both public service and private good, becoming a public utility on one hand and private on the other where, in the latter, delivery is made to specific qualifying and paying consumers (Wild et al, 2012; Scott & Seth, 2013). A consequence of this paradoxical standpoint in practice is to exclude non-paying participants which is difficult as political economy considerations are made for the poor groups in many instances (Scott & Seth,

2013). Yet for cost-recovery and sustenance, effective electricity tariff payments must be done but this is often compromised in weak governance mechanisms (ibid). Moreover, techno-politically the 'monopolistic nature of grid-based electricity, the main means of delivery, presents opportunities for rent seeking and can lead to inefficient services, underinvestment and poor maintenance of infrastructure' (ibid:2). Distributors supporting the monopolistic national grid network can, in turn, become local monopolies given limitations to entry of private producers or distributors because of high market entry costs, lack of technical expertise and other governance imperfections (Wild et al, 2012). In example, inclusion of private players to generate electricity in Ghana in 1993 was resisted and abandoned completely because the state-owned utility, VRA, argued that country's regional power position would be compromised (Williams and Ghanadan, 2006). VRA's sentiments were echoed by Kaiser Aluminium corporation, an influential local largest consumer. What this means was that the state monopoly and corporation 'created vested political interests that then resisted reform efforts' (Scott & Seth, 2013:8). The resultant high demand for and scarcity of electricity 'can give electricity considerable political salience, reflected in the promises and actions of politicians seeking broad electoral support' of the poor but without meaningfully expanding electricity access levels (Scott & Seth, 2013:2).

Using the developing country context, the foregoing discussions generically associate public institutions and political systems managing large-scale water-sanitation and electrification infrastructure networks with inappropriate arrangements, constraints and poor performance. However, country-specific data for individual country performance is required to determine how specific policies and infrastructure projects are contributory to the challenges. In electrification, there may little or no argument about the utility of the networked systems and related economies accruing to large-scale generation and distribution to many people in comparison to mini-grid or off-grid systems. However, the latter are getting increasingly recognized as viable alternatives to the large-scale frameworks by virtue of their providing for smaller localized non-networked constituencies (World Bank, undated). Locally organized mini-grids and off-grid electricity distribution are normally subjected to more careful scrutiny, transparency and accountability checks as well as less bureaucratic (Scott & Seth 2013). Coutard and Rutherford (2016) argue that there is scope for a better configured infrastructure system that needs to embrace fundamental societal shifts. This envisions new urban infrastructure configurations that considers situated context-specific arrangements in sync with societal dynamics of environmentalisation,

globalization, social differentiation among others (ibid). This beyond-the-networked processes advocate for hybridization or co-existence of diverse and overlapping, complementary or competing socio-technical infrastructure systems instead of relying on a single homogenous infrastructure network (ibid:11). However, electricity thefts, poor residents' unwillingness to pay, collective action challenges, related monitoring as well as regulatory oversight challenges by contracted distribution companies are common problems (Schaengold, 2006; Wild et al (2012).

Below I review various conceptualisations of governance and relationships among state actors, civil society, private sector and other stakeholders with particular regards to infrastructure.

2.3.3 Governance, conceptualizations and contextualisation

Governance has become a social science buzzword yet remains a slippery term, often used in conjunction with a particular qualifying prefix to denote the different kinds of radial categorisations and conceptual constellations that expand the different notions of governance (Ansell & Torfing, 2016). More commonly, governance is defined as the mechanism required to steer, administrate and improve, for instance, government proposals and the implementation of the activities that in turn enhance socio-economic performance (Vymětal, 2007). Transforming state-centric bureaucracy governance, argues Vymětal (2007), has been a key managerial approach for coordinating organisational and administrative processes of the state policies, exercise of power, dialogues, partnerships and evaluation of complex development issues. Governance is birthed after serious criticisms against traditional government administration related to what Vymětal (2007:6) calls 'pathological failures such as corruption, government failure, inefficiency of the public sector, misuse of power' and a continuation of top-down governance. In the context of high urbanisation rates in developing countries, such government challenges have been linked to increases in informal governance (McFarlane, 2010).

To facilitate better understanding of governance in relation to the discourse of infrastructure provision, I discuss in more detail three broad categorisations of governance: hierarchical, self-governance and co-governance methodologies (see Kooiman, 2003). The hierarchical governance perspective, portrayed as a state monopoly, ideally requiring bureaucratic state ownership or intervention, also viewed as the welfarist approach, champions the sovereign and top-down steering of the state and its subordinated institutions (Foucault, 1978; Bulkeley et al., 2007; Jessop, 2009). This governance perspective is supported by the argument that public utilities need to be

placed and controlled under state Public Works Departments (Graham & Marvin, 2001; Bolton & Foxon, 2015). Hierarchical influences and distributive controls of the state are, it is further argued, deemed necessary to curtail vices of privatisation, exclusivities and disconnections that come with infrastructure provision (Graham & Marvin, 2001). The conceptualisation of the state-provider approach to infrastructure, however, takes lightly the salient debates on limitations of state-led methodologies in dealing with urban development challenges owing to, among other factors, inadequate resources, policy inconsistencies and bureaucratic inefficiencies (see Palmer et al., 2017, Bénit-Gbaffou, 2018).

Self-governance, interchangeably termed informal arrangements associated with self-organised civil society processes (Ansell & Torfing, 2016), relate to inactive or insufficient state administrative roles in infrastructure provision. This leads to the poor's own ways and means to address the deprived situation of basic service, which Pieterse (2008:172) calls 'radical incrementalism'. Rosenau (1992) looks at self-governance of informal institutions as steering that section of society to satisfy needs and wants. McFarlane (2010) frames self-governance as forms of improvisations that often bypass formal connections through collusions with a range of official intermediary service providers. More benignly, self-governance is seen as a deliberate bottom-up social transformation agenda aiming to ameliorate vulnerabilities leading, for example, to informal housing (see Huchzermeyer, 2006; 2010) or illegal electricity connections to satisfy a real need (see Kirsch, 2005). McFarlane and Vasudevan (2014:5) validate informal governance as 'the below-the-radar practices of everyday life and culture that not only grease the wheels of these apparently formal realms, but which may indeed be more important than the formal domain'. As discussed in section 2.3.1 on electrification, self-governed communities are, however, inherently prone to inequitable resource diversion or misuse by authorities (Wild et al., 2012). Self-governance is also susceptible to vote-buying in political manipulations as well as politically motivated free consumption of public goods in typical political market imperfections in informal settlements (Scott & Seth, 2013). In corrupt countries, rent-seeking patronages and free-riding kickbacks to administrative staff for non-payment of services cost informal residents dearly (McFarlane, 2010; Scott & Seth, 2013). Another criticism of self-governance pertains to the pitfalls of collective action and dissonances that result in community groups not acting in collective self-interest, leading to ineffective delivery of infrastructure (Katsaura, 2012; Wild et al., 2012).

Co-governance, the third governance perspective, often termed governance but at times prefixed with "multi-level" or "new", describes an inclusionary and integrative methodology that allows for the participation of stakeholders (see Rhodes, 1996; Jaglin, 2014). This encompasses the increasing shifts from government to governance and the deepening of inter-organisational networking, stakeholder interdependencies (public agencies, civil society institutions and communities) and decentralised forms of steering (see Rhodes, 1996; 1997; Bolton, 2011). This new governance is inspired by the New Public Management in public sector reforms, referring 'to a system of continuous negotiation among nested governments at the local, regional, national and supranational levels' (Ansell & Torfing, 2016:2). In principle, co-governance opens opportunities for engagement, coordination and cooperation (Anheier, 2013), which Jaglin (2014:1394) analyses as implying a 'negotiating dynamic and complex compromises between different types of organisations and authorities' to produce collective outcomes. Kooiman (2003:4) expands on this dispersed governance as promoting 'the totality of interactions, in which public as well as private actors participate, aiming at solving societal problems or creating societal opportunities'. The Habitat Agenda of 1996 sums it up:

> 'Civic engagement and responsible government [which] both necessitate the establishment and strengthening of participatory mechanisms, including access to justice and community-based action planning, which will ensure that all voices are heard in identifying problems and priorities, setting goals, exercising legal rights, determining service standards, mobilizing resources and implementing policies, programmes and projects.' (UN, 1996:181)

New terms and concepts of multi-level governance have been generated in different setups, all referring to power dispersion and political decentralisation, principally disbanding authority away from central government downwards to subnational jurisdictions and sideways to public/private networks (Hooghe & Marks, 2001). While acknowledging that governance is complex, Stoker (1998) affirms governance as promoting mutual interaction and creating room for collective participation and technical complementarities. Central to this is the claim that governance operates at multiple scales to capture variations in the territorial reach of policy externalities arising from the provision of public goods, which vary immensely even within local city levels (Hooghe & Marks, 2001). In this way, local-level governance becomes necessary to internalise externalities but also better reflect the heterogeneity of preferences among citizens to facilitate credible policy commitments, innovation and experimentation (Majone, 1998). Arguing for local-level energy

governance, Carmin et al. (2009) contend that it is essential for local governments to interactively reframe global/national objectives in terms of local priorities and benefits through local deliberations and exchanges, local experiments and knowledge building.

As with other kinds of governance, co-governance has its downside. In many instances, the concept has tended to oversimplify complex realities, for instance, the assumption in the UN (1996:181) in the quote above that governance 'will ensure that all voices are heard in identifying problems and priorities'. The dense and interactive conceptualisations ignore diverse forms of socio-political struggles, inherent inequalities, conflicting interests, contestation and other constraining factors that are often at play in real-life governance. For these reasons, meta-governance analysts and neo-Foucauldian theorists [the latter are post-structuralists who analyse the state as exercising unprecedented controls] criticise the absolute continuing power of governments in the multi-level governance and public-private partnership (PPP) arrangements (Pierre & Peters, 2000; Brenner, 2004; Jessop, 2006; Bulkeley et al., 2007). For these reasons, co-governance is seen as a non-event, dysfunctional, contested and at worst unreformed hierarchical development trajectory (Brenner, 2004; Jessop, 2006). For Brenner (2004), the practices of the state in this governance are usually uneven, discontinuous and unpredictable, and at best a superimposition of entrenched, old-time path-dependent morphologies. Bulkeley et al. (2007) and Stoker (1998), likewise, describe the shift from government to governance as a mere strategic reorientation of the way nation-states exercise their power and influence, also a way to justify spending cuts. For Pierre and Peters (2000), the state still exerts its hegemonic influence in disguised ways on society to achieve its increasingly complex set of objectives. Therefore, 'the creation of a more participatory style of governing does not mean the government is, in reality, less powerful' but only bound together in the process of creating co-governance (Pierre & Peters, 2000:49). Less vocally, Keohane and Nye (2000a:12) contend that the reality is:

> '[C]ontrary to some prophetic views, the nation-state is not about to be replaced as the primary instrument of domestic and global governance…instead, we believe that the nation-state is being supplemented by other actors-private and third sector-in a more complex geography.'

Without taking a wholly normative view of governance, the thesis takes co-governance as a lens for understanding the variety of formal and informal processes through which decisions are made and implemented by a range of stakeholders in infrastructure provision. More specifically, can co-

governance arrangements mediate in multiple challenges that emerge when infrastructure is not provided as planned or does not reach target beneficiaries as intended in the policy or implicit in its intention? Also, can there be mechanisms that identify and signal that an infrastructure policy or programme is dysfunctional and not delivering under co-governance? The section turns to theories of governance to give more understanding of how they influence governance systems and arrangements.

2.3.4 Governance systems in theories

To understand the various conceptualisations and typologies of governance discussed below, I discuss theories of governance and principles that help me analyse and make sense of the concepts in practice. As analytical constructs, governance theories help us understand complex contemporary society, how public policies are dealing with the complexities and how the gaps in the policies are or can be addressed (Ansell & Torfing, 2016; Asaduzzaman & Virtanen, 2016). According to Farazmand (2012), a key attribute of theories of governance is their continuous evolution and thus relevance to proffer analytic and systematic examination of the dynamic and context-specific governance arrangements. Their weakness lies in their abstractness, context-dependence, theoretical understanding and explanation of how contemporary societies are governed, which, in many instances, is too simplistic and reductionist in approach (Ansell & Torfing, 2016). This critique makes the theories susceptible to generalisations as opposed to particularisations hence requiring critical evaluation and refinement through empirical studies (ibid).

Three critical theories of governance have been selected to analyse an 'increasingly complex, fragmented and dynamic society' (Ansell & Torfing, 2016:1). They see solution to the fragmentation in governance where the power of the state is envisaged as weakening as the society, private and civil organisations becoming active coproducers. To address the rapidly changing society, Asaduzzamann and Virtanen (2016:11) advocate for a 'governance system based on a learning and decision-making process, in order to be able to grow and adapt to citizens' expectations, as well as to operate effectively across shifting boundaries'. In this, Asaduzzaman and Virtanen (2016:3) conceptualise governance as a system of democratic principles which leads government to concentrate on 'effective and accountable...and responsible structures of government in order to ensure an open and legitimate relationship between the civil society and

the state'. Heady (2001), grounded on Max Weber's conceptualisation of rationality and bureaucracy, speaks to well-ordered systems of superordination and subordination where vertical coordination is established (see Scharpf, 1994). It should, however, be known that organisational theory has been evolving such that no one single organisational theory may explain fully the huge changes.

After theories of governance, the following sub-section turns to a discussion on the governance of infrastructure which is pertinent to this thesis as it brings the connection between governance and infrastructure, also dovetailing the study into electrification infrastructure.

2.3.5 The governance of infrastructure

> 'With established systems under pressure, and no realistic, visionary grand solutions to guide, the world is nonetheless alive with a seeming cacophony of approaches—old and new—on how to improve governance and, ultimately, policy outcomes. Not all are well grounded, let alone well guided. Some innovations would likely do more harm than good; others appear unfeasible, too self-serving, or fraught with unknown consequences.' (Anheier, 2013: 11)

Infrastructure governance is a key mechanism for planning, delivering and managing infrastructure provision in systematic ways that avoid arbitrary investment and crisis through bottom-up, locally produced and managed ways (Wegrich et al, 2017). In other words, it is an arrangement put in place to reduce or avoid infrastructure failures, poor quality, disorderliness, financial overruns and corruption in national and sub-national developmental processes (Graham, et al, 2010; Wegrich et al., 2017). The Organisation for Economic Co-operation and Development (OECD) defines infrastructure governance as 'the processes, tools and norms of interaction, decision-making and monitoring used by governmental organisations and their counterparts with respect to making infrastructure services available to the public' (OECD, 2015:2). It also refers to relational interaction among government institutions themselves, the private and community sectors regarding the approach to infrastructure delivery most commonly encompassing the entire infrastructure life cycle of decision-making, funding, implementation, monitoring and evaluation (OECD, 2015; Wegrich et al., 2017). I adopt this definition and the components of infrastructure governance for this thesis. As the quote from Anheier (2013) prefacing this section suggests, not all infrastructure provision solutions are genuine, well-grounded and forward-looking. Instead, some are arbitrary (see guesswork and thoughtlessness mentioned in Hirschman (1967) under the Hiding Hand governance principle), inappropriate and inflict harm to ordinary lives, yet a few may

be well-planned and suitable. The thesis uses infrastructure governance as a lens through which to examine decision-making and implementation, paying attention to stakeholders' engagements and or coordination aspects. Three threads of infrastructure governance are discussed here: complexities and paradoxes of decision-making, governments' decision-making (planning, coordination and funding) and the role of politics in infrastructure governance. I concentrate on these three analyses because they are relevant to the infrastructure provision practices in informal settlements in South Africa.

Infrastructure investment and its administration is a field characterised by complexities and uncertainties (Hammerschmid and Wegrich 2016). Accordingly, decisions about infrastructure must be logically planned to begin with the appraisal of societal demands, identification and analyses of infrastructure investment options, as well as undertaking cost-benefit investigations of the options. This process culminates in objective investment prioritisation, implementation, monitoring and evaluation through a de-politicised process (ibid). This is a macro-meso level activity (Van der Waldt, 2012), ideally advocated by theories of governance to address the complex and dynamic modern-day society (Ansell & Torfing, 2016). However, Hammerschmid and Wegrich (2016:32) conclude that 'political decision-making on infrastructure investment and governance is hard to get right'. The difficulty is echoed by critics in the UK who comment that strategic decision-making regarding infrastructure investments in that country suffers from short-sightedness and failure to secure consensus between different political parties that translate infrastructure governance into political risk (Coelho et al., 2014). Anheier (2017:75) concurs with Hammerschmid and Wegrich (2016) on the need for infrastructure governance planning; however, he identifies the pervasive conservative philosophies in the governance of infrastructure. Complexities and conservatism in infrastructure investment permeate the implementation of South Africa's well-intentioned UISP.

Expanding on the complexities, Hammerschmid and Wegrich (2016:34) argue that political and institutional 'dispersion of authority downwards to regional and local actors as well as sideways as a result of privatisation and the proliferation of PPPs' have amplified governance challenges. Multiple actors, including various levels of government, private service providers and local community organisations, are now engaged at various scales of decision-making that delay or constrain consensus (see Anstein, 1969). In PPPs, the challenge for public investment is to avoid

excesses in private sector engagement and to manage risks associated with delegation of tasks (Hammerschmid & Wegrich, 2016). Diverse organisations involved in collective institutional action often pursue conflicting interests and institutional logic (Wild et al., 2012). Lodge and Wegrich (2014b), cited in Hammerschmid and Wegrich (2016), argue that organising the diverse actors in such arrangements is a huge challenge that requires skills in coordination.

To return to the earlier point about infrastructure planning, adopting hierarchical infrastructure governance by governments that leaves out diverse societal actors and organisations imply huge socio-economic costs. Yet infrastructure experts contend this is a common scenario such that multi-actor involvement in central government decision-making is still low (Hammerschmid & Wegrich, 2016). Based on the OECD and a non-OECD 36-country case study, Hammerschmid and Wegrich (2016:40) conclude that 'non-governmental organisations, citizens, and academics were seen to play only peripheral roles, a trend that was significantly stronger in non-OECD countries.' This implies infrastructure decision-making is generally insulated from most stakeholders as central governments and subnational governments have the greatest stake making infrastructure governance liable to political economy influences on the pretext that democratic implementation is problematic (Hammerschmid & Wegrich, 2016; Wegrich et al., 2017). Yet the top-down political approach is in many realities in tension with strategic and sustainable infrastructure planning as political priorities are usually only short term (Hammerschmid & Wegrich, 2016). Jordana (2017), writing in the context of Germany but focusing on infrastructure concerns of OECD and non-OECD countries, and Coelho et al. (2014) in the UK echo the challenge of political planning in infrastructure decisions since infrastructure is not easy to reverse once implemented and substantive alterations thereafter may involve high costs and long-term commitments. In this way, Jordana (2017) criticises the short-term characteristic of central political planning as contradictory to the often medium- to long-term nature of infrastructure investments that usually require large financial commitments. The discussion turns to three scales of governance arrangements, which by their disaggregation of component parts, help in improving the management of programmes and projects.

2.3.6 Macro-meso-micro governance: disentangling for effective implementation

A schematic division of organisational actor groups can be designed to operationalise co-governance. Three broad analytical but interdependent governance categories of macro, meso and micro (representing the national, provincial and local government implementing structures and community and its structures, respectively) make accountable discrete governance institutions (Spanhove, 2007; Van der Waldt, 2012). The disaggregation makes it possible to evaluate how the institutions are delivering on promises of effectiveness, efficiency, economy, and qualitatively in terms of physical outcomes and impact on society (Van der Waldt, 2012). Thus, the diagramming distinguishes the macro-level (guaranteeing mutual coherence, organisational steering and monitoring aspects), meso-level mandated with the execution of policy goals, communication and accountability promises with the stakeholders (micro-level). Lack of planning and coordination in national policy framework precipitate poor meso-to-micro policy performance (Wild et al., 2012). Meso-level governance, which is where the community interfaces with the government, is the nerve centre for success or failure of policy implementation (Van der Waldt, 2012). This is the level where national policy is (mis)interpreted and translated into action, adjusted through reflexive learning processes and rounds of feedback, as well as the need for horizontal conflict management (Banjade et al., 2007). The macro-level must, therefore, provide sufficient resources and monitoring mechanisms of meso-level institutions, for example, to deal with collaboration challenges, responsibilities sharing and distribution and dispel any fears about the programme or project (ibid). The extent of clarity, for instance, in vertical alignment (allocation of roles between and among different institutional layers) and horizontal alignment in intersectoral organisations and stakeholders must be constantly assessed (see Wild et al., 2012).

The interest of this study is not on macro-level policy formulation processes but on the meso- and micro-level institutions, actors and processes where the quality of the physical outcome of the infrastructure policy show. Active oversight, coordination, performance management of implementing agencies, monitoring and auditing of meso-level institutions in line with policy objectives and targets is critical (Spanhove, 2007; Van der Waldt, 2012). The macro-level may also set up transparency and accountability mechanisms through which progress is captured by the micro-level [communities] in the form of, for instance, recording, report writing to show how the programme or project is unfolding and or impacting the community, also suggestions for

improvements (Van der Waldt, 2012). The placement of accountability instruments should not be misconstrued as re-bureaucratisation or inflation of regulations (Hood et al., 1999), but rather to enforce governance mechanisms to attain the desired outcomes. I turn now to the governance of infrastructure, paying attention to how the theories, principles or their combinations are influencing the contemporary world of infrastructure provision and its complex challenges.

2.3.7 Infrastructure governance and the Principle of the Hiding Hand and other Hands

In a seminal piece in the 1960s, Hirschman (1967) put forward a principle that captured the then typical influences of planners and policymakers to make arbitrary decisions about infrastructure investment. He termed this the Hiding Hand. In his observations about infrastructure governance, Hirschman (1967b) noted 'various projects being started that later appeared unrealistic, overambitious, dilettantish, and even almost deceitful in retrospect' leading to his formulation of the Hiding Hand principle quoted in Anheier (2017:65). Flyvbjerg and Sunstein (2016:1) describe the Hiding Hand thought piece as 'a benevolent mechanism by which unrealistically optimistic planners embark on unexpectedly challenging plans, only to be rescued by human ingenuity, which they could not anticipate, but which ultimately led to success, principally in the form of unexpectedly high net benefits'. In the observations, Hirschman (1967b) was concerned about the absence of creative thinking, thoughtfulness and criticalness characterising the reductionist approach to infrastructure planning and subsequent implementation by 'entrepreneurs, planners, financiers, and politicians—[that] take on tasks that seem nearly impossible and that carry high risks and entail high costs' (Anheier, 2017:65). As Hirschman (1967a:35) put it, the Hiding Hand principle 'does its work essentially through ignorance of ignorance, of uncertainties, and of difficulties'. Hirschman (1967b:13) elaborates:

> '[W]e would not consciously engage upon tasks whose success clearly requires that creativity be forthcoming. Hence, the only way in which we can bring our creative resources fully into play is by misjudging the nature of the task, by presenting it to ourselves as more routine, simple, undemanding of genuine creativity than it will turn out to be.'

It is noteworthy that the principle of the Hiding Hand does not necessarily concern preventive ignorance *per se* but involves continuing in ignorance or mistaken underestimation of task complexity that can lead to stumbling into either success or shameful failure (Hirschman, 1967b; Anheier, 2017). Under the principle, infrastructure planning is put forward as a required process to reach a desired goal yet without full knowledge of how to carry it out, of the consequences of

the trajectory adopted or thoughtfulness of the outcomes (Anheier, 2017). The process, however, allows itself to be deceived by an underestimation of resources required and complexity of the task (ibid).

In many instances, the Hiding Hand principle does not come to rescue in uncertainties and overestimates the 'likelihood of success' and or failure (Flyvbjerg & Sunstein, 2016:4). They claim that a Malevolent Hiding Hand 'which blinds excessively optimistic planners not only to unexpectedly high costs but also to unexpectedly low net benefits' is more a common phenomenon than the benevolent Hiding Hand (ibid:1). The Malevolent Hiding Hand applies to circumstances in which there is full awareness about what should be done, but the task complexity is wilfully underestimated in typical information asymmetries that lead to unethical tendencies and untransparent approaches (ibid). The system thus corruptly capitalises on 'ignorance of third parties such as investors who are tricked into believing that a project is sound and planned with care' (Anheier, 2017:71). As Vymětal (2007) argues, corruption is one of the indicators of failures and inefficiencies associated with top-down public administration in opposition to the promising new governance. The Malevolent Hiding Hand principle suggests that Hirschman's benevolent case is a rare and unrepeatable case of 'a felicitous escape from disaster' in which poor governance may unexpectedly result in success (Flyvbjerg & Sunstein, 2016:2). Accordingly, what is more commonplace with infrastructure planning is deliberate bias and resistance to incorporate governance approach by decision-makers (ibid), making the two typologies of hands typical hierarchical forms of governance.

The realities of the contemporary technological society and its increasingly heterogeneous circumstances require far more coordinated planning and organisation of infrastructure than during Hirschman's times (Martuzzi & Tickner, 2004). In practice, Jordan and O'Riordan (2004) argue that the Hiding Hand thinking operates side by side with a Protecting Hand principle where policymaking and planning processes take precautionary measures in response to damaging threats related to lack of adequate knowledge, skill and experience in overestimated task complexity. The planners manifestly address ignorance by instituting protective risk management planning that avoids worst-case scenarios (Anheier, 2017). While precautionary arrangements may be sound investment decisions against unanticipated mishaps, 'higher costs now to guard against dysgenic effects … implies committing current resources to investment for the future, the benefits of which

may be uncertain or at worse non-existent' (Jordan & O'Riordan 2004:32). The precautionary principle encourages policymakers to consider means and ways to counteract growing technological, socio-economic complexities and uncertainties by engaging 'research, innovation and cross-disciplinary problem-solving' methodologies (Martuzzi & Tickner, 2004:3). In a way, the Protecting Hand and its precautionary thinking acknowledge the need for multidisciplinary action to solve complex contemporary problems which cannot be left to the state alone. Yet, in another way, it requires that government makes a public intervention for public interest even if it is a non-democratic decision. This latter position is relevant to the topic of this thesis in which the South African government's electrification of informal settlements can be viewed as encompassing Protecting Hand thinking by recognising the need for its poor populations' well-being. The electrification, though not for all informal settlements, aims to alleviate the suffering and precariousness in the settlements (DoE, 2011; 2018). These analyses are reviewed in detail in the next chapter on South Africa.

The last of the four models is the Passive Hand, representing governance situations in which decision-makers are aware of the development trajectory being taken but unnecessarily overestimate the task complexity leading to over cautiousness and or inaction (Anheier, 2017). It is argued that the Passive Hand formulation results in unnecessarily higher project costs as a lot of investment is dedicated to 'worst-case scenarios' contingency planning and implementation even in situations with lowest probabilities of risk resulting 'in bureaucratisation at best … trigger[ing] tendencies towards a do-nothing approach' (ibid:72). In such situations, administrative staff have a negative attitude towards policy and its implementation such that routine work is categorised as problematic or controversial. The Passive Hand contrasts the Hiding Hand as it is 'not about triggering creativity but stifling it, and compared to the Protecting Hand, it is not about risk management but risk avoidance' (Anheier, 2017:71). With the theories and principles, the literature review below turns to conceptualisations of governance and understandings of how governance frameworks mediate in the provision of infrastructure. My interest in this review is how this helps us understand how the infrastructure gaps that manifest as deep formal-informal disparities in unequal cities takes place.

2.4 Electrification and development

In this thesis, electrification is defined as involving centralised, high cost, large-scale technical systems with significant investment in electrical engineering activities that can encompass electricity generation and construction of power stations, transmission (large conveyancing power lines from generation) and local distribution networks (Hughes, 1983). Electricity distribution involves local technical aspects of operations and maintenance and social aspects of governance (Hughes, 1983; Gaunt, 2003). Distribution is central to the interest of this inquiry to understand how it is decided upon and implemented in informal settlements. The focus of the thesis does not necessarily go beyond this aspect only examining electricity generation and transmission in so far as these affect local socio-technicalities of the distribution. Henceforth the term electrification shall refer to the local distribution level unless where specified. To get a better understanding of electrification, it is needful to discuss the types of electricity, its importance and how it is viewed in the modern society.

2.4.1 Types of electricity supply

The sustenance of socio-economic activities depends much on generated and transmitted electricity as the most widely used form of energy and becoming essential component of modern life since the past 400 years ago (Rahman, 2008; Energy Information Administration (EIA), 2009). I discuss two main types of electricity supply in order to contextualize the electrification of informal settlements under this study. The first is static electricity which is existing in nature often generated by friction build up (Rahman, 2008). According to Rahman (2008:27), before the invention of electricity generation, kerosene lamps were used to light homesteads and rooms 'warmed by wood-burning or coal-burning stoves.' The 'generation, transmission and use of alternating current (AC) electricity' only began in the late 19th Century, transmitting over longer distances unlike direct current, bringing indoor lighting to the built environment and powering industrial machinery (ibid:27). This study, however, does not get into detail about historical development and mechanics of electricity production except to highlight the key typologies of electricity supply to compare with energy forms in unelectrified settlements.

One typology of electricity is the static or stored electricity that has existed since 'the earliest civilizations remaining merely as a mystifying phenomenon and confused with magnetism through

rubbing and in the form of lightning' (Rahman, 2008:28). A chief disadvantage of static electricity is it does not transmit energy to much longer distances. More similarly, current electricity existing in form of direct current (DC) electricity, for instance a disposable primary electric battery, also has a low voltage system that require continuous (re)charging (EIA, 2009). Secondary batteries e.g., lithium batteries are charged using electric current chargers with some types charged at manufacturing stage before they are used (Rahman, 2008:42). This form of direct electricity is commonly used in areas without alternating current, primarily for lighting. Developments in the electromagnetic induction and alternating current electrification resulted in electricity being transmitted through copper wires to provide a constant and more significant flow of electricity to various and now electricity-dependent operations of electrical industries, cities and built environments, telephone, dynamo machines, electric lighting, electric motors, electric transformers among others (ibid:46). With this electricity, it became possible to induce heating that contributed to local heating through electric heaters which complemented or replaced coal or wood-powered furnaces in homes and industries (EIA, 2009). To do this, the elaborate and high investment alternating current (AC) electrification process requires electric transformers that converts electricity to desirable voltage (Rahman, 2008). The transformers, being efficient and revolutionary power transfer systems, enable electricity to be stepped up, transmitted over long-distances and voltage stepped down at reaching its destination through another transformer (ibid). Unlike the AC electrification, the DC system is only suitable for localized electrification as it does not use transformers such that its voltage drops with increasing distance from the generating point (Rahman, 2016). This implies that more power plants are required nearer the users, ultimately making the DC an expensive, inefficient and unsuitable option for large-scale distribution. In contrast, the AC generation involving the construction of large central power stations and high voltage transmission lines, serves wider markets, benefits from large-coverage economies of scale and the associated lower operating costs (ibid:59).

To give more insight into electricity generation, a utility power station can use a turbine, water wheel, engine or such similar machines to drive the electricity generation to convert chemical or mechanical energy to electricity (EIA, 2009). Most common systems of electricity generation use steam or water or wind or gas combustion turbines and internal-combustion engines to generate electricity (Rahman, 2016). According to many analysts, most of the electricity generation in the

USA, for example, was coal-based with nearly half of the electricity sourced from coal (Rahman. 2008; EIA, 2009; Campbell, 2011). In the fossil-powered steam generation, electricity is generated by burning fuel (coal, petroleum or natural gas) that heats water in boilers to produce steam that propels the turbine.

2.4.2 The importance using electricity when compared to other energy forms in unelectrified settlements

As electricity is expensive to generate, transmit and distribute, Anandan and Ramaswamy (2014) problematizes insufficient supply of modern electricity where in India about 60% of the population resort to traditional unclean energy and lives in primitive conditions. Over 700 million people in India still use biomass cooking stoves while kerosene lanterns are commonly used for lighting (ibid). Accordingly, lack of modern electricity restricts productive time for un-electrified communities as much time is spent in sourcing and or collecting dirty solid fuels which limits productive possibilities. The Indian case is supported by the IEA (2011) that compared access to electricity access and dependence on biomass for cooking in 2009 where a significant 1317 million people in the global South lacked access to electricity and 2662 million used biomass. India alone had 836 million people using traditional biomass to meet basic energy needs. The challenges of electrification in India have been exacerbated 'by mass migration to slums in powered metropolitan areas' (Anandan and Ramaswamy, 2014:125). This has promoted the use of other forms of energy with 71% of the urban households using LP gas by 2005 notwithstanding common constraining income poverty challenges among the poor (ibid).

By 2017, 44% of the Sub-Saharan African population have inadequate access to electricity (Anandan and Ramaswamy, 2014). Accordingly, the IEA, etal. (2021:3) calls for more focused attention 'to improve access to clean and safe cooking fuels and technologies ..., to expand the use of renewable energy beyond the electricity sector, and to increase electrification in Sub-Saharan Africa'. On a regional scale, the Latin American and Caribbean governments' electrification policy has managed to promote remarkable electrification (Butera et al., 2016). In that region, Bolivia has the lowest electrification with over 88% electricity access by 2010, its rural regions included (World Bank, 2010 cited in Butera et al. 2016). Bhattacharyya (2013), who writes about rural electrification, distinguishes Sub-Saharan Africa and developing regions in Asia as having the

most significant electricity challenges. He notes that 'out of twenty least electrified countries in the world, 17 are from Sub-Saharan Africa' (ibid:4). Conway et al. (2019:1) conclude that 'to achieve Sustainable Development Goal 7 (SDG 7), innovative approaches will be required to deliver affordable, reliable, sustainable and modern energy to Africa's poor.' Globally, the 1.456 billion people (representing 18% of the global population) lack access to electricity (IEA, 2009; WHO, 2009). The IEA (2011) estimates that the high reliance on biomass and solid fuels in developing countries leads to 1.5 million deaths, 2 million per year (WHO, 2009) and the Global Energy Assessment estimated that about 2.2 million died in 2005 (Rao et al., 2011).

In contrast, improved access to and use of clean electricity results in higher incomes and livelihood enhancement (IEA, 2011). According to Pachauri et al. (2012), electricity provision enables private social benefits of thermal comfort, lighting, entertainment and communications. In the public domain, large-scale socio-economic benefits accrue due to diversified income generation choices, the powered built environment, public street lighting as well as health and education benefits (Rahman, 2008; EIA, 2009). With reference to energy-efficient typologies in India, the World Bank (2015:12) hails the electrification as promoting the development of 'practical solutions for scaling up the implementation of large street lighting programs in cities and municipalities.'

2.4.3 A contemporary view of electricity

Both Rahman (2008) and Pachauri, et al (2012) agree to the efficacy of modern energy forms as facilitating essential socio-economic development of domestic and industrial uses through non-renewables or renewable energy sources for instance solar. Pachauri, et al (2012) further argues that electricity also improves labour productivity. Yet electricity can rarely be a stand-alone option. Rahman (2008:62) argues that 'the non-renewable sources are depleting very fast' which makes a compelling need for humanity to make efficient use of electricity and 'put all our efforts to make the maximum use of the renewable sources of energy for producing electricity.' Although solar energy may be unavailable and widely scattered in some areas, mankind should conduct 'extensive research on generating solar electricity and fuel cells' to increase 'efficient electricity generation schemes of the renewable sources' (ibid:62). Yet by in 2006, USA solar-generated electricity, for example, was less than 1% (Rahman, 2008:61). Campbell (2011, Summary) similarly argued that

'the United States does not have a comprehensive national policy in place for promotion of renewable energy technologies' arguably because of high costs related to production of renewable electricity. To minimize the threats of increasing anthropogenic climate change challenges, Campell (2011) urges both China and USA to grow their renewable energy.

This thesis does not get into detail about, for example, the economic dimension (e.g., of providing electricity to informal settlements). Neither do I review much on the social benefit dimension (electricity can ensure safer environments, especially for women, in terms of crime and in terms of lower risks of fire and allowing children to do their schoolwork in the evenings among others). Below I discuss grid and off-grid electrification as dominant ways through which electricity is accessed.

2.4.4 Grid electrification of informal settlements: formal recognition not without governance challenges.

Informal settlement electrification studies identify two dominant types of access, namely formal and informal electrification (Gaunt et al., 2012; Lemaire & Kerr, 2016). It is estimated that informal electrification, often labelled as illegal connection, is possibly the fastest growing form of electricity supply in Africa and other developing regions, owing to high incidences of poor households turning to informal settlements (Gaunt et al., 2012). Lemaire and Kerr (2016:5) show the gravity of informal settlement electrification in Sub-Saharan Africa saying:

> 'These illegal connections can take the form of distributing electricity to several households from one legal connection, or through directly tapping into medium-voltage electricity line to distribute at a local level. As of 2011 it was estimated that 40% of the Sub-Saharan African urban population live in informal settlements…[where] some 50% make use of an illegal electricity connection.'

The provision of grid electrification to informal settlements marks a turn in government approaches that signals recognition of informal settlements and their enduring infrastructure provision challenges (Lemaire & Kerr, 2016). The provision of electricity in the hitherto underserviced areas is widely interpreted as '[f]ormalisation of informal settlements, bringing them within the sphere of formal urban services' (ibid:1). In 2004, USAID (2004) demonstrated the feasibility of implementing innovative electrification of informal settlements in four countries,

namely Brazil, India, the Philippines and South Africa. Several other developing countries are formally electrifying informal settlements, albeit with different commitment levels and success.

I use Mumbai in India for a reflection of the implementation of typical informal settlement grid electrification where the Mumbai municipal government programmes have targeted some of the older settlements (Lemaire & Kerr, 2016). This was justified on the basis that some informal sections of the city had existed without official access to electricity for over 60 years and were increasingly becoming structurally difficult to be formalised through conventional planning due to extensive densification (ibid). A key challenge associated with the formal electrification in Mumbai pertains to involvement of community actors in community-level governance, where the:

> '[I]nfluence of local community leaders and landlords is much more significant than assumed by the municipal authorities in Mumbai. 72% of the surveyed informal population acquire their electricity through such a person, and these community leaders were found to be highly influential in terms of making the decision for their local areas to apply for formalisation, not just in terms of electricity connections but other urban services and legal standing. However, they were also found to be a major point of resistance to formalisation activities.' (Lemaire & Kerr, 2016:16)

The control by powerful community leaders and landlords in the electrification contrasts Slovo Park electrification in South Africa which is guided by an organised community-mandated forum as discussed in Chapter 7. Lemaire and Kerr (2016) do not clearly frame the challenge of community leadership in Mumbai, but the leadership actions resonate with mafias who are unknown by the city government but which the authorities cannot work without because of their influence, local knowledge and experiences about the informal settlements. While the Indian federal government has committed to universal electricity access, the Mumbai city government, as the major actor, has only managed to deliver electricity to street-level meters, which leaves a significant cost burden for households to reticulate to their respective dwellings over and above the expensive electricity supply (Mimmi, 2014). Apart from leadership and cost barriers, the Mumbai municipal electricity authorities are unwilling to 'engage in large-scale formalisation of electricity connections in more modern informal settlements due to the persistent threat of eviction from the land they occupy' (Lemaire & Kerr, 2016:15). Settlement and households can only be 'eligible for a formal electricity connection if they are in a notified slum, one that has been brought within the sphere of urban services of the municipality, so that the investment in electricity connection is a lasting one' (Lemaire & Kerr, 2016:15). The term "notified slum" somewhat

resonates with the "unproclaimed areas" used for informal settlements that meet certain qualifying criteria in South African formal electrification (DoE, 2011; 2018), however, with certainty of settlement permanency not guaranteed.

2.4.5 The practice of linking up informal settlements to grid electrification: successful and unsuccessful examples

Grid electrification of informal settlements is usually a local country or city initiative that purposes to provide physical infrastructures of electricity together with water, sanitation among other such key facilities which are usually scarcely provided (ESMAP, 2011). In the Ahmedabad City Slum Electrification in India implemented between 2001 and 2008, the objective was to 'develop a private sector-civil society partnership in order to extend legal and reliable modern energy services to slum communities in Ahmedabad' (ibid:23). Through a pilot Slum Networking Project launched in 2001 in five out 710 informal settlements under the jurisdiction of the Ahmedabad Municipal Corporation (AMC), being the Ahmedabad municipal entity responsible for the administration of city infrastructure, the project was gradually extended to cover all 710 slums in Ahmedabad (ibid). In this the ambitious project covered over 200,000 households that 'gained access to legal electricity connections. They receive and pay electricity bills on a monthly basis' (ibid:23).

According to ESMAP (2011), the slum electrification programme started with the conceptualization by the AMC to provide physical permanent infrastructures to the slums resulting in partnership with key stakeholders of the Ahmedabad Electricity Company Limited (AEC), USAID, Gujarat Mahila Housing SEWA Trust and SAATH (the last two are NGOs). This culminated in the selection of five distinct slums for electrification as a project pilot phase that later became expanded to cover all the slums in Ahmedabad (ibid). According to Joshi and Brahmabhatt (2005) the electrification was introduced after the slum households initially provided with water, sanitation connections, streetlights, paved roads, waste management facilities and storm water drainage where each beneficiary communities mobilized about USD $513 333 with the support of the two NGOS (Joshi and Brahmabhatt 2005). The AMC provided the households with no-objection and non-eviction assurance certificates as a pre-requisite and motivation to the beneficiaries to invest in their own homes. The AEC electricity company as the lead project coordinator supplying of electricity prepared the technical layout plan of the settlements (ESMAP, 2011). The USAID provided funding in the pilot phase from 2001 until 2003 for new connections,

designed flexible monthly billing options, encouraged energy efficiency by providing energy-saving bulbs and mobilized community awareness through training (ibid). The two NGOs were key facilitators and intermediaries between AMC, AEC, and slum dwellers through, of example, facilitating application paperwork for electrification to the electricity entity AEC. The CBOs were primary communication agents between the community and the utility entity which community participation allowed AEC to freely 'monitor the supply and consumption of electricity in the slum areas better' (ESMAP, 2011:29). Among its many roles, the CBOs also conducted door-to door visits as well as organising street meetings to 'motivate slum dwellers to acquire legal electrification' (ibid:29).

A key lesson derivable from the implementation of the grid-connected Ahmedabad City slum electrification programme is that it was a typical exemplar of multi-stakeholder partnership among the AMC, its utility entity, USAID, two NGOs and beneficiary communities. The pilot phase covering five slums with 700 households, subsequent expansion of the programme, the continuous monitoring and or evaluation are classic examples. According to ESMAP (2011:33), AEC the utility entity, started to issue indemnity bonds to those undertaking slum electrification which aided the electrification process for financially constrained households. The success account provides a model for replication as well as key lessons that government can relax its rules for the good of its informal citizens who usually 'are willing to bear the cost if a quality and reliable service is provided to them' (ESMAP, 2011:34). All the initial barriers relating to, one, illegality of status and tenure security, two, limited access to 'loans to pay for connection costs … [and] 'lack of trust between the electricity company and the slum dwellers' were also resolved and or allayed (ESMAP, 2011:33). Other challenges like incidences of electricity thefts fell, and regular consumption rates decreased due to strong mobilization on electricity conservation (ibid).

Another grid-networked electrification project albeit less successful to the Indian example was the favela and tenements in São Paulo, Brazil, that sought 'to convert formerly "free" electricity consumers into satisfied and paying customers in a manner that was financially viable for the distribution company' (USAID, 2009:1). Key partners in the 2006 Paraisópolis project were the USAID, the International Copper Association as well as the local electricity distribution company, AES Eletropaulo. The objective of the project was to 'solve a large-scale and long-term problem of electricity losses from theft and non-payment in slums' and to bring 'reliable and safer

electricity service … as well as helping them to reduce their electricity consumption dramatically to affordable levels' (ibid:1). Sharing some resonance with the AMC above with respect to piloting, pre-regularization, regularization, the post regularization and evaluation 'results show a rapid payback for the distribution company of less than 1.4 years and the transformation of non-paying or illegal electricity consumers into paying customers' (ibid:1). The project involved engaging the community leadership as well as other stakeholders deemed relevant in a bid to make extensive community campaign about the electrification and its components. The success of the project depended much on community support and improving their willingness to pay for electricity consumption (ibid). The regularization phase comprised pertained to overhauling the distribution system including installation of meters, onset of the billing and revenue collections. The innovated distribution system made it hard to steal electricity through anti-theft cables ensuring 'safer, better quality, more reliable and efficient electricity service within the area' with the targeted 4365 households formally electrified (ibid:1). In post-regularization, additional community campaigns were designed to improve the efficient use of electricity, installation of efficient household and public lighting systems and inefficient refrigerator replacements as well as upgrades of risky internal housing wiring (ibid)

Other substantial improvements were recorded in revenues collections that rose 'from virtually no payment to 68% paying (non-payment dropped from 98% to 32%, a reduction of 67%)' because of the installation of electricity meters (USAID, 2009:2). The electricity utility was now able to collect the subsidy for low-income people given by the government where their consumption became eligible for reimbursement by the government which boosted revenues of the utility company.

While the overall regularization process was effective the process overlooked close involvement of the community leadership as well as active stakeholders like as the municipality and NGOs prior to the intervention (USAID, 2009). Another such lesson was 'that residents needed to be contacted in a variety of ways' (ibid:2). Critical analysts like Luque-Ayala (2016:171), while acknowledging the electrification as a key expression to increase formal electricity coverage criticises the urban electrification retrofit as 'largely political in nature, characterised by its concern with an expansion of energy markets and, through this, the advancement of neoliberal understandings of the city.' Luque-Ayala (2016:172) analyses how the socio-material retrofit of

the urban grid electrification is achieved through interlinked political rationalities which sets to transform 'those accessing electricity in an informal, unmetered and unregulated manner into metered and regulated customers with monthly responsibilities for the payment' for the services. The second rationality is the reconfiguring 'notions of sustainability into "ability to pay", achieved via an intervention in consumer practices towards an increase in energy conservation and a reduction in electricity use' (ibid:172). To Andrés Luque-Ayala, these paradigms raise urban infrastructure debates, controversies and related struggle especially in unequal geographical contexts, for example, that bring to the fore specific processes of subjectification and 'the creation of specific forms of environmental subjectivity– in the context of resource use' (ibid:172). The electrification in Paraisópolis project, therefore, highlights discussions about 'the way subjects are imagined and energy practices are fostered, and…the emphasis lies on the perspective of utility companies rather than users' (ibid: 173). The favelas electrification, apart from 'being solely technological interventions, are political interventions that rely on specific understandings of the subject …, a neoliberal rationality embodied in the expansion of energy markets' performed under the framework of government well-intended social objectives (Luque-Ayala (2016:172).

Apart from the foregoing analysis by Luque-Ayala (2016), grid electrification of informal settlements by governments and electricity authorities has been criticised as extending the service to inappropriate and difficult areas settled 'on an ad-hoc basis, with limited oversight in terms of developing a cohesive settlement with urban services as a designed-in feature' (Lemaire & Kerr, 2016:4). Grid electrification entails extensive investments in transmission (construction of pylons and transmission lines) and distribution components of domestic lines to service the settlements (Rahman, 2008). The inappropriateness criticism surrounds the informal, uncertain and often fast-changing nature of the settlements that render grid electricity installation impractical for the use of fixed infrastructure in unplanned settlements (Kovacic et al., 2016). Other reservations relate to the fact that little consideration is given to the impact of the electrification on the electricity load profile, making it difficult to estimate power demand, particularly when fast-growing informal settlements and new illegal connections strain the formal network (Gaunt et al., 2012). Load profile in grid electricity distribution is a critical component in power planning and distribution that captures total electricity demand and variations. Thus, the unpredictability of load profile and

consumption present complexities to electricity utility providers in planning and extending supply into informal areas (SEA, 2014; Borchers et al., 2015).

Another key challenge to informal settlement grid electrification, with direct relevance to the Protea South case study in this thesis, relates to selective electrification that results in post-electrification management problems. Lemaire and Kerr (2016:6) expound:

> 'Other barriers from the view of the electricity utility are the lack of capacity in controlling illegal connections post-electrification of some areas. If the utility electrifies some areas but not others, the risk increases that un-serviced households may use the proximity of a formal electricity connection to acquire an illegal connection … if electrification programs only cover part of an informal settlement.'

Approaches to address the challenges of piecemeal electrification vary in Sub-Saharan Africa, with some authorities suggesting that the best way is to scale up 'projects to encompass larger un-serviced areas to reduce this risk' as in the example of Ahmedabad City above (Lemaire & Kerr, 2016:7). Uganda has increased the rate with which new connections are constructed and putting a rigorous audit of meter installations and the electrification system generally (USAID, 2004). The local electricity authority in the Philippines designed and launched an illegal tapping restraining scheme called RAISE, arguably unsympathetic to poor informal populations. This electricity pole schematic design involves 'clusters of metres…elevated (Elevated Metering Clusters)' such that electricity meters 'are now located on top of a pole, so that the population cannot reach the metres easily' (Mouton, 2015:231). This initiative adds to other efforts adopted at fighting electricity thefts and tampering, including cutting 'illegal connections and prosecute violators in front of ERC judges … as frequent as once a week' (ibid:231). This electricity governance in the form of disconnections for the poor in the Philippines encompassing costly and time-consuming endeavours resonates with Anheier's (2017:11) conclusion on infrastructure governance that some approaches may not be well-grounded with some innovations likely to 'do more harm than good… too self-serving.' Below, I turn to polycentric governance discussions to understand how macro-meso-micro governance arrangements, or lack thereof, are mediating in electrification provision.

2.4.6 Debates about polycentric energy governance and practices

Polycentric governance, typically manifesting increased currency in local participatory dimensions in decentralised and democratic contexts (Collier & Lo¨fstedt, 1997), is defined by Emelianoff

(2014:1379) as the embracing of a 'multiplicity of actors and spheres of authority … [becoming] the interplay and coordination … at all scales and across scales, in a non-hierarchical way.' The multi-scale governance of electricity hypothesises a governance situation in which governments as key actors engage other relevant stakeholders to provide electricity infrastructure in sustainable and acceptable ways. Being neither bottom-up nor top-bottom, a polycentric strategy transcends scales, positions and national - to local-level boundaries of actors in search of sustainable inter-scale local political action (Emelianoff, 2008). In this way, polycentric energy infrastructure governance, just as macro-meso-micro governance frameworks discussed above, envisages systematic institutional modelling of multiple actors and overlapping networks at different scales allowing 'for contextualization, experimentation and innovation' (Goldthau, 2014:134). Fudge et al. (2016:2), in the context of the global North, justify this decentralised governance by making a strong argument that '[o]rganizing action, influence and change from the local level has become a core focus for the encouragement of sustainability pathways and processes by a range of stakeholders and decision makers'. Accordingly, local governments have been identified as a 'key medium through which to coordinate and influence workable local level responses to the problem of developing more effective policies around energy' (ibid:2).

A review of examples of polycentric governance in electrification adopted by Sweden and Germany and transitioning governance in China to understand how those typologies are and can intervene in electrification generally is necessary. The multi-scale governance in Va¨xjo municipality (Sweden) and Hanover municipality (Germany) underline the criticality of engagement of key stakeholders and establishing alliances in local-level energy transitions. The new innovations and synergies developed between Växjö municipality and the local universities and industrialists for 'second-generation biofuels, which would be a second step towards a transition to biomass' are insightful (Emelianoff, 2014:1388). Apart from connections with the institutions, Växjö found a powerful supporter in the energy transition initiative from the city Mayor appointed in 2006. In all that, the municipality took advantage of decentralised national frameworks allowing experimentation in energy infrastructure development through the local connections and using local corporatised energy utilities in cities' control.

Like Växjö, Hanover City found support in its energy transition bid from nuclear dependence to cleaner forms of energy through key city officials. The Greens Party-led municipal council elected an influential personality as head of the Environment Department to influence the climate-related energy reform since 1995 (Emelianoff, 2014). In addition, Hanover City, like Växjö, is in partnership with non-governmental organizations (NGOs) and politically connected to the Greens political party, the latter being a dominant and influential party whose connections strongly influenced a transformative transnational municipal energy network (ibid). Yet the city struggled to 'gain legitimacy and power to act at the local level' notwithstanding support from the party (ibid:1385). However, the city managed to network with various local and international municipalities influencing an alternative non-nuclear dependent energy infrastructure that significantly reduces greenhouse gas emission (ibid). Apart from external networking, the city also partnered with its municipal energy company to initiate a carbon emission reduction strategy in 1995 by prioritising energy-saving programmes and efficiency that 'reached more than 50,000 customers … produced 29 per cent of the electricity consumed in Hanover, compared with 12 per cent in Germany as a whole' (ibid:1384). Unlike Växjö municipality, Hanover City did not get support from federal governments as Germany's reunification processes delayed the proclamation of federal policies related to renewable energy approaches (Huber, 1997 cited in Collier and Löfstedt, 1997).

Unlike the two cases studies above, the governance of the electricity sector in China has not much embraced polycentric governance but witnessed recent transitions from a state-centred coal-based electricity administration towards the interactive governance paradigm in recent years. The evolution in the electricity industry has been taking place since the 1990s with significant modifications to the state-centric approach, which was given impetus by an energy supply crisis of 2003 (Andrews-Speed, 2013). Although the Chinese government still relies on its dominant traditional administrative approach and instruments, 'large generation and transmission companies have been able to strengthen their positions in the sector', marking some transition in governance (Andrews-Speed, 2013:1).

The literature reviewed about Sweden, Germany and China does not significantly consider implications for or connections with poor communities, other than promising interactions at meso-levels in Sweden and Germany. In the three case studies, what is not clear is the enjoinment of

residents in the governance initiatives to the energy transitions, meaning how the incumbent governance initiatives are capturing the social and political dynamics of the residents. The Växjö and Hanover municipalities cases, however, provided relevant aspects to this thesis regarding the use of connections and alliances in infrastructure provision. The governance of informal settlement infrastructure provision in South Africa has resorted to engaging intermediaries and "champions" who are key individuals within the settlements and government circles, respectively, that support residents' cause (see Chapters 3, 4 and 7). Below I discuss how institutional framing thematic (institutional reforms, theorisations, and the role of judicial courts) is intervening in infrastructure provision and its governance with a focus on poor communities in the governance arrangements.

2.5 Institutional arrangements in infrastructure governance

The debates on informal settlement upgrading, electrification and infrastructure governance reviewed above signify that the institutional architecture for infrastructure decisions and investment is a key factor in infrastructure governance. Informal settlement upgrading efforts, for instance, hinge on institutional capacities, engagements and coordination between various institutions of national and sub-national governments, local community and other stakeholder organisations. Electrification processes, likewise, are underpinned by institutional arrangements. As such, this section looks at the institutional frameworks in greater detail to determine their influence on infrastructure governance.

According to UNDP (2017:5), the success of infrastructure governance lies in the 'institutional apparatus to lead the coordination and facilitate the implementation and monitoring' processes. Sotarauta and Suvinen (2021) frame institutions as the rules, constitution, laws, regulations (formal and social constructions) and the informal aspects (norms, relationships). North (1990:3) distinguishes institutions from organisations to be 'the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction'. Richards and Smith (2002) take government bureaucracy (being the legislations, the financial controls, the regulations, and the force) to be perceived as an institution. Institutionalism, being a school of thought emphasising the role and influence of social institutions, conceptualises organisations as capable of changing or amending institutions to inform and align implementation and monitoring systems with the desired choices and actions. It also can be looked at as adherence to an established way and code(s) of conduct, but an institution can be an organisation and its established laws, rules and

regulations that guide it. In Anheier's (2013:15) words, institutionalism does not deal with technical or administrative aspects of infrastructure policy but focuses on 'how different actor groups have adjusted and could adjust to the new types of challenges brought about by changed and changing governance conditions'. Based on the insights of the discussion, institution in this thesis refers to government bureaucracy (legislations, policies, regulations and relationships), community structures and civil society organisations working with the community levels.

Infrastructure institutionalism is perceived as dominantly centralised and entrenched in hierarchical coordination, implying infrastructure provision and governance are typically a bounded rationality (Wegrich et al., 2017). Pyper (2015) analyses institutional frameworks as having undergone historical transformations and transited from regimes of public administration (hierarchical governance), new public management (NPM) to the contemporary new public governance, commonly known today as governance. Public administration is performed through complex top-down institutional coordination with frequent concern over scale and efficiency (Kettl, 2008). Such concerns prompted a general revolution to the NPM as an organising framework reshaping practices of state officials along the values and concepts of the private sector for smaller, effective and more responsive bureaucracies (Chipkin & Lipietz, 2011 cited in Cameron, 2015). The NPM framework is viewed as addressing red tape and rigidity associated with public administration through decentralisation and corporatisation of public entities aiming for more effective infrastructure delivery through the local government sphere (Olsen, 2003 cited in Cameron, 2015). Central to NPM are local-level performance management (market efficiency and managerial reinventions geared at performance improvement and greater transparency (Chipkin & Lipietz, 2011 cited in Cameron, 2015) and a "contractualisation" through contract appointments for more accountability (Hood, 1998). Contractualisation is associated with outsourcing services to improve service provision and cut costs (Certeza, 2018). NPM has been evaluated as a transitory stage from traditional statist administration to the pluralist tradition of the current new governance paradigm, although the three paradigms coexist and overlap (Osborne, 2011 cited in Cameron, 2015). This thesis focuses on institutional mechanisms under the current governance overlapping with NPM, including "municipal governance" (de Visser, 2009), "community governance" (Katsaura, 2012), "network governance", "administrative governance", "socio-political governance", "contract governance", and "public policy governance" overlap (Osborne, 2011 cited in Cameron, 2015). State and municipal entities' corporatisation and

contractualisation are assessed to understand how changing institutional decision-making from centralised government systems is impacting infrastructure provision at the local level.

2.5.1 Institutional coordination as enabler to institutional administrative capacity

Organisational coordination, referring to institutional modes of decision-making which shape how the development is done, is a key institutional arrangement required to address infrastructure challenges in informal settlements as it connects and brings together multiple actors in a given task (Scharpf, 1994; UNDP, 2017). In hierarchical coordination, central control through different government units and politicians ensures welfare-maximising and distributional equities which expands overall welfare for a country or region (Wegrich et al. 2017). However, typical limitations in hierarchical governance are its openness to opportunism and cunning self-interest that often take precedence once politicians and administrative staff take office in contradiction to the founding promise to maximise public welfare and benefit (Scharpf, 1994). This makes hierarchical coordination in the public sector to be classified as predatory and oppressive such that politicians may 'seek to direct benefits to their various constituencies' (Wegrich et al. 2017:32). Another form of coordination is through decentralized horizontal self-coordination to meso levels which may require constant monitoring and interjection by the macro level to determine if the nature, volume, and complexity of interactions at this level does not surpass its capacities (Wegrich, et al. 2017). Thus, task decentralisation should not lead to 'extensive horizontal interdependencies across units…. under conditions of high levels of task complexity' (Wegrich et al. 2017:32).

Coordination is closely connected administrative capacities which deploys analytical capacities in organising actors across boundaries and levels of government to improve implementation and delivery of policies as well as 'addressing complex policy challenges' (Wegrich et al. 2017:36). Administrative capacities are, thus, functional and indispensable institutional traits in governmental administrative systems for executive arms of governments to tackle complex implementation challenges (Wegrich and Štimac 2014). However, administrative capacities are not politically neutral. This can lead government officials to politically enable and or constrain different actors by determining what they can or cannot do, hence ultimately dominating the decision-making process (Wegrich, et al. 2017).

2.5.2 Institutional theorisations informing infrastructure provision and governance

Infrastructure provision requires to be looked at from an institutional theory perspective apart from the socio-economic, cultural, and political patterns and processes (Dekel, 2020). Framing of institutions in robust institutional theory is important to inform infrastructure provision strategies (Sorensen, 2017). Rational choice institutionalism influences the behaviour of institutions to 'overcome collective action problems, to ensure greater certainty, and to reduce risks' by sanctioning rules and or costs for nonconformers (Sorensen, 2017:4). One example of such theories is Negandhi and Reimann's (1972) Contingency Theory of Organization, which re-examines a complex organisation's structure and functions in relation to its changing external environment and assesses the degrees of centralisation and decentralisation in relation to organisational objectives. A key thread in Rational Choice Institutional Theory is institutional change, a phenomenon Scott (2001:182 cited in Dacin, et al., 2002) calls 'deinstitutionalization', which refers to 'the processes by which institutions weaken and disappear' as they respond to 'pressure on institutionalized norms or practices'. Dacin et al. (2002) similarly argue that institutions should be capable of initiating and responding to change and discarding path-dependent practices but embracing variation and change. DiMaggio and Powell (1983) also provide a powerful momentum for institutions to be revisited and changed. Their theory contends analogously to Max Weber's firm belief on the efficacy of capitalist bureaucracy and its rationalities seen as 'become an iron cage in which humanity was ... imprisoned' which, however, succumbed to change (DiMaggio and Powell, 1983:147). Since Weber's (1952) argument for indispensability of bureaucracy (seen then as efficient, irreversible and powerful means of controlling mankind) has since changed, in like-manner, the state-inspired institutional imperatives can change. Institutional change is key to this study, given that the introduction of a policy for the electrification of informal settlements required state institutions to take on new tasks or to operate in new ways.

A second group of institutional theories concerns theories that defend public bureaucracy by protecting and demystifying the stereotype and denigration often associated with public agencies and employees as ineffective and inefficient (Milward & Rainey, 1983). Rainey and Steinbauer (1999) use this theory to conceptualise government organisations in the USA before the turn of the century as effective and performing very well. The theory compares public organisations to the archetypical large and cumbersome elephant, which can, however, gallop, if need be, and despite its thick skin, is also sensitive, altruistic and nurtures its young ones more than many other animals

(ibid). In this case, while government organisations are impugned as insensitive, 'they also commonly display sensitivity and responsiveness to the needs of clients and others' (Rainey & Steinbauer, 1999:2). If defence of bureaucracy may be applicable in the American context, it may not be appropriate to many countries in the global South, in particular, those having to cater to informal settlements, many of which are ineffective and involved in legal challenges with inhabitants. The following section turns to judicialisation to unpack how poor communities seek recourse over unimproved infrastructure provision.

2.5.3 Institutional-legal perspective: The connection between judicialization of infrastructure and governance

This thesis takes judiciary as a relevant legal state institution mediating in the governance of public infrastructure in poor urban communities. The inquiry derived a deeper understanding of how courts are intervening in the failure to or refusal of promised infrastructure provision and upgrades in informal settlements. The practice of the executive sphere of government in the global South and South Africa, in particular, has culminated in struggles and resistance by the residents against what they deduce as unfair denial of urban citizenship and rights (Bhan, 2016). Literature portrays India as a confounding case for informally settled communities with two distinct shifts in public interest litigation, beginning with the empathetic and protective era and later a reversal of the gains (Bhan, 2012; 2016). In this, the supreme and regional high courts were 'perceived as institutions that protect the rights of ordinary citizens from an executive that inspires a far lower degree of trust in the public, and that is often accused of being corrupt, politically motivated and, importantly, deeply inefficient' (Bhan, 2009:133). A series of judicial proceedings leading to innovations in the 1970s and 1980s concretised the position of the courts in India as sites for the poor and justice, for example, through landmark cases that eased the *locus standi*, virtually allowing the socio-economically marginalised persons to freely approach the courts (Rajamani, 2007). In Rajamani's (2007:293) words, the Supreme Court of India 'assumed the mantle … and a last resort for the oppressed and bewildered … the Court has opened its doors to public-spirited citizens, expanded the frontiers of fundamental rights, and even rewritten parts of the Constitution.' In this way, Rubin's thesis on this topic (2013:248) concluded courts and 'court cases have become important sites for communication and connection between state and non-state actors' in contexts where the two actors 'have limited opportunities for engagement'.

Further to the above, the Indian Court committed itself to gathering case information and evidence regarding land issues in informal settlements extending its involvement beyond issuing orders 'into implementation, oversight and administration' (Bhan, 2009:134). Consequently, the judiciary was interpreted as implicitly taking over functions ideally under the purview of the executive departments, thus, becoming an arbiter of justice in the urban planning and implementation processes in the city, a parallel administrator and part of the executive, which (Rajamani, 2007:294) analyses as:

> 'This expansive judicial role in governance has been welcomed in some quarters as 'chemotherapy for the carcinogenic body politic.' The ability of public-spirited individuals to use the Court as a fulcrum to leverage public policy is perceived as a testament to the Indian democracy. Judicial intervention has led to changes in policy as well as rules, and arguably, to discernible improvements in the environment.'

But Rjamani (2007:10) wondered if the agentic role and high involvement of judiciary in the informal settlement urbanism are not leading to 'judicial excessivism' or 'judicial overactivism' and takeover of coordinate organs responsibilities. Besides these concerns, the intervention of the courts has surfaced a conflictual dimension in both India and South Africa, where local authorities subverted the court orders (Rubin, 2013). In the South African case, Rubin (2013) shows subtle resistance to the manoeuvres of the court system, which, while the CoJ authorities generally accepted the court's judgement, the City nevertheless ignored the requirement or performed minimally with respect to the evictions that were still carried out anyway by its other departments and or private contractors.

The new millennium has witnessed a reversal of the gains in public interest litigation in India, and Bhan (2012:1) describes Delhi City as a 'city whose landscape has been scarred by a series of evictions of the homes of some of its most vulnerable citizens... mark[ing] a different set of negotiations, legitimations, processes as well as horizons of resistance'. What is intriguing about the new development is that it was not ordered by 'the institutions of the executive across local, state and federal scales that govern the national capital – but by the *adalat,* the Judiciary… by the Delhi High Court and the Supreme Court of India' (ibid:1). In this, the same public interest litigation judicial innovation that earlier on enabled the poor to access justice has been turned against them. As a result, the hitherto benevolence and protection is no more making some critical legal scholars wonder if courts are not 'inextricably entangled' (Blomley, 2003a:29) and

dynamically fused in discursive relationship with the state that conditions their practices (Delaney, 2004).

In a comparative study of socio-economic judicialisations in India and South Africa, Rubin (2013) found that the Constitutional Court of South Africa, like the pre-millennium Indian Courts, somewhat similarly ruled in favour of the poor in unjust evictions by the CoJ. The judgement forced the CoJ to halt the evictions pending 'alternative accommodation and meaningful engagement' (ibid:242). Thus, Rubin (2013:21) concludes that, while the pre-millennium Court of India

> '[H]as chosen a role of judicial activism and direct intervention into the daily practices and policies of the official producers of the city … the South African Constitutional Court has used an administrative justice approach with a special emphasis on procedure and engagement.'

In this modest approach, the South African Court has generally trusted the state to execute the orders, unlike in the Indian case (Bilchitz, 2008 and Christiansen, 2010 cited in Rubin, 2013 In this way, the South African Constitutional Court is a social and political negotiator between the state and the communities that need to consult with each other over socio-economic rights (Rubin, 2013).

2.6 The implications of infrastructure governance and institutional frameworks for informal settlement upgrading and electrification in informal settlements: Towards theoretical and conceptual framing

This chapter has engaged with informal settlement upgrading, which in large part is an infrastructure provision improvement strategy for informal settlements. However, in many instances, there are disjunctures between the adopted policies and actual state practices, as conceptualised in figure 2.1 with many governments in Africa emphasising neoliberal notions of urban competitiveness and city beautification that are hostile to informal settlements (Huchzermeyer, 2011). Evictions and relocation of poor communities (in overt or subtle ways) to peripheral areas and ill-conceived stop-gap accommodation are not uncommon to pave the way for flagship housing projects. In this way, state-led informal settlement upgrading efforts in the global South are often affected by policy-practice disharmonies occasioned by the subtle informal settlement eradication and relocations.

Situating electrification in the infrastructure provision narrative of informal settlements

Electrification is a key basic infrastructure in the upgrading of informal settlements encompassing sophisticated technical systems of generation, transmission and distribution, as well as maintenance (Hughes, 1983; Gaunt, 2003). Electricity supply to informal settlements and other poor communities in developing countries is still low against increasing demand (IEA, 2020; IEA, et al., 2021). There are, however, accounts of grid electrification in informal settlements (Gaunt et al., 2012; Lemaire & Kerr, 2016), marking recognition by some governments to address the electricity-related challenges in the settlements (Figure 2). The electrification is, however, not without challenges related to the unplanned and unofficial nature of the settlements. Relatedly, the use of fixed infrastructure does not match the temporariness and fast-changing unplanned nature of the settlements (Smith, 2004; Kovacic et al., 2016). Other limitations are the state fixation on-grid electrification as opposed to incorporating off-grid electrification solutions (see Merton, 1968). The state domination in the grid electrification process is, however, justified as creating economies of scale of large production, facilitating equitable distribution and anchoring national industrialisation and employment creation. However, state-centric electrification can suffer from funding challenges, underinvestment and poor infrastructure maintenance and be prone to political and administrative rent-seeking tendencies that militate against noble intentions (Wild et al., 2012). There are promising polycentric governances in Sweden and Germany, yet integration of community structures does not feature prominently in the governance structure in those two countries (Emelianoff, 2014). China is beginning to incorporate a form of interactive governance in the wake of increasing pressure to decarbonise its electrification for cleaner energy alternatives (Andrews-Speed, 2018).

The relationship between infrastructure governance and upgrading of informal settlement

Infrastructure constitutes the engine and heartbeat of cities' socio-economic systems such that its proper governance bolsters socio-economic and political performance (Calvin, 1984 cited in Graham & Marvin, 2001; Wegrich et al., 2017). Infrastructure governance is, thus, the special arrangements to transform the state-centric bureaucracy to pluralistic governance through organising, coordinating and administering state policies, dialogues and partnership arrangements, as illustrated in Figure 2. In this, governance addresses traditional government administration shortcomings of corruption, inefficiency, misuse of power and top-down governance (Vymětal,

2007). Theories of governance help us understand and analyse the complex modern society, policies and programmes (Ansell & Torfing, 2016; Asaduzzaman & Virtanen, 2016). The governance principle of the 'Hiding Hand' and other 'hands' equally provide a philosophical understanding of how different societies are governed, ranging from sheer thoughtlessness, guesswork scenarios and expectations of benevolence of nature, malevolent practices of corruption and deceitfulness by those in power to protective and precautionary governance as well as the passive resistance to change and unnecessary overestimation and bureaucratisation (Figure 2).

Institutional arrangements as key mediator to infrastructure governance and informal settlement upgrading

The institutional geography and relationships of state stakeholders are crucial to infrastructure provision and informal settlement upgrading (UNDP, 2017). Formal institutions or human devised 'rules of the game' (laws, constitution and regulations) and informal aspects of norms, relationships among others (North, 1990; Sotarauta & Suvinen, 2021), are conceptualised as amendable, changeable and abandonable, as illustrated in the conceptual framework in figure 2. The institutionalism of public infrastructure remains centralised and hierarchically coordinated despite public administration regimes being on record as transformed to NPM and co-governance (Wegrich et al., 2017). Framing institutionalism in robust theories helps to analyse and re-examine infrastructure provision strategies to conform to changing external environment (Negandhi and Reimann, 1972; Sorensen, 2017). Institutional theories encourage institutions to deinstitutionalise, weaken and cause to disappear the unwanted institutional traits and practices to attain relevant change (DiMaggio & Powell, 1983; Dacin et al., 2002; Scott, 2011). The efficacy of institutional defensive theories that protect and demystify the denigration associated with public agencies and employees as inefficient or ineffective are also examined (Milward & Rainey, 1983; Rainey & Steinbauer, 1999).

This review has included a specific institutional-legal perspective of courts as sites for juridical justice and state engagement with communities and civil society organisations over socio-economic rights. The apex court is perceived as both protective of the public interests and rights as enshrined in the constitutions, policies and programmes in a typical protective governance as theorised under the 'Protective Hand' principle (see Jordan & O'Riodan, 2004). The courts, as socio-political and institutional negotiators, are intervening in undemocratic decisions and refusals to provide infrastructure. What has been interpreted as problematic in the courts' intervention is

the expanded functions going beyond issuance of judgements and orders to administer their implementation. This has been interpreted as interfering and taking over the administrative function performed by other arms of government. A pertinent concern in this regard pertains to the sustainability of the approach and potential conflict it may cause between spheres of government. Besides, there is greater likelihood of role complication and overload to courts that specialise in judiciary, not administration leading to judicial excessivism and or overactivism (Rajamani, 2007).

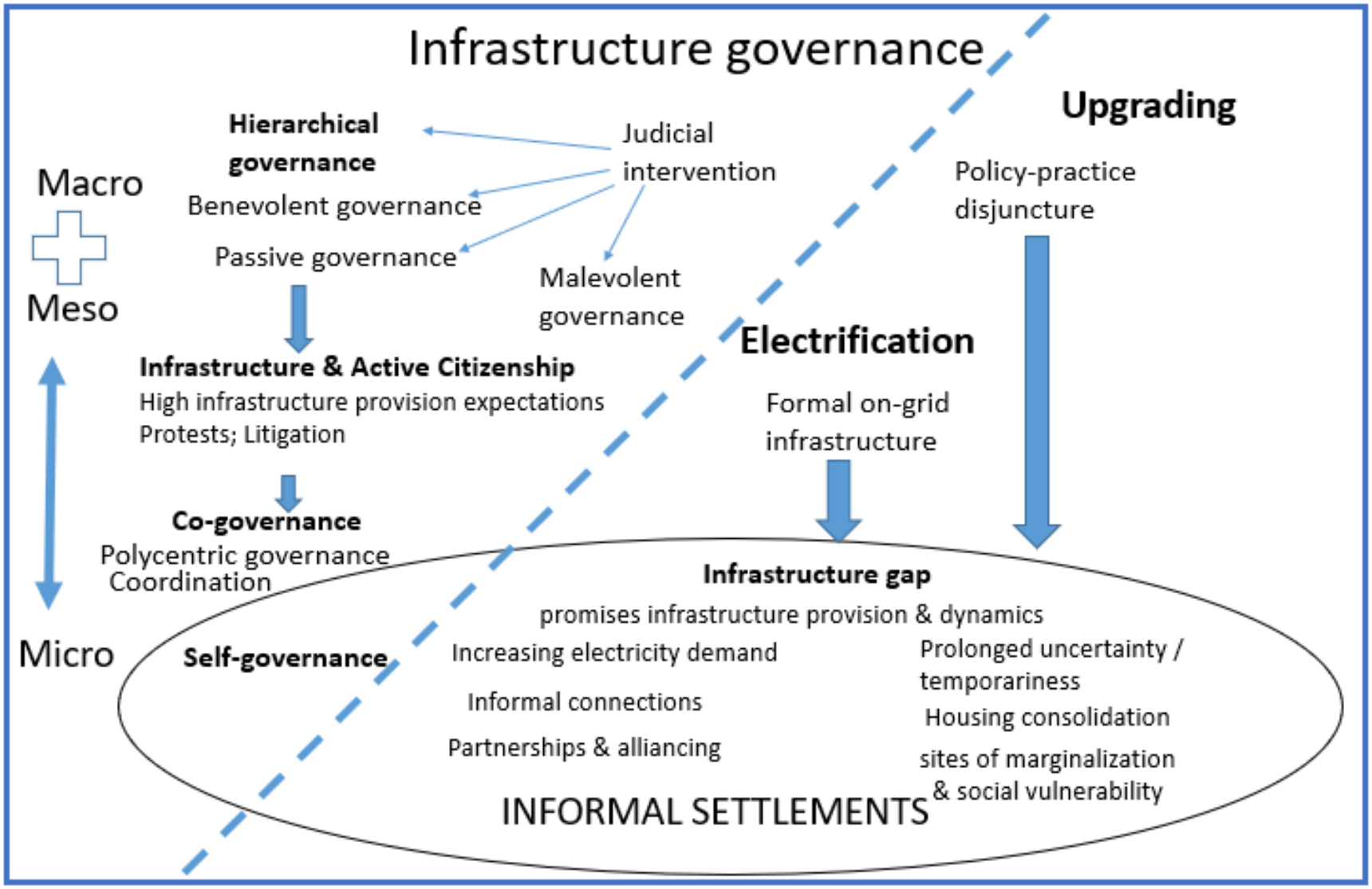


Figure 2. 1**:** Conceptualizing infrastructure provision in informal settlements: a theoretical and conceptual framework. **Author's own construction**

2.7 Conclusion

This chapter has established conceptual contributions from the global literature reviews on informal settlement upgrading, infrastructure governance, electrification and institutional thematic areas. The conceptualisations respond to and position the study within pertinent broader debates about urban informality, infrastructure provision and governance. Different hierarchical governance forms and configurations (benevolence, malevolence and passive models) characterise state-led administration of infrastructure while self-governance applies to informal residents. However, co-governance encompassing collaborative multi-scalar and polycentric micro-meso-macro scales appeals most to both the hierarchical and self-governance trajectories. The judicial intervention makes a legal-institutional intervention to infrastructure provision and governance challenges. Challenges can emanate from disjuncture to state policy-practice commitments to informal settlement upgrading and infrastructure provision. Grid electrification as opposed to off-grid approaches have also been analysed as revealing governments to often incline towards the former than the latter. The usually costly capital-intensive grid electrification of informal settlements is appraised as inappropriate and unsustainable for impermanent settlements that potentially culminating in infrastructural gaps of unfulfilled promises, informal connections, housing consolidation among other dynamics.

Altogether this conceptual framework is providing key conceptual threads to understanding infrastructure provision in informal settlements under the lens of governance. I take forward the useful global insights, experiences and lessons about infrastructure provision and electrification from this initial theoretical and conceptual framework to Chapter 3 on the local context of infrastructure governance in South Africa. The concepts helped me to carve out thematic boundaries for this inquiry, the selection of case studies and participants with important influence on and implications for thesis processes and conclusions. Thus, in many ways, the chapter is a firm founding lens upon which to compare real-life complexities in infrastructure provision in other countries with South Africa. I am, nonetheless, cognisant that the real-life contexts, nuances and complexities in the South African case studies differ from the ones presented in the global literature review because of different spatial settings, times, histories and levels of development, that shaping my overall methodological approach.

CHAPTER THREE

3.0 Infrastructure governance and institutional frameworks, informal settlement upgrading and electrification in the South African context

3.1 Introduction

The literature on informal settlement upgrading in South Africa spans planning, administration and implementation, making it relevant to my case studies. The country battles to address over 1.7 million households who live in the settlements without adequate housing, services and or secure tenure (HDA, 2014; Cirolia et al., 2016). Given the background of complex and evolving informal settlements, South Africa's rapidly urbanising metropolitan cities face a daunting challenge to address infrastructure provision in informal settlements and related governance problems. This literature review gives an overview of interim infrastructure provisioning located within an UISP designed towards improving the informal settlements by providing requisite basic infrastructure in the protracted process of full upgrading (DoHS, 2009; NUSP, 2016).

3.2 Informal settlement upgrading

Informal settlement upgrading is located within the overall South African housing policy (as the large-scale subsidization programme focusing on standardized housing units in greenfield projects), this essentially making *in situ* upgrading upgrading difficult to implement in South Africa. This section discusses four items, one, brief introduction to the informal settlement upgrading and interim electrification, the underpinning legislative and policy frameworks and main actors in that regard. The next aspect analyses policy-practice contradictions in the UISP-INEP programmes. The third section examines the categorisation and geotechnical assessments and how they are intervening in the infrastructure provision. The last subsection looks at the nationally provided funding streams and how they influence the infrastructure upgrading in the informal settlements.

3.2.1 Introduction to legislative, policy frameworks and main actors in the informal settlement upgrading and interim electrification

According to Ziblim (2013:21), South Africa has several firm supportive legislative and policy arrangements for 'the provision of adequate housing (and by extension slums upgrading)'

including the supreme 1996 Constitution. Key legislative frameworks directly relating to the informal settlement upgrading thematic include the Constitution evaluated by Tissington (2011) as 'one of the most "progressive" in the world in terms of guaranteeing the socio-economic rights of individuals in relation to adequate housing' (Ziblim (2013:21). The other is the 1997 Housing Act which is underpinned by several policy frameworks including the National Housing Code of 2000, also revised in 2009; the 1994 White Paper New Housing Policy and Strategy for South Africa; the 2004 Breaking New Ground (BNG), a Comprehensive Plan for the Development of Sustainable Human Settlements. The 1994 White Paper and BNG policy documents provide the policy context for the upgrading of informal settlements and UISP housing policy (ibid).

According to SERI (2012:5), key actors in the informal settlement include 'those in key government positions, and in other institutions' of the National Department of Human Settlements (DoHS), the Department for Performance Monitoring and Evaluation (DPME), National Treasury (NT), the National Planning Commission (NPC), the National Upgrading Support Programme (NUSP) and Housing Development Agency (HDA). The various local government municipalities and the beneficiary informal settlement communities are other key participants (ibid). The list of key actors, however, rarely mentions the Department of Energy (DoE) which is key electricity infrastructure state institution participating in the informal settlement upgrading probably explicable by its belated coming in the process in 2011.

3.2.2 Emerging governance conundrums in the operationalisation of interim infrastructure provision within informal settlement upgrading in South Africa

This section sets the background to the problematic basic infrastructure delivery in informal settlements in a bid to unravel deeper insights into the arrangements underpinning the provisioning (policy and planning), implementation of the provisions in practice and the governance mechanisms guiding their administration. In the three case studies of Stjwetla, Protea South and Slovo Park, water and sanitation were temporarily provided via the then Department of Housing, now Human Settlements, at the dawn of democracy soon after 1994. The 1996 South African Constitution (RSA, 1996) 'supports and motivates for the upgrading of informal settlements' together with the 1997 Housing Act, both establishing individuals' right to housing and basic infrastructure (NUSP, 2015:1). The Prevention of Illegal Evictions Act of 1988 supports the Constitution in this endeavour by setting down stringent bases for the removal of individuals from

land they would have occupied informally (ibid). Furthermore, NUSP (2015:1) argues that '[t]he Breaking New Ground Policy [BNG] (2004) was the first policy document that recognised the challenge of informal settlements and provided a directive and financial support so that they could be upgraded.' Subsequently, housing and planning legislation and policies, including

> 'the National Housing Code (2004 and 2009), Outcome 8, Delivery Agreement (2010), the National Development Plan [NDP] (2012) and the Spatial Planning and Land Use Management Act (2013) …continued to reinforce the need to upgrade informal settlements and provide mechanisms as to how this could be undertaken' (ibid:1).

According to NUSP (2015:14), the 2009 Housing Code has reorganised the national housing policy of South Africa into a comprehensive policy document that 'sets out a dedicated [upgrading] programme including a funding source.' However, the 2030 NDP raised concern about the slow rate at which informal settlement upgrading was being implemented and the endemic return by implementors to conventional completed-unit approaches (The Presidency, 2012). Essentially, the NDP has promoted the need to systematically and or programmatically address informal settlement upgrading. According to NUSP (2015:15), the cabinet-adopted 2010 Outcome 8 Delivery Agreement constituted a strategic 'shift towards outcomes-based development'. While the various frameworks discussed together have a considerable impact on infrastructure provision endeavours by putting in place an integrated and coherent infrastructure planning framework, various systemic governance challenges continue to besiege the informal settlement upgrading trajectory.

The mechanisms for infrastructure provision to informal settlement inhabitants under the UISP (see NUSP, 2015:1, also discussed above) constitute the core of this inquiry. Interim infrastructure service provision is guided by the UISP, administered under the NDoHS. The UISP implementation is located within the housing sector, which, for the purposes of this thesis, refers to the NDoHS, National Upgrading Support Programme (NUSP), Provincial DoHS and the Housing Development Agency (HDA), the latter as an implementing arm. The NUSP was established in 2009 with the primary objective to '[p]romote incremental upgrading as a major complementary housing programme … (*in situ* where possible) [and] [i]mprove the programmatic approach to upgrading, strengthening coordination with other sectors and partners' (NUSP, 2015:4). According to the NUSP (2015:17), the UISP incorporates the provision of '[b]asic services (water supply, sanitation, road access) on a site which is suitable for permanent settlement'.

Apart from the housing sector, the electricity sector plays a role in furthering basic infrastructure provision in informal settlements through electrification. This sector, for the purposes of this thesis, comprises the DoE, NERSA and Department of Public Enterprises (DPE) (the state ministry under which Eskom, the national power utility, falls). In-between the two infrastructure sectors lie the implementing local governments, which assume the 'developer role under the UISP, provided they are accredited and capacitated to do so' (NUSP, 2015:3). Figure 3.1 illustrates key institutions in what this thesis refers to as the 'infrastructure sector' in informal settlements comprising the DoE, NERSA and Eskom. The housing sector's focus (the DoHS, NUSP and or HDA), guided by the UISP, is on full, incremental upgrading. Within this, interim arrangements ultimately lead to township establishment and complete housing consolidation. However, the UISP does not include electrification as basic, interim infrastructure. Electrification is nevertheless identified in the 1994 Housing White Paper as a critical basic service in a settlement establishment process (RSA, 1994). The state's grid electrification approach for informal settlements was introduced belatedly in 2011 under the Policy Guideline for the Electrification of Unproclaimed Areas (DoE, 2011). This does not stem from the UISP nor does it mention the UISP.

To conclude this section, the interface between the official approach for the housing and energy sectors on the one hand and the *de facto* approach on the other hand is at times in contradiction. Interim electrification sits alongside the temporary water and sanitation services, but in many ways, its installation has unwittingly inspired a sense of permanency even to settlements earmarked for relocation. The temporary electrification guidelines refer to a three-year minimum period, after which it is permitted to become obsolete (replaced with permanent electricity or removed in the case of a relocation). However, as will be evident from my three cases, neither upgrading nor redundancy is occurring (see Chapters 5 to 8). A further governance issue relates to the tension between the CoJ municipal electricity utility company, City Power, and the national, state-owned electricity company, Eskom, with apparent duplication of electricity distribution roles in areas under the administrative jurisdiction of the City. I discuss tensions and the duplication characterising these companies in Chapter 8.

3.2.3 Policy-practice contradictions in the informal settlement upgrading and the INEP trajectory

> '[T]he key objective of the UISP is to facilitate the structured *in situ* upgrading of informal settlements, as opposed to relocation. Wherever possible relocations should be minimised during upgrading projects. The…UISP includes, as a last resort, in exceptional circumstances, the possible relocation and resettlement of people on a voluntary and co-operative basis, as a result of the implementation of an upgrading project.' (NUSP, 2015:3)

> '[The] INEP cannot work in isolation from the Department of Human Settlements – the programme after all requires a house to electrify. In other words, the electrification of low-income households in South Africa is integrated into the overall housing and service delivery process.' (SEA, 2014:39).

The two prefacing quotes indicate how, in theory, the two infrastructure sectors, housing and electricity, must work in an integrated manner. According to infrastructure norms and standards methodology in South Africa, guided by the National Treasury Infrastructure Planning and Appraisal Guideline of 2022, state institutions embarking must prepare and appraise infrastructure investment projects in line with the Framework for Infrastructure Delivery and Procurement Management (FIDPM) (National Treasury, 2022). The FIDPM has superseded the Standard for Infrastructure Procurement and Delivery Management (SIPDM) with the Infrastructure Delivery Management System becoming a new 'government management system for planning, budgeting, procurement, delivery, maintenance, operation, monitoring and evaluation of infrastructure' (ibid:1). This is setting minimum requirements for planning and programme as well as implementation and maintenance processes of projects to result in 'interrelated elements that establish processes that transform inputs into outputs' (ibid:1). What is fundamental about the guideline is its focus on project initiation and conceptualization that culminate in prefeasibility report for megaprojects and the concomitant decision to support or reject funding thereof (ibid). Similarly, the COGTA's (Cooperative Governance & Traditional Affairs) (2010:10) integrated municipal infrastructure report, is prefaced as setting local level services standards for 'practical … nation-wide system of guidelines … for high level infrastructure planning for municipalities, service providers and local/provincial/national government in terms of the provision of weighted infrastructure development.' The guideline focuses on basic services including 'aspects of integrated infrastructure planning and management and the value and role of infrastructure in local and national growth and development objective' (GOGTA, 2010:10). What the municipal infrastructure document lists as infrastructure are water, sanitation (health and hygiene), roads,

storm water drainage, sports and recreation but conspicuously leaves out electrification. This omission in municipal infrastructure planning forms the interest of this study which seeks to understand how the National Treasury-funded infrastructure investments taking place in informal settlements are subjected to SIPDM, its successor FIDPM or municipal infrastructure planning, hence policy-practice contradictions discussed in this sub-section.

In many instances, informal settlement upgrading approaches happen largely (or as default) in the form of relocation to greenfield housing developments, whereas the statutory approach is *in situ* improvement under the UISP in the 2004 and 2009 Housing Code (Charlton, 2006; Huchzermeyer, 2006, 2011; Cirolia at al., 2016). The relocation strategy is associated with greenfield housing developments using project-linked government subsidies for which 'basic services, such as potable water, sanitation systems and electricity' are provided (RSA, 1994:9). Provision of electricity in the greenfield housing developments is made under the INEP, which is '[t]raditionally…focused only on electrifying formal housing in rural and urban areas' (DoE, 2015:4). The INEP supports relocation 'in areas that would pose danger to the people of this country, where it would be safe to not provide electricity, but rather relocate the community [and] then electrify' (ibid:3-4). However, there is little literature in South Africa that gives specific evidence to electrification of informal settlements. What is clear is that the legislative and policy frameworks urge for the recognition of the importance of electrification. The 1998 White Paper on the Energy Policy (DME, 1998:9) assures that '[g]overnment will promote access to basic energy services for poor households, in order to ameliorate the negative health impacts arising from the use of certain fuels.' According to Ledger and Rampedi (2022), electrification of the poor households and, by extension, informal settlements was envisaged from the inception of the democratic South Africa as a socio-economic facilitator and part of the overarching strategic objective to attain universal electricity access.

In line with the 1998 White Paper on Energy Policy, a Free Basic Electricity (FBE) policy was designed with a specific target of the previously disadvantaged poor households in a bid to address electricity access challenges through an aggressive INEP (Ledger & Rampedi, 2022). Under this policy, individual municipalities needed to identify and register 'qualifying households – so-called indigent households. Unless a household is officially registered as indigent by a municipality, it cannot receive the benefit, no matter how poor it may actually be. Even where households are

directly supplied by Eskom, the municipality is responsible for identifying qualifying households' (Ledger and Rampedi, 2022:48). Accordingly, while 'the 2003 FBE policy made some recommendations on household indigency qualification and registration criteria … each municipality effectively has complete autonomy in setting its own indigency criteria.' This probably explains why there has been little or no electrification of informal settlements prior to 2011 DoE guidelines to the electrification of the settlements given the electrification was a prerogative of the municipalities.

The dominant approach of relocation contrasts the UISP, which the HDA (2104) views optimistically as a radical shift and exemplar form of planning towards informal settlements, promoting *in-situ* upgrading and incremental improvements in infrastructure provision. The NUSP (2015:17), in training material on UISP implementation, defines incremental infrastructure provision as engineering services, namely '[b]asic services (water supply, sanitation, road access)' among other housing sector services, in four phases of the UISP. The interim services are provided 'on a site which is suitable for permanent settlement, but which will take some time to formalise' (NUSP, 2015:17). The NUSP also allows for interim services for settlements that ultimately will not be upgraded. The four-phase process for upgrading, based on the UISP, starts with the municipality's annual application for funding for informal settlement upgrading to provincial human settlements departments and the subsequent feasibility or assessment studies (this funding route has since been replaced with direct grants to municipalities, as discussed in section 3.2). Interim infrastructure provision is under phase two, during which planning is underway, and the third phase forms the implementation of approved plans (ibid). The three phases culminate in township establishment and 'ownership registration (where appropriate) and house construction will take place in phase 4. Any outstanding social amenities will also be constructed' (ibid:2). The NUSP training manual is not clear in which phase electrification would take place.

According to NUSP (2015:10), municipalities regard implementation of interim infrastructure as administratively burdensome and premised on '[l]and acquisition, … inherently slow, challenging, and costly'. The net result is '[m]any municipalities…prefer to install permanent engineering services at the outset' (ibid:10) and thus do not adopt an incremental approach. Poor uptake of the UISP means that the approach as set out in the 2009 Housing Code has not informed how interim

infrastructure is provided. The NUSP (2015:1) training material promotes the UISP position, namely to '[g]ive priority to the upgrading and improvement…[through] *in situ*; undertake relocations only as a last resort [and prioritise] the provision of basic services and functional tenure'. In most cases, this does not reflect practice.

The framing of basic infrastructure in the 2009 Housing Code and the NUSP (2015) does not mention electricity, focusing instead on water and sanitation. As already mentioned, the Housing White Paper (RSA, 1994) recognises electricity as a basic service, suggesting the UISP, which includes the principle of upgradability of interim services to permanent services, should have incorporated electrification, or in other words, the UISP as such does not provide guidance for electrification, other than overall principles. One could argue that this ought to have been resolved by the NUSP, which set out to '[i]mprove the programmatic approach to upgrading, strengthening coordination with other sectors and partners' (NUSP, 2016:4). However, as it stands, implementers are left to their own devices in terms of coordinating across the critical infrastructure sectors of housing and energy. In relation to the focus of this thesis, this forms the foundation for governance challenges in the informal settlement upgrading trajectory. As Chapters 5 to 8 show, in the three case studies, the absence of coordination widened at the implementation stage, with the micro-level communities on the receiving end.

Besides the foregoing challenges, infrastructure provision in informal settlements has involved other problems related to managerial and administrative capacity (Marais & Ntema, 2013; SERI, 2018), perceptions of corruption and poor project assembly (Rubin, 2011; SERI, 2013), unspent budget allocations rolled over or surrendered to National Treasury (National Treasury, 2019) and nominal invited community participation (Ziblim, 2013; Clark & Tissington, 2015). I turn to the latter challenge next, to understand how community participation manifests in infrastructure provision.

Community participation in interim infrastructure provisions is recognised statutorily as indispensable in supporting social processes (NUSP, 2015). Participation variously refers to a complex mechanism of engagement and empowering involvement of beneficiary communities, placing them at the heart of informal settlement upgrading (DoHS, 2009; Isandla, 2019). This form

of citizen involvement aligns with the middle rung on Arnstein's (1969) ladder of participation, namely partnership-based, without concrete delegated power and citizen control. Clark and Tissington (2015) regard participation as a mechanism that should characterise informal settlement upgrading. While admitting that it is a complex aspect, the NUSP (2015:1) defines participation as 'building common ground between institutions and communities.' Isandla (2019:7) concludes that 'South Africa's policies are clear: community participation is essential for successful upgrading of informal settlements', noting that the 'UISP recognises that communities have a "deep rooted knowledge" of their settlements that must be harnessed.' This situates informal settlement communities as partners in the development of their settlements where their local knowledge and skills play a significant part in decision-making and the governance of development (ibid).

The reality for implementation is, however, far more complex than what the legislation, policies and programmes set out. As Clark and Tissington (2015) argue, state officials are not sufficiently engaging with informal settlement communities with regards to neither incremental infrastructure provision nor full UISP implementation. Clark and Tissington (2015) cite the lack the institutional capacity as the reason. Huchzermeyer (2009:65) takes this further, arguing that planners in the CoJ are 'unwittingly act[ing] as servants of orderly development … rather than as implementers of the transformative aspects of the Constitution'. Huchzermeyer (2021) further points to planners' inadequate preparation for a meaningful role in the UISP. Participation and the implementation of incremental upgrading are further compromised by politicians who prefer the delivery mode of state-subsidised RDP houses, with visible outputs that boost political support from the electorate (Clark & Tissington, 2015). In consequence, Ziblim (2013:34) concludes the implementation of informal settlement upgrading as occupying a contested space with 'salient problems, tensions and contradictions'.

3.2.4 Informal settlement categorisation and geo-technical assessments

This section discusses the NUSP, the Rapid Assessment and Categorisation (RAC) and the dolomite-based geo-technical assessments as important influences contributing to the governance configurations in the temporary infrastructure provisions and upgrading. I begin with the NUSP, which is the national support instrument with regards to informal settlement upgrading, being a

grouping of specialist consultants appointed by the then Department of Housing in 2008, initially under a grant from Cities Alliance (Huchzermeyer, 2011). This was motivated by divergent informal settlement upgrading approaches in the different provinces (Narsoo, 2010 cited in Huchzermeyer, 2011). In this thesis, I foreground an argument that the NUSP is entangled in the governance challenges surrounding interim infrastructure investments (including electrification) given its key role in coordination of infrastructure sectors and strengthening of institutional capacities for the upgrading under the UISP phase two. Thus, although the NUSP was not directly involved in the formulation of the UISP's interim infrastructure investment decision-making processes, it can use its institutional mandate and positionality to influence and steer government sectors and partners to align more in the direction of the intentions and principles of the UISP (NUSP, 2015:4). Linked to this steering role, the NUSP is mandated to 'strengthen the capacity of government and professional practitioners to implement community-based incremental upgrading' (NUSP, 2015:4). This strongly positions the NUSP in terms of the promotion of incremental *in situ* upgrading and unblocking challenges through capacity building in the housing and energy sectors, in provincial and local authorities, and among community organisations (Huchzermeyer, 2011:182). The coordination also extended to facilitating discussions between these sectors through the National Upgrading Forum, which included entities such as Development Bank of South Africa, a research entity Urban LandMark, an advocacy platform called LandFirst and the NGO Slum Dwellers International (Huchzermeyer, 2011; Fieuw, 2015).

The HAD, a dedicated entity mandated by the NDoHS, presents NUSP as facilitating rapid assessments and categorisation of informal settlements and assisting in the formulation of municipal informal settlement upgrading strategies to enhance significant implementation of the UISP. The NUSP, for this purpose, appoints consultants carrying out this work in municipalities. Relatedly, the World Bank (2011:1) portrays the establishment of the NUSP within the DoHS as a 'concerted initiative to improve the social, economic, environmental, and physical conditions in informal settlements'. Cities Alliance (2011:1), which funded the establishment of the NUSP, similarly, perceives the formation of the NUSP as advancing 'the structured *in-situ* upgrading of informal settlements through the provision of basic infrastructure, services and land tenure for 400,000 informal settlement households by 2014'. Cities Alliance (2011:1) further argues for the necessity of the NUSP to 'move beyond the orthodox approach of large-scale housing construction

and resettlement and promote a more flexible approach to housing for the poor to overcome the historic urban divide'. Yet the NUSP faces challenges regarding the modalities of its institutional set up which gives municipalities and or provinces options to agree or not with the NUSP's strategies for informal settlement upgrading, effectively allowing for possible acceptance or rejection of the UISP's prescriptions (DoHS, 2014b; Fieuw, 2015). Fieuw (2015) also cites the lack of sufficient human resources to manage the NUSP effectively, Fieuw (2015) cites further weakness as its incomprehensive technical support at the provincial and local government levels, ostensibly due to lack of adequate manpower, but also its reluctance to empower the demand-side, namely informal settlement communities, civil society organisations, NGOs, and other intermediaries (ibid). While there was some progress with the setting up of provincial NUSP forums to inculcate support at lower meso- and micro-levels, 'only some [forums] have become "communities of practice"', which would mean a shared understanding and shared navigation of challenges across different stakeholders (ibid:62).

Turning to the categorisation of informal settlements through RAC, the reality remains that the actual proclaiming of categorised informal settlements has to follow a formal planning process, which is deemed too slow by both the housing and energy sectors (HDA, 2014; DoE, 2015; NUSP, 2015). In this, the DoE (2015:6) identifies '[s]low approval process with regards to planning and proclamation of land for development'. RAC was conceived in response to the problem of informal settlements existing in limbo over extended periods; its intention is to investigate the baseline feasibility and sustainability of individual informal settlements for upgrading (NUSP, 2015). It covers geo-technical investigations, household surveys, social compacts and indicative implementation strategies, among other preliminary requisite planning information (ibid). The objective is to place the UISP into a city-wide programme that helps schedule intervention for each settlement, also aligning to budgets (Misselhorn, 2017).

RAC's findings inform settlement upgrading decisions. According to the HDA (2014), the categories are as follows:

- Category A pertains to informal settlements with low population density where land conditions are good for development and proper bulk services are available nearby, therefore the area being deemed easily upgradable to a township.

- Category B1 is a complex disordered settlement and highly populated area. The occupied land may not be owned by a municipality or there might be a claim on it. Despite the complexities, the land is suitable and appropriately located for human settlement.
- Category B2 is not a complex piece of land but it is nevertheless not appropriate for human habitation, yet inhabitants are not in eminent danger. Examples of such settlements are those closer to a mine, a toxic dumpsite or falling within a 1:50 gradient such that very basic temporary services are recommended.
- Category C applies to a settlement that poses imminent danger where people may sink due to the likelihood of sink holes subsidence, inhaling toxic waste and many such problems. The approach, in this case, is relocation to an appropriate piece of land (ibid).

This last category is linked to the next discussion point on dolomite, where suspicions of dolomitic conditions occupy contentious governance space as communities perceive levels of precariousness as overstated. They suspect that the government is using unproven geo-technical conditions as a scapegoat for non-implementation of the UISP. I discuss this situation in Chapters 6 (Protea South) and 7 (Slovo Park).

A categorisation parallel to RAC promoted by the NUSP is used in the electrification of informal settlements under the INEP (DoE, 2018:9). Instead of four categories, the DoE has three categories, which, unlike those of the NUSP, can all be considered for subsidised grid electrification, with the third category electrifiable on case-by-case consideration (ibid).

- Category 1 has informal settlements on 'suitable land …and is likely to go through *in situ* upgrading' (DoE, 2018:9). This would be equivalent to Category B2 under RAC.
- Category 2 has informal settlements that are not considered for 'immediate relocation and will therefore go through the process of regularization which is preformalization (putting basic [electrification] services with plans to relocate in future)' (ibid:9). Such a settlement is subsidised as long as it shall 'not be relocated in the next 3 years.' This would be equivalent to Category B1 under RAC.
- The last of the three categories under the INEP is settlements located on

> '[U]nsuitable land (do not comply with the set criteria, areas such as on dolomite land, in toxic areas, or in a dangerous area) and need relocation. Settlements that have been there

> for a reasonable amount of time will be considered on a case by case upon application.' (DoE, 2018:9)
>
> This would be equivalent to Category C under RAC.

Misselhorn (2017:41) validates RAC as 'a key input and pre-requisite' for informal settlement upgrading guidelines for provinces and municipalities 'undertaken at the "programme level" to identify and better understand informal settlements within a particular province or municipality'. Misselhorn (2017:13) commends RAC as a participative initiative done 'against the backdrop of an urgent need to operationalize an incremental approach' for informal settlements with suitable conditions. The HDA (2014:3) also hails RAC 'as the critical first step in implementing improved and more responsive informal settlement upgrading programmes in South Africa'. The HDA (2014:4) makes further implication that RAC contributes to settlement readiness for upgrading but also to the service provider outsourcing, discussed in a later section:

> 'Undertaking RAC (as well as the subsequent project preparation work required to make projects implementation-ready) requires sufficiently experienced professionals with both social and technical skills, either located within municipalities or provinces or else procured from the private and NGO sectors.'

While RAC is useful preparatory work for incremental and rapid upgrading response, application of the outcomes is often delayed as the proclamation process is not speedily concluded (HDA, 2014; NUSP, 2015). Another dilemma is that electrified unproclaimed settlements (in Categories B1 and B2) often persist with impermanent infrastructural investments and temporariness, not progressing to UISP phase three (implementation) and housing consolidation. As such, the HDA (2014:3) has argued there is 'significant misunderstanding about what RAC is in terms of its purpose, scope and outcomes' and 'insufficient appreciation of the need for incremental (as opposed to conventional) upgrading responses'. Confirming the HDA's concerns, the NUSP (2015) finds municipalities to be as entrenched in permanent infrastructure provisions rather than applying interim infrastructure investment arrangements. RAC, therefore, appears not to ease the difficult governance situation.

Regarding geo-technical prevalence of and or suspicions about dolomite, the South African Government has instituted a typical 'Protecting Hand' governance approach (Jordan & O'Riordan, 2004) by enrolling risk characterisation, precautionary planning and a management approach.

Analysts concur that there are widespread complex dolomitic conditions in South Africa, leading to the likelihood of sinkholes or subsidence (Constantinou & van Rooy, 2018). This is particularly so in Gauteng Province (ibid). The size and distribution of sinkholes technically informs, promotes, or hinders development of interim infrastructure investments as the technical investigations have to be done to determine the level of precariousness, which become the basis for mitigation measures (SABS, 2012; Constantinou & van Rooy, 2018). The South African Bureau of Standards (SABS, 2012:1), when publishing new, revised standards, noted:

> 'Avoiding the hazard associated with dolomite land by prohibiting development of any kind on such land is not practical as between four and five million South Africans currently reside or work on such land… At the other end of the spectrum, undue acceptance of risk is not an option given the potential severity of the consequences and the Government's obligations in terms of the Bill of Rights. Systematic risk mitigation measures are therefore required.'

This excerpt underlines physical vulnerability challenges and mitigatory possibilities associated with developments that happen on dolomite land. Upgrading initiatives in two of my case studies, Protea South and Slovo Park, are affected by dolomite and entangled with geo-technical assessments. As implied in the quote above, the presence or anticipation of the potentially sinking karst landscapes owing to the highly weatherable limestone (Storie, 2016) has constrained township development in many informal settlements. From the empirical findings of this thesis, the governance of informal settlement upgrading with respect to dolomitic conditions is a contentious issue for which affected residents criticise government as unwilling and refusing *in situ* upgrading. Their argument is, in a way, supported by Storie (2016:80), whose research contests the process of determining the degree of dolomite risk vulnerability assessments and settlement characterisation as 'to a large extent a theoretical process which does not always correspond to real-world scenarios'. To move away from generalisations, the Department of Public Works (2003) suggested thorough site investigation, innovative development design assessment and suitable infrastructure building and management to prevent harm and avoid 'fruitless expenditure' on infrastructure investments. Accordingly, the SABS (2012) and Storie (2016) view recent amendments to South African National Standards (SANS) on dolomite standards as starting to facilitate informal settlements by advocating for intensive site investigation and settlement re-classification where relevant. However, as Storie (2016) notes, the classification of low-income settlement has remained contested.

3.2.5 Housing and Energy funding - implications for resourcing and management of informal settlement upgrading

The financing of interim infrastructure provisions in the UISP-led housing and INEP-led energy sectors is a complex aspect. Infrastructure investments through the housing sector are funded through the grant frameworks for phase two of the UISP, the Urban Settlement Development Grant (USDG) and the Municipality Infrastructure Grant (MIG) (NUSP, 2015). The energy sector, in turn, has a broad electrification programme, the INEP, with a component targeting the interim electrification of unproclaimed areas (DoE, 2011; 2015; 2018). The UISP water and sanitation grant framework caters for free services while the INEP grant allows individual shack dwelling metering making residents to pay for any excess consumption above the 'free basic electricity allowance of 50kWh/month to poor households' (Lemaire & Kerr, 2016:25). Perhaps the pre-payment financing model and cost recovery for electricity, unlike other wholly free types of infrastructure, explains in part why electricity has been able to be more easily rolled out. More generally, electrification has been a benevolent political decision to alleviate suffering in the settlements (DoE, 2011). The intersection of the two discrete sector funding streams in informal settlements accounts for the temporariness of communal water and sanitation dynamic on the one hand and perceived permanency in the electrification on the other.

Using the INEP financing model, the DoE provides funding to metropolitan municipalities and Eskom. According to Van der Westhuizen (2017), one of the objectives of the INEP grant framework is to fund bulk electricity infrastructure where that is required; this is a costly exercise as it entails establishing power stations and substations in addition to the reticulation and related processes. The following media communication Joburg NEWSROOM (CoJ, 2018) indicates costs incurred by City Power, the municipal-owned electricity entity, in three informal settlement interim electrification projects (excluding bulk infrastructure installation). The then Executive Mayor, Councillor Parks Tau said:

> 'The number of households that have benefited from the electrification of the Stjwetla informal settlement, on the banks of Jukskei River, so far stands at 1 600 at cost of R30-million. A further 1 000 will be connected soon, bringing the total cost to about R60-million. At Thembelihle informal settlement…7 000 homes were switched on to prepaid electricity… at a cost of more than R90-million. At the Lawley Station informal settlement R79-million was spent on connecting 2 000 homes.'

Another important electricity grant framework for informal settlements is located in human settlements and is the USDG. Van der Westhuizen (2017:11), however, argues that available information is not clear as to the extent to which the USDG grant 'is used to fund the provision of bulk electricity infrastructure as part of UISP projects' nor how the INEP and USDG are connected in the interim electrification philosophy. Palmer Development Group (2015), cited in Van der Westhuizen (2017), evaluated the Department of Planning Monitoring and Evaluation-funded research on the USDG design and implementation as suggesting that some metropolitan municipalities are prohibited from using the USDG for electricity infrastructure investment. This indicates inflexibility with the use of the USDG. Van der Westhuizen (2017:11) therefore concludes that '[t]he conditions for the USDG in the [Division of Revenue Bill or the Division of Revenue Act] DoRA do not provide clear guidelines in this regard.' This is notwithstanding the fact that '[l]imited funding is available under INEP to contribute towards electrification of identified and qualifying informal settlements… [often dedicated to] electricity reticulation and service connections' (DoE, 2018:10).

The USDG, a conditional institutional funding framework designed to instil a theory of change involving devolution in the informal settlement upgrading (DPME, 2015) and allocated by the National Treasury through the NDoHS, is given to metropolitan municipalities only. According to the Department of Planning, Monitoring and Evaluation (DPME) (2015:i), the

> 'USDG is a substantial supplementary capital allocation to metropolitan municipalities introduced in the 2011 DORA grant framework… [It] derived its fiscal design from a previous supplementary grant (MIG (Cities)) that funded a wide range of built environment outputs. [The MIG] was replaced because of the need to address human settlements related backlogs articulated in Outcome 8 targets.'

The strategic purpose of the USDG is to assist metropolitan municipalities in providing basic infrastructure services 'to individual poor households, specifically in informal settlements … including water, sanitation, solid waste, electricity, refuse removal, roads…' (National Treasury, 2016a:193). The USDG is, thus, a supplement to 'capital budgets of metropolitan municipalities' in their endeavours to provide 'bulk, link and internal reticulation infrastructure, with a focus on the poor' (ibid:193). Unlike the UISP, which is 'not explicitly mentioned in either the Division of Revenue Bill or the Division of Revenue Act (DoRA), metros are expected to use the USDG to

fund activities under the first three phases of the upgrading program' (Van der Westhuizen, 2017:5). By virtue of its funding the bulk infrastructure capacity or its expansion (National Treasury, 2016a), the USDG is, therefore, a significant grant framework for informal settlement interim infrastructure provisions, including temporary electrification, in metropolitan cities (Van der Westhuizen, 2017).

One weakness of the USDG is that, because it provides broad guidelines regarding the usage of the allocated funds, it does not prescribe how the entire grant should be used, making the grant framework open to abuse. The National Treasury (2016a:193) only prescribed that 'a minimum of 50 [%] of the USDG allocation must be spent on the provision of individual basic services to households living in informal settlements either through in-situ upgrades, relocation or integrated development projects'. According to the DPME (2015:i), the establishment of the USDG was not clear from its inception leading 'to a variety of interpretations of the grant objectives… cause[ing] different expectations for its outputs and intergovernmental tensions'. The governance tensions and misinterpreted intervention logics often manifest during the implementation of informal settlement infrastructure upgrading in metropolitan cities. Moreover, the lack of specificities in the USDG provides fertile ground for increased metropolitan city unaccountability (DPME, 2015), 'a disjuncture between National Treasury and municipalities' and disharmonies in the infrastructure sectors in informal settlements generally (NUSP, 2015:5). There are indications from the empirical research results discussed in the upcoming chapters that the funding conditions are being revised to focus more on informal settlement upgrading.

Following this discussion on the housing and energy sector funding sources, the chapter now turns to infrastructure governance more broadly. Given the contexts of infrastructure deprivations and sometimes threats to continued occupation in informal settlements, it is needful to review infrastructure and related participatory governance arrangements that have particular relevance for infrastructure delivery and governance in the settlements.

3.3 Infrastructure governance in South Africa: key components in place but not operationalised

This section adopts aspects and processes of infrastructure governance as defined by Anheier (2013), OECD (2015) and Wegrich et al. (2017). While institutional frameworks for infrastructure

governance are expanded on in section 3.5, I highlight in this section the key framing provided by the 1996 Constitution, as a basis to elaborate on the Government-Wide Monitoring and Evaluation (GWME) policy of 2005 as they relate to infrastructure governance. The Constitution commits local government to important aspects of infrastructure governance. It requires optimal 'provision of services to communities in a sustainable manner' and for municipalities 'to encourage the involvement of communities and community organisations in the matters of local government' (RSA, 1996:47).

Infrastructure governance arrangements were subsequently elaborated through macro, meso and micro governance frameworks. In 2004, former President Thabo Mbeki proposed a 'comprehensive monitoring and evaluation system' (Van der Waldt, 2012:89). The proposition for mainstreaming these key policy components was in answer to the MDGs, which required the state to submit progress reports. However, President Mbeki saw opportunity to also give appropriate 'feedback to society on government's delivery through the Government's Programme of Action as well as the State of the Nation Address' (ibid:89). This led to the institutionalisation of monitoring-results-evaluation-impact policy-driven implementation process (Ijeoma, 2010) and enhancement of 'the quality of performance information to monitor outcomes and impact' (Van der Waldt, 2012:89). The Presidency (2007a) conceptualises monitoring as operational day-to-day programme/project management that assesses progress against set objectives. This aligns with the OECD's (2004) definition of monitoring as 'a continuous and systematic data collection mechanism based on specific indicators that provide sufficient development progress, usage of allocated funds and required intervention by decision-makers and main stakeholders'.

The subsequent introduction of the GWME policy in 2005 and the formation of the South African Monitoring and Evaluation Association in 2006 were applauded as the beginning of public accountability for better infrastructure delivery in the democratic state (Ijeoma, 2010). In the architecture of governance, the GWME became a key macro-level legislative framework to 'direct the measurement of the efficiency, effectiveness, and economy of government strategies and programmes' (Van der Waldt, 2012:88). To anchor the GWME policy, two new departments were created in the Office of the Presidency: the Department of Performance, Monitoring and Evaluation (DPME) and the National Planning Commission (Friedman, 2011; Van der Waldt, 2012). According to Friedman (2011:1), the Presidency showed commitment to address 'a lack of

accountability at the upper levels of ministries, decentralized and often ad hoc policy planning, and poor inter-ministerial coordination'. The introduction of this strong performance vision was also complemented by the Medium-Term Strategic Framework (MTSF) and the Medium-Term Expenditure Framework that further guided departmental strategic budgeting and prioritisation (Van der Waldt, 2012). At the meso or intermediate level, the GWME is expected to facilitate the measurement of progress of policy implementation and delivery, leading Van der Waldt (2012:89) to conclude that the South African meso governance system is designed to drive

> '[S]ystematic and coordinated monitoring and evaluation of policy and programmes to improve the management of the public sector. It monitors developmental impact, for example, through the Provincial Growth and Development Plans and Integrated Development Plans (IDPs) of municipalities.

The micro or operational level framework pertains to the community level 'where mechanisms are designed to monitoring and evaluat[ing] service delivery initiatives' (Van der Waldt, 2012:92). The quality, efficiency and effectiveness of performance of both policy and human capital are measured through setting performance targets, indicators and standards (ibid). According to the Framework for Managing Programme Performance Information (RSA, 2007), appropriate performance indicators in relation to the process inputs, the activities and outputs, as well as outcomes and impacts, must be specified in the measurement of the performance.

The South African macro to micro performance framework expresses benevolent intention as conceptualised in 'Hiding Hand' governance reviewed in Chapter 2 (Hirschman, 1967) with regards to performance governance and significant effort to operationalise the performance philosophy (Ijeoma, 2010). Performance frameworks are seen as providing useful performance information in the way government plans, budgets and reports about programme implementation and outcomes (ibid). Many critics, however, argue that monitoring and evaluative performance governance has not had a significant effect in South Africa (Ijeoma, 2010; Van der Waldt, 2012; Cameron, 2015). Analysts noted that the GWME system is not grounded in terms of policy procedures and not meaningfully rolled out across government departments since its launch in 2007 (Cloete, 2009; Ijeoma, 2010; Van der Waldt, 2012). As such, Van der Waldt (2012:93) found that some government departments did not have a 'comprehensive performance management system' in place. Ijeoma (2010:359) expected the introduction of performance governance and the

formulation of projects/programmes monitoring and evaluation teams in every department and sector in line with the GWME system, but by 2010 this had not been operationalised. Critics cite the continuing existence of state ambivalence regarding policy implementation, maladministration, poor service delivery and corruption as bedevilling the South African Government (Van der Waldt, 2012; SERI, 2013). As I discuss the infrastructure governance arrangements in informal settlements in relation to developmental local governance below, I ask: what could be holding up operationalisation of the GWME arrangements that have important implications for infrastructure policies and provisions in informal settlements?

3.3.1 Infrastructure governance in practice

> 'South Africa still has a long way to go before … robust systems and processes are in place, although emerging initiatives originating from both civil society and government, particularly around social accountability, community-based monitoring and collaborative planning, give room for cautious optimism.' (GGLN, 2013:5)

The above excerpt from the Good Governance Learning Networks (GGLN, 2013) indicates that there is little if any infrastructure governance systems that relevant spheres of government in South Africa have put in place to administrate infrastructure provision for the poor, other than adopting transformative legislative, policy and planning frameworks. Mere crafting of good policies is not in tandem with the global central emphasis for countries to shift in practice to pro-poor trajectories (Brown & McGranahan 2016; Parnell 2016). Using the context of electricity infrastructure provision in informal settlements in the City of Cape Town (CoCT), Ziervogel (2019) contends that informal settlement challenges and the rising social inequalities require co-governance between local governments and communities to catalyse sustainable planning and implementation of infrastructure. This piece of literature and related articles provide a useful infrastructure governance lens in a situation where there are few documented such cases in South Africa that deal with interim electrification of informal settlements. Ziervogel's (2019) case study, also analysed by others (Saaghus, 2016; Jordus-Lier et al., 2018), demonstrates adaptation pathways to the challenge of flooding in Green Park informal settlement through local policy subversions as instructing transformative governance configurations. Conceptualised along the prescripts of co-governance frameworks discussed in Chapter 2 and in a context where decision-making is predominantly a prerogative of the government spheres mandated with informal settlement upgrading, the residents of Green Park successfully managed to forge inclusive governance

through multiple governance arrangements. In the process of inclusive governance, 'a more hybrid mode that draws on both formal and informal institutions … participation, intermediaries and diverse governance modes' was adopted for the eventual negotiated electrification of the Green Park (Ziervogel, 2019:498).

The Green Park settlement had been provided with temporary services and kept waiting for upgrading since 2006 (Ziervogel, 2019). Upon realising the state-led infrastructure provision was not making any progress, the community, at the advice of a socially networked local intermediary, organised a protest march to the Office of the Mayor of the CoCT, where its plight caught attention (ibid). The community request for electrification was falsely granted on a compromise: that the shacks falling in the wetland first be relocated to higher ground in stepped-gravel platforms to reduce the settlement's vulnerability to floods. Sensing no progress in the apparently cyclic temporary-to-permanent infrastructure trajectory of promises based on both physical and bureaucratic constraints, the intermediary 'aligned actor interests and created a shared discourse between officials and residents' (ibid:499). The brokering entailed convincing the residents to accept the conditional development approach as the first step towards electrification, hoping 'to shift the trajectory of services in the settlement towards what residents wanted' (Ziervogel, 2019:499). According to Saaghus (2016), the CoCT officials were caught in a difficult balancing position as Eskom electrification guidelines require a resolved settlement status, yet the provincial government land transfer and proclamation processes had taken long to conclude. Finally, the CoCT had managed to relocate residents to the safer gravel platforms and fulfilled the promise of 'electricity, which was finally secured in late 2016' (Ziervogel, 2019:499).

The approach to governance taken by the CoCT, in a way, resonates with the Protecting Hand principle in which policymakers and planners institute a protective risk management planning in response to perceived threats, yet without comprehensively addressing, in this case, the precarious livelihoods and root cause of informality (Jordan & O'Riordan, 2004). The use of an intermediary and powerful social networking was instrumental in the Green Park case (Jordhus-Lier et al., 2018), resonating with polycentric governance arrangements and establishment of key alliances in Swedish and German cities that drew on the ingenuity of the development intermediaries (see Emelianoff, 2014). Based on the Green Park case, Jordhus-Lier et al. (2018) conclude that

transformative governance approaches are the ways to unblock confusions and or blockages in the South African informal settlement upgrading processes.

The inadequate infrastructure provision in Green Park and the ensuing adoption of various modes of governance provides a platform to analyse other configurations of infrastructural governance in impoverished South African communities. Through the analytical framework of infrastructural citizenship, Lemanski (2019) analyses a long-term citizenship - infrastructural disjuncture between state and residents manifesting in inadequate infrastructure provision in formal township where poverty and urbanisation are increasing resulting in citizens to protest against the state. The analytical work elaborates that infrastructure provision and maintenance 'is intrinsically connected to citizenship identities and practices, not in terms of protest per se, but everyday activities and expectations' (ibid:590). In this interdependent framework, infrastructure serves as the lens to understand cities and mediating political struggles with citizenship improving socio-political circumstances of citizens often through citizen-led action (Wafer, 2012; Lemanski, 2019). The infrastructural citizenship potentially forms the basis for political struggles against the state to secure and or improve socio-political-infrastructural circumstances of the poor (ibid). Lemanski (2019:589) expands by arguing

> 'While citizens adapt and consume public infrastructure in ways deemed "illegal" and "uncivil" by the state, citizens view these actions as a legitimate form of "citizenship-in-action" in the context of rapid urbanisation and poverty and are frustrated by perceptions of state neglect … poor service delivery and beneficiary (mis)use of public infrastructure.'

The anger and resentment in the protests symptomise deep infrastructure governance challenges in the built environment. Yet, several protests that have taken place have not led to tangible improvements in infrastructure governance (ibid). Wafer (2012) also takes a critical analysis of the reframing of citizenship, the promises and expectations raised, and the realities of post-apartheid infrastructure delivery capacity which makes citizens to compare that capacity in relation to apartheid era. To address the apartheid infrastructure provision challenges, the democratic South Africa purposes to resolve the entrenched apartheid infrastructural provision system that led to political citizen unrest and protests (ibid). Yet 'service delivery protests in townships and informal settlements in the early 2000s marked the possible limits of a post-apartheid citizenship (ibid: 233).

Relatedly, the GGLN (2013) advocates the notion of active citizenship to enforce a civil society-based participatory democracy in South Africa. The advocacy for active citizenship by the GGLN (2013:5) was bolstered by South Africa's NDP of 2012 that elevated 'civic activism and agency in development processes' agitating for robust, organic, mutual but sometimes contested state-people networking in development. Networking, as opposed to a silo approach, can 'mediate power, difference and diversity in a manner that brings forth transformative outcomes' (ibid:35). The GGLN (2013:5), therefore, looks at the adoption of active citizenship as the missing but relevant paradigm shift to inspire a workable governance model and practice. In this regard, the notion of citizenship is viewed as an innovative formal approach deliberately adding horizontal coordinating dimensions among citizens themselves yet vertically connecting in what can transform the dominant political top-down culture (ibid). To attain the empowering traits of active citizenship, the GGLN (23013:7) suggest the need to initiate 'citizenship academies' conceptualised as learning platforms for community empowerment, project planning and management, as well as state-society interchanges. The philosophies of infrastructural citizenship (Lemanski, 2019) and active citizenship (GGLN, 2013) resonate with earlier calls for re-gearing, re-inventing and or reconstructing governance (Khan, 2008). The 1996 Constitution, the White Paper on Local Government (WPLG) (1998) and the 2030 National Plan also provide a strong foundation to instituting an infrastructure governance that is underpinned by community participation as detailed below.

3.3.2 Developmental local government: infrastructure governance implicitly subsumed

The WPLG (1998: unpaginated, section B 1 paragraph 4) defines developmental local government as a 'local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs and improve the quality of their lives'. While this framework should have important implications for infrastructure governance, local government focuses more on infrastructure provision than the sustainable, participatory governance. De Visser (2009:7) concludes that the major focus of the local government transformation from the mid-1990s to early 2000s was to move away from municipalities being 'a racially configured, illegitimate arm of the apartheid government into a system designed to produce developmentally oriented municipalities'. This ushered in a political transformation that prioritised the provision of basic services to the previously disadvantaged majority (Chikulo, 2013). As a result, significant improvements in infrastructure delivery were

scored in key services of water, sanitation and electricity at 89.3%, 93.9% and 82.0% universal access, respectively (StatSA, 2010a). However, the participatory governance aspect of developmentalism did not receive the same level of attention.

Apart from the absence of meaningful participation, the design of municipal governance has been criticised as institutionally uncoordinated and impracticable (de Visser, 2009). This critique is articulated against the backdrop of local government's constitutional autonomy as

> 'a sphere of government in its own right, and not a function of national or provincial government … [yet] increasingly being seen as a point of integration and coordination for the delivery of national programmes.' (WPLG, 1998:Executive Summary quoted in de Visser, 2009:9)

According to the 1996 Constitution, local government is a distinctive but interdependent and interrelated sphere with the national and provincial spheres bound together by an intergovernmental framework (RSA, 1996). Interrelatedness connotes a holistic approach to working, information sharing and dialogue between the three spheres of government. However, de Visser (2009) contends that the functional responsibilities have not been clearly demarcated. In some cases, ambiguities between constitutionally allocated responsibilities and local realities are decided upon after mass public protests (Madlingozi, 2014) and judicialisation (Chenwi, 2012; 2015). The Office of the Premier, Eastern Cape Province (OPECP, 2019:3) admits that in the Eastern Cape Province, there are 'glaring weaknesses' in the functionality of the singularness and distinctiveness of local government and interdependence and interrelatedness of the spheres. Therefore, the OPECP (2019:3) concludes that there is a:

> 'Lack of integrated planning between and within the two spheres of government in … [the Eastern Cape] … The various IGR structures have not always been connected by a desire to pursue a development agenda predicated on agreed provincial priorities … a lack of a coordinative mechanism to ensure that there is joined up action and approach … Each department has always intervened unilaterally in local government … in isolation from other imperatives.'

Yet the above-quoted scenario of intergovernmental tensions is not only found in the Eastern Cape but also in other provinces across the country (DPME, 2015; Van der Westhuizen, 2017). While the argument for functional clarity of developmental local government could be looked at positively in that implementation complexities require governance flexibilities rather than strict constitutional prescriptions, de Visser (2009) argues that there is a need for reasonable precision

to avoid gross errors. This would also apply to participatory aspects of governance, to which this chapter turns next.

3.3.3 Participatory governance: official rhetoric, political gimmick or too difficult in practice.

The policy of participation in South Africa normatively aligns in fascinating ways to the theoretical framing for the co-governance discussed in Chapter 2 by underlining the need for mutual interaction, deepening of inter-organisational networking, and stakeholder interdependencies in infrastructure provision (see Rhodes, 1996; 2007a; Bolton, 2011). In this way, community participation in infrastructure governance in South Africa is evaluated as, at least in theory, based on the Constitution and on housing and infrastructure policies and programmes that mandate a supposedly responsive state role in infrastructure provision (Fieuw, 2015). In this regard, de Visser (2009:18) cites that the national government has enacted a 'progressive legal framework for participatory governance at municipal level'. The 1997 Housing Act, the 1998 WPLG and the 2009 Housing Code, among other statutory documents, enshrine that communities participate in processes of project identification, planning, implementation and monitoring, as well as a review of performance. In this connection, the National Housing Code (DoHS, 2009:30) makes a strong commitment to community participation in informal settlement upgrading stating:

> 'International best practice has proved that one of the factors contributing towards the successful upgrading of informal settlements is the role [that] the community, targeted by the development intervention, will play in the process. It is of the utmost importance that the community is involved in all aspects of the settlement upgrading process'.

The DoHS (2009:30), therefore, instructs that 'community participation should be undertaken within the context of a structured agreement between the municipality and the community'. In the context of UISP projects, the NUSP (2015) and Fieuw (2015) analyse community participation as supposedly empowering and capacitating the beneficiary communities. A question that this begs is to what extent infrastructure provision practices in informal settlements are incorporating meaningful participation of the communities in their governance.

Many analysts acknowledge that community participation and meaningful involvement in South African municipal governance and infrastructure development is paramount to enabling effective infrastructure provision, for instance, through Integrated Development Plans (IDPs) and

community-led budgeting (de Visser, 2009; Fieuw, 2015). Everatt et al. (2004) corroborate in their two-case studies in Johannesburg that participation and grassroots mobilisation undergirded democratic governance that stopped exclusions in decision-making and negligible involvement in infrastructure provision in the city. Enaifoghe and Adetiba (2019) also conceptualise community engagement in local governance and grassroots development in South Africa as a useful framework in which communities express their interests, as well as uniting themselves and officials in common purpose to resolve various community development challenges. John (2006) cited in Enaifoghe and Adetiba (2019) concluded that local South African citizens' marked interest in local government administration is in sync with the legislative and administrative provisions of the Municipal Structures Act, 1998. Chapter 4 of the Act instructs that in performing its duties, the executive committee must 'report on the involvement of communities and community organisations in the affairs of the municipality' annually, while also ensuring 'that regard is given to public views' in the reporting 'on the effect of consultation on the decisions of the council' (RSA, 1998:22). This gives a high priority to community and public involvement.

Much as community participation is recognised as enabling and empowering communities to take ownership of infrastructure, concerns have been raised about its functional difficulties and or inapplicability in certain structured infrastructure projects (Fieuw, 2015). De Visser (2009:19) deduces apparent contradictions in the legislatively created participatory spaces and platforms, and the coincidence of 'persistent incidences of protest targeting councillors and municipal administrations'. For this reason, de Visser (2009:7) infers an 'overzealous institutionalisation of community participation', implying participation has been taken too far and perhaps not carried out cautiously enough. In this, de Visser (2009:19) questions the wisdom of legally 'institutionalising community participation' in a way that inundates municipal governance 'with institutions, procedures and platforms' procedurally capturing too many interests into the municipal bureaucracy. The danger that de Visser (2009) and Tshoose (2015) identify in the creation of ward committees in institutionalised invited spaces is the potential removal of transformative and innovative ways of state-community engagement. This has bearings on the three case studies in this thesis.

In related critical analysis of community governance, Katsaura (2012:340) argues that 'the field of community governance that is so much celebrated as progressive and novel is not necessarily

practically so'. Community governance, which typifies a shift from government to governance and multilateralisation, should not only look at community participation from the prisms of homogeneity but also from internal socio-political contentions and coalitions (Katsaura, 2012). In this dialectical governance analysis, Katsaura (2012) problematises community organisations in an inner-city suburb of Johannesburg, Yeoville, as complex and politically embedded in divisive contestation-coalition politics and therefore becoming a microcosm of the macro politics in the country. This competition for 'power, social prestige, political legitimacy and economic resources' distracts the community from effective participation (ibid:339). While contestations and or coalitions can be analysed as democratic forms of community governance fostering community engagement and deliberations (Dryzek, 2002 cited in Katsaura, 2012), contradictions can lead to community disarray, politics of domination and fragmentation (Katsaura, 2012). To compound the contentious-coalescive dialectics, Lemanski (2019), writing about infrastructural citizenship in Cape Town, also argues that the potential of participatory governance is inherently weighed down by problematic notions of citizenships and discrimination between citizens and non-citizens. This weakens united political bargaining by the community in invented participative agendas (ibid).

Further critical analyses show that community participation, as practised for infrastructure projects in South Africa, is a formality that, to a great extent, merely fulfils or observes legislative requirements, with most residents passively trending toward endorsing pre-arranged programmes (Enaifoghe & Adetiba, 2019). The claim, for instance, by the CoCT 'that their informal settlement upgrading is based on "active participation", "dialogue" and "continual engagement" with communities', often does not hold true, as programmes merely contain rhetorical participation terms and language crafted without care, and difficult to translate into practice (Jordus-lier & de Wet, 2013:1). In this way, community participation in South Africa is critiqued as a compromised phenomenon in consensus politics, whereby state officials are positioned as introducing better life through community participation (Tshoose, 2015). Yet, in terms of informal settlement upgrading, the NUSP (2015:1) argues that meaningful participation is important 'and has equal benefits for politicians, officials and communities'. Enaifoghe and Adetiba's (2019:23) study on dynamic community engagement in local governance and enhancing grassroots development in South Africa concludes, however, that bureaucrats and 'councillors are resolved to force their own truncated form and knowledge of "citizen's interest" on the specific community'. Relatedly but

earlier, Piper and Deacon (2009:15) problematised ward committees in South Africa as 'caught up in relations of dependency with ward councillors, political parties and the municipality itself', which undermine the envisaged democratic dividends. More recently, Pieterse (2021:7), analysing the crisis of urban municipal governance in Emfuleni, South Africa, adjudged participation structures of ward councillor and ward committee, conceptualised as 'pivots of public participation processes' in the Municipal Structures Act of 1998, as political by virtue of their engaging politically appointed councillor and the ward committee system. This political aspect in the way participation structures is handled also shapes the processes through which informal settlements are formally brought onto the electricity grid. I return to this after setting out the applicable policies as well as the technical debates on this theme.

3.4 Electrification of informal settlements in South Africa

In this section, I examine the electricity distribution sector policies in post-apartheid South Africa (administered by the DoE) as they interact with human settlement sector policies (under the NDoHS) to understand the governance configurations that manifest in the electrification of informal settlements. As already discussed above, the implementation of interim electrification (energy sector) is providing a complicated interface with other temporary basic service provisions (housing sector) in informal settlements. This is potentially bedevilling delivery of infrastructure (Tait, 2015; Van der Westhuizen, 2017), inter-state or institutional integration (DPME, 2015; NUSP, 2015; Tait, 2015) and state-communities relationships (SERI, 2018). To draw together the discussions above, there are key dissonances at many intersection points in the informal settlement electrification process. To capture the complexity of the dilemmas that confront communities as much as implementers, it is useful to briefly list the points of tension:

- between policy and implementation;
- between national government and local government spheres (on municipal funding models, for instance) (DPME, 2015; Tait, 2015);
- intergovernmental tensions and disconnects in relation to implementation roles between the different infrastructure sectors (DPME, 2015);
- uncoordinated and duplication of planning for and implementation of electrification governance between different state-owned companies, in particular City Power (the CoJ) and Eskom, and challenges regarding maintenance and refurbishment (Tait, 2015);

- inadequate monitoring and evaluation of electricity utilities (Tait, 2015);
- misalignment and disconnects between different metropolitan municipalities;
- the weight of adopting on-grid electrification as opposed to appropriate alternatives to informal settlements (Runstein et al., 2018);
- the ensuing connotation of permanence and signalling of the start of formal upgrading, and consequent (mis)perceptions, confusion and uncertainties among communities about the state's intentions with regards to interim infrastructure provisions. The residents' confusion is exacerbated by virtue of electrification processes taking a seemingly permanent approach when compared to other services of water and sanitation also provided in the same areas.

3.4.1 Legislative and policy frameworks for electrification: A need for rationalisation towards informal settlement infrastructure provision and governance

As this section will show, while there are progressive legislative and policy frameworks as well as sector operations in the energy sector, there is a need for transformation and alignment to provide sufficient response to the electrification of informal settlement upgrading. In chronological sequence, the post-apartheid background to electrification in South Africa includes the transformation and rationalisation of the electricity industry along a long-charted restructuration process outlined in the 1998 White Paper on Energy Policy (DME, 1998). It is important to note that the change was not for informal settlement electrification (the interest of this review). The policy provides the parameters for an INEP that makes fundamental changes to the state-owned electricity utility culminating in Eskom Holding Pvt Ltd in 2001 (DPE, 2019; Greenberg, 2002). The reform was necessary 'to ensure a reliable, competitive and transparent system of governance of the electricity sector' which is dominated by state-owned Eskom (DPE, 2019:10). The restructuring aimed to reduce Eskom's dominance in the electricity generation, transmission and distribution configurations to make the entity more efficient and transparent, also allowing entry into the market of diverse players (DPE, 2019). Greenberg (2002:6) validates the 1998 White Paper on Energy Policy restructuration as introducing 'competition into the generation sector, to corporatize the transmission sector and to restructure distribution into a small number of regional electricity distributors (REDs) that would be financially and organizationally independent of one another and the state'. This transformation would make metropolitan municipalities constitutionally and legislatively 'retain their authority over electricity supply in their areas of jurisdiction' (ibid:6).

Legislatively, electricity provision is guided by the Electricity Regulation Act of 2006 (RSA, 2006:2) that sets out to 'establish a national regulatory framework for the electricity supply industry; to make the National Energy Regulator the custodian and enforcer of the national electricity regulatory framework; to provide for licences and registration as the manner in which generation, transmission, distribution, … are regulated'. The Regulator, NERSA's principal mandates directly relevant to this study are not necessarily its licensing and registration with regards to electricity generation, transmission and distribution, but its oversight of the electricity industry in the form of monitoring and evaluation of electrification processes, which informs its intervention in dispute resolution and development of remedies (Tait, 2015). Tait (2015:6, citing Newbery and Eberhard, 2008) criticises NERSA as suffering 'from a lack of expertise and capacity as well as the political strength to enforce many of its functions'. In connection to informal settlements, the regulator is not placing sufficient attention to, nor feature in aspects of electrification, in particular, interim electrification to enable 'a more holistic interrogation of programme performance and outcomes' (ibid:6). This makes the regulator marginally integrated or completely left out of an important upgrading programme of government. It is therefore argued that '[w]ithout [NERSA] key monitoring and evaluation systems in place, it is not possible to illustrate progress, understand whether outcomes are being achieved, or to evaluate the effectiveness' of public electrification programmes including informal settlement interim electrification (ibid:6).

Apart from the Electricity Regulation Act, 2006, the National Energy Act of 2008 (RSA, 2008:2) is designed to ensure 'diverse energy resources are available, in sustainable quantities and at affordable prices, to the South African economy in support of economic growth and poverty alleviation, taking into account … interactions amongst economic sectors; to provide for energy planning, increased generation and consumption of renewable energies'. Despite the provision of the statutory framework regarding the development of diverse energy sources, South African electricity provision is still fixated on coal-based grid "big-infrastructure" even for informal settlement electrification (Tait, 2015; Runstein et al., 2018). The logic and sustainability of the 'single technology approach to energy access' is questionable yet grid electrification in the country has been maintained and 'crowded out other energy access considerations' (Tait, 2015:1). As shall

be further discussed in an upcoming section, this position contributes to the governance challenges in the electrification of informal settlements.

Responding to the government-initiated informal settlement upgrading, the DoE produced policy guidelines for electrification of unproclaimed areas in 2011 (DoE, 2011). The policy guidelines, which have been continuously updated, respond to the rights theme in the Constitution that 'every citizen has a right to basic services, and this includes electricity, and this is regardless of location' (DoE, 2011:2). The policy recognises that the

> '[l]iving conditions in informal settlements are often poor... [and the] informal, low income, and often illegal settlement areas are normally not covered by infrastructure planning of Government and Service Providers … It is the responsibility of Government to ensure that people living in informal settlements are also provided with basic services as they form part of the country's society' (DoE, 2011:2).

While the INEP is traditionally focused on 'electrifying formal housing in rural and urban areas … the Department is obligated to ensure electrification of informal settlements as well' (ibid:2). The above citations from the electrification policy guideline for informal settlements express a strong conviction by the government of South Africa and the energy department to address the informal settlements electrification challenge. The benevolence is in sync with the 'Hiding Hand' governance principle championed by Hirschman in 1967 in its showing a strong disposition to overcome a challenge, albeit without full knowledge or research of the constraints that the proposed development could stumble into. Challenges pertaining to various aspects of financial planning, inter-governmental integration, institutional sustainability and administrative mechanisms to operationalise the programme were not prioritised or were overlooked (Tait, 2015). Thus, the implementation modalities and use of Eskom, the state-owned holding company, and municipalities, for instance, were not anticipated to create conflict.

As I move to the next subsection on the grid-networked electrification in informal settlements, a few questions to carry over are: Can South Africa afford to continue with grid electrification in unproclaimed areas? What is South Africa doing to advance to renewable energy alternatives?

3.4.2 Grid electrification for informal settlements as a governance issue: Policy fixated in contradiction to imperatives for alternative energy provisions

Grid electricity solutions under the *Policy Guidelines for the Electrification of Unproclaimed Areas* (DoE, 2011) complemented housing sector basic infrastructure provisions in informal settlements making good government gesture aimed at reducing energy-related vulnerabilities in informal settlements. There is, however, apparent lethargy in the energy sector in responding to alternative off-grid solutions that would make more sense for the electrification of informal settlements. The installation of "big" grid networks and capital investment in the form of high-tension transmission and distribution lines, transformers and metering of impermanent informal housing, among other equipment, speaks to this concern (Runstein et al., 2018). The grid electricity supply methodology is therefore criticised as unsustainable and inappropriate for informal settlements (Keller, 2012; Tait, 2015; Runstein et al., 2018). It has been argued that implementing grid electricity supply demands consultation among key players, government departments, and municipalities included, for instance, to assimilate proposed solutions to the disparate and fast-changing conditions of informal settlements (Idasa, 2010; Gaunt et al., 2012). Critical research for the on-grid electrification approach for informal settlements, for example, SACN (2008) and Runstein et al. (2018) in South Africa, Bhattacharyya (2012) in the UK and GNSED (2013) in Brazil, argue that it is not sustainable and cost-effective to effect grid electrification solutions to informal settlements because of their temporary and physically poor dwellings. The dense and packed nature of informal settlements naturally renders implementation of on-grid electricity connections conflictual and impractical (Runstein et al., 2018). Moreover, the on-grid electrification is also happening in areas that are, in most cases, witnessing explicitly temporary basic water and sanitation, among other temporary infrastructural services, implying a contradiction. From an urban planning perspective, further contradiction lies in the ambition to provide on-grid electricity to temporary housing where 'physical site conditions of dwellings and settlements may also render grid connections impractical' (ibid:82).

Because of the foregoing, 'a persisting focus on providing grid electricity seems limited and should be complemented with alternative solutions', for example, photovoltaic systems (Runstein et al., 2018:82). The fixation for on-grid electrification for informal settlements is further widely criticised as suffocating alternative household energy programmes (SEA, 2014). In this, Tait

(2015:3) analyses grid electrification as being 'emphasised as a supply solution whilst alternative energy carriers such as biomass … or off-grid solar have received very limited policy attention'. Carbon Trust (2017:4) similarly criticises a 'centralized utility thinking concentrated historically on-grid extension for electrification, including the policy environment and national funding streams'. This is despite the potential of interdependent power producers (IPPs) and municipalities hold to adopt an off-grid electrification strategy to generate, transmit and distribute electricity, especially to informal settlements given their temporary nature (ibid).

The above discussion on the persistence of on-grid electrification illustrates a governance issue that, although the energy sector was able to be responsive in its compilation of the guidelines of 2011 (DoE, 2011), it has not reviewed their effectiveness in terms of cost, operation, maintenance and usefulness to the end-user (Tait, 2015). Photovoltaics have high initial start-up capital but provide much cheaper electricity once installed, therefore very relevant to impoverished communities (Keller, 2012; Runstein et al., 2018). The weight of the on-grid electrification in informal settlements, through temporary and low in quality, unwittingly signals permanence and the start of a formal upgrading, and communities use the electrification to sway decisions towards upgrading. As the empirical evidence in Chapters 5 to 7 shows, there is a pervasive mentality of permanence across informal settlement residents, yet the official position about *in situ* upgrading is shrouded in confusion and uncertainties (Huchzermeyer, 2021). Another important governance aspect related to grid electrification is the implicitness in the decisions as to which informal settlements are temporarily electrified. These are neither driven by the electrification guidelines to unproclaimed areas of the DoE nor the UISP's programmatic categorisation. Who steers these local-level decisions becomes the governance issue, this usually bringing in the political dimension as well as very deliberate strategies by organised communities that can influence decision-making. Slovo Park, discussed in Chapter 7, provides a good illustration of this.

South Africa's persistence of the on-grid electrification model, even for informal areas, fulfils the postulate of indispensability (see Merton, 1968). Tait (2015:3) analyses the fixation of the on-grid electrification policy as a misconception 'based on the foundational assumption that grid electrification, as a supply option, will be suitable for all contexts', yet the grid electrification model is 'not integrated within a coherent household energy strategy, but rather as a stand-alone

supply-oriented solution'. Therefore, much as the government-led informal settlement electrification is hailed as a revolutionary and facilitative policy framework, its planning and execution are not sufficiently integrated hence unsustainable in many ways (ibid.

The strength of the foregoing debates raises some misgiving about the appropriateness of on-grid electrification in urban, informal settlements, notwithstanding the good intention to alleviate vulnerabilities in the settlements. The recent COP26 commitment to move away from coal-powered electricity on which the informal settlement electrification is based speaks to a higher level of unsustainability connotations in the electrification. The scope of this thesis, however, remains focused on understanding how electricity decisions at the local level are made, implemented and the arising governance concerns. Suffice to acknowledge Jaglin and Dubresson's (2016) study on challenges wrought by Eskom's monopoly, its reluctance to allow competition by independent power producers and the electricity crises that threaten South Africa. The following section discusses the importance of multi-scale energy governance arrangements in mediating electrification challenges.

3.4.3 Multi-level energy governance in South Africa

This discussion on energy governance takes cognisance of elaborate literature on polycentric and multi-scalar governance deliberated in Chapter 2, also in this chapter under infrastructure governance. This section, therefore, focuses on aspects of multi-level governance in electrification processes in South Africa. If South Africa needs to provide sustainable 'clean, reliable and affordable electricity' to its citizens and informal settlements (as it has recently declared in COP26), there is a need for public participation processes that bring together stakeholders such as policymakers, regulators, service providers and citizens (Idasa, 2010:1). Such a multi-level approach brings about improved transparency and helps better manage social, environmental and financial challenges in complex, dynamic, multiple-actor electrification, and policy environments (Caprotti et al., 2020). Idasa (2010:1) criticises the governance of the South African electricity sector as 'seriously flawed; there is a profound democratic deficit in the way decisions are taken, oversight and regulation occur, and in which stakeholders are listened to and included in the policy-making process'. It is further argued the sector is manipulated and dominated by a few select state and other actors such that public interest is suffocated, leading to a minority-dominated and highly regulated electricity sector (Idasa, 2010; Jaglin & Dubresson, 2016). Some researchers advocate

‘for a multiscalar focus on the governance of energy policy and practice … [that] reveals the translation of agendas and policies across scales stretching from the global to the local’ (Caprotti et al., 2020:1). Idasa (2010:1), inspired by virtues of actor-networking, suggests that urgent action must be taken to bring together all interested parties to plan a sustainable energy path that reassesses ‘the adequacy of our institutions and of how effectively we relate to each other as policymakers, electricity service providers, consumers, and citizens’.

In similar polycentric governance argumentation which I reviewed in Chapter 2, Jaglin (2012:1394), looking at the context of multi-level governance of energy in Cape Town, validates putting in place multi-scale governance arrangements as the solution to multiscale challenges in urban energy to allow ‘extensive interaction among multiple levels of government and social forces’. Governance, thus, becomes the fundamental approach to understand and resolve complex relationships, political conflict and other resistance patterns (ibid). Equally, financing informal settlement electrification requires invoking a governance arrangement. State financing, as was done by Eskom, became unsustainable necessitating political intervention and concomitant national budget allocations since 2001 (Bekker et al., 2008). Sustainability of political arrangements in political economy considerations is, however, susceptible to many challenges, including rent-seeking behaviours and political patronages (See Wild et al., 2012; Scott & Seth, 2013). The inclusion of, for example, distributors who augment the efforts of government through tariff cross-subsidisation or other revenue streams makes governance sense as monopolistic electrification processes fall into ‘financial difficulties and high levels of indebtedness’ (Tait, 2015:5). Inclusionary approaches to managing informal settlements are deemed the right way to handle illegal connections, for example, as community stakeholders get involved in problem-solving (see Jordana, 2017; Wegrich et al., 2017). To demonstrate the importance of multi-level governance in electrification, Ehebrecht (2014:148) concluded in the case study of Hangberg informal settlement community in Cape Town that ‘[i]ntense cooperation between the community and the local authorities … transparent processes, and the strong involvement of the community seem important aspects’.

The multi-governance debate in South Africa should, nevertheless, not take lightly internal and external social and organisational challenges in the informal settlements upgrading processes (Ehebrecht, 2014). Yet maintaining the planning for and implementation of electrification

predominance by state institutions, which may also be disintegrated, (see City Power and Eskom disconnects in Protea South in Chapter 6 below) is not the best option. The municipal financial and other challenges, discussed below, can, however, be overcome through participatory and mutual governance mechanisms between state institutions, stakeholders and communities to overcome resistance, personal interests, political interference and other such constraints.

3.4.4 Techno- political electrification governance at metropolitan municipalities

> 'Under the Constitution, electricity reticulation is a municipal responsibility, as is the delivery of basic services … [Yet] in some of the larger municipalities and metros electricity is being distributed by both Eskom and the municipality itself, leading to challenges … In addition, municipalities depend on the sale of electricity to cross-subsidise services and provide for the poor. Having Eskom distributing electricity within a municipality's jurisdiction compromises the ability of a municipality to raise its own revenue' (SEA, 2014:38).

The above preface by Sustainable Energy Africa (SEA) (2014) gives key highlights to this section about electrification governance at metropolitan municipality level. Several strands of literature position Eskom as manipulating and intervening in metropolitan electricity distribution to the utility's own advantage, an act that is at variance with the 1998 Energy White Paper restructuration proposals (PMG, 2007; SACN, 2007). It is widely suspected that Eskom instigated NERSA to cancel metropolitan electricity distribution responsibilities (REDs), culminating in the six rationalised and consolidated municipal REDs distribution licenses revoked by December 2006 (Gaunt, 2008; Jaglin & Dubresson, 2016). Serious reservations about the metropolitan municipalities' financial capacities and adherence to public procedures, as well as likely legal uncertainties, were cited as reasons for the revocation (Gaunt, 2008). The NERSA, established in terms of the Electricity Regulation Act of 2006 as the custodian and enforcer of the national regulatory framework for the electricity supply industry, allegedly acted partially in Eskom's favour (Jaglin & Dubresson, 2016). The subsequent attempt by government to re-establish the six REDs as non-municipal public entities was correspondingly criticised by municipalities as changing the nature and governance of the electricity distribution to the detriment of municipalities (PMG, 2007). Based on this background, the CoJ and Eskom are competing providers of electricity in the City's unproclaimed informal settlements, a mandate that is constitutionally a prerogative of the municipality and which, if adhered to, would allow for integrated, single interface and cross-cutting management of services and substantial savings (see Gaunt, 2008; SEA, 2014).

Electricity distribution is a significant source of municipalities' revenue and a financial surplus producing funding mechanism for cross-subsidising revenue shortfalls emanating from providing electricity to poor households (DME, 1998; PMG, 2007). Cross-subsidy refers to implicit electricity-generated surplus revenue where public sector electricity suppliers (in this case metropolitan governments) 'extract sizeable surpluses from some of their electricity customers for purposes of cross-subsidising other customer classes' (DME, 1998:101). As such, taking electricity distribution away from municipalities raises great public interest given that extensive economies of scale and possible gains from the distribution are used for social subsidies and offsetting efficiency losses in revenue collection (PMG, 2007; SACN, 2007). Jaglin and Dubresson (2016:37) argue Eskom 'resisted the transfer of its local assets, customers and staff' that should have paid way for the rationalisation and democratisation of local electrification. Taking away the electricity distribution responsibilities from metropolitan municipalities raises a question that is relevant for this thesis: How electricity distribution is governed in local government jurisdictions?

In what appears to be common contestation in electricity governance, the CoCT, with the support of the South African Local Government Association (SALGA), challenged the NERSA in court for refusing the city to buy electricity from IPPs, but not only from Eskom, which was understood to be unreliable (Magubane, 2020). In a News 24 article of 11 August 2020, Khulekani Magubane reported that the CoCT was denied permission to buy power directly from IPPs in the city's bid to ease damaging electricity blackouts. In denying approval, the North Gauteng High Court referred the matter between the CoCT and the NERSA to intergovernmental dispute resolution, and the office of the minister of energy as the court saw no urgency in the intergovernmental dispute which, if need be, could be re-enrolled. This is notwithstanding President Cyril Ramaphosa's *State of The Nation Address* earlier on 13 February 2020 (accessed at https://www.gov.za/speeches/president-cyril-ramaphosa-2020-state-nation-address-13-feb-2020-0000) that had opened the opportunities for municipalities in good standing to procure their own power from IPPs.

3.4.5 Pressure around unbundling the Eskom monopoly, as a backdrop to informal settlement electrification

The foregoing discussions on electrification form a background to the growing need for unbundling of Eskom's monopoly in the generation, transmission and distribution of electricity.

Unbundling in this context refers to a structural reform that involves the separation of the core functions performed by the state power utility leading to 'increased benefits for the electricity sector and consumers' (Power Futures SA, 2019:1). This would enable Eskom to concentrate on its core business of transmission while shedding off assets and decentralising non-core function, ultimately realising increased benefits of competition, improved efficiencies, greater transparency, good governance and increased accountability, as well as better spread of risk management (ibid). At the time of writing, Eskom had begun this process. Prior to this, the DPE, under which Eskom falls, admitted that 'Eskom's vertically integrated structure was appropriate at its inception and served the country well for over 90 years … [but] is no longer suitable to meet the country's energy needs and has made the business susceptible to the kind of problems it has recently experienced, including state capture' (DPE, 2019:10). The realisation of the need for transformation of Eskom resonates with the long-standing but unimplemented recommendations of the 1998 White Paper on Energy Policy.

There are many acknowledged pros and cons to the Eskom transformation, and these will have implications for the governance of electrification of informal settlements. One of the fears is there are political economy concerns about slim prospects of Eskom survival as its monopolistic advantage will be subjected to stiff competition with the entry of IPPs (see Wild et al., 2012; Scott & Seth, 2013), which might trigger municipalities to explore off-grid alternatives for informal settlements. From a socio-economic consideration, unbundling can make Eskom lose control over distribution in metropolitan municipalities, which can negatively impact local industrialisation and public electricity consumption that currently benefits from subsidised electricity prices (Oelofsen, 2020). Electricity pricing, in turn, is critical for suitable or sustainable electrification for the socio-economic conditions in informal settlements. Indeed, protagonists for the unbundling route contend that transformation will usher in the development of sustainable electrification models, operationalise off-grid electrification and exploit 'a big potential for renewable… more sustainable energy system' in South Africa (Carbon Trust, 2017:4). This comes against the backdrop of unsustainable inefficiencies at the state electricity utility, which needs to transition from a bloated, fossil-fuel driven entity to an enabler of cleaner forms of energy that represent greater efficiencies (ibid). Predating these larger shifts, my case studies dealt with a different level of conflict around the national electricity company, to which the chapter turns next.

3.5 Institutional framing for infrastructure governance in South Africa

This section has three sub-sections focusing on the legislative frameworks, public service reforms and how the state and municipal corporatisation and contractualisation are impacting infrastructure provisions for informal settlements. The last sub-section discusses the role of judicialisation as a democratic expression is mediating in infrastructure challenges. Below I turn to legislative frameworks.

3.5.1 Legislative frameworks

To explain a seeming confusion and or contestation between Eskom and the CoJ electricity distribution in unproclaimed settlements in the Johannesburg Metropolitan area, with Eskom and CoJ's utility company City Power both supplying electricity in the same jurisdiction of the CoJ, this section reviews the applicable legislative arrangements. The 1996 Constitution put in place a cooperative, distinctive, interdependent and interrelated government constituted as national, provincial, and local spheres (RSA, 1996). All spheres of government (including state-owned enterprises like Eskom, which forms part of the national sphere) must conduct their activities in line with the principles of cooperation buttressed by respective acts of Parliament. Accordingly, all spheres of government must provide, among other functions, effective, transparent, accountable and coherent government; respect institutions, constitutional powers and functions of government in the other spheres; not assume any power or function except those conferred on them in terms of the Constitution (ibid). Government entities are to perform their functions in a manner that does not encroach on another government sphere's geographical, functional, or institutional integrity and coordinate their actions and legislation with one another (ibid). The 2005 IRA likewise provides intergovernmental framing that bolsters cooperative, coordinated and interactive governance (RSA, 2005). The IRA instructs 'the national government, provincial governments and local governments to promote and facilitate intergovernmental relations' and reinforces 'concerted effort by government in all spheres to work together and to integrate as far as possible their actions in the provision of services' (ibid:2). While the IRA underlines that 'co-operation and the integration of actions in government' for an 'effective system of governance' (ibid), the housing and energy infrastructure sectors are seized with inherent complex intergovernmental disconnections, as my case studies show (see Chapters 5 to 8).

Further to the above, the Constitution gives municipalities the 'right to govern, on their own initiative, the local government affairs of their communities, subject to national and provincial legislation' (RSA, 1996:47). Accordingly, local authorities are empowered and have conferred rights as municipal electricity distributors and to derive revenue from electricity distribution as well as administer the distribution in line with the 1998 White Paper on Energy Policy (DME, 1998). This notwithstanding, there are constraining sections in the Constitution, for example, section 156(4), that says

> 'the national government and provincial governments must assign to a municipality, by agreement and subject to any conditions, the administration of a matter listed in Part A of Schedule 4 or Part A of Schedule 5 … that would most effectively be administered locally; and the municipality has the capacity to administer it.' (RSA, 1996:48)

This assumes that national or provincial government can benignly assign functions to a municipality, for example, electrification distribution. Conflictingly, section 156(5) says '[a] municipality has the right to exercise any power concerning a matter reasonably necessary for, or incidental to, the effective performance of its functions' (ibid:49). This implies functional assignment is a right but assumes the assigning government sphere is willing to relinquish the function. For such dissonances, the NDP of 2012 identifies South Africa as struggling to 'achieve constructive relations between local, provincial and national government … [and] a lack of clarity about the division of responsibilities together with a reluctance to manage the system' (The Presidency, 2012:409).

The institutional structuring for local government is also pertinent in this study. As partly discussed earlier, it is founded on the 1998 White Paper on Local Government as the basis for the new developmental local government system, which is committed to working with citizens, groups and communities for sustainable human settlements and social, economic and material needs of communities (RSA, 1998). Another important legislative piece is the Local Government Municipal Demarcation Act (27 of 1998) that provides for the demarcation of municipal boundaries that created distinct jurisdictions. Also relevant is the Local Government Municipal Structures Act (117 of 1998), providing for the establishment of municipalities and the appropriate political and development structures relevant to consultative and participatory governance. The Local Government Municipal Systems Act (32 of 2000) provides for the core principles, mechanisms

and processes for progressive socio-economic upliftment and universal access to essential services by local communities. The most important innovation under the Municipal Systems Act is the promotion of community participation, widely believed to be the engine for community development (Mohamed, 2009).

Besides the various legislative frameworks discussed above, the NDP 2030 (The Presidency, 2012:17) makes a strong institutional pledge to assist the state institutions 'to meet our varied needs … reach out across communities … to be set against corruption'. Institutional capacities and reforms are required in the public sector to address challenges including a 'complex intergovernmental system, high levels of corruption, weak lines of accountability, inadequate legislative oversight …' (The Presidency, 2012:49 Executive Summary). The NDP thus provides for firm and focused resolve to major institutional stumbling blocks of poor organisational coordination 'and an undefined hierarchy of authority among the plethora of government departments' (The Presidency, 2012:154). I shall return to the aspect of hierarchy of authority and reporting pertaining to corporatised public entities in the section below and on Eskom in Chapters 6 to 8. The Plan recognises that although integrative structures on infrastructure provision are in place 'a certain degree of fragmentation has crept into government … and this must be fixed … The Presidency, as the centre of government, be given strategic coordinating responsibility' (ibid:154).

In addition to the above institutional frameworks, the 1998 Energy White Paper clarifies government policy regarding the supply and consumption of electricity. It underlines the need for 'co-ordination between government departments, government policies, and the different spheres of government … in order to achieve greater integration in energy policy formulation and implementation' (DME, 1998:25). As of 1998, the Energy White Paper acknowledged that integrated energy planning between government departments was lacking, leading to silo approaches by the sectors. At local level, despite clarity about metropolitan authorities as electricity distributors, the politics in the electricity distribution between Eskom and urban local authorities has continued (Jaglin & Dubresson, 2016). How is the silo approach explained and addressed? I turn next to public sector reforms to understand how the restructuration is intervening in infrastructure governance.

3.5.2 Public service institutional reforms: implications of state and municipal corporatisation and 'contractualisation' for infrastructure governance

This sub-section analyses how the post-apartheid South African public sector reforms guided by NPM, but with relevant overlaps with contemporary co-governance approaches, are mediating infrastructure governance in informal settlements. Two key components of the NPM are relevant to this, namely corporatisation on the one hand and contractualisation, outsourcing or public procurement on the other. According to Cameron (2015) and Tshombe and Dassah (2018), the transition to NPM took off when South Africa witnessed significant transformation from the highly centralised pre-1994 traditional public bureaucracy, which was administered by commissions serving minority interests, to the Department of Public Service in 1996 becoming a majority-serving public entity. The transition ushered in new systems, principles and philosophies in public service management that aimed to transform public service delivery (Pillay, 2014). In line with the corporatisation or "agencification" component of NPM, some government departments were broken up into 'corporatized units around services that can then deal with each other on an arm's-length basis' (Cameron, 2015:135). In this way, free-standing entities were created out of government departments (Hughes, 2003 cited in Tshombe & Dassah, 2018). Corporatisation is a relevant subject in this inquiry where corporatised entities of the CoJ-owned entities City Power and Joburg Water provide interim infrastructure in informal settlements. The rationale behind creating these agencies was to offer greater managerial flexibility, accountability and greater infrastructure delivery outcomes (Cameron, 2015; Tshombe & Dassah, 2018). Corporatisation is a form of unbundled government synonymous with removing programmes from state departments, which are political organisations, with a view to thwarting political interventions through the autonomisation (DPSA/National Treasury, 2005). The Public Affairs Research Institute (PARI, 2014) summarises the public sector corporatisation agenda as emphasising principles of de-bureaucratisation of local government and the public sector generally to reform and strengthen management practices, decentralise decision-making to lower levels and outsource government functions. A chief limitation with corporatisation is agencies can only be supervised by parent ministries, departments and municipalities if the latter bodies have 'information, appropriate skilled staff and appropriate levers by which to steer' (Cameron, 2015:151). PARI (2014:9) argues that agencies, just like contractors, are open to 'corruption and clientelism'. The DPSA/National Treasury (2005) gives credence to these doubts about corporatisation in South Africa as there was no policy framework that established, managed and reviewed the corporatised structures by 2005.

This implies that there were no performance monitoring and assessment mechanisms used to enforce performance culture and influence service delivery outcomes (Cameron, 2012).

The second dimension, contractualisation, interchangeably termed outsourcing or public procurement, is another key outcome from the administrative and financial decentralisation of functions of government aimed at boosting NPM performance targets, efficiency, cost savings and service quality in South Africa (PARI, 2014; Shai, 2019; Mthembu, 2019). It is relevant to this inquiry as most of the informal settlement upgrading feasibility studies, planning and engineering works are given out to consultants and contractors. Contractualisation is a public procurement and administrative system (PARI, 2014) whose conception Shai et al. (2019:1) places within broader imperatives of transforming society and the economy:

> 'A key instrument in the post-apartheid South African government's broad-based black economic empowerment (BBBEE), a legislative and policy framework aimed at reversing the country's legacy of injustice and inequality through pursuing a range of socio-economic objectives that favour the majority black population.'

According to PARI (2014:7), contractualisation is '[o]ne of the most dramatic features of the post-apartheid state … contracting-out of government services to third-party providers' in the quest to 'modernise the state as well as to use government agencies as a catalyst for black economic empowerment'. PARI (2014:7) further argues that current public procurement procedures are unlike the apartheid era, where a

> 'handful of sites for procurement, such as the State Tender Board [were created]. However, from the late 1990s responsibility for the procurement of goods and services was decentralised to government officials in offices all around the country.'

Outsourcing has grown to unprecedented levels such that 'approximately 42 per cent of the South African Government's budget… or R 372.9 billion … was allocated to procurement' in the 2012/13 financial year (ibid:7-8).

A question can be asked about the implications of the contractualisation for infrastructure provision to informal settlement upgrading processes. PARI (2014:9) highlights that infrastructure 'delivery in South Africa' being performed less and less 'by government administrations and increasingly performed by private companies' relegates public servants to managers of contracts

rather than carrying out the work themselves. In this performance management and monitoring of private firms and parastatals, it is alleged the processes are open to abuse, clientelism and corruption (ibid). There are further allegations of a decrease in the quality of infrastructure delivery due to a lack of enforcement of standards (ibid). With the system of contract awarding being 'so decentralised and fragmented' it is problematic to organise outsourcing activities 'between departments and tiers of government and/or to exercise oversight over the system', which has several 'thousands of sites across South Africa', making South Africa a 'contract state' (ibid:9). Moloto's (n.d) report on the impact of outsourcing practices in the public service confirms most of PARI's (2014) concerns about public procurement. Moloto found contractualisation as becoming a divisive national question with two anti-outsourcing and pro-outsourcing schools of thought emerging. The pro-outsourcing philosophy supports contractualisation as a developmental and key enabler of the broad-based black economic empowerment (BBBEE). Yet the anti-outsourcing thinking evaluates outsourcing as an ill-conceived mechanism that is deepening contracted worker exploitation for the enrichment of the contractors themselves (Moloto, n.d; Mthembu, 2019).

Given the background of corporatised infrastructure provision and contractualisation in South Africa and in the CoJ, this thesis engaged the implications of these arrangements in the governance of infrastructure delivery in informal settlements in the substantive Chapters 5 to 8. Given the delays and unparticipatory decision-making resulting from the particular governance constellation at this intersection, a further phenomenon has marked governance of informal settlement electrification. This is the involvement of courts, which this section turns to next.

3.5.3 Judicialisation as last hope intervention for infrastructure governance in South Africa

> '[L]itigation is a legitimate form of democratic participation, one of many ways to exert the political pressure required to get policy implemented… In reality, policy implementation is not a technical, neutral exercise that occurs in a vacuum, independent of society. Power dynamics, class interests and conflict, lack of political will, financial constraints, and institutional deficits, amongst other factors, all affect the implementation of policies.' (Clark & Tissington, 2015:2)

As the prefacing quote puts it, the South African courts, together with similar rights organisations like the South African Human Rights Commission, play a strategic governance role in the enforcement of the democratic right to infrastructure provision. Huchzermeyer (2016) confirms

that there are advances in policy and implementation leading out of the democratically premised judicialisation. She reviews several informal settlement court cases involving informal settlements in South Africa in which the state and its spheres are gradually nudged to act decisively on informal settlements. Court action has thus become the ultimate pressurising recourse for advancement and enforcement of the constitutional rights to housing and infrastructure access in South Africa and occupational rights to land that apply to informal settlement residents (Clark & Tissington, 2015; Huchzermeyer, 2016). In Clark and Tissington's (2015:2) terms, cases of defensive litigation 'catalyse communities into action and to challenge the pervasive "feeling of invisibility" … for the most marginalised groups in society to assert their rights and demand accountability … Further, litigation has served to "activate" the UISP where it has been deliberately or unintentionally ignored.' The Nokotyana judgement (brought to court by the Harry Gwala informal settlement community) is an example of court judgement through which it dawned upon municipalities that they have a constitutional duty to provide basic levels of water and sanitation, leading to an extensive (outsourced) roll-out of chemical toilets in several municipalities (ibid). This form of judicialisation came about due to persistently unconstitutional actions of the state against its own upgrading policy, the UISP, and the *in situ* upgrading it foresees for informal settlements (Huchzermeyer, 2016).

Apart from playing a key role as a tool to 'resist state relocations and evictions' (Tissington, 2015:10), litigation has enabled collaborations between academics and legal NGOs, among other interest groups (Chenwi, 2015). Collaborations have led to important juridical advances, defining jurisprudence and awakening legal consciousness in informal settlement residents (Madlingozi, 2014; Chenwi, 2015). Chenwi (2015) has therefore argued that judicialisation is significantly redefining the evolving housing policy and programmes, and this gives more meaning to constitutional obligations and rights (Chenwi, 2015). Two of my cases, Protea South and Slovo Park, discussed in Chapters 6 and 7, involve this form of collaboration enabling representative committees in informal settlements perusing their demands through the courts.

The repeated intervention by the courts in contestations over aspects of informal settlement upgrading demonstrates that the judiciary in South Africa is avoiding a radical, judicial excessivism and activism in public interest litigation, which Rajamani (2007) and Bhan (2009) identify in a certain period in India. Instead, the South African courts generally trust the executive

arm of the state to implement their orders without overlapping interference; the courts, therefore, become a social and political negotiator between the state and the communities (Rubin, 2013). Yet this modest approach does not work in dramatic ways for affected communities whose circumstances are barely changing. This confirms Chenwi's (2015) conclusion that despite a myriad of progressive housing laws and important jurisprudence on housing rights and approaches in South Africa, ensuring access to adequate housing for the poor and those faced with evictions continues to be a challenge.

A key challenge in the South African judicial system is that courts have limited juridical legitimacy and or insufficient adjudicatory prowess on government policy implementation (Madlingozi, 2014; Clark & Tissington, 2015). The unwillingness by the implementing state (for example, the CoJ cited above) to accept legal outcomes is a testimony to this shortcoming. Poor households, therefore, are in constant threat of eviction (even in subtle ways) and or living in perpetual temporariness despite the growing jurisprudence (see Huchzermeyer, 2011). In cases where implementing state departments accept court orders, for example, for *in situ* upgrading, the order is often implemented in a way that contradicts the instructions of the court order. Huchzermeyer (2009:61) notes that even '[w]here legal battles have led to the acceptance that informal settlement residents should be given rights to an area they have invaded, the subsequent formal development stamps out any evidence of organic or people-led "informal" processes'. In concurrence, Chenwi (2015:82) observes that although the Constitutional Court has laid down pro-poor jurisprudence, 'successful litigants are unable to benefit fully from the orders arising from their victories. Consequently, they continue to live in poverty and socio-economic deprivation'. Chenwi (2015) therefore suggests that litigation can only realistically improve and effect social change if executive authorities comply with judicial verdicts and political action taken to implement court orders. Chenwi (2015:81-82) further contends the transformative potential of litigation also depends on 'the extent to which court decisions are politically authoritative and whether political branches comply with them and implement and reflect them in legislation and policies'. Yet it is also important to note that litigation has its limitations as courts are not experts on informal settlements or housing, sometimes resulting in issuance of unfeasible court orders or with unintended consequences. The Grootboom case is a typical exemplar that led to the formulation of the Emergency Housing Policy and the development of TRAs (Huchzermeyer, 2011).

3.6 Towards a conceptual diagram of infrastructure governance and institutional arrangements in the South African informal settlement electrification

This chapter reviewed literature on infrastructure governance and institutional arrangements with respect to infrastructure provision in the informal settlement upgrading and electrification programmes in South Africa. The relationships coming out of the arrangements are illustrated in the diagram of the programmes and issues shown in Figure 3.1. Informal settlement upgrading, designed primarily through UISP's four-phased process of *in situ* upgrading, is well-intended in terms of legislation and housing policy, yet the *de facto* implementation contradicts the statutory intentions and also points to aspects that are not implementable within the current frameworks and governance constellations. Municipalities have been shown to avoid the incremental *in situ* upgrading approach by their taking a predominantly conventional and formalistic housing delivery approach (Huchzermeyer, 2011; Cirolia et al., 2016). Under informal settlement upgrading, the housing sector's interim infrastructure provisions (water and sanitation) are evaluated as disconnected to the energy sector's interim electrification service in terms of the statutory framework focus and operational coordination (Tait, 2015; Van der Westhuizen, 2017) and funding mechanisms (DPME, 2015). Discussions in this chapter on infrastructure governance concluded that key governance components are in place but not operationalised, resulting in isolated instances of transformative, collaborative governance, often brought about by infrastructure and active forms of citizenships (de Visser, 2009; GGLN, 2014; Lemanski, 2019). Under this theme, participatory governance has been found to be complex and often regarded as removed from requirements set out in the legislation, policy and programme frameworks (Jordus-Lier & de Wet, 2013; Cark & Tissington, 2015; NUSP, 2015; Isandla, 2019).

The third thematic discussion on electrification revealed that the progressive statutory frameworks and institutional intervention in the energy sector are not sufficiently responding to the interim electrification of informal settlements (DME, 1998; Greenberg, 2002). The adoption of a grid electrification trajectory is found not to be appropriate for informal settlements, where off-grid alternatives would be more relevant and appropriate (Keller, 2012; Tait, 2015; Runstein et al., 2018). The electrification is also criticised as not encompassing polycentric governance but remaining state-centred in approach (Idasa, 2010; Jaglin, 2014; Caprotti et al., 2019). There are also techno-politics in the electricity distribution at metropolitan municipality level involving Eskom alongside the municipal electricity entities (Eberhard, 2003; PMG, 2007; SEA, 2014; Jaglin

& Dubresson, 2016). The discussion on electrification in this chapter ended with an account of the calls for Eskom to unbundle to introduce competition, improved governance, increased efficiencies and accountability in the coal-based electrification in South Africa (Carbon Trust, 2017; Power Futures SA, 2019; DPE, 2019). Lastly, the chapter reviewed the institutional framing for infrastructure governance, which covered the legislative frameworks, public service institutional reforms, corporatisation and contractualisation or outsourcing of work that the state can provide more efficiently and cost-effectively by contracting out (Cameron, 2012; 2015). The institutional framing thematic also discussed judicialisation as the last hope for infrastructure intervention and thereby infrastructure justice in informal settlements, showing the efficacy of judicial roles, which are, however, limited in terms of their functional jurisdiction and the extent to which judicialisation can advance and protect residents from unjust implementation practices (Huchzermeyer, 2016; Madlingozi, 2014; Chenwi, 2015; Clark & Tissington, 2015).

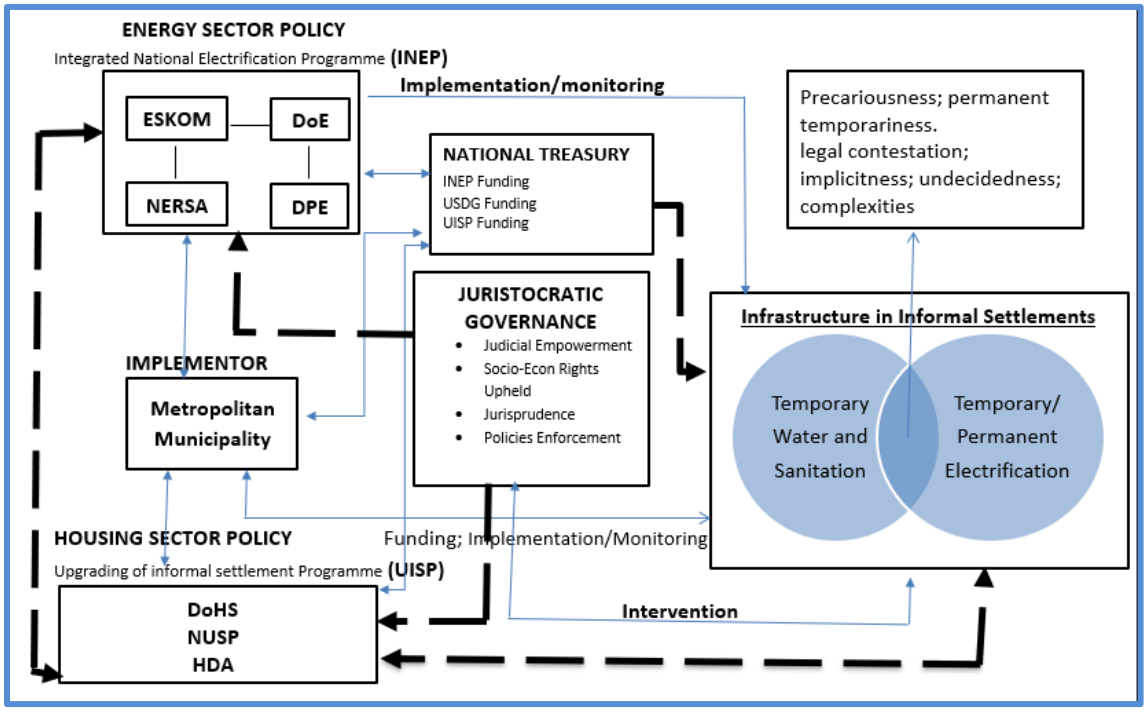


Figure 3. 1: A schematic diagram illustrating departmental interrelationships and issues in South Africa Author's construction

3.7 Conclusion

The chapter has presented the South African context of infrastructure governance portrayed as implicitly provided in legislation with emphasis on infrastructure provision. I reviewed literature on the specific cases of the gravel platforms in Green Park and the Joe Slovo informal settlement

relocation, both in Cape Town, to demonstrate arbitrariness and indecisiveness associated with infrastructure provision in informal settlement upgrading and electrification programmes. Despite adopting, at least in principle, inclusive infrastructure upgrading methodologies through the incremental UISP, implementation in South Africa is dominantly fixated on formalistic philosophies of greenfield relocations with an unchanging mindset of local government officials about informal settlements upgrading. Attempts to upscale UISP implementation are constrained by several factors, including dominant attitudes within the state, based on non-acceptance of the incremental, *in situ* approach. This requires introspection by the state, re-strategising of funding mechanisms and reinvigorating the NUSP. The fixation on coal-powered grid electrification of informal settlements is criticised as unsustainable and requiring rationalisation to off-grid alternatives. The Eskom-metropolitan municipality stand-off indicates a deficit in infrastructure governance, this happening in the face of significant post-apartheid institutional as well as public sector reforms, corporatisation, agencification and autonomisation. Local government-residents' contestations over insufficient infrastructure provisions culminate in residents resorting to litigation that has set important jurisprudence. Judicial governance is, nevertheless, providing protracted palliative relief to infrastructure governance as the executive sphere of government is struggling to live up to its commitments to informal settlement upgrading.

CHAPTER FOUR

4.0 Research methods and case study background

4.1 Introduction

This chapter frames the methods I used to carry out the empirical research. The central aim was to use interviews to generate relevant understanding about infrastructure planning, implementation and governance from the perspective of different stakeholders among state officials, politicians, the beneficiary communities, experts/academics and non-state actors. This chapter discusses the case-study approach that I used and explains the delimitation of the study. I introduce the three case studies, namely Stjwetla, Protea South and Slovo Park informal settlements, all in the CoJ. In the next section, I discuss data sources and sampling techniques for both secondary and primary data collected. The primary data source mainly comprised of semi-structured key informant interviews purposively sampled and complemented by my personal observations of the realities of infrastructure provision in the selected case studies (see Etkan et al., 2014). For secondary data, I used both international and South African context literature, policies, official documents, media reports and court case documentaries. The chapter also explains the implementation modalities of semi-structured interviews and the data analysis from primary sources, including voice recordings, transcriptions and field notes. Ethical considerations and the negotiations that were necessary to gain access to the study areas and respondents are also discussed. Lastly, I evaluate the challenges that potentially constrained the whole process and how I navigated them.

4.2 Interpretive research paradigm, qualitative case study approach and research instruments

The study employed a qualitative, inductive methodology to elicit primary data to answer the four key research questions for this research, which are subtended by the main questions: How is infrastructure provision in informal settlements, in particular electrification, governed in South Africa? I decided to follow a qualitative research design because it is primarily exploratory, naturalistic in inquiry and seeks an in-depth understanding of underlying reasons, opinions and motivations behind social phenomena (Creswell, 2007; Creswell, 2013). As I show in Chapters 5 to 8, the qualitative methodological approach enabled important insights into the governance of infrastructure provision in three informal settlements in the CoJ through its use of multiple systems

of inquiry, including the case studies, key informant interviews, transect walks and observation (Lincoln et al., 2011; Creswell, 2013). Lincoln et al. (2011) validate qualitative methodology and its intrinsic virtues as capable of interpreting and explaining social reality.

4.2.1 Case study as the research design

This research adopted a multiple case study approach, embedded in one case study area, namely the CoJ. I adopted the case study design because it is a methodologically sound, practical, all-encompassing and rigorous research design that addresses validity and reliability issues of research (see Yin, 2014). The systematic and comprehensive selection of three case studies in the CoJ should be viewed in line with Yin (2014:99) that when 'the process has been given careful attention, the potential result is the production of a high-quality case study.' As Robert Yin would say, the case study research is challenging. However, the empirical iterative process of data collection and analysis about the infrastructure provision scenarios in the three real-world "cases" was key to inform great insights and understanding. The case study approach provided evidence about governance relationships in the electrification of the informal settlements and between the community-based organisations and the municipal officials. The fact that both the municipal electricity entity, City Power, and the national electricity company Eskom were electrifying informal settlements within the CoJ complicated the relationships between the community-based organisations and the municipality, generating important governance dynamics for the research. The CoJ and its governance relationships in terms of its role in improving informal settlements are, therefore, one case study, and within this, a selection of three informal settlements formed the multiple-case study setting for on-the-ground research. The three case studies are introduced in Section 4., including the rationale for their inclusion in this study. The research instruments that I applied to compile the case studies are discussed in other sections.

4.2.2 Literature review

I engaged with an extensive desktop review of published academic literature relevant to infrastructure provision and electrification to acquire as much data as possible to understand how infrastructure governance is taking place in the CoJ. I identified published materials for both international and South African literature. To ensure relevance to the topic of the thesis and Johannesburg and South Africa, I filtered all the search results manually. Similarly, I applied the

same thorough selection principle with documents by employing a systematic document analysis of both printed and electronic material, as Bowen (2009) recommends. For those documents I selected, I examined the data to elicit meaning, gain understanding and relate to what is happening in practice in the case studies (as recommended in Corbin & Strauss, 2008). For this study, document analyses involved review and analysis of policy documents regarding informal settlement upgrading of the BNG, the National Housing Code and the UISP, the latter as the state programme through which incremental upgrading is designed to be implemented (the housing sector). On the energy sector, the Energy White Paper Policy of 1988, the Electricity Regulation Act of 2006, the policy guidelines for electrification of informal settlements and the INEP were some of the key documents analysed. Document analyses also included relevant court cases and judgements as well as legislative frameworks that pertain to informal settlement upgrading, infrastructure governance and electrification, particularly since 1994. I also examined a number of CoJ policies and plans as well as academic research reports relevant to infrastructure provision in informal settlements in the City.

4.2.3 The choice of qualitative interviews as a research instrument

In-depth semi-structured interviews were a key qualitative instrument used to compliment the case-specific documents review, which did not reveal debates, negotiations and arguments at the time of my research. I found the in-depth interviewing particularly important for the dynamics surrounding governance. I conducted several qualitative interviews and discussions that enabled a useful understanding of the meanings of actions taken by the respondents, the logic of particular decisions, the stakes involved, as well as the power relations among state officials, politicians and residents. All the interviewees for this study were regarded as expert source informants as their responses were based on their positions in government or in the community or on their personal skills and expertise. As such, they provided deeper insights into infrastructure provision in each of the case studies or informal settlements in general.

4.2.4 Scope of the qualitative interviewing

Consistent with Marshall (1996) and Etkan et al. (2014), the selection of the interviewees was purposive and premised on seniority in organisational positions (see my typical permission-seeking application letters to organization and agencies in Appendix B), ward councillors,

community leaders and experts in cases of professionals and academics. The full range of interviewees appears in Table 4.1.

The primary data source consisted of semi-structured in-depth interviews conducted with eight groups of respondents, altogether making a total of 35 interviews (Table 4.3). The respondents can be classified into five broad categories, namely institutional (central and provincial government), the CoJ and municipal entities, community leaders, ward councillors, experts/professionals and a non-state actor. The CoJ and its entities category comprised the biggest class with 12, while the institutional category of central government departments and Gauteng Province are six. The community leadership category was another significant group with ten respondents, followed by the political group with three ward councillors and four in the professionals/experts/non-state actor group.

Table 4. 1 Groups of interview respondents

CASE STUDIES IN CITY OF JOHANNESBURG				CITY OF JOHANNESBURG		
Stjwetla	**Data Sources**	**No. of Respondents**		**Data Sources**		**No. of Respondents**
	Community Leaders	4		**Department of Housing**	Central Office	3
	Ward Councillor	1			Regional Offices	3
Protea South	**Data Sources**	**No. of Respondents**		Environmental, Infrastructural Services Department	Central Office	1
	Community Leaders	3				
	Ward Councillor	1				
Slovo Park	**Data Sources**	**No. of Respondents**		Planning and Development	Central Office	1
	Community Leaders	3		City Manager	Central Office	1
	Ward Councillor	1		Municipal Owned Entities	City Power	2
					Joburg Water	1
	Sub-Total	**13**				**12**
STATE INSTUTIONS AND OTHER						
National Government	**Data Sources**	**No. of Respondents**				
	DoHS (NUSP)	1				
	Department of Energy	2				
	National Treasury	2				
Gauteng Provincial Government	**Data Sources**	**No. of Respondents**				
	DoHS	1				
Experts or Professional	**Data Sources**	**No. of Respondents**				
	Legal	1				
	Electrification	1				
	Ex-officio Director/Academic	1				
Non-State Actors	**Data Sources**	**No. of Respondents**				
	Electrifying Company	1				
	Sub-Total	**23**				
TOTAL						**35**

4.2.5 Gaining access to interviewees and scheduling of interview meetings

While I had originally decided to start interviews with state institutions, the process changed so that I started with community level respondents. The rationale for this was twofold: securing interviews with state officials was difficult and took much longer than anticipated unlike informal

settlements respondents who were generally less difficult. Starting with the community level armed me with on-the-ground facts and realities which prepared me for live interactive and reflective interviews with state officials at later stages. These later interviews were important in that they enlightened me why particular actions taken, the logic of particular decisions, the stakes involved and to some cases the power relations. In line with Denscombe (2010), using semi-structured interviews allowed more flexibility and opportunity for further interrogation unlike structured interviews that are rigid. I did not develop a systematic order of question-and-answer but I deliberately cultured lively interaction based on the interviewee's introductory narrations about their organisations, responses, and my own reflections of the subject from previous findings.

The interviews were carried out on arranged days. However, with state officials and councillors, the interview took place after several appointments were cancelled or postponed when the interviewee could not find time for the interview or cited other commitments. Sometimes unusual conditions were set for the interview; in one instance, the interviewee requested my guiding question, which resulted in further demands and finally no interview (the unusuality in this instance was that this particular respondent was the odd one out of all interviewees). I perceived such situations as unwillingness on the part of the official or just being difficult not withstanding those connections that had been aided by Professor Marie Huchzermeyer. A key interview with a senior official in the NDoHS fell through after many attempts. Similarly, planned interviews with Eskom officials did not materialise, despite preliminary consent to the interview. Several follow-ups with these officials by phone calls and emails did not yield positive results. All my respondents gave consent for recording. However, in one case, my recorder ran out of power unexpectedly, and I had to resort to writing notes. But because I realised that I had not adequately noted down some important information, I requested and was granted a second interview that I recorded successfully. I managed to establish particularly good relations with community leaders in all three settlements, and this helped me secure their permission to take photographs in the settlements. I photographed during transect walks, accompanied by the community leaders, as I discuss below.

4.2.6 Interview approach

Interview questions were adapted for each category of interviewee. A general guiding set of questions for each of these groups are listed in Appendix C. The interviews provided significant information about the governance of infrastructure provision in relation to informal settlements in

the three case studies in Johannesburg and South Africa generally. The length of time for each interview averaged about an hour, but most state officials gave no less than one and half hours, which allowed adequate opportunity for detail. The face-to-face interviewing process was, however, interrupted by the COVID-19 restrictions as of March 2020. Nearly all the community level (community leaders and councillors) interviews were conducted face-to-face in their respective communities prior to the first COVID-19 restrictions. The remaining interviews were conducted, to the extent possible, through online means (WhatsApp and Zoom or Microsoft (MS) Teams video calls, with follow-ups where data or network problems occurred). About half of the nine interviews conducted with the CoJ departmental officials and regional directors were done physically, with the remainder online (Zoom; MS Teams; WhatsApp calls). A third of the six national and provincial government institutional interviews were conducted face-to-face and the rest online (three on Zoom and one on WhatsApp call). The physical and Zoom meetings gave a comparatively higher advantage to voice-only WhatsApp calls in that the interactions in the former allowed me to read facial expressions and other gestures. Although I didn't code facial expressions as Ismail (2017:37) suggests and which Bavelas (1994) in turn cautions about, I did find them useful in the CoJ interviews, in particular in following and understanding what the officials were trying to convey to me.

4.2.7 Transect walks as a research instrument

Transect walks was another important research instrument that I used to elicit accurate, reliable on-the-ground realities of infrastructure provisioning in natural settings in all three case studies (see Papanek, 1972; Facer & Buchczyk, 2018). As Facer and Buchczyk (2018:1-2) suggest, walking as a method in the three informal settlement case studies enabled gathering of comprehensive micro-practices that reconciles the 'tension between the top-down vision of the city planner and the lived experience of individuals actually navigating' the settlements through everyday activities. The 'iterative exploration and observation' of the three settlements on foot provided deep insights and enhanced local area literacy (Pierce & Lawhon, 2015:1). Transecting the sites made me to witness the severity of some of the infrastructure provision challenges and to understand how the residents are adapting to the environments through socio-technical resilience (see Chapters 5 to 7 below). As Facer and Buchczyk (2018:5) further suggest, the walking method was also instrumental in developing conceptual as well as methodological instruments used in the

study and, thus, instructed relevant pluralist pedagogy of the everyday experiences of each of the settlements. In this way, the method shifted my imaginations of the settlements from 'institutional metaphors … in which education and learning take on more performative, improvisational, subtle, and hidden representations … [which then] calls for researchers and theorists to examine their methods, epistemological and ontological assumptions' (Facer and Buchczyk, 2018:5-6). To achieve the above, I conducted at least two transact walks in each settlement in the month prior to the interviews, and the walks were continued during the interview period (before and after the higher levels of COVID-19 restrictions). The walks allowed casual observation of the electrification provisions, informal connections and other basic infrastructure provisions generally. Community leaders from the study sites accompanied me on the walks, which gave me the opportunity to ask questions about what I observed. Crivellaro et al. (2015:1) argue that transact walks and observation allow 'for the situated discovery of issues connecting [informal settlements] residents with the processes and mechanism[s] at play'. In this way, I managed to capture the spatial differences among the three case study areas and between different sections of each of the areas. The differences within and among the sites in relation to infrastructure prompted me to ask for explanations during the walks. Details about the case study follow.

4.3 Data analysis

To analyse the secondary and primary data, I applied qualitative data analysis methods, namely sorting and electronically coding the data using my word processor and Adobe Inc. for PDF documents rather than third-party analysis software. In line with Miles and Huberman (1994) and Crabtree and Miller (1999), I coded the literature reviewed around four priori themes of informal settlement upgrading, infrastructure governance, electrification and institutional-legal arrangements for informal settlements. As Ryan and Bernard (undated:1) in agreement with Bulmer (1979) suggest, the themes came out 'from local common-sense constructs, and from researchers' values, theoretical orientation, and personal experience with the subject matter.' In the first place, it all began with an assumption that aspects of the informal settlement upgrading, infrastructure governance and electrification should be analysed in more detail. The ensuing several reading and the openly recurring features in my engagement with the readings as I attempted to answer the key research question led to the discovering or identification of key themes or constructs (see Huddersfield University, undated). Once identified, the four themes became

pragmatic tools that have helped build greater understanding and produce the account of data and analysis in this inquiry. As the Huddersfield University (undated:1) argue, it is important to note that data coding and theme-making require a philosophical skill of determining key issues and a fine balance of the 'relationship between text, analysis, and the investigator's experience'.

In terms of the secondary sources, I analysed all relevant documentary information pertaining to statutory frameworks for infrastructure, policies, programmes, strategies and plans. I also analysed court documents for Protea South and the Melani judgement for Slovo Park. To distinguish different themes among what I deemed relevant information, I electronically colour coded the texts to generate a new document that was tabulated in two columns for further analysis; one column pertained to recurring themes and texts and the other concerned budding areas that emerged during the analysis.

Turning to primary data, I transcribed the recorded respondent interviews (Table 4.1) and organised the data according to data source to formulate different themes as well as data tabulation for each category. As with the document analysis, I used colour codes on all transcripts and annotated using comment boxes in Microsoft Word. This analysis was complemented by the field notes taken during the interviews, which I revisited during the analysis. As my research involved five major interview categories, I created five tables, namely for community leaders, ward councillors, the CoJ and two municipal-owned entities, central and provincial state institutions and experts/professionals/non-state actors. Rich salient quotations were selected from the interviews, as were examples and illustrations. The analysis culminated in explanation building and the construction of arguments that answer the questions guiding the thesis.

4.4 Ethical considerations

The study adhered to the ethical guidelines of the University of the Witwatersrand for conducting research, as issued on the 15th of November 2019 from the university's Non-medical Human Research Ethics Committee. These required me to seek ethics approval before proceeding with the research, which was granted on the 15th of November 2019 (Appendix D). As committed to in my ethics application, I secured informed consent and ensured voluntary cooperation with all the participants. During the research process, I explained the ethical aspects to respondents, assuring

them that all information supplied was confidential and their contributions synonyms as I shall use self-styled names which do not divulge their identity. For all face-to-face interviews, consent forms were issued and signed by each interviewee, authorising me to carry out the interview, make use of a recording device and take observation photographs (in the case study communities). The onset of the COVID-19 pandemic and ensuing lockdowns that coincided with much of my fieldwork, however, presented challenges with that approach. I could not physically meet some of the respondents to issue the consent forms for them to read for themselves and sign. The interviewees accepted my reading out of the contents of the consent form during the online interview and their acceptance to undertake the interview. No respondents were compelled to answer any questions that they did not wish to answer. Moreover, respondents were at liberty to express themselves in English or isiZulu. However, all the interviewees preferred using English language with bits of isiZulu whenever some emphasis wanted to be made. Generally, all the respondents were comfortable with and effectively communicated in English. However, I did not encounter any refusal to answer my questions with those who consented to the interview invitation. Given that my interviews were semi-structured, the interviews went beyond my initial questions, and there too, the respondents did not indicate any problems with responding. I made sure to explain to the respondents my obligation to maintain anonymity of their identities in any reports or papers that would be generated from the research. I was also careful not to give any guarantees or false hopes to the participants about solving their problems connected to the investigation. However, I still had a sense that some respondents from the case study communities did expect positive change to result from the research. However, to my knowledge, this did not affect the insights they conveyed during the interviews.

A key ethical issue that arose was that officials in central, provincial, and local government spheres and councillors struggled between maintaining professional obligations and opening to give their candid personal views on infrastructure provision in informal settlements. Deep engagement with the issues appeared to make them feel ethically conflicted and constrained, as Perera-Mubarak (2014) experienced when conducting research in post-tsunami Sri Lanka. However, the good rapport that I established with the officials and one ward councillor convinced them to confide views that were sceptical, especially of the national sphere of government's commitment to infrastructure provision and governance. Therefore, contrary to fears by Richards (1996) and Duke

(2002) that officials in high state positions potentially create barriers that shield or resist interviews for the often less powerful researcher, I managed to elicit important perceptions from the respondents who hold privileged positions. I must admit that it was not easy to earn the trust of the officials. However, trust resulted not only from my capability to handle the interview in a friendly, interactive and professional manner but was partly due to the confidence respondents have in my supervisor, Professor Marie Huchzermeyer, who also connected me to some of these key contacts. These connections provided by my supervisor included introductions to government officials in the National Treasury, NUSP, Gauteng Province, CoJ, as well as community leaders of informal settlements. I capitalised on these entry points to effectively gain more access into the organisations and communities by building the trust and confidence of the respondents.

'In terms of positionality, and taking this to mean an awareness of how my presence as a researcher influenced the interview process, most of the respondents interpreted my position in relation to the research in mixed ways with many taking it in its true academic sense, while also appreciating that I'm a mature student with 3 decades of professional experience as a government official in the field of planning, albeit in Zimbabwe and not South Africa. Generally, it was relatively easy to build an understanding with the respondents particularly in the informal settlement communities who understood the research as potentially intervening in their challenges of perpetual temporariness and government indecisiveness over informal settlement upgrading and infrastructure upgrades. This must have made most of them to take the research seriously and to give out as much information as they could, usually beyond what I requested for. In much the same manner, many government officials, who I met for the first time, found an opportunity to express their opinions, sometimes starting in reserved ways but becoming more confident and evidently interested in the lively interactions to open up and share their understandings, perceptions and or frustrations with systems. As such I did not doubt much of the information supplied. However, I had to cross check some of the information with other sources such as media reports and used google imagery for authentication.

4.5 Limitations

One limitation that may be identified in this research pertains to the use of only three case studies of electrified informal settlements out of about 12 such settlements in the City. However, the

qualitative approach does not seek to be fully representative. The three settlements were selected purposively, as shown in Table 4.2, and as explained in the selection of each case study below.

One limitation that I anticipated was a potential language barrier in relation to some of the local languages. However, all my respondents were conversant in English. Any language barrier or need for further clarification in vernacular was done in Isizulu, which I am conversant with.

While gaining access to the research site is a challenge and a potential limiting step (Bryman, 2012), I was fortunate to benefit from established contacts with the community leadership in Slovo Park and Protea South through Professor Marie Huchzermeyer prior to the onset of fieldwork. As reported earlier below, access to Stjwetla and to officials in the CoJ was also facilitated by Professor Marie Huchzermeyer. I struggled but finally succeeded to make contacts with City Power, thanks to a CoJ official in the Environment and Infrastructure Services Department (EISD). As Burgess (1984) cautions, securing access can be a challenging process that can involve multiple steps of negotiation and renegotiation. Several attempts to negotiate access to Eskom officials failed, as alluded to previously. I concluded that the Eskom officials may wrongly have assumed that my inquiry involved allegations of corruption, which the utility is embroiled in (OUTA, 2017; Kessides, 2020). To compensate for the interviews I was not able to hold with Eskom officials, I gained information from alternative sources through dedicated field visits to Protea South and inquiries from beneficiaries about details of the electrification and processes. Further, I made use of my interviews with officials from City Power and the CoJ officials as they were familiar with Eskom and how it operates in the City.

The fear I had of potential xenophobic tendencies flaring up in the settlements and negatively impacting me as a foreigner (Zimbabwean) proved unjustified. Instead, it was the COVID-19 pandemic that put off my scheduled fieldwork, which should have run from the end of 2019 to mid-2020. The pandemic induced the initial hard lockdown from March 2020, such that I was not able to access my workspace on campus, but more importantly, I was prevented from returning from Zimbabwe, where I had travelled at the onset of the pandemic. I had to learn how to conduct online interviews, conducting these initially from Zimbabwe until I was able to return to South Africa. Due to poor internet connectivity there, I resorted to cell phone interviews at that stage.

The sudden lockdown in March 2020 prevented planned visits to the informal settlements, such that I had to completely adjust the schedule. Accordingly, my length of study had to be extended.

Having presented the methods applied in my research, the chapter now turns to the case studies, providing the selection process, rationale for their inclusion in this study and background on the selected case study settlements.

4.6 The CoJ Municipal Governance Framework for basic service provision

This section introduces the CoJ municipal governance structures and arrangements with respect to basic infrastructure provision. According to the CoJ 2014-2015 IDP (an IDP review that falls within the bigger 2012-2016 IDP), the CoJ envisions the City to be 'a vibrant, equitable African city … city that provides real quality of life … a resilient and adaptive society', this committing the CoJ 'to pro-active delivery… and the practice and encouragement of sound governance' (CoJ, 2014:1). The IDP forms an overarching coordinative governance mechanism that sets developmental plans, priorities, strategies and performance to meet performance targets (ibid). To facilitate the effective management, the City was divided into seven regions named A-G, with regions A, B, C and E geographically located in the north, while Regions D, F and G are in the southern part of the City. The regionalisation of the City is a schematic approach aimed at providing localised urban governance, mobilise community participation and meet the growing diverse demands of the citizenry through Citizen Relationship and Urban Management (CRUM) (ibid).

In terms of institutional arrangements, the CoJ is run by a Council that performs legislative functions whose core mandates include oversight and scrutiny of service delivery projects and ensure accountability in the implementation of formulated and approved policies, the IDP included. The Council is supported by an executive led by the Executive Mayor and eight various committees of Council with nine executive departments all under the City Manager but headed by executive directors. For this study, I purposely chose three departments: Housing, Development Planning and EISD, which have specific infrastructure mandates for electrification and other basic infrastructure in informal settlements. The CoJ adopted a cluster approach that 'aims to coordinate the City's programmes around the four outcomes outlined in the Joburg 2040 Strategy' such the

three selected departments fall in two of the clusters: sustainable service and economic growth (CoJ, 2014:26). The sustainable service cluster comprises two of the three departments under this study being EISD and Housing department, which work with City Power and Joburg Water, among other entities in the City. The Department of Housing operates the Sustainable Human Settlements Urbanisation Plan that addresses rapid urbanisation-induced housing backlogs and infrastructure provision (ibid). The third is the Development Planning department clustered under the economic growth and working with entities like Johannesburg Property Company, among others, but its core mandate is on smart city concepts, economic growth and competitiveness support. The department is guided by a Spatial Development Framework (SDF) that aims to restructure the City's historical fragmentation and urban form through city densification and compaction. The function of the Development Planning department is silent on the planning of informal settlements leaving these to the Department of Housing, a misalignment that shall be discussed in Chapter 8.

The CoJ's primary mandate is to deliver basic services as required by the 1996 Constitution, national and local government legislative frameworks where the City commits 'to ensuring excellent, proactive delivery of services' (CoJ, 2014:53). As entrenched in the Joburg 2040 Growth and Development Strategy (CoJ, 2011), CoJ boasts that its service delivery 'continues its impressive trend in the overall delivery of basic services (water, waste and electricity)' (CoJ, 2014:54). As a result, the level of service for city-wide coverage for basic water is given at 98.69%, where the backlog difference is in informal settlements where water is provided through yard and communal standpipes, water tanks or no provision at all (ibid). Sanitation is at 94.14% coverage where 'the backlog is in informal settlements, with such households currently provided with nominal services (chemical toilets)', ablution blocks, ventilated improved pit (VIP) latrine and unimproved VIP toilets (ibid:55). Critics, however, argue that there is a much higher percentage difference in water and sanitation provisions in the informal settlements (van Zyl & van der Westhuizen, 2020), where Joburg Water is not sufficiently providing for the services. More importantly, '[m]any settlements do not appear on the City's waiting list at all. And the City's performance target of a tap within 200 metres of each household does not address the key issue of too many people depending on each tap' (ibid:2).

To ensure integrated and coordinated service delivery, the CoJ has developed service level standards and mechanisms in the form of steering and oversight mechanisms of Central Visible Service Delivery Forum and integrated ward-based service delivery structures. The CoJ has also developed ten Priority Implementation Plans and City-Wide Programmes. This study focused on three of the priorities being Priority 3 (Sustainable human settlements), Priority 4 (Economic growth named Jozi@Work that promises to reengage communities and civil society to reduce economic exclusion) and Priority 5 (Engaged and active citizenry) (CoJ, 2014). The sustainable human settlement priority aims at establishing sustainable, liveable and integrated communities achieved through innovative space reorganisation to satisfy a variety of housing options (ibid). The economic growth provides for an innovative re-engagement with communities and civil society, being an economic mechanism that is dedicated to addressing the 'city's most deprived communities' where '30-50% [live] in informal circumstances' hoping to 'address the interlocking challenges of poverty, inequality and unemployment' (ibid:79). The Jozi@Work forum resembles the UISP in that it is empowering, inclusive and transformative. The last of the three priorities reviewed for this inquiry is Priority 5, which promises to engage and promote an active citizenry based 'on the fundamental principles of good governance [including] accountability, accessibility, transparency, predictability, inclusivity and … participation and responsiveness to people's needs' (CoJ, 2014:87). Priority 5 advocates for citizen engagement, community-based planning 'with a multi-centric model providing the platform for an improved understanding of residents' needs and issues' and an 'active and participative citizenry' by making social compacts with communities (ibid:87). This is last is closely relevant to this study.

In terms of the city overall informal settlement upgrading strategy, the CoJ framed in a PowerPoint of 10 May 2011 that its political mandate is to bring 'dignity to the poorest citizens of the City of Johannesburg by providing decent housing and eradicating informal settlements by 2014, in line with the national goal of a "nation free of slums." At that time, there were about 180 informal settlements in the city, but this figure is estimated to have gone (HDA, 2014). The approach that the CoJ has since adopted is to regularize informal settlements 'while they wait to be formalized in-situ or to be relocated to a formal development' (CoJ, 2011). Regularization is described as a new approach distinguished from formalization and the construction of RDP houses, both approaches opposed to *in situ* upgrading as advocated under the 2004 BNG and the UISP (DoHS,

2009). In this the City acknowledges that '[u]p until quite recently formalization was the only recognised route to follow in improving the living conditions of those living in informal settlements' yet the 'rate of formalization to produce housing units is complex, slow, capital intensive and cannot keep up with demand' (CoJ, 2011). For regularization to be effected, principles like availability of uncontested land and ownership, recognition of the informal settlement by urban planning land use zoning and administratively, the land must be tenurable just like other formalized properties in the city (CoJ, 2011). The CoJ rationale to provide tenure is supported by LandMark (2009) which argues that the City aims to 'bring a level of security to residents within informal settlements other than the formal township establishment processes which are long and tedious, to include all settlements into an appropriate regulatory environment' (Urban LandMark. 2009:2). With reference to the apparent departure by the CoJ from the BNG, Klug and Wawda (2009) argues that the CoJ has not officially embraced official UISP upgrading policy by adopting the regularization approach. Below I turn to case study research design.

4.7 Comparative methodology in case study selection and background

The section focuses on the selection of the case study and selection of the case contexts of Stjwetla, Protea South and Slovo Park. Beyond the qualitative methodology, the case study selection process drew on comparative research methodology to carefully select three informal settlement case studies. The methodology involves the use of wide-ranging strategy that can be situated alongside other research methods like experimental or statistical methods (Lor, 2011). Based on its unique positivist methodological inclination, the comparativist case study selection which is spatially distributed around expansive City of Johannesburg orients to what Ragin (1987) calls "large macrosocial units" that selects fundamentally important, large-scale or representative settlements giving highest details about the complexities in infrastructural governance. In line with Ragin (1987), the comparative case study in CoJ was concerned about identifying similarities and variations among the three settlements in the process providing key understandings about the significance of infrastructure governance arrangements, diverse settlement histories to be able to explain and interpret undergoing processes. As Chapters 5 to 8 below reveal, this cross-settlement revealed significant similarities as well as differences that characterise informal settlement infrastructure provision and governance landscape in the CoJ featuring different infrastructure

sectors, departments and entities within and outside the City. Below I discuss the selection of the CoJ before I look at each of the individual cases within the City.

4.8 The City of Johannesburg as a case study

As mentioned above, this inquiry is a city-wide case of the CoJ with three sub-case studies of Stjwetla, Protea South and Slovo Park informal settlements (Figure 4.1). I chose the case study design because there are city-level governance aspects in the interim electrification that manifest in different ways in different sites. As shown in Figure 4.2, the design allows for an element of comparison in the case selection with the potential to show how infrastructure governance is manifesting in the three cases. I chose the CoJ among other cities in South Africa on the strength of complex ways in which informal settlements are forming in the City falling in the most urbanised province that are subjecting the City to infrastructure provision challenges (HDA, 2014). Another reason pertains to the practice of informal settlement upgrading adopted by the City, which has tended towards formalisation as opposed to the incremental, participative trajectory encapsulated in the UISP (High Court of South Africa, 2016; SERI, 2020; Huchzermeyer, 2021).

The CoJ also has a compelling background, being the most advanced commercial and industrial city in Africa, the largest city in South Africa with the strongest role in the country's economy, a metropolitan city with a long history of local and international migration and internal growth (CoJ, 2012/2016; 2020). The City claims to have 'world-class infrastructure in the fields of … water and power… the city is also one of contrasts - home to both wealthy and poor' (CoJ, 2020:5). However, the intense demand for housing in the CoJ resulting from the primary city status has led to housing and related infrastructure provision challenges stemming mainly from about 211 informal settlements proliferating across the City (HDA, 2014; CoJ, 2020).

The total land coverage of the CoJ is 1645 square kilometres (kms), spatially spreading over 60kms in length and about 30kms wide with 'about 5.5 million people, making it the biggest metro by population size in South Africa' (CoJ, 2020:10). The huge population and informal settlement challenges are placing a strain on infrastructure provision (ibid). Inclining to electrification, the infrastructure provision by corporatised Eskom alongside the CoJ's City Power in the City makes the case study of the governance of Johannesburg's electrification processes complex and worthy of in-depth study. Early in my research, it became evident that the unresolved nature of the

governance relationships between the two electricity entities and how the electrification is relating to other existing basic services in the informal settlements needed research.

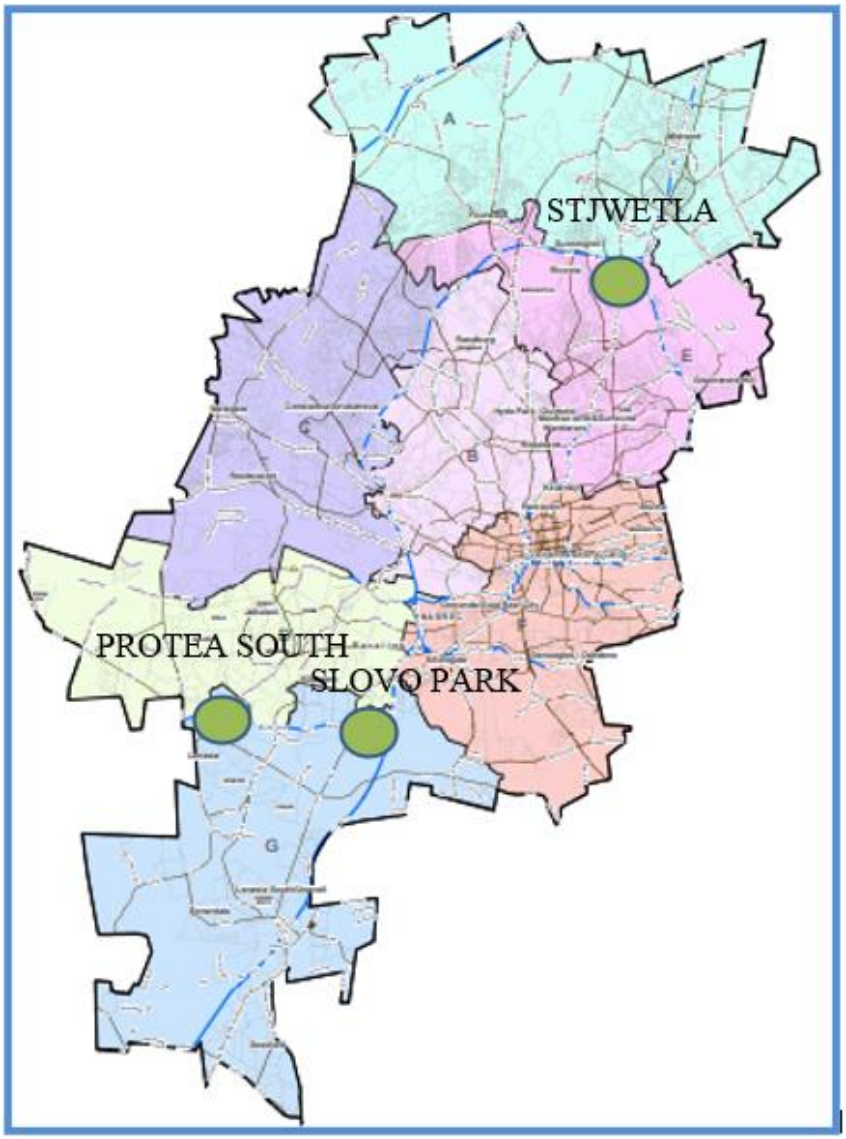


Figure 4. 1**:** Location of Setjwela, Protea South and Slovo Park informal settlements in Region E, D & G respectively, Johannesburg **Source: Adapted from CoJ Regional Map**

4.9 Selection of the three informal settlements cases

Three out of 12 electrified informal settlements were selected as case studies in the City's seven regionalised urban management system (Table 4.2). In this system, the northern regions are classified as generally wealthier than those in the south, the latter 'previously designed as labour sending areas' (CoJ, 2020:8). Stjwetla lies in the north in Region E while Protea South (Region D) and Slovo Park (Region G) are in the south (Figure 4.1). While Region E 'is the most economically

prominent region' anchored by the economic hub Sandton (ibid:9), Stjwetla, which is a few kilometres away, is one of the poorest and densest informal settlements in South Africa (Webster, 2020). The high turnover of households in this TRA, which the city has also remodelled several times, makes the settlement worthy of further investigation. Protea South lies in the southern regions within the main cluster of the densely populated Soweto townships with high concentrations of informal settlements (CoJ, 2020). The last of the three cases, Slovo Park, is also in the southern region near middle-to low-income Eldorado Park and Ennerdale townships. Like Protea South, the CoJ had been unwilling to implement the UISP in Slovo Park, citing geo-technical dolomitic conditions, among other reasons, with the residents finally approaching the judiciary to intervene (High Court of South Africa, 2014; 2016). The intervention of the courts makes the two study cases relevant. Together with Stjwetla, the sites were selected as the most suitable for this study (Table 4.2). In terms of electricity provision, two of the settlements (Stjwetla and Slovo Park) have been electrified by City Power, while Protea South was electrified by Eskom. The governance constellation that includes Eskom reticulating electricity in informal settlements in the CoJ's jurisdiction makes it relevant to include Protea South, making this part of the study a comparison of the governance constellations and implications of two electricity utility companies.

Table 4. 2**:** Case study selection: Stjwetla, Protea South and Slovo Park: **Source: Author based on data obtained from City Power**

Name of Informal Settlement	Estimated No of Households	Municipal Region	Long-term Plan	Electrification Status	Electrification Entity
Stjwetla	5100	E	unknown	2014-2016	City Power. Beneficiaries, Contractor
Slovo Park	3 734	G	Court ordered Upgrading in 2016	2016-2018	City Power, beneficiaries, Contractor
Thembelihle	8000	G	unknown	2014-2016	City Power, Contractor beneficiaries,
Protea South	5000	D	Court ordered upgrading in 2009	Partially electrified in 2013-2015	Eskom, Contractor
Lawley Station	1900	G	unknown	2014-2016	City Power
Mnadini-Tsepisong	750	D	unknown	2013-2014	City Power
Narens Farms	200	G	unknown	2013-2014	City Power
Princess Transit Camp	650	A	unknown	2014-2016	City Power
Northern Farms	120	A	unknown	2014-2016	City Power
Lawley Hopefield	73	D	unknown	2016-2017	City Power
Meriteng	417	F	unknown	2016-2018	City Power
Organic Market	400	F	unknown	2016-2018	City Power

The introductory account that follows for the three informal settlements includes the justification for their selection as case studies for this thesis. Rather than following a systematic and fully

comparable background on each settlement, the account is to some extent driven by the unique features or trajectories of each of the three cases, which motivated my purposive selection of them.

4.10 Rationale for and background on Stjwetla

There are several motivations that inspired me to take on Stjwetla as a study case ahead of other electrified informal settlements areas in the northern regions A, B and C. What partly aroused interest in Stjwetla was the unassisted consolidation process with intense brick-and-mortar housing and commercial building construction having taken place since electrification (Figure 4.2). The double-storey buildings in the settlement typically suggest an established township, yet the area has the temporary status of a TRA. For the CoJ and City Power, the multi-storey auto-construction provides a dilemma in terms of proximity to electrical wiring, some electrical poles even being incorporated into walls (Figure 4.3). This generated questions not only on how electrification is provided and governed but also on governance implications of the electrification. There was a "re-blocking" in 2015, and electrification was applied beyond the area that had been cleared in 2010. The electrification extended *in situ* into the areas that had not been cleared of shacks. The background to Stjwetla outlined below provides further aspects that make the settlement worthy as a case study.



Figure 4.2 Storey brick-and-concrete residential and business structure (left photo) and another storey residential (right photo). **Source: Author, 2020**



Figure 4.3: Left photo showing electrical pole being incorporated in upcoming brick structure and on the right a storey building under construction is very close to electrical lines. **Adopted from Huchzermeyer, 2017**

In terms of background, Stjwetla has a complex history, beginning in the mid-1980s. Since 2010, it has seen state-led relocations and clearances because of its location. It is deemed unsuitable for human habitation as it is constructed on an unsolidified former illegal industrial refuse dump (CoJ, 2014), and parts are prone to flooding by the Jukskei River (Figure 4.4). Many of the higher-lying portions of the settlement are sloped and have informal, eroded stormwater gullies causing localised water damage to homes (Ngove, 2020; Webster, 2020).

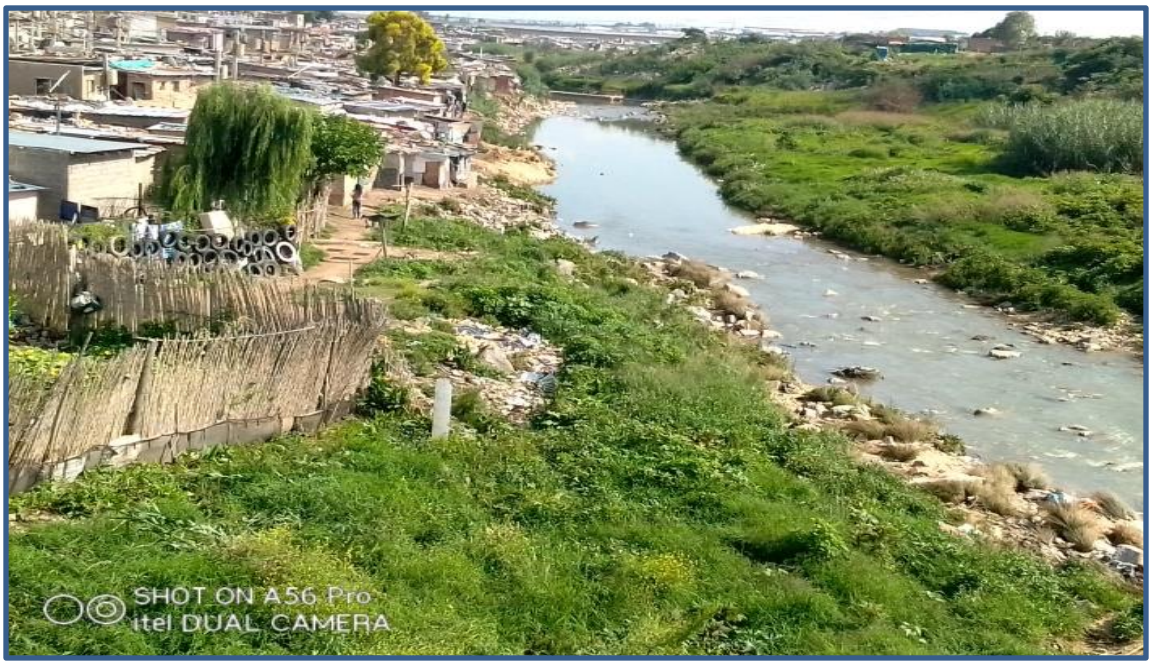


Figure 4.4: Shack dwellings have encroached below the flood line of the Jukskei River in Stjwetla Informal Settlement: **Source: Author, 2020**

The following sequence of aerial imagery as of 2001 presents the historical changes to Stjwetla (Figures 4.5 and 4.6). Stjwetla maintained its original size of about 14 hectares since its establishment in the mid-1980s along the west bank of the Jukskei River up to 2015 when gradual extension occurred with new occupation beyond its northern edge and to the north-west. In 2006, a TRA named Silvertown (because of the state-constructed one-roomed tin shacks under iron sheets roofing material) was established about 100 metres north of Stjwetla, about 0.2 hectares in size. The relocation was from the Wynberg industrial area adjacent to Alexandra. In 2008, shack clearance took place at the southern end of Stejwetla for the construction of the extension of Florence Moposho Street with a new bridge crossing the Jukskei River.

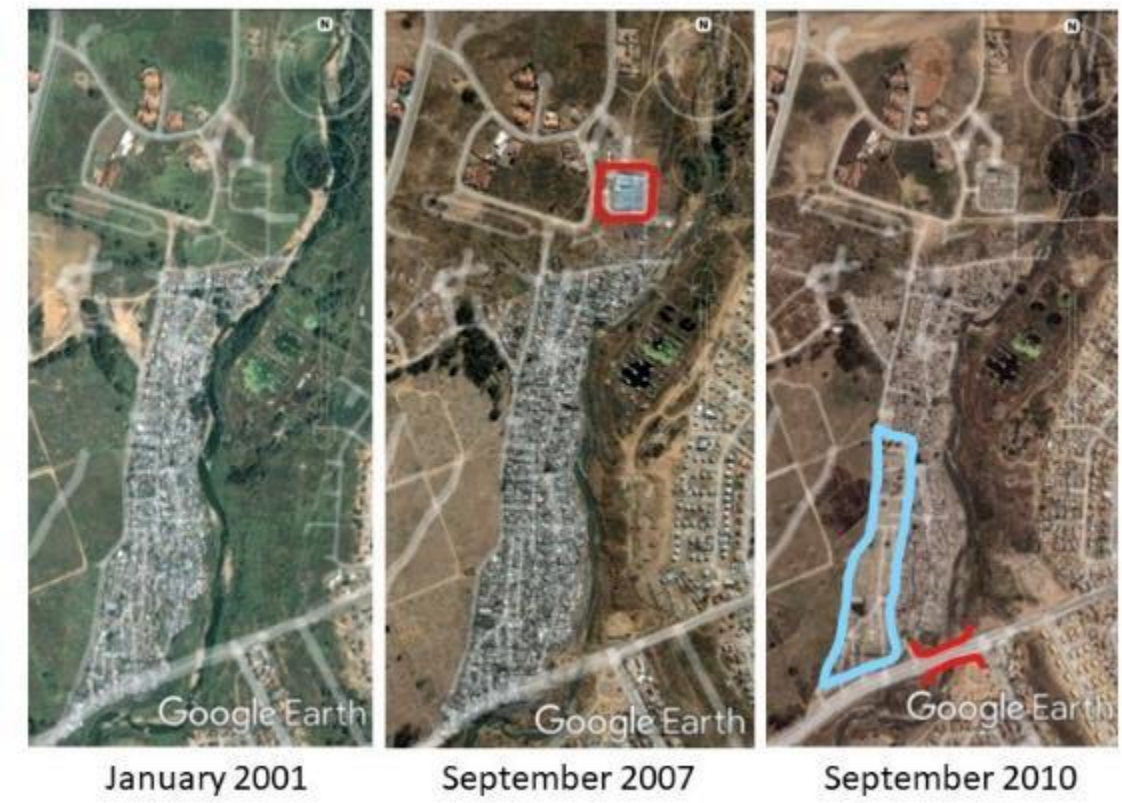


Figure 4. 5: Stjwetla informal settlement 2001-2010 depicting the Silvertown TRA constructed in 2006, road bridge construction in 2008 and clearance for re-blocking in 2010. **Source: adapted from Source: Google earth historical imagery**

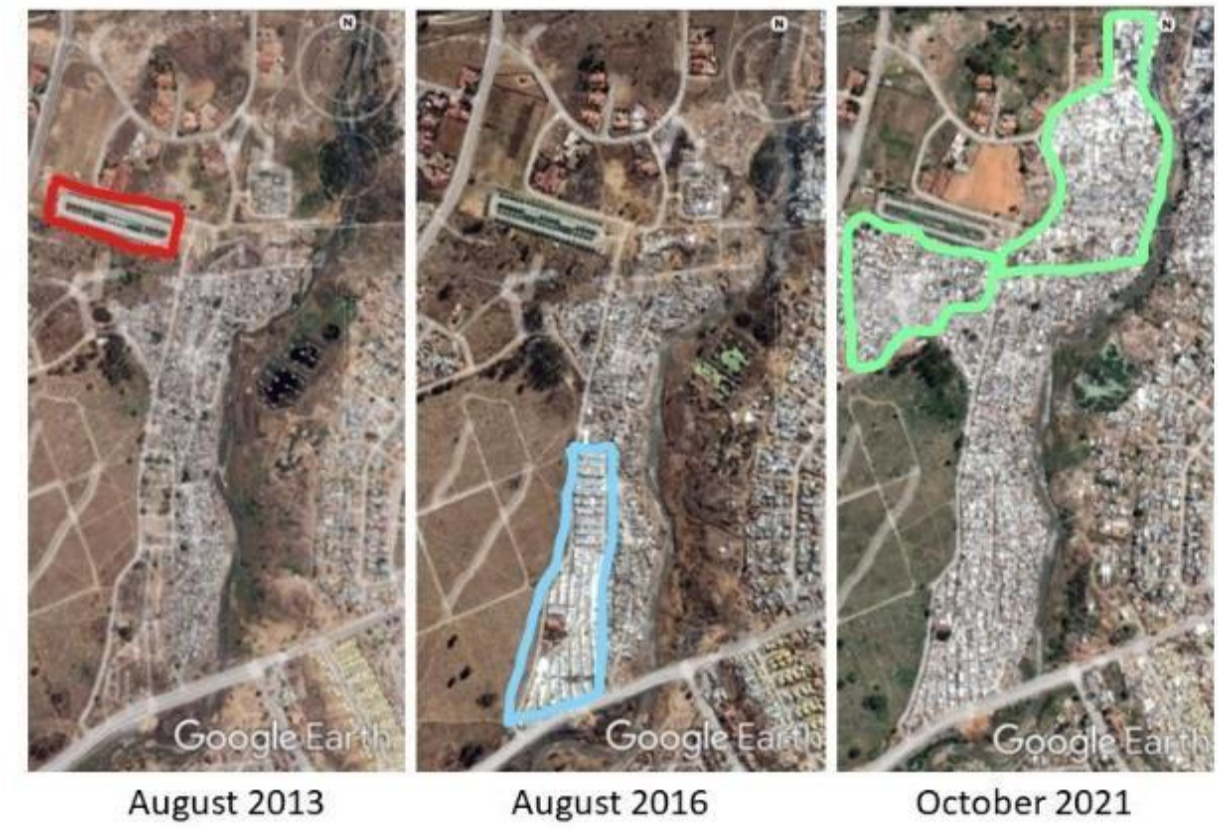


Figure 4. 6: Stjwetla informal settlement 2013-2021 depicting the Gift of the Givers TRA, the state construction of tin shacks with electrification in 2015 and the gradual extension of the settlement thereafter **Source: adapted from Google earth historical imagery**

In 2010, the state initiated extensive clearances from Stjwetla in what relocatees understood as a targeted eradication of the settlement, with removal to various housing schemes that formed part of the Alexandra Renewal Project (ARP) in Greater Alexandra Township, but also with relocations to Soweto and Diepsloot (Mvulane, 2020). The clearance affected approximately five hectares of the 14 hectares of the original Stjwetla (Figure 4.5).

After five years, in 2015, the state, however, changed its plan for the vacant space to reintroduce new state-constructed shacks by re-blocking the area and initiated an electrification programme completed in 2016 (Figure 4.6). The reintroduction of shacks involved a tight grid layout with new tin structures with the electrification extended beyond that grid.

The residents interpreted the new state-led trajectory as a reversal of the initial eradication strategy to formalising the settlement through the UISP. According to a key respondent in the settlement (Stj 4), there had not been reoccupations on the created open space between 2010 and 2015, only for government to reintroduce new shacks along with electrification and new occupants in the space of about two months.

For the purposes of my case study, 2015 was a critical time in the trajectory of the Stjwetla informal settlements, as the formal shack construction on a new layout was accompanied by electrification. The construction did not follow formal planning and township establishment; the process, therefore, was officially termed re-blocking. To the remaining residents, this signalled a commitment to *in situ* upgrading, a confusion to date pervading misunderstandings about settlement upgrading and electrification, which I expand on in Chapter 5. The triggered new confidence has led to brick construction replacing the state-provided shacks as well as shacks in parts of the original settlement. It also appears to have triggered gradual in-migration with the extension of the settlement to the north and north-west. This saw the land portions between Stjwetla and Silvertown occupied and producing a seamless landscape of shacks, almost doubling the original size of Stjwetla to approximately 20 hectares.

In the course of 2020, in response to the COVID-19 pandemic, the NDoHS used existing density datasets to identify Stjwetla as one of the densest informal settlements in South Africa. As a result, it targeted Stjwetla for the controversial COVID-19 de-densification project for overly dense settlements; Stjwetla is believed to have over 5100 households living on the 20-hectare piece of land (Webster, 2020). This appears to be a conservative estimate, converting to a household density of 255 households per hectare. The de-densification project for 1600 households involves the construction of yet another TRA. This is located on a vacant lot in the nearby Marlboro industrial area and constructed of shipping containers (ibid), as shown in Figure 4.7. Investigative journalist Dennis Webster expressed reservations about the NDoHS-initiated de-densification project noting that it was taking puzzling proportions and that '[t]here is, after all, no "de-densification" policy or legislation. Social movements feared it was shorthand for evictions'.

As the Google Earth historical imagery mapping corroborates, the relocations and redevelopments, the 2015 electrification and the 2020 de-densification proposals in Stjwetla appear ad hoc. A key respondent from City Power (CTPow 1) framed Alexandra Township as a politically contested constituency in electoral governance, hence the politics of removals in 2010 and reinstatement of the shacks and electrification in 2015. In his understanding, this was aimed at regaining political legitimacy from the beneficiary electorate against competing political opposition parties and support. Considering this narrative, the confusion and uncertainty that the political decision-making has ostensibly been causing resonate with the Malevolent Hand model of governance discussed in Chapter 2 and pertaining to circumstances of wilful underestimation and unethical and untransparent approaches, even where there is full awareness about what should be done (Flyvbjerg & Sunstein, 2016). Other than the pertinent question about how the electrification process and the resultant infrastructure is governed in the settlement, it is necessary to understand how the CoJ's corporatised utilities are responding to infrastructure provision against the funding demands of the UISP, USDG and the realities of the CoJ administrative and political influences, compounded by the NDoHS' seemingly ill-conceived response to the COVID-19 pandemic. More discussions about these aspects of Stjwetla feature in the empirical research in Chapter 5.



Figure 4. 7: Marlboro Container Housing Units as of 16 December 2020, all work on heavily reinforced slab.
Source: Author's, 2020

Access to Stjwetla was negotiated through a preliminary familiarisation site visit on the 27th of November 2019 in the company of Professor Marie Huchzermeyer and Pheni Ngove, a fellow student at the University of the Witwatersrand, conducting his masters research report on disaster risk mitigation in the settlement (see Ngove, 2020). The site visit and meeting with community leaders based in the Silvertown TRA confirmed the relevance of selecting the settlement as a case study for this thesis.

4.11 Rationale for and background on Protea South

The main reason for choosing Protea South for a case study in the CoJ's southern administrative regions is that it was electrified by the national state-owned power utility Eskom, unlike the other cases of Stjwetla and Slovo Park, which were electrified by the CoJ-owned utility City Power. The complex background of Protea South, which I provide below, also forms part of the motivation for selecting the settlement as a case.

In terms of background, Protea South informal settlement in Ward 10 of the CoJ consists of five portions spread across the area but interspersed by street blocks with formal housing (Figure 4.8).



Figure 4.8: Protea South informal settlement in July 2021 depicting areas that were formally planned and developed with bonded and subsidised housing: **Source: adapted from Google earth historical imagery**

Protea South was formally proclaimed in 1986 and inhabited by households that the apartheid government classified as “coloured” and who were relocated to Eldorado Park in the 1980s as part of the implementation of the notorious Group Areas Act of the apartheid government (Mnisi, 2010). According to Tebid (2006) and Mnisi (2010), the homeless population predominantly of African descent began to settle in the area around 1986. Initially, they occupied the 167 houses on large plots left by relocated families. Shacks began to fill in the spaces between the houses, with the informal settlement structured by the original street layout but not aligning with the underlying cadastre of boundaries of the large plots. An informal electricity supply spanned the settlement.

The chronological aerial images in Figure 4.9 show several changes over the past decades. The images are only of the south-west corner, enlarged to show localised changes. 2001 to 2007 saw gradual densification. In 2007, the CoJ leased adjacent land and constructed a TRA. Those households targeted for relocation, however, mobilised and resisted the move; in 2011, the unused TRA was dismantled (Huchzermeyer, 2011). In 2015, a spatial re-arrangement or re-blocking took place, leading to the construction of roads and electrification. One area on the southwestern edge of the settlement, however, resisted re-blocking as well as electrification, seeking the implementation of the UISP instead.

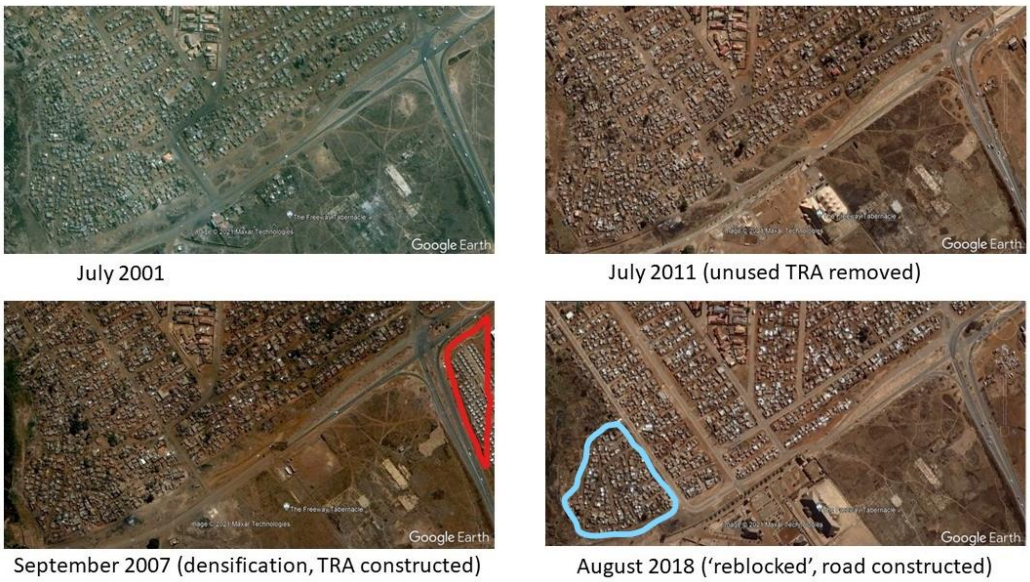


Figure 4.9: Chronology of Protea South informal settlement 2001-2018 depicting densification, temporary un-used TRA (2007-2011), re-blocking and road construction: **Source: adapted from Google earth historical imagery**

One of my main respondents in the community is a long-time resident of Protea South informal settlement, a community leader formerly affiliated to the Landless People's Movement (LPM), and more recently active as a proportional representative councillor for the Democratic Alliance (DA). She played a key role in the community's infrastructure provision endeavours, although these have been marred by political conflict.

In the early post-apartheid years, formal subsidised as well as mortgaged or "bonded" housing developments were elaborated for parts of Protea South. The town planning scheme was approved without geo-technical investigations (Mnisi, 2010). With subsequent planning endeavours revealing dolomitic ground, no further formal development ensued. There are accounts of demolitions of the temporary residential structures and related relocations to several sites, including Doornkop (now called Lufhereng, west of Soweto), Lehae, Protea Glen, the decant camp or TRA in Midway, Unity at Pumpings, Orange Farm and to private land at Jeppestown (see High Court of South Africa, 2009; 2014 & Harrison and Harrison, 2014). Because of this, Harrison and Harrison (2014:306) concluded that 'severe tensions remained with respect to state programmes to relocate…' The inconsistent treatment of some portions as informal, undevelopable or problematic on account of the universal dolomite, when others had been proclaimed and formally developed, forms a central contention to the development of the informal portions. The residents perceive the relocations not only as refusal by authorities to upgrade the informal sections but fragmentation of already vulnerable and fragile social and economic networks (Mnisi, 2010).

Attempts to relocate the informally settled areas of Protea South due to the dolomitic land were resisted by the LPM with its legal support, Maureen Mnisi being instrumental in these efforts, also experiencing repression as a result (Mnisi, 2010). It must be added here that according to Tebid (2006:71), approximately a '¼ of the population [of Protea South] is living on a 1:50 year's flood plain'. This means that these areas, in addition to high-risk dolomitic areas, are not suitable for permanent residential development. The turn by Protea South residents to litigation provides another dimension that led me to include Protea South as a case study in this thesis. From a governance perspective, the question of how judicial intervention is mediating in infrastructure provision is relevant. In seeking justice to the insufficient infrastructure provision and non-implementation of the UISP, the Protea South community led by Maureen Mnisi approached the

High Court of South Africa, which ordered in 2009 that interim infrastructure be provided in line with the National Housing Code (High Court of South Africa, 2009; Mnisi, 2010). Five years later, the community had to take the City to court again for noncompliance with this order. On the 31st of March 2014, the High Court of South Africa issued a court order that compelled the City to implement the 2009 judgement through a case management approach (High Court of South Africa, 2014). Case management involved a High Court judge presiding over the implementation process with the CoJ and representatives of the Protea South communities as members of that committee. According to a human rights respondent in my research, case management methodically enabled the implementation of the 2009 judgement, albeit the CoJ showing inherent technocratic and organisational challenges, as detailed in Chapter 6. One of the important successes of case management was enabling a re-assessment of the dolomitic conditions in line with new standards, SANS 1936 (SABS, 2012), which re-evaluated the gravity of dolomite through a rational geo-technical appraisal and quantification (Hathorn, 2019, personal communication). According to a report made public by the CoJ at a meeting in 2019 with the Protea South community, which my respondent (PS1) attended, the result from the reappraisal indicates that two major zones amounting to 74 hectares are developable for low-income housing, subject to restraints that can be imposed by a layout plan and further testing of a few patches for poorer dolomitic conditions. The third zone with 16 hectares was not found suitable only for social and economic developments, such as commercial, industrial, sports and recreational facilities (ibid). The new findings overtake earlier restrictive geo-technical assessments of 2006, which concluded that it is high risk for low-income residential developments in Protea South (SKR Report, 2012).

What I also found noteworthy about the background of Protea South are the community strategies, albeit in disintegrated forms, adopted for the pursuit of basic infrastructure provision. Because of the superficiality in community engagement by the CoJ, which does not give residents 'proper opportunity of contributing to the identification of an appropriate location and the development of a fair relocation programme' (High Court of South Africa, 2009:35), the community organised protests. This was led by the LPM in 2002 with further protests between 2007 and 2008 as well as in 2013 (Tau, 2013; Harrison & Harrison, 2014). Some of the protests pitted residents against residents, culminating 'in violent clashes between the residents of bonded houses in the area and shack dwellers' (Harrison & Harrison, 2014:306). Mnisi (2010) indicates that the community also strategised against the CoJ by petitioning the Gauteng Provincial Legislature to coerce the CoJ to

provide the infrastructure in line with the 2009 High Court judgement. The judgement instructed the provision of potable communal water within 200 metres reach of each informal dwelling, VIP for each shack, electrical connections to informal dwellings, as well as high mast lighting in key areas to enhance community safety. Mnisi (2010) argued the lack of provision of electricity, for example, had not only resulted in fatal accidents and tragedies related to informal electricity connections but also in community safety compromises, owing to the lack of high-mast lighting in key localities.

A characteristic of the community-level governance in Protea South is the influence of party politics, which has distinctively and consistently divided the Protea South leadership, in particular pitting the opposition DA Party grouping against the ward committee and the ANC ward councillor. Unlike in Stjwetla, Protea South portrays intense local leadership power dynamics and tug-of-war community divisions in fragmenting and divisive ways (PS 1; 2; 3). A one-day *Misty River* workshop to which I was invited by CoJ officials (CoJ RG1 and 2) on the 18th of December 2020 aimed to map out mutually agreeable strategies to quell the community leaders' differences and polarisations but seemingly to no avail. This resonates with Bénit-Gbaffou (2008) and Katsaura's (2012) problematisation of community governance relationships and practices. In relation to infrastructure provision, I came to the initial conclusion that the intersection of local-level power structures of local government, namely councillor and ward committee, versus local opposition party politics in Protea South is retrogressive.

The fact that the formally proclaimed parts of Protea South, with bonded and subsidised housing, were electrified in 2013-2014 but at the time not the informal sections, increased the formal-informal tensions, although most of the informal sections were electrified later. Yet when the electrification took place in 2018, some environmentally marginal portions, namely those below the flood line mentioned above, as well as high-risk dolomitic areas, were included. As in the case of Stjwetla, though to a lesser intensity, the electrification has signalled an undertaking by the City to upgrade the settlement on a permanent basis, with households investing in brick-and-mortar structures.

In terms of access negotiation to Protea South, Professor Marie Huchzermeyer put me in touch with Maureen Mnisi whom she had known for almost two decades. Maureen Mnisi, in turn, introduced me to other relevant community leaders according to my request to her. However, she could not assist with contacts for those in opposition to her leadership, such as the councillor and the ANC-affiliated leadership. However, I managed to navigate my way through contacts in the CoJ to access the councillor and one ward committee member.

4.12 Rationale for and background on Slovo Park

My initial interest in selecting Slovo Park informal settlement out of a dozen other electrified settlements in the CoJ arose from a field trip to the settlement in 2013 as part of the Housing Seminar course in the Master of the Built Environment format of the University of the Witwatersrand. As an urban planner by training and with practice experience, the settlement's marked orderliness and distinct alignment of stands and roads showed meticulous bottom-up urban planning (see Schmid, 2021) (see Figures 4.10-4.11). At that time, the settlement was connected to electricity through so-called 'people's connections', officially termed 'illegal' or *izinyoka nyoka* connections. When I learnt that Slovo Park had been officially electrified in 2018, I became curious to know what made the electrification breakthrough possible and whether it was tied into an *in situ* upgrading trajectory under the UISP, as at face value, it was already an exceptionally well-planned settlement reflecting 'community-led organizing and bottom-up agency' (Schmid, 2021:1).

Slovo Park is located between the Eldorado Park township (the N12 Highway, also known as Moroko Bypass, forming the border) and the Nancefield industrial area (Figure 4.10). The settlement occupies 47 hectares and is arranged in a clear grid. Its north-eastern corner is taken up by a wetland area. In 2007, the community arranged an internal relocation, sacrificing its soccer field, to move shacks out of the area that was periodically subject to flooding (Figure 4.11). Slovo Park has approximately 3734 households translating to a population between 10 000 and 15 000 (SERI, 2020). At occupation, the settlement was informally laid out with 1076 stands. This layout has been maintained to date. However, due to gradual densification, there are two or more households per stand, either housing relatives or tenants.



Fig. 4.10: Slovo Park in its surrounding **Source: Author-adapted Google Earth Imagery, 2021**

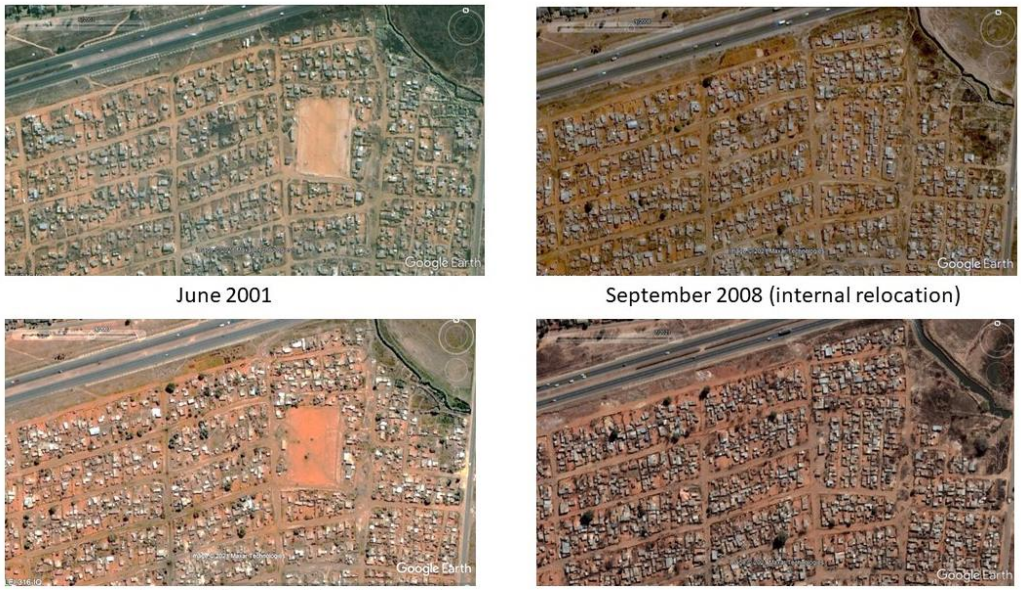


Figure 4.11: The north-east corner of Slovo Park showing gradual densification and the internal relocation from the flood-prone area to the erstwhile soccer field. **Source: Author-adapted Google Earth Imagery, 2001-2021**

The largest portion of the occupied land is owned by the Gauteng Provincial Government. However, the eastern side of the settlement consists of smaller portions that are privately owned (ibid). For the purposes of upgrading, the community leadership has insisted that the settlement

consists not only of the state-owned portion but also the occupation on the privately-owned erven. A high voltage power line, as well as a water servitude, runs in a north-south direction through the settlement. In terms of basic services, potable water access on each stand was arranged in 2007 by residents themselves with assistance from the Informal Settlement Network, which is affiliated with the NGO SDI. This involved extending the water reticulation from the communal water tap system that the municipality had installed (ibid). The municipality has provided interim sanitation in the form of 1076 VIP toilets in addition to 34 flush toilets. The VIPs are desludged on a monthly basis (ibid), as shown in Figure 4.12.



Figure 4. 12: A contracted 'honey sucker' desludging a VIP toilet system. **Source: Author's 2020**

What also made Slovo Park a compelling case study for this thesis is its exceptional background that shows concerted struggles in the various stages of engagement with many levels of the state and concomitantly carving out collaborations with relevant stakeholders for infrastructure provision, that aligning with '[p]rogressive community-led' and 'actor-focused perspectives on change' (Schmid, 2021: 2 & 3). This community approach arose to counteract the characteristic indecisive long wait for unfulfilled housing and infrastructure upgrading by state officials since 1994 (SERI, 2020). Yet, as fully discussed in Chapter seven, Slovo Park case offers deep insights and complexities in the 'bottom-up transformative action' (see Schmid, 2021:2). Table 4.3 below shows the chronology of events in relation to Slovo Park. The High Court of South Africa (2016:4) judgement raises concern about the repeated promises made to the settlement:

> 'For over 20 years officials at all levels of the State have advised the residents of Slovo Park that they would receive formal housing, planning schemes have been developed, environmental impact assessments have been done and steps have been taken to declare townships … and officials

> representing the fifth respondent [Member of the Executive Council for Human Settlements], and the MEC, have visited Slovo Park to announce the imminent provision of housing.'

What the empty promises show is the misalignment and gap between the UISP and the actual policy practice, which produces minimal or no implementation of informal settlements upgrading (Mvelase, 2020). The appointment of several contractors and consultants that consume resources have also not contributed to the improvement of Slovo Park, nor do the outputs of those processes align with UISP principles (SERI, 2020; Huchzermeyer, 2021). Part of the commissioned professional work has involved undertaking geo-technical investigations, environmental impact assessments (EIAs) and general feasibility studies, several carried out between 2004 and 2010 but not translating to the implementation of settlement upgrading (SERI, 2020). Despite these setbacks and polarisation within the state bureaucracy (Mvelase, 2020), the resilient Slovo Park Community Development Forum (SPCDF) has since 2017 pursued interactive multi-level deliberations, collaborations and inter-organisational networks (as conceptualised by Jaglin, 2014; Rhodes, 1996), becoming a promising game-changer for the CoJ's informal settlement trajectory. The SPCDF co-governance pedagogies were discussed in Just Spatial Imaginaries Workshop held on the 15-16th of August 2019 organised by the Centre for Urbanism and Built Environment Studies (CUBES) in the School of Architecture and Planning at the University of the Witwatersrand. All stakeholders in the Slovo Park process at the time participated in a session focussing on the settlement upgrading process. The workshop adjudged Slovo Park as a turning point in realising just spatial imaginaries in Johannesburg's informal settlements.

As illustrated in Table 4.3, the SPDCF litigated against the CoJ's refusal to upgrade Slovo Park in line with the guidelines of the UISP (the City had chosen a relocation approach), in what became the Melani judgement, issued in April 2016. The judiciary instructed the CoJ to meaningfully engage the SPCDF and stakeholders and to apply to the provincial government for funding under the UISP within three months (High Court of South Africa, 2016, Case No: 02752/2014)

Table 4.3: Summarised table of key events and timelines in Slovo Park settlement upgrading from 1994-2018: Source: author's own construction with insights from SERI (2020) and Huchzermeyer (2021)

Year	Unfulfilled Promises of Housing	Contractor Appointments	Geo-tech Feasibilities studies/EIA	SPDCF /Protests	Collaborations /Negotiations	Gauteng South High Court	Task Team	Electrification
1994	Residents promised a housing project							
2001	The CoJ promises construction of 950 houses in Sept							
2003	NDoH & GDLGH promises 950 houses							
2004 to 2005	The Premier & MMC for Housing: house construction to start in September	iNtatakusa appointed to conduct a feasibility study	The feasibility report recommends 1150 stands only					
2006		Arcus Gibb consultant replaces iNtakakusa						
2007		Nemai appointed to undertake EIA	Geotech studies conducted	The SPCDF formed				
2009 to 2010	City plans to provide 575 stands, rest 2500 households to be relocated	Nemai submits EIA to GDARD. Recommends 629 to 663 stands only		Residents protest for housing	SPCDF works with ISN on a water reticulation			
2012					City-SPDCF meetings			
2013 to 2014					SPCDF engages the CoJ in 2013	2014 Court application		
2016 to 2018		Urban Dynamics planning consultants prepare the plan in 2017, rejected by SPCDF, Technical Team				Melani Judgement in 2016	Task Team formed in 2017	Electrification by City Power in 2018

The City accordingly convened a collaborative multi-disciplinary Task Team 'to develop a compliant UISP application in a participatory manner' (Huchzermeyer, 2021:46). The Task Team includes the CoJ's Housing Department and the City's Legal and Contracts Department, as well as the City's planning consultants appointed to produce a layout plan for Slovo Park settlement (ibid). The CoJ also appointed a UISP champion from the City's Housing Department, marking a new level of seriousness about informal settlement upgrading that resonates with the use of key persons and intermediaries in polycentric governance (Emelianoff, 2014; Jordus-Lier et al., 2018; Ziervogel, 2019). The official appointment of a UISP champion also makes Slovo Park a relevant case. While the idea has begun with Slovo Park as a pilot case, it is understood that the champion is relevant for other settlements where the City authorities are exploring interactive possibilities in line with Melani Judgement. Other members of the Task Team are the SPCDF and its legal and technical or academic support team of SERI, CUBES and 1to1 (SERI, 2020).

The outlined challenges and milestones presented in Table 4.3 suggest that Slovo Park is attempting to pioneer a community-driven approach to infrastructure governance in informal settlements, aligned with the UISP and in accordance with the Melani judgement. The resilience of the SPCDF leadership and its readiness to adopt and apply a partnership-based participative pedagogy are in tandem with principles of the UISP in the 2009 National Housing Code, though seldom interpreted in that way. Besides the above background, the Slovo Park community, like Stjwetla and, to some extent, Protea South, is constructing permanent structures in brick and cement, albeit without express consent from CoJ (Figure 4.13); this dimension also meriting this inquiry. In Slovo Park, the level of investment is suggestive of the fact that some of the longstanding households have managed to establish themselves economically through their foothold in this settlement.



Figure 4.13: A newly constructed house in Slovo Park (left photo) and a double-storey residential building under construction (right photo): **Source: Author, 2020**

In terms of access negotiation to Slovo Park, my introduction to two of the SPCDF leaders was through Professor Marie Huchzermeyer. I was received warmly, and my many questions were entertained with patience. The two leaders enabled me to contact other leaders, to move around the settlement freely and to take photographs with their assistance.

4.13 Conclusion

This chapter has presented and justified a qualitative inductive research methodology comprising the multi-staged and sequenced research methods and activities used to understand relationships in infrastructure provision and upgrading in informal settlements. I used the case study design that focuses on the CoJ with three sub-cases at the level of informal settlements. The City was selected ahead of other metropolitan cities in South Africa owing to its intense and complex informal settlements and particular settlement upgrading trajectory. The chapter deliberates on the case instruments used in the data collection, as well as the approach to analysis, on ethical considerations, specific limitations in the research and how I navigated challenges I encountered. The chapter also introduced the three informal settlement sub-cases in the City, namely Stjwetla, Protea South and Slovo Park and explained how they were selected for the research into electrification provision and its governance. Reasons for the inclusion of these cases had to do with the disjuncture between the UISP/electrification policy and practice, the role of state officials and or politicians in non-implementation of incremental upgrading, competitive involvement of both City Power and Eskom in the electrification in CoJ jurisdiction, infrastructure governance conundrums, resort to judicialisation by some communities and emerging hope in the UISP

through stakeholder engagement. In the main, this chapter has provided a focused overview on each of the three case sites with respect to the settlement's backgrounds and spatial settings, as well as institutional arrangement in the infrastructure provision and governance. This has set an important connection to the findings described in Chapters 5 to 8, where the CoJ's adopted upgrading trajectory that has been at odds with the UISP is informing particular governance constellations. Yet it is necessary to see how the intervention of the judiciary in infrastructure provision is reinforcing collaborative governance arrangements, including the CoJ's appointment of a UISP champion in that regard. Also, the purposive inclusion of a study case that involves an Eskom-supplied settlement implies important governance comparisons between Eskom and City Power, which is among the governance elements I take forward in the following four chapters.

CHAPTER FIVE

5.0 Stjwetla: interim electrification caught up in governance dilemmas and political promises for housing

5.1 Introduction

Stjwetla occupies an ambiguous status in which the state has said that permanent development is not possible given that it is prone to flooding and wants to relocate the settlement, yet a 2015/16 interim electrification project connotes permanence for some actors (DOE, City Power and residents). Quotes from residents suggest that they feel the state is indecisive about informal settlement upgrading as sanitation and water, in the form of portable chemical toilets and communal standpipes respectively, are explicitly temporary unlike the intensive-investment grid electrification. Efforts to relocate the settlement got under way but these were contradicted later when people re-settled the cleared area with the blessing of some politicians who were trying to retain political support. In 2020, a relocation or de-densification plan of the settlement based on the emergency of COVID, to neighbouring temporary Marlboro shipping containers housing was motivated albeit proceeding very slowly. Officials and residents perceived the TRA project as meaningless and not well-managed financially. From the vantage point of community leaders and some actors, state provision is at odds with what the community wants and participatory processes insufficient or absent. While the process of electrification has brought about improvements in the quality of life in Stjwetla through formal provision to 'stand' numbered dwellings, informal consumptions by the densifying settlement population is causing supply system overload and long-term outages. Meanwhile, houses are being made into permanent brick structures as residents believe the settlement is permanent, yet the councillor, the CoJ and more generally the DoHS are adamant that it is not. Energy sector officials differ with the impermanent position, arguing electrification means permanency, this entangling Stjwetla in complex and discordant governance of interim infrastructure.

5.2 The manifestation of infrastructure provision: electricity, water and sanitation

This section looks at how interim infrastructure governance is manifesting in Stjwetla in responding to the research question: How infrastructure is provided in informal settlements in

South Africa? The section also responds to what arrangements exist for the governance of infrastructure provision in the informal settlements in South African cities and how the interventions are mediating in the infrastructure challenges. The section reveals that water and sanitation infrastructure and its management are inadequate and inappropriate. The governance mechanisms of visible services delivery meetings and municipal policing, albeit operating under the control of the political hand, are ineffective to manage new shack formation, reoccupations of open spaces and the informal connections to infrastructure provisions. What I refer to as "mess governance" was prompted by typical "malevolent governance" when government reversed the original settlement eradication strategy for Stjwetla in 2010, as discussed in Chapter 4. Moreover, the unclear electrification programme, which accompanied the re-blocking and resettling of the area with new households, concretised misperceptions about a permanent Stjwetla. Below is an illustrative schema showing the infrastructure and related development trajectory in the settlement.

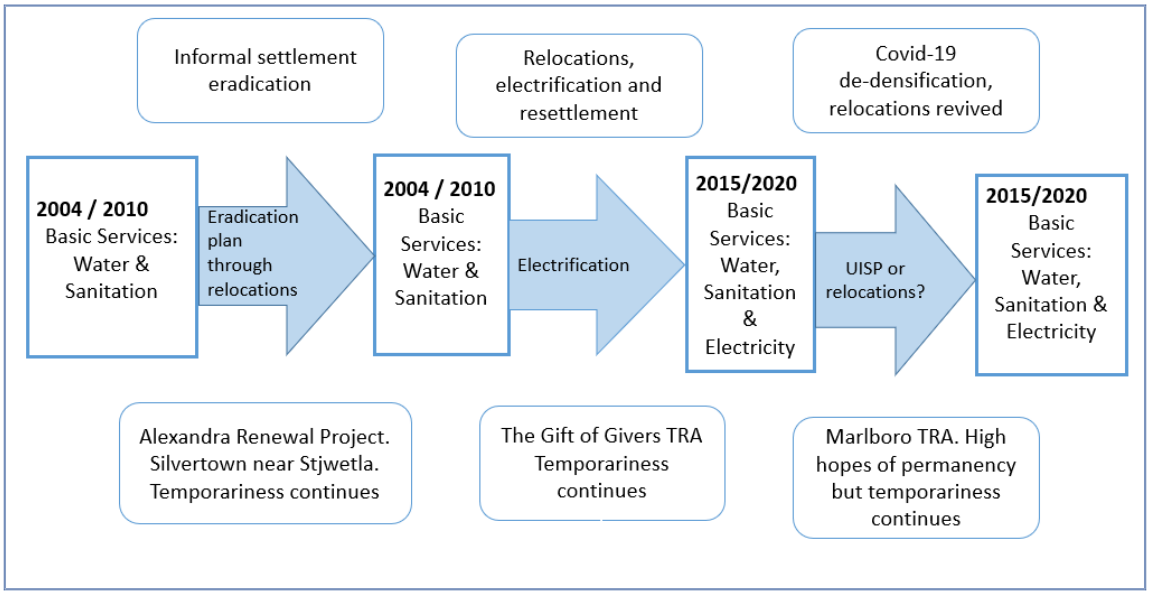


Figure 5. 1: Summary of the basic infrastructure trajectory in Stjwetla: **Author's own construction 2021**

5.2.1 The CoJ's de facto urban management policy and how this is manifesting

The grid electrification process, which CoJ undertook in Stjwetla through its utility company City Power in 2015 and 2016, involved a new layout with stand numbering on the site that had stood vacant for five years (Stj 4). City Power refers to this as re-blocking, although the term generally

refers to the re-arrangement of shacks in an existing settlement (National Treasury, 2016; Basson, 2019). The new layout allowed for electricity reticulation but did not envisage sewer and water reticulation. Essentially it was the layout design applied to TRAs, in which water and sanitation remain communal (Figures 5.2 & 5.3).



Figure 5.2: The original tin structures provided in the 're-blocked' Stjwetla by the municipality and connected to the grid electrification and basic storm water drainage as part of the infrastructure provision: **Adopted from Huchzermeyer, 2017**



Figure 5.3: Individual shack electricity connections in Stjwetla: **Adopted from Huchzermeyer, 2017**

What the empirical findings show is electrification strengthened the connotation of permanency. When asked what they think about the future of the settlement, the infrastructure portfolio community leader (Stj 3) confidently answered that

> ‘Stjwetla is formalised, there is water and electricity. But it may only require decongestion. It [City Power] never gave a timeframe for electrification, meaning it was never indicated that the electricity reticulation would be dismantled at a particular point in time. It is therefore a deemed permanent infrastructure.’

On further probing whether the community had as yet been appraised about the settlement upgrading status, the leader realised that there was nothing concrete about *in situ* upgrading except their mere speculative conclusions of permanence. What then also caused the leadership to begin to contemplate the possibility that Stjwetla was not as yet proclaimed a permanent settlement is the CoJ had rejected the community’s request for water-borne sanitation and instead continued to provide only chemical toilets. Stj 3 had assumed that the continuation of the chemical toilet arrangement was a corrupt deal between Joburg Water and the contractor Supreme Toilet Company. The respondent became very disturbed and curious when made aware about the temporariness of Stjwetla and posed the following questions to me:

> ‘There were several households who were moved out of Stjwetla to the Greater Alexandra to allow for access road servitudes and electricity wayleaves during the 2015 electrification and related re-blocking processes. Some were moved to the southern end of Stjwetla where there was an open space. Yet some people have come back or were brought back by government to reoccupy those spaces. My question is: is Stjwetla temporary or permanent? Could that mean Stjwetla is temporary? No. By paying no attention to the reoccupations, this is a deemed confirmation by the Department of Housing [CoJ] that Stjwetla is permanent.’ (Stj 3)

On further examination of the revealing possibility that Stjwetla can be relocated irrespective of the heavy state investment especially in electrification and the triggered brick-and-mortar construction taking place, the respondent lamented the logic applied by the CoJ and government of South Africa generally:

> ‘I see now. The maintenance of ‘transit camp’ mentality even for settlements that established many years ago for many informal settlements like Silvertown, Mamabulo and Vezinyawu in our Ward (109) is a clear testimony that the South African Government is not decisive about informal settlement upgrading. The costly 194-million-dollar [multi-]storey shipping container housing units in Marlboro being constructed by the CoJ also temporary initiative shows that the city is stuck on temporariness’. (Stj 3).

In terms of water provision, communal standpipes at sparsely designated points provide water around Stjwetla. According to JWFR, a respondent from Joburg Water (JW), a CoJ municipal-

owned entity whose mandate is to provide both water and sanitation to the informal settlement as well as to the entire seven regions of the CoJ, basic water service is provided for free. Sanitation in Stjwetla is provided in the form of desludgeable chemical toilets where one toilet is designed to serve between five to seven households and desludged three times a week (ibid). Figure 5.4 depicts the water-sanitation infrastructure in the settlement.



Figure 5.4: Communal water standpipe (left photo), lockable chemical toilets located on the far western end outside the built area along the main access road into Stjwetla (right photo). **Source: Author, 2021**

The following excerpts from respondent Stj 1 reveal the water and sanitation infrastructure realties in Silvertown and Stjwetla generally.

> 'We started with six water tapes but only three are functional in Silvertown. I sometimes personally sort out broken taps as the CoJ does not do so frequently. Each of our portfolio works with CoJ but it's the residents who do the repairs as the Municipality doesn't do it reliably.'

> 'There is no sewerage here. We use, I can say, the bucket system [chemical toilets], where sewer is collected like once a week. The toilets are always full. I can't say how many families to one toilet as there are people who have vandalised the lock system of the toilets and as many people including those that are continually invading the settlement get to use the toilets.'

Supporting respondent Stj 1, another community leader commented with respect to water provision that the situation is dire with 'one communal water tap for 1000 people. [This results in] innovative attempts to bring the services to individual homes, [which] is done by very few financially capable residents' (Stj 3). On sanitation the respondent also elaborated as '[w]e are using lockable bucket or chemical toilet system … although the locking system has been vandalised and the toilets are very dirt[y] and irregularly emptied, therefore very unpleasant to use' (Stj 3). What I noticed about

the toilets besides disproportionate population/toilets ratio, is the toilets are inappropriately located on one far end of the settlement which disadvantages most residents especially those whose homes are located towards the Jukskei River. These households cannot easily access the facilities during the night. This applies in particular the elderly and disabled groups. As shown in figure 5.5, some residents closer to the Jukskei River are discharging sewage effluent directly into the river leading to environmental hazards to the river as Webster (2020) concluded.



Figure 5.5. An 'off-site' sewerage effluent disposal into Jukskei through a white PVC pipe. **Source: Author, 2021.**

Another challenge about consumption of the water and sanitation facilities is increasing population in the settlement as discussed in Chapter 4, ostensibly induced by the raised hopes of settlement formalisation. When asked how Joburg Water manages the consumption of the services, the response pointed to the bigger infrastructure governance by the CoJ DoH administrative responsibility saying:

> 'Joburg Water does not manage that at all. We can't do anything about [that]. It is the responsibility of the DoH in the CoJ as we don't have the powers to manage it. What we do is that we only get in

> the settlement to service the initial target as given by the DoH, for example, only 200. As for the influx, DoH will have to manage it. Until DoH recognizes the extras and contract us again to provide the services for them, we don't do anything.' (JWFR)

When asked why Joburg Water is not extending services to individual shack dwellings just like the electricity, the response was that that can only happen if the CoJ Department of Housing asks the utility to do so, usually after finalisation of settlement categorisation and township establishment process. As HDA (2014) and the NUSP (2015) concluded, informal settlement categorisation or RAC is in practice a lengthy and often indeterminate process, partly accounting for the perpetual water and sanitation infrastructure challenges in Stjwetla and informal settlements generally. The position of Joburg Water above contradicts the information supplied to me by a senior housing official in the CoJ (CoJHS 3), namely that as many as 155 out of 211 informal settlements had their RAC concluded. What that meant is Stjwetla should have its ultimate destination known and published, which would hopefully pave the way for infrastructure investments in line with Joburg Water standards. Unlike with electricity supply, Joburg Water's communal supply mode of services delivery explains why the entity cannot levy for the provision of the basic services making the two provisions wholly state-sponsored and free of charge for the residents. While the provisions are understood within the current context of poverty of the residents, the historical context, and constitutional rights (RSA, 1996), this position may be sustainable, not cost-effective, and without any means of control over use and abuse of the services in the settlement and informal settlements generally. Without advocating for premium charge, the wholly free for all governance approach for water-sanitation infrastructure does not inculcate a sense of ownership and responsibility on the residents. That may explain why there is rampant abuse and vandalism to the infrastructure and the stalemate with the service provider. The response from JWFR was:

> 'Joburg Water does not charge the communities in informal settlements, but their usage and bills fall under unaccounted water bill, just like the water that gets lost and can't be accounted for. Remember we can't bill individuals on the common good. It is just like water that is lost or stolen.'

5.2.2 "Visible Services Delivery Meetings" and municipal policing as governance mechanisms but without political support

According to the IDP review in 2014-2015, the visible service delivery meetings are a form of CoJ-led arrangement meetings to manage the settlements. The administration of the population densification through incremental land occupations and re-occupation of spaces once left for road and electricity servitudes (some of these created during the electrification process of 2015 to 2016) present informal consumption challenges in the governance of infrastructure provision in Stjwetla. As discussed in Chapter 4, there are accusations concerning the cause of the occupation of the servitudes with shacks, local community leaders blaming the state for bringing in new people and constructing new shacks on spaces that had been cleared of shacks in 2010. The sense was that this opened the gateways to reoccupations, fuelling disorder and setting a bad precedent. One community leader commented as follows:

> 'What is disturbing is, at one point in time, people were successfully moved from Stjwetla to the ARP project, but government allowed new entrants back into Stjwetla and new shacks have been built. We were taken aback when after waiting for government to complete the relocation from Stjwetla, government came back with shacks to reside new households in what became [a] "from shack to shack" approach, these new entrants, some coming from other transit camps.' (Stj 4).

Another community leader cited the state ambivalence with regard to the settlement upgrading, such that invasions are inevitable as the Stjwetla has been in existence for a very long time (Stj 2). But Stj 4 insisted government is to blame for the densification, saying:

> 'I don't blame the people who are illegally coming to occupy every space in Stjwetla resulting in increasing shacks. Government has the blame. It is now very long time since people were settled at Stjwetla. I have my first daughter born in year 2000 who has now passed Matric, and I can't stay any longer with her in the one shack.'

One state official confirmed that there is a great challenge in the governance of reoccupations in Stjwetla. Asked how inter-organisational networking was faring in addressing the challenge, the official gloomily replied that there is little that can be done to salvage the situation:

> 'We have political and administrative sides to the issue of reoccupations in Stjwetla. The political dimension pertains to government in the form of the ruling party not wanting to lose votes to an emerging opposition political party. The reconstruction of shacks and electrification was done unsystematically largely to shed off the political competition. Alexandra and Soweto Townships

> are highly contested constituencies, which the ruling government cannot afford to lose. There were threats from the voters, and the government responded by facilitating abrupt reoccupations.' (CTPow 1).

The above excerpt about political intervention in infrastructure governance is useful to explain the reintroduction of shacks together with the re-blocking and electrification in Stjwetla. The dimensions of arbitrariness expressed in the infrastructure investment, the uncritical and reductionist approach to infrastructure planning, which is unprofessional and seemingly deceitful closely resonates with the Hiding Hand governance framework advanced by Hirschman (1967). As Flyvbjerg and Sunstein (2016) argue, the "benevolence" of the political indulgence leads to malevolent governance dimensions involving deliberate task complexity underestimation and unethical or corrupt tendencies. The administrative governance in Stjwetla, often under the control of and submitting to the more powerful political governance, implements infrastructure governance as:

> 'Administratively, we have Visible Services Delivery Meetings where the CoJ administration engages with the political stakeholders in Region E, coordinated by the Regional Director. Yet if we are to be honest about the situation, settlement management is a difficult task, we do not want to lie about it as some of the people relocated and allocated houses somewhere are finding their way back again to Stjwetla. They are reoccupying the servitudes … They cannot be given houses anymore nor be relocated anywhere as they have already benefitted.' (CTPow 1).

When asked what mechanisms are in place to prevent land occupation or reoccupation apart from demolishing newly erected, unauthorised shacks, the ward councillor answered: 'It's only demolishing; no mechanisms are put in place at all. You know, in my ward, there is frustration because the JMPD also goes only to demolish only and that only. No mechanism at all' (Stj Cllr). Some respondents blamed the Gauteng Provincial Department of Human Settlement for land invasion in the CoJ. The provincial department official, GauProv, however, refuted the claims arguing that it is entirely the responsibility of the local government sphere and its structures to manage development control matters. This provincial position was echoed by the NUSP coordinator, who put the blame on an inappropriate land strategy by the CoJ to address the land invasions. The coordinator encouraged metropolitan municipalities

> 'to develop [their] own land management strategies. Yet what they do is to appoint RED ANTS, an anti-invasion unit invoking a 'Scop and Donder' philosophy that primarily uses force to evict

> land occupiers. I suggest an overarching strategy that is all-encompassing, engaging, identifying potential land in advance, and assessing how people are likely to move from this area to another and outwit them' (NUSPOFF).

The foregoing discussions portray the administrative and political challenge in the governance of infrastructure in Stjwetla. The rhetoric question posed by residents about the temporariness or permanency of Stjwetla implied that interactive governance between the state and the residents is dysfunctional, leaving the residents to guess about the future of the settlement. A related administrative/political approach to the COVID-19 induced settlement de-densification discussed below also shows that co-governance is in practice minimal if at all practised in infrastructure provision.

5.2.3 Experiences and understandings of the Marlboro TRA as a lens into the governance conundrum underlying and influencing Stjwetla

Basic infrastructure provision in informal settlements depends on relationships across a variety of government entities that spanned not only the municipality but also other spheres of government. This section discusses my interview responses to questions about the development of the Marlboro TRA that was underway at the time of my interviewing in 2020. Although this is not directly related to basic infrastructure in Stjwetla, the TRA trajectory in the way Stjwetla has been handled means that experiences and understandings of the current TRA construction reveal the governance reality that the destiny of Stjwetla is caught up in.

At the municipal level, responsibility for basic infrastructure in Stjwetla spans different Departments of Housing and EISD (CoJ, 2014). The regional office (Region E) locally manages the settlement. The municipal infrastructure department was not responsible for any developments in Stjwetla as it is not part of the sustainable cluster that is concerned about infrastructure provision. The municipal utility companies for electricity and for water and sanitation provide the services accordingly. Roles in relation to informal settlement upgrading or implementation of the UISP, in turn, lie with the DoH and EISD. The responsibility for coordination lies with the DoH (CoJ EXD). My interviews with a senior housing official in the CoJ revealed lapses in coordination at the municipal level. The disjuncture appears to be caused by a lack of adequate macro-meso

level consultation, which would involve, for instance, the CoJ at higher levels sideling the regional office. In this lacuna, a form of top-down governance had established itself, manifesting in the senior CoJ housing official for Region E (CoJRG3). As a result, there is frustration on the part of CoJRG3 over the administration of Stjwetla and other informal settlements in Alexandra Township. As mentioned, the directive by the then Minister of Human Settlements, Water and Sanitation in 2020 to relocate 1600 households from Stjwetla into a TRA as a COVID-19 response to de-densify informal settlements led to what was intended to be a rapid construction initiative in the form of the Marlboro shipping container housing. However, in the view of a senior CoJ housing (CoJHS 3), this turned out to be slow and losing its emergency focus. The official also voiced a sense of powerlessness in relation to the process, which he felt was meaningless:

> 'You know, eish, some of these things. Who must I advise, seeing my inferior position in government? When you do something and you realise it is not working, like the relocations [from Stjwetla] to Vezinyawo, which is again a TRA, why should we continue to do it? It is not working. How many people have been taken from the TRA to permanent housing? Maybe 2%. This TRA approach has failed. As an official, I do not agree with that. I am disappointed about the whole plan. I am also frustrated as I sit here as an official, and I feel we have failed, yet I know that I do not have power or influence to say, "guys, but we are failing". We have policies, which are adjustable if it is not working and if not serving people. It must be amended. So, we cannot always say, "hmm the process of accumulating land is long" or "the processes of legalizing…are long". Why? As government, that is all in our power, as the processes are designed by us. It simply means it is not working … I feel helpless and disappointed about this dire situation of informal settlements.'

One senior Department of Housing official in the CoJ (CoJHS3) attempted to defend the Minister's directive in respect of the Stjwetla de-densification, through still echoed shortcomings and alluding to the challenges that this left municipal officials to deal with:

> 'The Minister made herself available over and above in terms of the Housing Act and said to the CoJ: "you have USDG, and the HSDG [both settlement grants], and by invoking powers given in terms of the Housing Act the Minister changed the conditions of the grants from USDG or HSDG to emergency housing grants". But the Minister could have been advised more appropriately to make right decisions and still be able to achieve de-densification…now we [local government sphere] are tasked to unpack the resulting de-densification in a way we understand it.'

When probed further about the Malboro container housing project, the senior CoJ regional housing officer (CoJRG3), more disconnects between the regional housing office and the head office were

revealed, in addition to fissures between the CoJ and central government, particularly regarding the planning and implementation of the COVID-19 TRAs. Caught in this conundrum, which appeared to reveal already deep-seated and growing fissures within the CoJ's Housing Department and between the CoJ and the NDoHS, the official of the regional office voiced frustration:

> 'Maybe you did not get me in the first place. I am not part of the developments going on [Malboro container housing], not from its inception. We are busy hiding behind the policies that don't work, yet we should be observant! People are busy building double-storey housing using brick and mortar [in Stjwetla]. Just imagine how the Malboro containerised housing project is happening. As the local manager, I am not supervising nor know about it. I heard about the containerised housing project and was later informed that there is a project. I think I am the wrong person you interviewed.'

Further probes into some aspects of the Marlboro TRA revealed allegations of irregular financial management in the way such a multi-million Rand project was being handled; funds said to have been advanced to a contractor before the accomplishment of required stages of the work. With a resigned attitude, the housing official refuted that an official at that level could manage the project because 'I am not an expert but just an administrator. There is need for experts even the finance ones; but it's unethical to give the contractor all the money except procedural disbursements according to stages completed. That's my opinion' (CoJRG3).

The disconnect between the CoJ and the NDoHS also became evident in the response of a senior CoJ housing official (CoJHS3), the commentary about the inception, implementation and governance surrounding the Marlboro housing container units. This official indicated that the City too was unhappy about its lack of involvement in the project and saw the project as an unwise decision, although accepting that the City had been tasked with implementing it.

> 'The issue for me is the coordination that eventually leads to the Minister being advised appropriately so that she can make good decisions. But in this case, when she made the decision [about the Marlboro TRA], in my own view, she was not sober. She must not have been herself whereupon she needed to be advised correctly. I would have said hang on Minister, please know you have a housing law, you can't get out of it, as it entrusts you with this … and that responsibilities. Therefore, your behaviour should be in line with the law. But in this case, she made a pronouncement that looked good, but [was] bad from human settlement analysts' perspective.' (CoJHS3)

The senior official in the CoJ further conceded to the institutional fissures and elaborated how the reactive informal settlement de-densification problematic unfolded in practice:

> 'We have appointed an implementing agency to construct around 6000 units including [for] *Madala* people [elderly people] in Alexandra Township at Marlboro. Here is the real issue: I did the engagements with [the Ward] Councillor and the community, but they plainly told me that "the biggest problem is that you have made your pronouncement with your Minister but did not talk to us". I engaged the communities since April [2020] and got so tired in the deadlocked process such that around July I felt like I don't want to be part of that engagement anymore.' (CoJHS3)

When asked how, as leadership of Stjwetla, they evaluate government's action in respect of housing and infrastructure provision to Stjwetla, the reply showed that there is a serious gulf between the state and the wishes of the people and that the former is out of touch with the people. The idea of government providing serviced land to those with capacity to build for themselves also surfaced in my interview with one of the leaders:

> 'Government is going in one direction, and people are taking a different direction altogether. We are not in the same thinking as government is failing to engage us. Imagine we are here in Stjwetla, but government is taking a decision to take us from this TRA to another. This is not solving our [housing and infrastructure] problems at all. It was better government gives us land which is our own. Most of us can build on our own. Yet when we prove that and build in informal settlements, they come and demolish. You see. Right now, many have built brick and mortar structures in … Stjwetla and have stayed for over ten years. Is that temporary anymore?' (StJ 4)

Then the respondent further emotionally commented about how he perceives government's *modus operandi* in informal settlements, especially regarding how it implements infrastructure development plans:

> 'When it comes to beautiful plans, our government is good, but [when it] come[s] to implementation, it is so bad. Just watch out on the Marlboro container housing units; it may not be surprising that as few as 100 people from Stjwetla may end up benefiting instead of the original targeted number. Many excuses will be given for that. Implementation is very bad. Imagine most of us are registered and recognised by the housing system as having benefitted from the [Alexandra Renewal Project] ARP yet we did not get any house. Can you imagine?' (StJ 4)

This points to challenges surfacing that side-line the operationalisation of the UISP and related infrastructure provision in Stjwetla. Apart from the political and administrative challenges discussed so far, the manifestation of poor implementation may be explicable from the scarce

implementation of the GWME policy of 2005 (Ijeoma, 2010; Van der Waldt, 2012). Yet the Centre for Effective Services (CES, 2021:2) identifies bad policy formulation as breeding poor implementation, as '[t]here is no good way to implement bad policy'. The aspect of Stjwetla case covered in this section aligns with the established standpoint that infrastructure policy intervention for informal settlements in South Africa is neither well-designed (Van der Westhuizen, 2017) nor thoroughly explored and or resourced (NUSP, 2015; DPME, 2015), therefore the absence of a foundation for effective implementation.

5.3 Participatory governance and governance of infrastructure planning and implementation

Discussions about participatory governance surrounding the Stjwetla case revealed that this mode spans not only community-municipality relations but also relations within the City, between its structures. There was a strong understanding of the importance of such governance but at the same time frustration with its absence. Respondents also articulated the implications of non-participatory governance, framing this with indignation.

A senior CoJ housing official noted the absence of participation within the City's structures, noting the relevance of implementers' experiences and reflections for the articulation of policies and programmes, but the complete absence of voice by someone at his level and with his insights in such processes.

> 'It's good for seniors at higher levels to listen to lower ranks' viewpoints. Not to say, "you are just an area manager … what can you teach us?" Ooh yes, an area manager and I love where I am because I am passionate about helping the poor informal settlement residents to improve their livelihoods. My opinions, which are based on practice, have I always given to my bosses, but … these are never reflected in the policies nor at implementation. I have told you the brutal truth. Telling it as it is.' (CoJRG3)

Turning to the relationship between residents and the City, residents of Stjwetla showed concern about their low level of involvement in the planning and implementation of the electrification process as of 2015, including the re-blocking processes that occurred in the parts of the settlement that were not removed in 2010. One respondent declared that there was no community engagement and 'I was not involved at all, nor did they involve the community. Department of Housing in the

CoJ informed the people about the electrification by addressing us in a public meeting about what they were about to do' (Stj 3).

Yet the community position about lack of participation contradicted the assertion of the municipal state agency, City Power. When asked how the electricity power utility is engaging local beneficiaries in the planning and implementation of electrification, a City Power official vaguely answered saying, '[t]he first thing is to talk to that community. Relationship management is very important' (CTPow 2). The other respondent from City Power answered more elaborately about political coordination as follows:

> 'Your question is twofold: there are political and administrative stakeholders. On the political part, we engage the ward councillor and the ward committee. These, in turn, engage the communities. They are the mouthpieces. Administratively, we have our stakeholders' management section in City Power who engages with the politicians who will tell the councillor and the committee to relay the information to the communities that "here is the electrification project that we promised the people, here we come with it". Once introduced, then City Power gets in with a contractor to implement the project. Aspects of employing locals are then liaised with the communities' leadership.' (CTPow 1)

It is apparent that the participation processes are political by virtue of the electrification being implemented to fulfil promises made through the political system of politicians. While the ward councillor and ward committee systems are conceptualised in the Municipal Structures Act of 1998 as a platform for effective local democratic decision-making, these have been analysed as dysfunctional and problematic (Pieterse, 2021). This is in part because both bureaucrats and councillors impose their own ways and knowledge on the community (Enaifoghe & Adetiba, 2019). The foregoing analysis is in tandem with the framing of political coordination, theoretically designed to ensure welfare-maximising and distributional equities yet, in reality, is open to opportunism and self-interest taking precedence once politicians take office, further amplifying governance challenges (Scharpf, 1994; Hammerschmid & Wegrich, 2016; Wegrich et al. 2017). Overall, what is missing in the infrastructure upgrades in Stjwetla, as in the other cases discussed in the next two chapters, is meaningful public engagement beyond the statutory provisions and the official rhetoric of "active participation" and social compacts often used in uncritical ways (see Gaunt et al., 2012; Jordhus-Lier & de Wet, 2013).

5.4 Implementation dynamics in the electrification and how these are governed

This section reflects on the challenges related the electrification in Stjwetla, responding to research question 4 about the dynamics triggered in the implementation of the electrification of unproclaimed areas and how these are governed. The discussions analyse the implications that are prompted or inevitably instigated with the implementation of electrification. The dynamics include the raising of expectations for permanent settlement upgrading, increased in-migration and concomitant densification and settlement expansion, uncertainty on the status of the electrification investments and related misconceptions leading to brick-and-mortar construction. The unauthorised construction is happening in full sight and knowledge of the CoJ, in what AlSayyad (1993) calls official ignorance, yet without express authority. The findings of this paradoxical development align with a 'quiet diplomacy' where the CoJ adopts the 'business as usual' and 'no crisis' indifference (Crush & Williams, 2008:4) that is prompting a *de facto in situ* upgrading.

5.4.1 Stjwetla's electrification triggering in-migration, informal connections and permanent construction

Electrification has caused remarkable improvement in Stjwetla with the provision of safe energy for domestic uses, in particular cooking and lighting. One resident noted, 'yes, we noticed a change in that we were using paraffin, candles and gas and there were lots of shack fires in the settlement. Now this has changed and improved for the better' (Stj 1). Other respondents had similar but differently framed comments (Stj 2; Stj 3 & Stj 4). Yet electrification has had far greater impacts beyond what the state may have hoped to achieve, namely, what Fourie (2006:533) terms externalities. As already evident from Webster's (2020) description of Stjwetla reviewed in the methods chapter, my discussions with a cross-section of respondents, of which I provide some extracts, confirmed that the settlement is witnessing increased pressure from new occupiers from the Greater Alexandra Township. One respondent remarked that 'many people have come into Stjwetla from parts of Alexandra triggering more pressure on [the] electricity load through illegal connections' (Stj 3). Another respondent commented on how the formal electricity supply to numbered households was extended to newcomers, one of them suggesting that this involved a level of coercion from them. I didn't, however, probe more deeply into the allegations:

> ‘[The] Housing Department (CoJ) has the enumeration of shacks in the settlement. The department knows full well of the increasing shacks through the ward councillor. But it is doing nothing with the increasing number of shacks. The officials should come regularly to take stock of new occupations. City Power knows about these invaders, some of whom are already connected to the electricity network. Electricity provision is a real issue here as it is extremely limited, especially during [the] winter season due [to] increasing illegal taping.’ (Stj 3)
>
> ‘There are shortages in water and sanitation, also electricity as meter boxes are vandalised through illegal connections by daring ‘invaders’, especially from Mozambique, who come in broad daylight to do the connections. At some point, we surrendered our control of the meter boxes to the invaders. Now this has improved, though.’ (Stj 1)

Although the second respondent implied that the situation with informal electricity extensions had been resolved to some extent, Figure 5.6 shows evidence of continued live wiring, in this case along a footbridge linking the East and the West banks of the Jukskei River.



Figure 5.6: A typical illegal connection showing a live electric cable across the footbridge from the Alexandra East Bank developments to Stjwetla on the west bank: **Source: Author, 2019**

The ward councillor revealed that new occupants to the north of Silvertown TRA were informally connecting to electricity supply in a high-income suburb in Marlboro across the Marlboro Highway (according to a City Power official, CTPow 1, some of these “invaders” were believed to be returnees to Stjwetla, having been allocated RDP houses elsewhere but I was not able to ascertain whether this was indeed the case). Complicating the informal electricity connections to recently constructed shacks to the north of Silvertown was that the tapped electricity was not supplied by City Power but by Eskom, also causing electricity problems outside of Stjwetla. The ward councillor explained:

> ‘You see, Stjwetla is supplied by City Power, and across Marlboro Highway are formal high-income suburbs supplied by Eskom. Currently, the latter properties have over nine months without electricity because the illegal connections from immediately across in Stjwetla caused the transformer to malfunction. Eskom is not putting a replacement, no, not so soon.’ (Stj Cllr).

Another important externality prompted by the electrification is the construction of permanent brick-and-concrete housing and business structures. Double-storey residential buildings and businesses properties are common features of the built environment in Stjwetla. These electrification-induced transformations are forms of auto-construction and self-production (see Caldeira, 2017; Caballero et al., 2019), denoting resident-led notions of urbanisation. What is disturbing is that neither authority nor politicians are taking proactive action to advise the residents about the pending complete relocation plan for the settlement. The unyielding official position about future demolition is also not tested in relation to feasibility of at least partial *in situ* upgrading.

Confirming the hypothesis that electrification has made an important contribution to the misconception of permanency, municipal officials also ignoring the dynamic, one respondent, justifying construction in brick, mentions that she made the authorities aware:

> ‘The permanent house construction started about three to four years ago [2016-2017]. You know it’s not nice to have a shack place with a family. There is no privacy. Just imagine you have children, and you want to bath, how are you going to do it? I told everyone to extend shacks wherever there are spaces in front of their shacks. I notified the authorities that we are building in brick to enhance privacy’. (Stj 1)

Another respondent confirmed, ‘[t]he bricks construction is inspired by the hope that Stjwetla is now a permanent place’ (Stj 3).

When I engaged the ward councillor about the ongoing permanent brick-and-mortar construction believed to have given impetus by the electrification, he was not amused and, without empathy, said:

> ‘That is all illegal. Nothing is permanent. All that will be bulldozed. I tell you sewer from those “double storeys” is discharged into [the] Jukskei River. There are sewage pipes connected from those houses into the river [figure 5.4 above]. We can’t have a settlement like this.’ (Stj Cllr)

As already mentioned, Figure 5.4 provides evidence of a pipe diverting sewerage into the Jukskei River. However, I did not ascertain which houses such pipes were connected to and am therefore not in a position to judge whether the councillor's dismissive position on the self-help consolidation process is justified. What was evident was that the indoor quality of the brick-and-mortar structures was better than that of the state-provided tin structures and adding a second floor did allow more family space than the one-roomed shacks stacked cheek-by-jowl (see Figure 5.2).

5.4.2 Temporary or permanent electrification in Stjwetla? State and community institutions in intense debates

This sub-section responds to the third research question, which is about how infrastructure is institutionally framed and the ways this structure manifests in informal settlement upgrading, in this instance, in Stjwetla. The question focuses on institutions, institutional framing and the emerging institutionalism, as discussed in Chapter 2 (see DiMaggio & Powel, 1983; Sotarauta & Suvinen, 2021), relative to electricity infrastructure provision and how this is manifesting in informal settlement upgrading.

The provision of electricity in Stjwetla, as in the two other comparative case studies under this study, has triggered a variety of responses about the status of the electricity where the community expects the electrification to be permanent. Two senior officials at the DoE took a very pragmatic position when asked about the permanency of electrification done under the *Electrification of Unproclaimed Areas Policy* of 2011. One of these officials explained this position as follows:

> 'We do not have electrified informal settlements which will be relocated. There are going to be very few [if] any such settlements because of extenuating circumstances. Once grid electrified, the settlement is upgraded automatically. People start building shops, double-storey housing. This [electrification] is surely permanent.' (DoE 2)

This brings to the fore contradictions and disconnections between policy and practice in the electrification processes, with the City housing officials and the ward councillor for Stjwetla defending the position that, although funded and electrified under the guidelines of the DoE, the settlement shall be relocated, yet unwilling to communicate this to the residents. In a contradictory affirmation of permanency status of electrification and thus by implication the settlement, a senior official from CoJ's Environmental and Infrastructure Department (EISD) asserted:

> ‘As far as we are concerned, the electricity infrastructure is permanent, and the settlement is also permanent. This is purely a technical assessment given the huge capital investment the CoJ is contributing to the electrification. Yet I do not understand the UISP/USDG and the Department of Housing [CoJ] processes in this regard.’ (CoJ EISD)

Apart from the question of temporariness/permanency of the electrification, the above excerpt is important in foreshowing inter-municipal misalignments and disconnects, which I discuss further in Chapter 8. The temporary-permanent puzzle and disillusionment in Stjwetla were also conceptualised by one of the City Power officials as a potential research area.

> ‘I like the question. I know many try to compare water with electrification or sanitation, but this can’t [really be done] for obvious reasons. Take note some services provided are basic, interim, or emergency services. However, there are no basic services with electrification. There are also no interim services with electrification. What we provide is [an] almost permanent service. When we give that electricity and a meter number, that meter has an owner’s name, which belongs to that name forever. The electricity may be called interim in that it is awaiting final connection to a proper RDP house upon *in situ* upgrading that shall take place, but the backbone and the bulk services that takes five to seven years to complete are permanent and not temporary at all… To put cables, you need wayleave planning, which is layout planning … As such, we can’t call the electrification that happens in such an elaborate process temporary. Once we have the approval to install electricity, then it is no more temporary.’ (CTPow 1)

The above City Power respondent disclosed more information about how the electrification process in Stjwetla unfolded where 3250 shack dwellings were connected to individual electricity meters. The funding was made available under INEP disbursed by the National Treasury with grant administered by DoE (CTPow 1). Clarification was also sought about how reblocking or intra-settlement reorganisation unfolded in Stjwetla. According to one of the respondents in Stjwetla, the Department of Housing in the CoJ appointed a planning consultant to prepare the reblocking plan, although without the community involvement (StJ 4). The residents were only incorporated at implementation to provide labour, which technically excluded the community in the process (ibid). Yet, according to National Treasury (2016:16), reblocking is essentially 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.’ The process is a collaborative planning instrument calculated to incorporate and build residents’ capacity and facilitate the delivery of basic services (ibid).

A more senior official in City Power could not confirm nor deny whether the electrification is temporary or permanent but suggested that this conundrum showed the electrification was done unclearly and acknowledged that the question overwhelmed him. Holding his head in puzzlement, the official answered, 'aah look it's permanent, and if that settlement is relocated, there is very little recovery of that infrastructure which can only be decommissioned and become scrap. It's not a case that it will be used somewhere else' (CTPow 2).

The ward councillor, ambivalently in agreement with the DoE official, however, vehemently dismissed that Stjwetla shall be developed *in situ* or upgraded for permanent occupation by the Stjwetla community. He reasserted that

> 'the electrification, like water and sanitation, which we discussed earlier, is temporary. It can't be permanent. Stjwetla community shall be moved out from there. Government has an intention to redevelop the area in the next three years [for some other land use].' (Stj Cllr)

5.5 Discussion of findings for understanding the governance of informal settlement electrification in Stjwetla

In this chapter, I have attempted to "make sense" of the empirical findings on Stjwetla. This section provides an overall discussion across the aspects pertinent to the infrastructure governance and electrification issues covered in this chapter, so as to interpret and make recommendations about them wherever necessary. In addition to the theoretical-conceptual frameworks, I discuss the findings in relation to relevant theories in this theory-informing inductive data analysis study design (see Varpio, et al. 2020), in order to provide comprehensive conceptual understandings. The analysis shall be complemented by my own observations. The discussion on the findings is guided by the overarching research question: How is infrastructure provision in informal settlements, in particular electrification, governed in South Africa?

The first theme in Stjwetla concerns the ways the interim infrastructure provisions of electrification, water and sanitation are manifesting and governed. The grid electrification and its attendant processes of re-blocking, stand numbering, and individual shack connection and metering is misconstrued as settlement formalisation for permanency. The expectation of

permanency is exacerbated by the absence of formal communication about the electrification status. However, if the DoE's realistic and pragmatic position is taken into account, residents' expectation of permanency is not misconstrued but rather based on an active understanding of "what makes sense." What the DoHS and the City's Housing Department like to treat as a misperception of permanency is characterised by two paradoxical events, firstly the removal of residents from Stjwetla in 2010 on accounts of the settlement being unsuitable for human habitation, this being contradicted by resettlement five years later, implying political manoeuvres (Ngove, 2020; Webster, 2020; Stj, 3). It is this second event, which pertains to the subsequent reversal of the action (clearance) taken due to in habitability, and the construction and allocation of new shacks by the state in the once cleared area, that concretises insinuations for an *in situ* upgrading under the UISP and intense reoccupations (see Stjwetla google earth imageries in 2015 in Chapter 4). However, unlike the Slovo Park case, the community and its leadership are not directly aware of or familiar with the prescripts of the UISP and have not used it to argue their case for permanent upgrading. Instead, their arguments are based on common sense.

The second event was typical government benevolence yet seemingly laden with hidden malevolent, unethical and corrupt intentions to regain political popularity and legitimacy. The substantial state investment in the electrification process and equipment is also (mis)leading residents to an expectation of permanency. City Power officials are aligned with the position of the DoE officials in assuming or hoping the electrification is permanent as the eradication of the settlement means the equipment is rendered unusable (CTPow 1 & 2). A yet unknown selection of households from Stjwetla is currently being considered for further relocation to yet another TRA, the Marlboro container housing. As evident in Figure 4.7 (Chapter 4), the closely packed containers with an internal corridor setup to access individual rooms connotes institutional or state rental accommodation rather than a serviced stand on which consolidation is possible. Whereas the possibility still exists that a UISP with *in situ* upgrading unfolds in Stjwetla, it is unlikely to be the case at the Marlboro TRA.

The infrastructure governance approach applied to Stjwetla is contradictory and accidental rather than willed and can be conceptualised along the Hirschman's (1967) Hiding Hand principle, which, however, becomes a Malevolent Hiding Hand (Flyvbjerg & Sunstein, 2016) because of the

non-benign interests that the contradictions entertain – a systematic and effective governance system would foreclose these opportunities. However, the contradictions at the same time allow a level of openness as to the outcome as to whether Stjwetla will ultimately become permanent or be relocated. The plan for partial relocation to the Marlboro TRA can be conceptualised in terms of hierarchical governance, in that it is devoid of consultation and macro-, meso- and micro-level interface and feedback, which is necessary for project acceptability and implementation success (see Banjade et al., 2007; Van der Waldt, 2012). The hierarchical typology of infrastructure governance can also be analysed from Asaduzzamann and Virtanen's (2016) governance theory, which advocates for a democratic governance system that encompasses key stakeholders in decision-making process to meet citizens' expectations and address opposing opinions and criticisms. As it stands, there are tensions between the NDoHS, the DoE, the CoJ, its regional office and its utility company, and the Stjwetla community. Lack of participation and coordination at all these interfaces has sown key fissures in the implementation. The residents ultimately live with the effects, which are both positive and negative in terms of opening possibilities for residents to help themselves and carve out their own permanence. While participatory governance should be prioritised and practicalised as provided in the statutes by meaningfully engaging relevant stakeholders, participation in itself would not resolve the larger disconnect between the pragmatic approach of the DoE and the City's electricity utility, which aligns with the spirit of the UISP, and the dogmatic pro-relocation stance, yet ambivalent implementation of the City's DoH and the NDoHS. There are, therefore, no easy recommendations to be made for Stjwetla. As it stands, Stjwetla presents a complex infrastructure governance situation entangled in political and administrative hierarchical coordination that requires engendering transformative co-governance aspects.

5.6 Conclusion

The governance of infrastructure provision in Stjwetla can be summarised as manifesting an unclear informal settlement upgrading trajectory where the implementation of electrification is entangled in political promises and misdemeanours. The interim water and sanitation infrastructure provisions, while meeting certain immediate needs, are inadequate at various levels. The intense in-migration into the settlement, ostensibly prompted by hopes of permanent *in situ* development

owing to the installation of grid electrification, is compounding the challenge of infrastructure extension through informal connections. Infrastructure governance mechanisms such as visible service delivery meetings intended for coordination and municipal policing intended to contain the settlement are failing to address the challenges and contribute to a growing complexity of issues that ultimately have to be resolved for Stjwetla's residents. The inhabitants blame the besieging conundrums on the state whose decisions are implicit and typically occur in a forward-backward-forward fashion as it implements removals, reverses them and removals again. In the processes that surrounded the electrification and subsequent dynamics in the settlement, there was little or no meaningful participatory governance, with instead the rhetoric of hyper-promises, and related to this, suggestions of political rent-seeking tendencies in the infrastructure provision and TRA construction. While the DoE's policy and approach are pragmatic in its dealing with informality understanding electrification as a trigger for permanent upgrading, the human settlements arm of government is hierarchical in its approach to infrastructure provision in Stjwetla. This has precipitated fissures not only between it and the community but also in a variety of intergovernmental ways. The implication on the ground is a complex settlement structure with a trajectory towards self-consolidation towards permanent buildings with individual electricity connections but communal and impermanent water and sanitation provision and uncertain future in the minds of residents. The next chapter complements these findings with insights from a similarly complex electrification process and dynamics but less house consolidation in Protea South.

CHAPTER SIX

6.0 Protea South: Interim electrification fanning community fragmentation

6.1 Introduction

In Protea South, the state pursued a dual strategy of relocations to greenfield housing and incremental upgrading adopted later. Relocation was adopted because allegedly inherent dolomitic conditions meant that *in situ* upgrading was incorrect. As a result, some community members, in solidarity with activists, contested the findings of the 2012 dolomitic assessment that wrongly concluded the settlement was unsuitable for *in situ* development and used the courts to force a second assessment. It is argued that Protea South's dolomitic risks and conditions are similar to Lufhereng/Doornkop where residents from Protea South are relocated to. It is also alleged relocated households and those purporting to leave the settlement are not surrendering their original plots but informally sell them to new occupants in shack framing scheme that CoJ officials are implicated in. Responses also allege that new arrivals in the settlement are allocated RDP houses ahead of those waiting for a long time. Activists and some community members resorted to using courts to compel the CoJ to properly investigate upgrades, and when it did not, to interdict the CoJ resulting in infrastructure improvements that the authorities had been resisting. In the same way, the activists again used the courts to force Eskom to meaningfully engage the residents in the electrification process.

The chapter also presents key findings about fragmented community leadership fractured along party affiliations – some with the DA or LPM and others with the ANC where ANC affiliated individuals support relocation, while DA/LPM aligned individuals advocate for upgrading *in situ*. Under electrification, the process was seen to be linked to the councillor who was involved in the appointment of the contractor. Eskom phased its electrification of the settlement beginning with the formal section in 2014 and the informal section in 2018. This lag resulted in many illegal connections that caused deaths, transformers to malfunction and sometimes violent tensions between those connected to electricity and those who had not. CoJ officials felt that Eskom had mismanaged the process and neglected maintenance.

6.2 Informal settlement upgrading: Implicit and inconsistent application

This section analyses a conservative upgrading philosophy pervading poor implementation of the UISP and its incremental upgrading doctrines in Protea South by the CoJ, where a parallel trajectory of removals or relocations to greenfield housing development was adopted. The section also discusses how the indecisiveness is influencing *in situ* upgrading, maintenance of temporariness and de-densification as options (see SABS, 2012; Storie, 2016; Constantinou & van Rooy, 2018).–This section responds to research question 1: How is infrastructure provided in informal settlements in South Africa, the case of Protea South.

6.2.1 Ambivalence to UISP: Disjuncture between the statutory UISP and the conventionalist RDP top structure approach

> 'I think there is a gap between the law [housing policies or programmes] formulated by government and the actual attitude and conduct of its officials. At times the officials profess total ignorance of the regulations under the Housing Act, which require *in situ* upgrading where it is feasible. They have developed plans for the development of the City, but those plans do not seem to take account whatsoever of the provisions of the Housing Code promulgated under the Housing Act, which requires upgrading *in situ* if financially and technically feasible. If you ask them about Chapter 13 of the Housing Code [the 2004 version of the UISP currently in the 2009 Housing Code], they ask, what are you talking about? Kkkkk. It is very strange, yaaah … I don't know what more to say than that.' (HRL)

The excerpt above by a human rights lawyer respondent for Protea South summarises the intentions of the UISP framework and the CoJ's approach towards informal settlement in Protea South. The quote was from a discussion as to why the CoJ is not complying with the UISP that advocates for inclusionary and incremental approaches to informal settlement infrastructure upgrading. A response from the CoJ regional housing official (CoJRG2) about UISP implied that the available grant system enabled the RDP greenfield housing development, which therefore was pervading the trajectory:

> 'Yes, there are infrastructure grants for the 'overflow' section of Protea South. The grants were previously allocated to a contractor to construct a few RDP houses using HSDG [Human Settlement Development Grant]. With USDG [Urban Settlement Development Grant], there isn't much to talk about infrastructure except for the MIG [Municipal Infrastructure Grant] that has been used to provide infrastructure not only to the informal Protea South but also to the bigger Protea South.

A senior housing official respondent (CoJHS3) also did not explicitly clarify the City's approach in addressing challenges of informal settlements and infrastructure provision, as the response inclined to RDP housing production, in this case suggesting this aligned with expectations on the ground:

> 'There is no right answer to that question. I have raised the issue of communities' lack of understanding and expectations not [being] fulfilled. People are used to the top structure/RDP houses. Communities aren't really interested in the preparatory work [of UISP] [rather they prefer] actual houses.'

This was contradicted by my interviews among the local leadership in Protea South, one grouping in particular, aspiring to a UISP process and experiencing exclusion from the consultation process (PS 3). I return to this below. Ambivalence towards the UISP, with its emphasis on inclusive *in situ* upgrading with housing construction only in the last phase and only for those households that qualify, was evident among the officials I interviewed. There was a fixation on the elaborate and comparatively expensive RDP housing processes and on electrification. As a result of this approach, as the senior CoJ regional housing official acknowledged, there was a shack proliferation in Protea South, which proved problematic and difficult to manage. Blaming residents for it, this official said:

> 'Controlling it, we can, but settlement invasion is created by the communities themselves through subletting and creating more shacks, causing a serious strain on the existing electricity infrastructure. You may find over 20 new shacks erected overnight. I am frustrated as to why shacks are increasing this much. What we hear as happening is that some people sell the electrified shacks for huge sums of money.' (CoJRG2).

One of the respondent community leaders gave a lengthy chronology of how the governance and sale of shacks are manifesting in Protea South:

> 'I will start from 2010 when some households were relocated from Protea South to Lufhereng, and it was instructed that whatever space was created out of the relocation [the space] must be fenced off so that no one erects another shack in that place. Now what has been happening of late is if one decides to leave the settlement, he or she sells to another, and although a person can't sell the stand because it is the CoJ land, people became smarter to the system. They sell their shack to incoming residents without declaring they are selling but lie that they are migrating to their rural homes for good and leaving behind a relative (a brother etc.) in that stand. Later they appear at the Housing Office to make a change of ownership. In the process, money has "changed hands" between the incoming tenant and the leaving tenant. The "leaving" tenant will then proceed to a

> new informal settlement. The Department of Housing systems are yet to capture details of a beneficiary of [a] stand in informal settlements to detect reregistration in another informal settlement.' (PS 1).

As is also evident in relation to Stjwetla in Chapter 5, the excerpt points to weakness in proactive management of space created by relocations out of the settlement. In Protea South, this is raising corruption allegations as shown in the following passage – another respondent, PS 3, blamed the proliferating shack infilling to irregular practices by the CoJ officials in the administration of the broader allocation among residents of Protea South for RDP housing in Lufhereng and downplayed the shack infillings as singularly induced by the electrification. The respondent alleged that undeserving residents are jumping the 'queue', which is understood as synonymous with the pervasive but rational 'waiting list system' that is meant to work on a 'first come, first served' basis (SERI, 2013:7). He argued:

> 'The way how houses are allocated is a grey area contributing to the rise of the number of households in Protea South from 5600 to 8400. It's not transparent how people are benefitting and taken to the RDP housing in Lufhereng Township. Imagine someone claiming to have bought a stand in Protea South, and within a short period of time, such become a beneficiary of the RDP or boasts he/she is a beneficiary in the next allocation of the RDP houses. This shows that there is someone in the CoJ Housing Department behind the corrupt allocation tendencies. The truth is some old residents have applied for houses over nearly 30 years ago but have no houses yet.' (PS 3)

The allegations of corrupt deals were repeated by another respondent focusing on Protea South CoJ housing officials, which collaborated and expanded respondent PS 1 and PS 3 above, saying:

> 'We are concerned by what we perceive as irregular practice by some of the officials within the municipality in "shack farming" that is bringing new households into Protea South often involving [the] illegal sale of municipal land between R75 000 and R150 000. This is done in a way that appears as if a shack owner is simply passing on ownership to another, with the former owner apparently going away permanently from the settlement. Money changes hands under this guise. Should municipal officers effect stand ownership change? Do we have stands yet in Protea South, or there are simply shacks giving temporary residence? We, therefore, think that there is underhand work happening between the purportedly departing (seller) and the municipal officials that help effect the transaction. I have reported that matter to the head of [the] Housing Department in the CoJ, and we think that the firing of one official is informed by our reporting. We also question the transparency of the list of people who are benefitting in Lufhereng. Why is it not made public to us?' (PS 2)

In similar but differently framed allegations of corruption on the part of politicians and government officials in Stjwetla in Chapter 5, the CoJ officials in the Protea South appear to be embroiled in untransparent governance of RDP housing allocations in a way that allegedly precipitates the shack densification phenomenon. To get deeper insight, I inquired from the ward councillor for Protea South how the relocations were taking place and the role of the CoJ officials in the infilling of the spaces created by the relocated households. The response avoided the role of officials in the relocation aspect of the question but centred on "shack farming" with the position that 'most of the influx into the area is caused by the residents themselves who create shacks for subletting and selling that making the area to be congested always' (PS Cllr). After further interrogation about the CoJ's approach to the shack infilling, the councillor alluded to the political approach the previous political party (the DA) running City administration in a coalition with the radical Economic Freedom Fighters who imposed their demands on how new land occupation should be handled (an opposition party). He also framed the bureaucracy within the municipal police as contributory:

> 'At first the approach was to demolish any new shacks created, but with the coming of the new administration [DA] in 2016, we couldn't. Things got out of hand due to the incitement for people to take land. We used to call the JMPD to destroy the shacks, but now it's difficult to do that as the JMPD has to approach the Department of Housing first so that the Department can go to courts first to obtain an order to evict those who would have erected shacks or occupied some piece of land. It's now a length[y] process.' (PS Cllr)

If the allegations were true to some extent, this would be in contravention with Priority 5 in the CoJ IDP of 2014/2015, which states '[t]he primary focus of this priority is on the fundamental principles of good governance, which include accountability, accessibility, transparency, predictability, inclusivity....' (CoJ, 2014-2015:87).

It was also necessary to inquire from the ward councillor why most of Protea South is still informal and not being upgraded informally. The councillor cited complexities in the informal settlement upgrading process and, without reference to the UISP, said, 'people have continued to proliferate into the settlement and staying informally in large numbers. While some are relocated from the Protea South, many more continue to come into the settlement' (PS Cllr). Further conversations with the CoJ senior housing officer, CoJHS3, established that there are plans for a significant

change in approach to informal settlements, with Protea South destined for upgrading under the UISP and no longer formalisation. It was not clear, however, whether the envisaged approach would address deep frustration among some community leaders exemplified by respondent PS 3, who commented, 'government will only get serious with us next year, 2021, as we go towards elections. That is when they will seem to want to address our complaints.'

6.2.2 Dolomite entangled relocations and cause for perpetual temporariness

The senior regional housing official explained that under the post-apartheid regime, geo-technical surveys have become increasingly mandatory where residential development is proposed. Protea South is no exception. The official elaborated:

> 'Before 1994, the process of a geo-technical analysis of the soil conditions was not a requirement, but this has become mandatory in the post-apartheid government. For Protea South, a contractor was appointed to do a geo-tech of the whole of the settlement. Surprisingly, some of the existing properties [formalised low-income housing] are located within the high-risk area while some are in the medium to low-risk areas. As we develop, we want to concentrate on the lower risk areas where the appointed Town Planning consultants have indicated that high rise flats are possible, but the density of housing decreases as the risk of dolomitic occurrence rises.' (CoJ RG2)

Further, the official gave a background to geo-technical processes in Protea South:

> In 2009 the Gauteng Provincial Government made a geo-tech analysis, wanting to develop Protea South along [with] the results of that assessment. In that process, it was proposed to decant Protea South community and bring back some people but take away excess elsewhere as appropriate. But it was found that the Protea South is dolomitic, this before the reassessment in 2012 along SANS 1936 standards. We are going to assess the second geo-technical results. We will also assess whether the site of any portion does not fall within a flood line to avoid safety and health compromises to the people in those sections.' (CoJRG2)

The above responses from the housing official in the CoJ correspond with court-ordered geo-technical reassessments, as highlighted in Chapter 4. In the opinion of the human rights expert, Protea South will be upgraded *in situ*, following along the new findings and standards of the geo-technical assessments, because 'the CoJ said so publicly, at a public meeting … on the 20th of June 2019 that they shall upgrade Protea South *in situ*. I think it will happen. It shall happen also because of the legal interactions that have been made in that regard' (HRL).

The reassessment of dolomite was instructed by the South Gauteng High Court of South Africa in 2012, after submissions by Protea South residents convinced the court authorities that the earlier geo-technical report by Africa Exposed consulting engineers was inconsistent with realities on the ground and serving to promote relocation to Doornkop (PS 2). According to an independent report from the SRK firm of consulting engineers, there appeared to be no advantage of Doornkop over Protea South as both have similar, dolomitic conditions that can be mitigated.

To shed more insight on the foregoing, the human rights expert gave a detailed account of the dolomitic assessments and what the courts had directed should be done:

> 'Development in Protea South began from 2012 after a court order was obtained in 2012 in terms of the new National Standard Act introduced for testing dolomites. Dolomites have been cited as the reason for the proposed relocation of that community. Earlier, the court in 2009 had ordered that we discuss the issue of dolomites to find solutions. And in a way, we were saved by the amendments to new regulations to [the] Standards Act setting new approaches to dolomitic land. In this way, our focus was shifted from the relocations to how it may be possible to have development and mitigate the possible consequences of dolomite. In terms of that standard, we got an order in 2014 that required the CoJ to test afresh for dolomite and to deal with the question if development was feasible in line with [the] new Standards Act and regulations pertaining to land with dolomite. As a result, that has been implemented by the CoJ, albeit very slowly.' (HRL)

As a result, the intervention of the court enabled a rational geo-technical re-assessment and quantification of the dolomitic conditions 'following the drilling of some 20 or so further bore-holes as required by the judge' (HRL). The news about the prospects of settlement upgrading in line with the SANS 1936 has been heartening for Protea South residents. One respondent happily commented:

> 'Remember, the CoJ wanted to remove people from Protea South based on dolomitic risks. However, we resisted and approached the Courts in 2013 for a reconsideration of the dolomitic assessments. What has since happened is that it has been determined that Protea South has significant portions that are developable in line with the new findings, which, although not yet made public, the CoJ has already admitted to. This is good news for the settlement and the community.'(PS 2)

Another respondent was equally ecstatic about the rational geo-technical assessments and its implications:

> ‘The second geo-technical feasibilities determined that the overflow area is developable *in situ.* Perhaps this is what made Eskom to consider electrification of Protea South without necessarily considering the CoJ plans for the settlement.’ (PS 3)

6.3 Governance arrangements and how they are mediating in the infrastructure provision challenges in Protea South

The theme and sub-themes presented in this section respond to my second research question about what arrangements exist for the governance of infrastructure provision in informal settlements in South African cities and how the interventions are mediating in infrastructure challenges using the case of Protea South. The research analysed the entanglement of community leadership in local partisan politics; the role of participatory governance and community litigation as democratic, participatory mechanisms to influence infrastructure provision processes.

6.3.1 Community leadership and the influence of party politics

A distinctive community governance characteristic of Protea South is the fragmentation among its community leaders along party political lines, in particular, pitting the grouping affiliated to the DA as an opposition Party against the ANC ward councillor and the ward committee, which was believed to be ANC aligned. Unlike in Slovo Park (discussed in Chapter 7) but in more intensity than in Stjwetla (Chapter 5), Protea South portrays local institutional power dynamics and a tug-of-war between community groupings along major political party affiliations leading to divisive and fragmenting approaches (PS 1; PS Cllr; PS 2; PS 3 & HRL). I got a glimpse of the divisions in the one-day *Misty River* workshop (mentioned in Chapter 4) aimed to quell the internal differences between community leaders. As I show below, the divisions are affecting the electrification and other interim infrastructure provisions negatively.

Dynamics with regard to community representation in Protea South first became evident when I interviewed the ward councillor, as political figurehead in the ward, regarding coordination of infrastructure provision in the settlement. He explained his role as follows: ‘[m]y role is to liaise between government entities and communities. There are different committees that I work with to bring about development in the Ward’ (PS Cllr). When I probed whether there was an organised community leadership for Protea South, the councillor divulged

> ‘There was no structure yet until September 2020. I was working with the bigger ward committee. After my further engagement with officials from the Housing Department, we may need to restart the selection of that committee which is a Project Steering Committee. At the moment, I am in contact with the community through public meetings, not via any structure of leadership.’ (PS Cllr)

The ward councillor explained that he receives ‘complaints from the community through calling me directly’ in connection with electrification and ‘illegal’ electricity connections, but also community infighting and other challenges in the community, stating again that there is no leadership structure to coordinate with. This pointed to a governance gap and, as a result, fragmentation between the ward councillor and the Protea South community. I was aware of leadership structures in the community, one of them in opposition to the ward councillor and his party affiliation. The community leaders I interviewed, in particular those opposed to the ward councillor, however, said that in their experience, the councillor did not entertain direct mobile phone calls with respect to infrastructural service challenges. In their view, there was an element of bias towards the councillor’s own political party in the engagements he would entertain, and they felt excluded and said, ‘as we speak, there are socio-economic surveys being undertaken, but we are not made aware of this development as we should also be consulted and employed’ (PS 3)

One of the leaders shared how they were considering dealing with the situation:

> ‘The CoJ takes the case [of the councillor] casually and prioritises one person at the expense of the well-being of Protea South, and the fact that we find it unbearable in practice to work with the calibre of the councillor. This is why we think we may need to approach the courts that are fair and looks at the rights of the people. The City officials do not know that we may take the CoJ to court if they do not prioritise our rights. We think it is the duty of the CoJ and its structures to streamline the way the ward councillor must work with the people. Look, how do we work with a ward councillor who is not available to us and does not answer to our calls?’ (PS 2)

This signalled that the settlement leadership had exhausted other avenues and was placing its hopes in the courts as a last resort. Yet the question remained how many times and which issues the community would take to the courts, given the costs and length of time the process takes to have the interjection of the judiciary.

The untenable relationships between sections of the Protea South community and the ward councillor have promoted parallel governance committee structures as the councillor is said to

have openly declared 'that he can't work with opposition party members. To communicate with him, I have to write a letter to his political party and ask from that party's leadership that I want to speak to the ward councillor. He just doesn't work well with anyone from the opposition party' (PS 2). One of the leaders explained how a local civic structure called the South African United Forum came about and the predicament it faces:

> 'After realising that the councillor doesn't want to work with stakeholders, we have formed our own organisation in order to advance and lead development in the area by first establishing what was known as Case Management United Forum [with reference to the court case of 2010] later becoming South African United Forum. We are eleven stakeholders in this Forum. I was elected the chairperson of that Forum, which is non-political. We have never been invited to UISP meetings and workshops chaired by the councillor, although he is aware of our existence.' (PS 3).

To show the extent of politicisation of the infrastructure provision and the longer-term upgrading in Protea South, a leader aligned to the ward councillor was supportive of him and made the following attacks against the opposition leaders who are affiliated with the former LPM but now DA and United Stakeholder Forum:

> 'I am the chairperson of ANC in Protea South since 1993 to date. There is no development leadership apart from politically affiliated leadership. For some time now, the CoJ's administration has been under the influence of the DA, which supported the LPM.' (PS 1).

When asked how infrastructure development works when there is no structure that brings together the leadership from various organisations for the sake of development, the ANC Chairperson responded:

> 'Now there is a steering committee, not the South African United Stakeholders Forum. That Forum belongs to [PS 3] who is [PS 2's] son. They started forming [their] own steering committee as DA Party, but we have since sat down and agreed that we need a project steering committee that accommodates everybody where the ward councillor is the chairperson. It comprises of representatives from all political parties. It is a stakeholders committee with two members from the seven political parties giving a 15-member committee including the councillor.' (PS 1)

It was important for me to ascertain whether this mentioned assemblage of political leaders is fostering functional infrastructure development initiatives rather than advancing political agendas. The ANC Chairperson responded candidly:

> ‘It was addressed that we need to take our political differences aside when we meet for development not to advance political issues. We have agreed as politicians to bury our political differences to work for community development, but that is very difficult in practice, yeah.’ (PS 1)

I inquired whether the LPM Leader is part of the steering committee. The response revealed what was perceived as an undemocratic and nepotistic or family-based management style associated with threats to resort to the courts; the perception was also that there were financial interests behind this (PS1).

To get a more neutral position on the community fragmentation in Protea South, which appeared to be defining the governance of infrastructure provision, I sought the perspective of the human rights lawyer. The response centred on the influences of divisive party politics saying:

> ‘There is division of the community wherewith party politics [that] is playing a significant role, with the group aligned to ANC seemingly supporting the relocation of the community to about 15-20 km [to the] north. The LPM’s approach is opposing this relocation.’ (HRL)

Going into more detail on the tensions, the human rights lawyer shared his analysis of the situation:

> ‘For some reason, I think it is partly personal competition between the ward councillor and the radical members of the LPM. It can also be a tussle between ANC and the community members. In some informal settlements, the political parties have not played a role. For whatever reason, the ANC has not played a prominent role at community level, and for some reason, there is a divisional conflict between ANC and community-based organisations or movements. I understand that [the] ANC is claiming that it was responsible for bringing the upgrading developments taking place now, trying to seize that achievement from LPM members, this getting down to personal competition.’ (HRL)

I was keen to find out how the “oppositional” leaders were hoping to resolve the political impasse with the ward councillor, which to them was a continuing trend given that the preceding ward councillor had taken a similar approach to community governance. This revealed that they had not as yet formally taken their challenges to higher levels of the CoJ Council. The key responses were as follows:

> ‘We did write to Council [CoJ] during the tenure of Herman Mashaba [Mayor from 2016 to 2019, affiliated to the DA], and we presented our grievances, for example, the partisan employment tactics.’ (PS 3)

> ‘That was during Mashaba, but we may need to do it again and include the advice we are getting from you [meaning myself] that we are requesting this in the spirit of trying to foster our working relationship for the good of Protea South and not resorting to courts always.’ (PS 2)

> ‘I agree with our researcher [meaning myself] because I am in group of Ward 10 residents, including those from Lenasia Township where the residents sought and obtained the contact details of the Chief Whip who was added to the group after their ward councillor refused to talk to them. This suggestion can be a way to check the untoward behaviour of our ward councillor.’ (PS 2)

The foregoing micro-level leadership contentions between political party opposition groups and coalitions significantly resonates with Katsaura’s (2012) problematisation of community governance, which I further discuss below to determine how the community engages in participation over infrastructure provision.

6.3.2 Participatory governance in infrastructure provision processes

Participation is given, at least in theory, fundamental emphasis in informal settlement upgrading and infrastructure provision processes. It is framed as being ‘at the very heart of the system of local government’ (NUSP, 2015:1). The CoJ places meaningful citizenship as priority five out of the ten key development aspects (ibid). It portrays participation as a key platform for improving ‘understanding of residents’ needs and issues’ that promote ‘active and participative citizenry’ (CoJ, 2014:87). My engagements on the Protea South case, however, suggested that CoJ officials are subverting the consultation procedures set out in policy, thereby disadvantaging Protea South residents and deepening the leadership divisions revealed in the section above. Respondent HRL remarked that the CoJ operates in an opaque approach to housing and infrastructure provision in Protea South by capitalising on the politically divided community:

> ‘At one point we successfully sought to declare the decision by [the] CoJ to relocate the community unlawful as there was apparent lack of consultation with the community regarding the relocation as required by the Housing Code. Our other concern was that our client, LPM, had been excluded from a Ward Committee, which was supposedly consulting with [the] community over the relocation. It seemed to our client that the Ward Committee was comprised mainly of ANC members who were supporting the relocation and, thus, exclusionary of LPM stakeholders in that respect. This then showed that the process was done along party lines with quite a large segment of residents who wanted to remain in that settlement disadvantaged.’

While acknowledging that the stakeholder disengagement approach by the CoJ has of late changed for the better albeit slowly, HRL argued that 'what is happening on the ground [in terms of participation] is quite different to what ought to be happening'.

From a planning perspective, the CoJ, the regional housing official, mentioned that the City now consults the Protea South community in the planning of infrastructure development saying:

> 'We engaged a consultant Town Planner who is also a social facilitator in that regard. Once a draft plan is prepared, it shall be brought before the committee of the community for a critique. Any layout plan must go to the community, and if the community has not approved it, that will never be passed.' (CoJ RG2).

The sincerity in the use of a town planning consultant to drive the planning and consultative processes on behalf of poor residents did not inspire confidence, given a background of mistrust, insincere consultations, and top-down configurations characterising the CoJ's determination to remove the human rights lawyer from representing residents (High Court of South Africa, 2009). Ray (2003:3) talks about what residents want as constituting an 'aspirations gap' or difference between the community's required competencies or capacities to read, interpret technical matters (aspiring), for example, and what they realistically can do (Appadurai, 2004). Reading and comprehending a map and its technical and unfamiliar symbols can only be possible if the community is empowered, competent, experienced or outsources technical assistance in that regard (ibid).

Participation or lack of it is usually the measure to successful implementation and post-implementation management phase (NUSP, 2015). An interview with two of the respondent leaders (PS 2 and 3) showed mixed responses about how the community of Protea South was involved in the electrification process that was implemented by Eskom in 2014. An earlier consultative meeting was held in 2013 as referred to in the following excerpt:

> 'There was no meaningful engagement with the communities by Eskom. If that had been done, we would not have been left out of the electrification right from the beginning. Remember when electrification was implemented, we were gathered at the community hall and informed that Eskom was going to electrify the area in a particular way. This was done verbally and using hand gestures to demonstrate how the electrification would go, without entertaining questions. We were confused

> and could not understand how they were going to do the electrification, only to find the informal sections skipped.' (PS 2)

Another respondent echoed the lack of consultation by Eskom but also blamed the ward councillor for not extending consultations about contractor appointments, resulting in the electrification being riddled with challenges.

> 'This [electrification conundrum] was worsened by the ward councillor-initiated contractor appointment without adequate consultations with the residents. The ward councillor has been used as a front by Eskom but without full knowledge of what his role should be. We had asked that the business forum of Protea South be appointed to lead the electrification, but that was rejected.' (PS 3).

Respondent PS 3, however, consented that leadership involvement in electrification in the post-implementation electrification phase has improved saying,

> 'We are now more involved in the electrification than before when the electrification first took place. The electrification and management of the overflow is led by the Business Forum.'

The next subsection looks at litigation as another dimension of democratic expression in the governance of infrastructure in Protea South.

6.3.3 Litigation as democratic participation in infrastructure governance

Like Slovo Park in the next chapter, Protea South took legal action against the CoJ, thus expressing the democratic right enshrined in the 1996 Constitution for protection against unfairness and injustice in housing and related infrastructure provision (RSA, 1996). As discussed in my introduction to Protea South in Chapter 4, a section of the leadership structure in Protea South led by LPM petitioned the High Court of South Africa through Webber Wentzel, a public interest law enterprise. This resulted in the court invoking case management as a measure to ensure implementation of the court judgement. The human rights lawyer and legal representative of the LPM-affiliated grouping explained how his organisation came to represent this grouping.

> 'Our representation of [the] Protea South community was informed by our public interest, where in March 2003, LPM approached us with the request for us to assist with various cases of informal settlements and upgrading in the CoJ facing the looming challenges of relocation of the communities. Protea South was one of the settlements. As the head of the [pro bono unit of the

> legal firm], I was requested by members of LPM, an active community-based organisation, to assist.'

One respondent leader at Protea South elaborated what case management in the context of Protea South entailed and how it performed in enforcing infrastructure development in Protea South:

> 'Case management was when the High Court judge decided to manage the implementation process as spelt out in the court order after realising that the CoJ was not implementing the order properly. The judge brings the two parties together, the applicant [Protea South residents] and the respondents [the CoJ] and the court oversees the implementation processes. If one of the two parties fails to implement what would have been agreed in that committee, the Judge has the power to arrest that party.' (PS 2)

The LPM-affiliated and opposition-aligned community leader also gave highlights of how case management has fared in infrastructure provision, see figure 6.1:

> 'The CoJ was pinned down through case management resulting in water and sanitation infrastructure provisions. Some mutual agreements had to be done by the case management committee where the CoJ proposed not to put elaborate underground water pipes as that could be a waste of resources given the anticipated upcoming development informed by a proposed layout plan in line with SANS 1936. Yet the CoJ isn't fulfilling some of the case management agreements. I have advised our legal representative to take note of the deviations.' (PS 2)



Figure 6.1: Water tanks that the CoJ put in Protea South in 2019. **Source Huchzermeyer, 2019**

From the perspective of the law expert, infrastructure improvements in Protea South commenced only after the court order and the enforcement through case management:

> ‘The CoJ took a long time to comply to the High Court judgement of 2009 culminating in a contempt of court application. It also led Judge Francis to intervene by declaring that he was going to case manage the implementation process as the CoJ was never compliant with the court order, in regard of electricity, water and sanitation provisions. The case management was remarkably effective. As we speak, there must be improvements in service provisions owing to the judiciary intervention.’ (HRL)

One of the opposition-aligned community leaders concurred that there were milestone achievements from litigation and case management strategies (PS 2). While the conversation below acknowledges the developments, it also points to governance challenges in the electrification process wrought by the use of a private contractor:

> ‘There are lots of improvements, especially electricity provision. As we speak, Eskom has started to roll out electrification in our areas. Yet the progress is so slow, and criminals are already taking advantage of that and stealing cables left by the contractor for a long time on the ground. As people are unhappy about this, they have asked me to request a Community Liaison Officer of Eskom to come and meet them.’ (PS 2)

The human rights expert collaborated the efficacy of case management as an effective way used by the High Court to pin down the CoJ, yet the overall infrastructure provision in Protea South has not significantly improved.

> ‘Case management made an impact. With reference to Protea South, I must say there wouldn’t be any development taking place. So, I can conclude that courts are necessary to ensure housing developments take place. Protea South does illustrate that. I agree it is difficult to get a case into the court, yet it’s necessary to get [to] that level. The Courts are necessary to get to compel government to put its weight on the upgrading processes where the number of people living in shacks in CoJ has not reduced much since the year 2000, whatever the reasons.’ (HRL)

Judicialisation, as Clark and Tissington (2015) and Huchzermeyer (2016) note, has become the ultimate recourse for advancement and enforcement of the occupational rights to housing and rights to basic services in South Africa. In Clark and Tissington’s (2015:2) terms, defensive ‘litigation has served to “activate” the UISP where it has been deliberately or unintentionally ignored.’ Like public interest in India discussed in Chapter 2 (Rajamani, 2007; Bhan, 2009; Rubin, 2013), case management involved taking an extra step to administrate an order which required the courts to enter the executive’s jurisdiction and ensure an order is implemented.

A discussion with CoJ senior housing officials about their perception of the resort to courts by residents of Protea South showed mixed feelings about court-intervened infrastructure provision trajectories. One respondent accepted judicialisation as the way for residents 'since government sometimes delays budgets, appropriations for specific programmes and [it is] worsened by the local government's lack of proactive planning...to fast-track service delivery' (CoJHS1). In this official's opinion, the resort to courts by Protea South residents unmasked the CoJ's continued inclination to prioritise relocations to greenfield sites rather than *in situ* upgrading under the UISP. Another official (CoJHS2) commented that 'the City sees that [litigation] as opportunity since communities didn't resort to destruction of property.' The senior housing official in the regional office (CoJRG2) also responded 'I don't see anything wrong with their going to courts. It is their right to do so. If you don't agree with something, you need to seek a mediator, and in this case, courts are the arbitrators'. However, this official believed the litigation trajectory was not appropriate for Protea South as it delayed the 'upgrading of the settlement' through relocations to Lufhereng RDP housing project where everyone in the settlement then could have been accommodated. This argument did not take note of the residents' objection to the distance to Lufhereng, some 10km to the north-west. The following excerpt is a perception pervading the UISP for many CoJ officials:

> 'When the Proportional Representative Councillor took the CoJ to court, Protea South overflow was not yet so congested at that time, and it was suggested that 3500 households could benefit by being relocated to a big Lufhereng RDP housing project in Soweto. The Lufhereng Project was meant to accommodate everyone on the housing waiting list in Soweto, including Protea South. That PR Councillor and the team objected to the relocation, arguing that there was new legislation in terms of geo-tech assessments, which gives hope for development on dolomitic areas.' (CoJ RG2).

According to de Visser (2020), proportionally representative councillor (PR) cited in the above excerpt refers to a novel local government electoral system that presents equal number of political party representative and elected ward councillors in metropolitan councils. The PR councillor mentioned in the official's quote above suggested that the CoJ is bitter about the community's resort to courts for infrastructure provision as the residents have exposed the CoJ's weaknesses. She elaborated:

> ‘The CoJ was not happy at all as we became a threat to their operations and in a way exposed the City’s wrongdoings. But after this process, the CoJ now swiftly responds to most of our queries for fear we can take the institution to court again. One officer from the CoJ admitted that the administration is giving closer attention to Protea South than ever before…and many aspects of the development are taking place well. Yet one CoJ official approached me and asked why I had resorted to court when I was a Proportional Representative Councillor. I replied that the CoJ and its administration do not appreciate living in an informal settlement - the bad living conditions and realities of serious infrastructure deficiencies. I also told him I can’t afford to spare the CoJ at the expense of the suffering community that I represent.’ (PS 2)

The above passage indicates the negative attitudes some officials have about vocal community leaders. I turn below to examine the electrification by Eskom.

6.4 Eskom and partial electrification in Protea South: corporatised services without interdependence with the CoJ

This section responds to research question 3: How is electricity infrastructure institutionally framed, and in what ways does the structure manifest in informal settlement upgrading in Johannesburg? Unlike the City Power electrification in Stjwetla (Chapter 5) and Slovo Park (Chapter 7), Eskom electrified sections of Protea South in 2014 and delayed electrification of the informal sections until 2018. The belated electrification triggered several challenges, including informal electricity connections and ensuing discord between the electrified residents in formal areas and those in informal sections and between residents and Eskom. As discussed in section 6.3.3, lack of meaningful engagement and open discussion of the electrification plan by Eskom was a key contributory factor to implicit electrification. The electrification challenge was worsened by the use of a private contractor whose implementation was not monitored (PS 3), leading to implementation and post-implementation challenges discussed in the next section. What the partial electrification encouraged was competition in the consumption of the electricity infrastructure between the adjacent communities. The following cross-section of respondents show how the electrification of both the formal and later informal sections was carried out:

> ‘The community was so excited about the electrification, except of one thing: the ward councillor did not allow Eskom officials to meet [with residents] and answer questions concerning some aspects of the initial electrification where one section got electrified and another not because there was no participation in the process. This has resulted in the fights we have today between ourselves.’ (PS 2)

And another respondent, PS 3, commented the electrification as revolutionary but had reservations about Eskom and the electrification process, which he labelled as selective and divisive:

> 'I put the blame of the ongoing in-fights for electricity on Eskom, which didn't do a thorough job in the first place when it electrified one section in 2014 and did not check how the contractor had implemented the electrification. The electrification of one section and leaving out another prompted the illegal connection conundrum and community fights that ensued the initial electrification, only for the utility to react in 2018 to rectify the situation. Yet when Eskom came to fix the problem, transformers in the earlier electrified sections were blown up and dysfunctional owing to overuse until now.'

The ward councillor (PS Cllr) blamed Eskom for the differential electrification of parts of Protea South as elitist and selective, disfavouring informal settlements. He said, 'remember Eskom deals or works with planned settlements where there is layout plan. For Eskom, the "overflow area" is like an open space where there is nothing. As an after [-thought], Eskom had to go and prepare a plan for the informal sections hence the belated electrification' (PS Cllr). In one of the few instances in which the LPM- and opposition-aligned community leader concurred with the ward councillor's view about Eskom, she said:

> 'Eskom did not comply with [the] DoE electrification policy guideline that we in the informal settlements have a right to electricity even if we are in unproclaimed areas. Eskom had its own criteria and didn't want to electrify the informal settlement sections. So, when Eskom electrified the formal section, that was the exact plan it had.' (PS 2)

Much as there appeared to be a coalition against Eskom made up of the ward councillor and some of the oppositional leaders, there was still evidence of councillor-community division, polarisation and a blame-game regarding the electricity challenges. From the CoJ's regional senior housing officer (CoJ RG2) standpoint, Eskom's approach to electrification is a function of the entity's limited budget allocations. This defensive justification, however, did not critically examine Eskom's unresponsiveness to the residents' complaints in the governance of the electrification process. The official said:

> 'There are reportedly cuts in the budget for Eskom resulting in the reduced capacity to electrify at once. The settlements are usually divided based on availability of funding applied, obtained, and shared proportionally with other settlements in the City. Besides, there are increasing invasions into the overflow areas leading to increasing illegal connections.' (CoJ RG2).

In the above excerpt, the official was making a point about the problematic land occupations, which the Eskom budget had not planned for. Respondent PS 2 narrated how the selectiveness irregularity of electrification was corrected through the court strategy, albeit the litigation route overly relied upon.

> 'We informed our legal adviser about the lack of consultation in the manner Eskom had conducted the electrification, and he took this matter to court again. The High Court ordered Eskom to produce a plan of how it would roll out electricity and to consult with the unelectrified community. Instead of complying with the court order, Eskom must have convinced [the] ANC leadership to rise against us. People started to turn against us in favour of ANC, not knowing that they would not get the electricity. Yet from [a] subsequent meeting that I had with Eskom after September 2018, the utility acknowledged that it understood there were people who had not been electrified and that a map had been prepared to determine which areas had not been electrified. Now we have the electricity, but the former electrified side has damaged infrastructure already, and Eskom isn't fixing it in time.' (PS 2).

6.5 Dynamics in the electrification of Protea South and how these are governed

This section concerns occurrences emanating from the implementation of the electrification in Protea South, responding to research question 4: What dynamics are triggered in the implementation of the electrification of unproclaimed areas, and how are these governed? Two sub-sections below present and analyse the unintended outcomes, these being fierce community contestation between differentially electrified communities and erratic electricity infrastructure maintenance. The subsection below discusses community contestations that have arisen because of particular approach in the Eskom electrification.

6.5.1 Community contestations as outcomes from differential electricity access

The delayed electrification of informal sections of Protea South prompted huge strains on community relationships and protests against Eskom. Several respondents confirmed that there are deep community divisions and contestations emanating from the way the electrification was implemented. In the quote below, one respondent narrates the background to the challenges of electrification in the settlement:

> 'Eskom electrified [a] part of Protea South in 2014 and later electrified the informal section in 2018. Before the electrification of the informal section, illegal connection to the section that was

> originally electrified in 2014 became rampant, causing the transformers in that area to blow up due to the increased demand.' (PS 2).

In further elaboration, the same respondent revealed how Eskom failed to manage the conundrum:

> 'When Eskom officials electrified the informal section, they promised to fix all the damaged transformers in the earlier electrified section but [this] that has not happened. So, what is happening is the community is divided and fighting itself as the affected section [without electricity for over a year] is forcefully connecting to the recently electrified informal section leading to a big fight. In the ensuing physical fights, we have come to realise Eskom is our one common source of the challenge, and we have recently engaged Eskom in this regard, also through protests.' (PS 2).

Based on what is happening, the respondent framed Eskom as uncaring and unresponsive to the electricity connection conundrum manifesting in Protea South, saying:

> 'As a PR Councillor for this area, I must allow illegal connections by people from the section where transformers have been vandalised. If I refuse them, they will hate me. Eskom is the one that created this problem by first electrifying one section and leaving the other. If you witness the fighting between the two warring sides, you may conclude that someone is going to die. People attack each other with weapons. It's scary, to say the least, serious fights indeed.' (PS 2).

As the illegal connections, electricity blackouts and the contestations over who has informal access to formalised electricity have taken levels that involve threats to violence (PS1), it was hoped the ward councillor was actively pursuing a lasting resolution with Eskom and would mediate between the warring sections. The Councillor casually responded: 'I spoke to Eskom, and I was promised it is coming soon to sort out the mess' (PS Cllr). However, since 2019, Eskom has not returned to repair the damaged transformers. When I followed up with one respondent in November 2021 (over a year after fieldwork) to find out if there were any changes to the status quo, the response was about a new, proactive approach, but even this had not yielded results:

> 'The situation hasn't changed yet. Eskom has not responded to our several requests and reminders to come and rectify the challenges. Some months ago, we contacted the Regional Manager [name supplied] responsible for Protea South with a community suggestion to contribute or pay for the damaged transformers in the bid to get the situation back to normal. The Manager promised to come back to us after presenting the request to the Eskom Board. It's now over four months, and we think our request has not been prioritised.' (PS 2)

The non-attendance to damaged transformers in Protea South by Eskom resonates with the dilemma of the Marlboro high-income housing where transformers had broken due to informal connections to recently occupied parts to the north of Stjwetla (Chapter 5), with no response from Eskom for over nine months. Both incidents point to a gap in electricity governance strategy and or capacity by Eskom in terms of its handling of electricity demands from informal settlements. The piecemeal electrification implementation by Eskom and the resultant illegal connection challenges can be analysed from the global literature context of Lemaire and Kerr (2016:6), which concluded in relation to Mumbai that illegal connections increase if the electricity utility 'electrifies some areas but not others.' In such instances, the un-serviced households 'use the proximity of a formal electricity connection to acquire an illegal connection' (ibid:6). To address the challenges, USAID (2004) and Lemaire and Kerr (2016) suggested encompassing the unserviced areas and increasing the installation rate for new connections. Below I discuss another key dynamic about how the post-electrification infrastructure management in Protea South is manifesting.

6.5.2 Ineffective electricity infrastructure maintenance

Apart from the illegal connection conundrums, dysfunctional transformers as well as contestations, the electricity infrastructure in Protea South is visibly neglected. Alarmingly, there are slacking distribution lines dropping as low as about two meters above ground, posing great danger to the community (see Figure 6.2, taken in a formal part of Protea South). My fieldwork sought to investigate what was behind the lack of maintenance of electricity infrastructure from Eskom but the national state-owned company did not grant me access to get audience with it, as elaborated in Chapter 4. The following were some of the community leaders' responses about what is happening with the live lines that were hanging dangerously low:

> 'Illegal connections are not the only concerns, but several of the distribution lines have dropped too low below acceptable range, getting to barely two metres above the ground. Some live distribution lines fall to the ground, and Eskom usually does not come in time to attend to such dangers. When Eskom takes weeks to attend, the community members always take it upon themselves to fix the problem through [their] own knowledge, which is dangerous, of course. There is virtually no maintenance to the electricity infrastructure, which Eskom just passed on to the community without close monitoring of the performance of the infrastructure. Eskom doesn't give a care at all; hence we demonstrated.' (PS 3).



Figure 6.2 Low tension electricity distribution lines in Protea South since 2019, photos taken eight months apart in 2020. Left photo, a resident showing how low the lines drop and right photo showing equally lying lines. **Source: Author, 2020**

In one of the protests in September 2020 at Eskom Offices organised by one of the opposition leaders from Protea South (PS 3), residents vowed not to depart from the offices before the transformers were repaired or replaced. The marchers were, however, told that a comprehensive study to investigate why the transformers were strained and burning out was needed, as mere replacement would lead to a repeat of the problem. What is worrisome to the community is the delay by Eskom to fulfil its promises.

> 'As a convener, they promised me that they would call me later, and they also suggested that in the proposed meeting, the ward councillor be available as he had earlier allegedly reported to Eskom that there were no electricity challenges in Protea South. The Eskom officials have not called until now, despite a verbal assurance that they would do so soon.'

Another leader in Protea South provided further insight into the challenge of electricity distribution:

> 'There are people who will always bring their "experts" to sort electrical faults because it takes long to wait for Eskom, which says, "wait until four hours" and yet never ever come. These are the *izinyoka nyoka*, who come with a step ladder. Virtually everyone is "Eskom" in Protea South. Come during the night, its activity all over. Also, if one were to call Eskom, one must have the receipt to prove that that complainant is paying for electricity. Many are connected illegally and thus not paying. I have had five months without electricity and resorted to using gas.' (PS 1)

It was revealed that there had been several incidents in which the "experts" were electrocuted in the process of fixing the electrical faults on live electrical wires or when electricity suddenly switches on after a blackout.

> 'Yes, we have many fatalities. Early this year, there was one "electrician" who was shocked to death. What people do is they hire these "experts" whenever there is no electricity and pay about R500. Don't you think any one of those who would have hired would want to associate with dead, no, for fear of the police and Eskom as well. The dead becomes unknown in that community.' (PS 1)

What PS 1 said was echoed by the CoJ regional housing official, who confirmed allegations of the community tampering with the electricity infrastructure. The official argued it is not the workmanship by Eskom and suggested that there was also a practice of dismantling the Eskom infrastructure to connect informally to other surrounding areas:

> 'Firstly, this is attributable to the mushrooming of informal shacks in Protea South. Secondly, just across the N12 Freeway, some informal residents near Lenasia come at night to steal the electricity cables to electrify themselves by connecting illegally from Lenasia. So, there is a serious infrastructure problem. This is a common problem in Soweto Townships where people are stealing the upper electricity lines, and the lower lines drop down in the process.' (CoJ RG2)

Yet a senior official at the CoJ's central Housing Department did not mince words about Eskom operations and the mismanagement of the electrification. In many respects, the response also showed the deep gulf between the CoJ and Eskom, the latter in a higher state tier, allegedly positioning itself as a self-sufficient and stand-alone national state entity and its operations not coordinated to the CoJ, and the latter unable to challenge Eskom:

> 'The responsibility [for maintenance] remains Eskom. It owns the infrastructure and must maintain it. It's not until communities take government, in this case, Eskom, to court to determine who must maintain that infrastructure. This is when Eskom may clarify if it is [the] CoJ or itself. The issue is Eskom must employ competent people who must engage and find solutions with the communities. What Eskom has been doing in some cases where they have community issues is to run away when there are problems and [to] ask [the] CoJ to solve the problem. We are not an electricity company. We deal with human settlements and [are] not here to sort another's problems. When you put infrastructure, you must have a budget to maintain it, not to install, and then disappear.' (CoJHS 3).

In my fieldwork, I discussed the problem of Eskom's lack of maintenance, which by then had extended over two years. One of the opposition-aligned community leaders said:

> Eskom is difficult. We have the utility's contact details, but when we write to it, we don't get a response. I don't know why. If any response, this comes after a very long time, and this is why people have eventually resorted to sorting the electrification challenges themselves.' (PS 3).

The other opposition-aligned community leader gave some insights into thoughts on how this situation could be mediated. It appeared the only feasible avenue was community mobilisation:

> 'I think the challenges need community mobilisation to come together against Eskom. There is [an] evident lack of electricity infrastructure maintenance, which is posing [a] real danger to the children and the community generally. There is [a] grave hazard to the community greater than not having electricity at all.' (PS 2)

From the immediate above quotation, it shows while the high expectation with electrification raised the hope of resolving problems of the settlement (in terms of quality of life at the households' level), there are several ways in which this anticipation was frustrated, and lives threatened. What this means is although, in the DoE's pragmatic view, electrification can lead to permanency of the settlement through *in situ* upgrading, the Protea South case suggests that electrification on its own without effective means to divert the inflow of new residents attracted by prospects of access to infrastructure, cannot improve residents' livelihood. In this regard, the other opposition-aligned leader elaborated on the mobilisation: 'residents have recently agreed that the chairperson [of South African United Forum] call another meeting so that the residents can strategise against Eskom. A protest and a petition to Eskom can't be ruled out' (PS 3).

To overcome the infrastructure maintenance challenges, one resident suggested that the CoJ-owned electricity utility, City Power, take over electrification processes from Eskom.

> 'I have a hypothesis that Eskom is interested in private business for established townships and suburbs that perhaps pay well. As such, I think we need to write to [the] CoJ asking that City Power takes over the electrification as we are not a private informal settlement but belong to the CoJ.' (PS 3).

Yet it was assumed that the application for City Power to take over the electricity distribution in the Protea South would require cooperation and endorsement from the ward councillor for the CoJ Council to accept it for consideration. In my interview discussions with the opposition-aligned

leaders, this was thought to be another hurdle, given the absence of a cordial working relationship with the councillor. A CoJ senior housing official later revealed that the CoJ cannot take over electrification functions from Eskom, as the electricity distribution function requires the assignment of that function to municipal level from national level. The discussion suggested that there are political interests in preserving Eskom's status quo behind the non-assignment of the electricity functions.

> 'We cannot take over. It's an issue of law. The government of the day realises that certain municipalities may go out of its pocket and thus out of control because of collusion arrangements. We have seen that in [the] CoJ, Tshwane and Nelson Mandela [Metropolitan Municipality]. Looking at it carefully, the government uses the Constitution wisely to deal with emerging political parties, and this is why I am talking of the law. The CoJ was supposed to be assigned certain functions in terms of [the] human settlements mandate, but they realised that the politicians might lose the City in [the] 2016 elections, hence government did not use section 156 of the Constitution to assign [the] City of Johannesburg the electrification function. Do you also think Eskom would also want to assign and relinquish power?' (CoJHS 3)

While the above respondent's personal explanations on the politics of electricity governance and politics more generally may not have been given with authority, it shows the extent to which the CoJ infrastructure challenges can be (mis)interpreted in the context of high-level political interests. If the above seemingly speculative comments were true to any degree, then political strife at the national level may be permeating down to community level, where failed expectations of improved quality of life through access to infrastructure fuel local political tensions.

Discussion

The first theme in relation to Protea South discussed in this chapter was the type of informal settlement intervention adopted for Protea South by the CoJ. This approach varies from the guidelines of the UISP and advances the City's fixation on resettlement, the residents' evacuation to Lufhereng and other settlements that the City identifies beyond and at some distance from Protea South. This fixation shows an entrenched, conservative approach through which the City is failing to align to the prescripts of the UISP but rather remains obsessed with the conventional 'RDP-housing' trajectory as argued by Huchzermeyer (2021) and Anheier (2017). It is generally believed

that what informs this position is pervading thinking that the UISP is difficult to implement. Planning for informal settlements is a challenge owing to the inflexible, rational planning standards that are not flexible enough to accommodate lower spatial standards. This is notwithstanding the CoJ's promises of an innovative, restructured and transformative spatial planning framework that assures inclusivity (CoJ, 2014. According to Misselhorn (2017), planning and implementing the UISP and accommodation of existing infrastructure developments in informal settlements is challenging in practice, hence the adoption by the CoJ of what at face value appears as a technically simpler resettlement trajectory. However, the difficult trajectory and situation at Protea South do not support the notion that the City's chosen route is implementable. The City's recent turn to the UISP for its informal settlements, including Protea South, suggests some realisation of this. However, at the time of my research, a new commitment to UISP implementation had not filtered down to most of the City respondents and the ward councillor

Uneven understanding of the UISP and its implementation approach suggests inadequate training and capacity building, which brings attention to the role of the NUSP. Critics argue that the national human settlements upgrading support organisation, which is headed by consultants but understaffed, has not managed to train, capacitate and demonstrate all four phases of UISP implementation. (CoJ, 2015; Fieuw, 2015). Yet, from an institutional theory of change perspective, the avoidance to implement the UISP by the CoJ can be evaluated as requiring the bureaucracy's spatial planning structure and functions to conform to the realities of informal settlements. Institutional change, as argued by DiMaggio and Powell (1983) and Dacin et al. (2002), requires institutions to capably initiate and respond to change and discard path-dependent practices to embrace variation and change. The insensitivity and unresponsiveness of the CoJ to the plight of the residents of Protea South and inhabitants of other informal settlements by not implementing the UISP suggests an absence of this capability.

The next theme that emerged from this chapter relates to the divisive and fragmental governance arrangements at the community level. With longstanding tensions, community leadership have resorted to using partisan politics, which is instructing particular configurations of infrastructure provision in Protea South. In other settings, party political groupings at community level have been found to result in deep tensions, in turn triggering retrogressive tendencies (Katsaura, 2012).

Because of the contentious and simultaneously coalescive tendencies of the community leadership in Protea South, the power of participatory governance is compromised. State institutions such as Eskom and the CoJ seem to take advantage of these weak and fragmented positions in the community to dictate resettlement plans that relocate the residents. In response to this, residents are divided rather than forming a united front against irrational City decision-making (Harrison & Harrison, 2014). In the same way, litigation as a democratic expression required oneness or unity in order for a sustainable outcome. However, some sections of the leadership dissociated themselves with outcomes of judicial intervention. The judiciary can, in some cases, resort to monitoring and enforcement of the implementation through case management. The judicial intervention in Protea South is playing a significant role in reminding the state about its infrastructure provision promises under the informal settlement upgrading and the UISP, specifically nagging the CoJ as an implementer of the state's policies and programmes in Protea South (Chenwi, 2015; Clark & Tissington, 2015; SERI, 2020). But in a divided community, there is more that is stacked against the desired progress than an irrational or non-responsive state, therefore the chances of the judicial intervention yielding the desired results was compromised – more was needed in terms of bringing stability into the community.

The last theme discussed in this chapter is Eskom's electrification processes in Protea South, with a piecemeal approach of partial electrification rather than a systematic plan to electrify the entire settlement resulted in or worsened community divisions by encouraging or necessitating informal connections. What lacked most in the electrification was participation and proactiveness to emerging challenges. As NUSP's (2015:2) training manual argues, meaningful engagement that includes partnering with communities entails community-driven processes and 'developing agreed processes for communication, discussion, decision-making, and dispute resolution'. The level of irresponsiveness to technical challenges such as blown-up transformers or low hanging live electricity lines displays a lack of accountability structures within or beyond Eskom. This points to the challenge of corporatisations that they are autonomous and not controlled by, say, the state department as discussed in Chapter 3 (PARI, 2014; Cameron, 2015; Tshombe & Dassah, 2018). While accepting that grid electrification in informal settlements is besieged with several challenges, Eskom displayed unresponsiveness even when the Protea South community proposed

to pay for the repair of the dysfunctional transformers. Resort to self-help repairs was putting individuals in danger of losing their lives, ultimately at the hands of state provisioning of infrastructure but state failure of its maintenance. The governance constellation where the DoE and NERSA are unaccountable to the CoJ, the CoJ's housing department as upgrading facilitator but no mandate for the electrification, does not appear to have a resolution.

6.6 Conclusion

As a case study in this thesis, Protea South stands out as unique in various ways. The electrification by the national state-owned electricity utility is in disjuncture with the municipal system, which itself is ambivalent to an upgrading trajectory for the settlement. The electrification, seemingly not temporary, forms a substantial investment that links individual households to the state grid and could form the basis for permanent upgrading. However, at the time of my research, it was not able to lead to other permanent investments, given indecision on the ultimate trajectory of the settlement and ANC-aligned opposition to the implementation of the UISP. The deep-seated divisions in the settlement were playing themselves out in the electrification process with exclusions from the initial electrification process, this, in turn, deepening the division. The partial disruption of the infrastructure through informal connections means that the implications of the state failure are distributed across the settlement, irrespective of which households gained formal access to the infrastructure first. With households across the settlement faced with a common problem across the settlement meant that the gradually disintegrating infrastructure formed the possibility for governance structures at the community level to ultimately unite and struggle for resolution together. However, the political representative structure did appear to resist this, invested in the status quo in a way that my research did not manage to reveal as such. The Protea South case is of such a nature that no easy recommendations can be made other than to identify the abovementioned governance dynamics as implicated in the complex situation on the ground.

CHAPTER SEVEN

7.0 Slovo Park: interim electrification as a community strategy to bridge delays in implementing a court order for permanent upgrading

7.1 Introduction

Slovo Park has a Development Community Forum (SPDCF) leadership which brings together 15 settlement block structures, each of which has four or five sub leaders. Unlike Protea South, Slovo Park leadership is not fractured as the SPDCF worked towards an integrated community approach against CoJ's divide-and-rule tactics and a relocation plan for the residents to greenfield development in 2014. The leadership with the help of activists took the city to court insisting that the city rather implement UISP and its related infrastructure upgrades. The residents and activists attribute the reluctance of some officials to get on with infrastructure improvements to vested interests while city officials profess not understand UISP and stuck the RDP approach. In addition, community leaders also feel that officials are overly cautious about dolomitic risks. With electrification, the SPDCF dissuaded the 2018 City Power electrification from connecting every shack to influence electricity connection to main dwelling on each stand which in turn distribute to 'tenants' in each stand. There is also other infrastructure innovation by the community that resulted in a water tap on every stand. There is, however, ambiguity about whether electrification is permanent or interim. As in Stjwetla, the state vagueness about UISP and electrification are spurring permanent investment dynamic in brick structures.

7.2 The local civic instructing a locally relevant infrastructure governance pedagogy

Along the concept of three major interdependent actor institutions, namely national (macro), provincial and local government (meso), and community and its structures (micro) (Spanhove, 2007; Van der Waldt, 2012), I categorise the Slovo Park leadership under micro-level governance arrangements. These are extensive and involve development control, accounting for the regular layout of the informal settlement, which has been maintained over the almost 30 years of Slovo Park's existence, although, as evident from the aerial photos in Chapter 4, there has been a level

of densification. I set out SPCDF's structure in some detail, as this has relevance for how the electrification in 2018 was governed.

The SPCDF, as explained by one of its leaders (SPCDF 1), is the umbrella grouping for a sophisticated system of interest groups as well as block committees, each with its own leadership structures. The SPCDF, therefore, consists of representatives of the several forums representing different interests in the Slovo Park community, including the youth, women, men, church and business community, as well as representatives from 15 housing blocks, which cover the entire settlement spatially and allow for easy communication and management. Junior ranks of the leadership participate in overseeing the block structures. In total, SPDCF involves approximately 120 structured leaders for the entire settlement (SPDCF 1).

The vice-chairperson of the SPDCF (SPDCF 2) justified what may seem like a bloated leadership structure as necessary to keep an eye out for the welfare of the entire settlement community. In each of the blocks, responsibility is assigned to four or five leaders who, in turn, are accountable to the main SPDCF committee (SPDCF 2). Examples of specific governance aspects pertain on the one hand to the special needs of child-headed and elderly households, and on the other to manage and contain incremental shack development and the addition of new households, in other words, control over in-migration. This has become particularly pertinent since the community's court action in 2016, given that a listing of 3 734 households at the time is understood to be the rightful beneficiaries of the court order. Unlike in Protea South, Slovo Park manifests a coherent, well-organised micro-level infrastructure governance.

My interviews in Slovo Park included the three respondents from the SPCDF leadership. The leadership wanted to avoid leadership vacuums should one of the leaders pass away, as had tragically been the case with five key individuals since the court judgement in 2016 (SPDCF 1, 2 & 3). One of the leaders also explained that the deliberate mentoring of leadership was decided upon after SPCDF had become aware that the elements in the CoJ had a divide-and-rule tactic in relation to informal settlement leadership, through which it pushed for the maintenance of the status quo, i.e., obstructing the UISP implementation (SPDCF 2). There had been times when

dynamics in the settlement were similar to those in Protea South, though with the difference that the SPCDF itself has been close to the ANC structures in the area. In SPCDF's experience, elements in the City had attempted to destabilise the community by creating alternative leadership groups to confuse and subvert gainful engagements. The SPCDF understood this to function in favour of a municipality that is unwilling to provide permanent infrastructure to the settlement. Out of this experience, SPCDF had decided to function apolitically:

> 'In many instances, the different groupings are done along political party lines. We concluded in Slovo Park that there is nowhere in the world or in South Africa where a township was developed due to politicking. We have realised that settlements are developed by government and its development partners irrespective of political affiliations. We, therefore, decided to do away with politics in our Forums whenever we talk about development.' (SPCDF 2).

The practicality of keeping the extensive, multi-tiered leadership structure in Slovo Park active did involve challenges. One of the leaders gave the example of full-time employed leaders who may not have enough time to attend to community problems. He also acknowledged limits to oversight; for instance, a leader may perform contrary to the mission of SPDCF, accepting a bribe from someone seeking to establish a shack despite an SPCDF resolution that there should be no new shacks in that block (SPCDF 2).

To deal with such cases, the SPDCF set down governance and disciplinary mechanisms. However, this aspect of SPCDF's duties, namely development control, is challenging, relying on voluntary commitments from the leaders and demanding honesty and integrity when some of the leaders may not be gainfully employed (SPCDF 2). Unemployment and poverty, therefore, exacerbate the enticement of individuals in the SPCDF structures when approached by outsiders seeking a home or by others seeking to set up businesses (ibid).

The SPCDF's mechanisms to deal with wrongdoing in its ranks involve investigation, and in cases where new structures have been built, SPCDF attempts to compensate the person who received wrongful permission, and then removes the structure. SPCDF's main committee\reprimands the offending leader according to laid down rules, which allow for demotion, reshuffling to another portfolio and making him/her account for the costs incurred. If irregular development had been

allowed by the "owner" of a stand, SPCDF would ask the "owner" of that stand to comply with the requirements of the SPDCF rules and regulations outlined above. If owner resists, he/she would be asked to sign an indemnity form to clarify that the fate of the new tenant household, if formal planning and land regularisation under the UISP took effect, would be the sole responsibility of the "stand owner". Further, if the committee felt that the new construction was wayward and not in tandem with the agreed standards and expectations for the settlement, SPCDF would request the City's metropolitan police to remove the structure and restore order (ibid).

In effect, the SPCDF's structure and approach amounts to a locally designed infrastructure governance arrangement that is relatively effective. According to the literature reviewed in Chapter 2, this is quite a unique phenomenon (Anheier, 2013). Hammerschmid and Wegrich (2016) bemoan the exclusion of key actors of citizens, locally based civic organisations and NGOs culminating in their merely performing peripheral infrastructure governance roles, yet they have important stake, and in the case of SPCDF also knowledge, capacities and experience. These are also directly relevant to how the UISP is manifesting in the settlement, to which this chapter turns next.

7.3 The UISP in practice: The benevolent 'Hiding Hand' governance turns to 'Protective Hand', 'Passive Hand' and 'Malevolent Hiding Hand' configurations

As highlighted in the background to Slovo Park in Chapter 4, the Slovo Park settlement was carefully and skilfully designed by its initial leadership in 1991, who modelled it after the formal neighbouring Eldorado Park Township across the N12 Highway (Figures 4.10; 411). Over the years, the leadership engaged the CoJ on temporary infrastructure provisioning, namely road grading, refuse collection, communal water points which the community later extended to reach each stand, temporary sanitation in the form of VIPs and a small number of water-born flush toilets, and lastly electrification. One of the community leaders explained the approach:

> 'Slovo Park is a well-orchestrated act of planning by our own selves where we studied and replicated the nearby Eldorado Township making this settlement to resemble that township in many if not all urban planning standards: the stand sizes, the roads and overall design. We hoped that that would help unlock development with officials as they would find the organised settlement much easier to plan and adopt than many other unplanned informal settlements. In addition, we also

> ensured that the trunk sewer line from Eldorado Park Township that passes through Slovo Park is respected. We then decided to pilot and determine if we can connect to it against the negative pronouncement by engineers from [the] CoJ. It is now over ten years with the piloted homes flushing into the trunk sewer line without any problem at all.' (SPCDF 2).

The leader further explained how the Slovo Park community had innovatively extended the water reticulation from communal standpipes to supply all stands

> 'Even with water, we used to have 12 public water taps at corner stands for the entire community but realizing the danger of shack fires, although we space shack dwellings in comparison to many informal settlements in Joburg or South Africa in general, we decided to reticulate water to each stand. The reticulation only gets to the 1 076 stands and not to all households in the stand which total 3 734 on the 1 076 stands.' (SPDCF 2).

The Slovo Park leadership's ambition went beyond these interim improvements. It sought permanent recognition of the settlement. The benevolent UISP, initiated by the South African Government in 2014 and setting out a process for *in situ* upgrading, came to their attention when resisting the City's plan for relocation to greenfield sites. As already mentioned, they sought a court judgement which led to the City having to apply for funding to implement the UISP in Slovo Park. One of the community leaders explained the protracted process that followed the 2016 South Gauteng High Court judgement as follows:

> 'What must have contributed to the delay to unlock the development of Slovo Park after the April 2016 court judgement is the need for the CoJ to first make an inventory of the settlement including a socio-economic survey of the settlement upon which the City would base development proposals. In this process, we have identified, through teamwork, land for resettlement outside Slovo Park for all those who may not be accommodated in the settlement planning processes. In that inceptive participatory process, we realised that the layout plan that the officials had proposed did not suit our expectations and we have made our input to the process.' (SPDCF 2).

One community leader gave opinion of how he perceives government is working saying:

> 'National government has its own way of working, so [does] the province. The former doesn't interfere with the operations of the Province and so [does] the Province with the municipalities unless the later has requested assistance. Although the national level is responsible for designing the programme and funding disbursements, in practice each of the spheres, especially provincial and local government, can do [things] very differently from the original intent of the arrangements. This is not working for us in the informal settlements. The only time government institutions react to our plight is when people fight against each other in competition for inadequate infrastructure or

> when there are service protests. In summary, our government is reluctant to upgrade informal settlements.' (SPDCF 1).

The above response about government's reluctance to solve informal settlement echoes respondents from Protea South in Chapter 6 where upgrading is not happening. One of the Slovo Park community leaders (SPDCF 1) alleged corrupt deals in settlement upgrading as responsible for the abuse of the funding, hence delaying the implementation of permanent solutions:

> 'I think it is also because of tender processes in the UISP processes wherein people are making big monies out of them under the guise of Black Economic Empowerment, where contracts are given out corruptly, purportedly to provide the informal settlements with the infrastructure services, which we are not provided anyway.' (SPDCF 1)

Thus, in the respondent's view, the contractualisation is a corrupt enrichment project by officials with the following excerpt alleging the honey sucker desludging of the VIPs (Figure 4.12 in Chapter 4) as typical contracts:

> 'I also see informal settlements used as business sites by unscrupulous senior state officials where temporary services are provided by contractors who have been running these contracts for a very long time now at the expense of establishing permanent services. Imagine the 1076 VIP toilets in Slovo Park since 2007, which must be desludged regularly, and this happening for so many years. Just as with chemical toilets, the same principle works in Slovo Park where the contract to desludge the VIP toilets is given out [to] private contractors.' (SPDCF 1).

While I return to this approach of outsourcing in more detail in the next chapter, at this point it is worth noting that this aligns with Table 4.3 in Chapter 4, which shows more than five consultancy companies engaged in Slovo Park between 2004 and 2018 without contributing meaningful progress. The next quote is about the City's struggle with understanding UISP:

> 'We are all confused about informal settlement and UISP. We don't know how to deal, especially with the UISP. People are sensitive about it. We are hiding behind something in this whole thing. We still haven't accepted it but are fixated on the conventional housing provision. Yet that time is past. I think the greatest weakness about [the] UISP is that we don't understand it. I witness that every day when we are in meetings now and again. I wouldn't put myself in a better position because of my attaining a postgraduate qualification in Human Settlements and thus engages deeper with [the] UISP than ever before, we are just not aware of the UISP.' (CoJ RG1).

When asked to elaborate on the misunderstanding around the UISP, the official, like the regional housing official for Stjwetla in Region E, showed deep frustration with the way the UISP is

implemented in the City, which corroborated the disappointment I sensed in my engagements with the SPCDF leadership. The official expanded:

> 'Sometimes, I become frustrated. But well, this is not my theory [referring to the UISP]. We do not come with a theory anyway. This time 'herewith a consultant and later another', but there is nothing to show.' (CoJ RG1).

Another principal reason that respondents cited for delays in the upgrading of and or threats of evictions from Slovo Park prior to the 2016 judgement was the generic assumption of the presence of high-risk dolomite. As with Protea South, the CoJ has been cautious and protective in the development of informal settlements for fear of dolomite-related land subsidence. This precautionary and protective governance by the CoJ resonates with the Protective Hand philosophy (Jordan & O'Riordan, 2004), which argues that planning and implementation processes institute protective and precautionary risk management measures to mitigate damaging threats, in this case, environmental hazards, in overestimated task complexity. Anheier (2017) expands that such Passive Hand planning approaches have the purpose of avoiding worst-case scenarios but lead to a do-nothing approach, as in the case of Slovo Park. One of the leaders dismissed the dolomite allegation as 'a scapegoat to deny or delay development' (SPCDF 1). One of the other leaders criticized the eviction attempts based on the dolomite as 'pure bureaucracy and dictatorship. They were giving petty reasons like the area is dolomitic and thus undevelopable. This would be said to us without any documentation of the geo-technical studies done for our settlement' (SPCFD 2). He assured me that there were no proven severe dolomitic conditions that threatened human habitation. An officially commissioned geo-technical investigation in 2017 confirmed this, with the exception of the south-western corner of Slovo Park (Huchzermeyer, personal communication, 2022). The community leader summarised the lack of UISP implementation in Slovo Park as showing a lack of understanding between government and communities of informal settlements in general:

> 'This is one of the reasons why we finally resorted to the courts for intervention. That is also why we had to seek partnership[s] with various organisations and universities like Witwatersrand and Pretoria, who continue to assist us in useful ways. There are not any portions that were diagnosed as having severe if any threatening dolomite following a geo-technical study done in line with the Gauteng High Court judgement. Dolomite was, by large, a scapegoat. In similar ways, officials in

> the CoJ had told us that Slovo Park is not sewerable because the land is too gentle. Yet the University of Pretoria proved beyond doubt through engineering studies that it was very possible to sewer the area after a thorough seven-month study of the settlement. When we presented the engineering mapping produced at meetings with the officials, that is when we were threatened with relocations, which was arrogance at its best. We were labelled people that want to see better than them, know more than them.' (SPDCF 2).

Based on the above revelations, the practice of the well-intentioned and benevolent UISP in the case of Slovo Park in the CoJ can further be analysed along the Hirschman's (1967b) benevolent Hiding Hand and Flyvbjerg and Sunstein's (2016) malevolent Hiding Hand governance principles discussed in Chapter 2. The UISP, as part of the human settlement law in South Africa for infrastructure upgrading for informal settlements (Huchzermeyer, 2021), resonates with the benevolent Hiding Hand concept in that the government's kind-hearted informal settlement upgrading is stumbling into unforeseen complexities. The task complexity must have been, therefore, underestimated and taken as simple routine work (Hirschman, 1967b). The underestimation is evidenced in the adoption of the UISP before there was a full investigation and or piloting (Minister of Housing evidence in Joe Slovo court application quoted in COHRE, 2009), this leading to the ignorance of uncertainties and difficulties inherent in the programme. In Hirschman's (1967b) terms, UISP may have been overambitious and dilettantish in that it triggered interest, but its adoption also did not generate real commitment or knowledge about how it should be implemented, nor did it lead to the putting in place of effective mechanisms to oversee and enforce its implementation. This is notwithstanding the creation of the NUSP as an upgrading support programme whose shortcomings are discussed in Chapter 8. However, given that the city's infrastructure provision was analysed earlier on as allegedly having vested interests and corruptly profiteering from ongoing informality, the CoJ may be presented as a contradictory mixture of both benevolence and malevolence. The following sub-section shows how the SPDCF is enforcing the upgrading of Slovo Park.

SPCDF holding the CoJ to account for informal settlement upgrading: Putting macro-meso-micro-governance procedures in reversal

In typical macro-meso-micro reversals (the opposite of the usual state-led hierarchical arrangements (see Van der Waldt, 2012) and polycentric co-governance (Emelianoff, 2014), the

SPDCF partnered with a technical team of NGOs and a research organisation (as explained in Chapter 4) to assist in the protracted settlement upgrading, forming Slovo Park Task Team (see Huchzermeyer, 2021). Prior to the formation of the Task Team, SERI had legally represented the Slovo Park community in the *Melani and others versus the CoJ and others* court case in the South Gauteng High Court, culminating in the 2016 Melani judgement case number 02752/2014 in favour of the community (SERI, 2020). The Task Team was established late in 2016 and was still meeting at the time of writing this thesis, five years later, in its bid to make sure the CoJ complies with the Melani Judgement, which ordered the City authorities to apply and implement UISP in a manner that meaningfully engages the residents (SPDCF 1). My respondents in SPDCF showed delight at having a Task Team that legally and technically assisted it to hold the CoJ to account with regards to UISP and outlined milestone achievements, including facilitating the participation of the residents. The senior CoJ regional housing official admitted that there had been a lack of involvement of Protea South Community saying:

> 'This [lack of engagement] was compounded by the way officials would do upgrading. I will quote the example of Unaville, where we planned to relocate people from Slovo Park and to build them houses. This was done from the Offices and not with the people of Slovo Park, a typical planning style for them but without them. The Slovo Park people resisted and contested that decision.' (CoJ RG1)

Later this official indicated that there had been an improvement as the CoJ was engaging the community of Protea South, albeit not sufficiently:

> 'I think now we are beginning to plan with them but, honestly, even then there is this aspect of imposing. As I am speaking now, I am part of a team that is involved in the engagements with informal settlement communities, but the element of imposition is still there.' (CoJ RG1).

In the Task Team, the CoJ is represented by housing officials, its legal department and the CoJ's appointed planning consultants (Huchzermeyer, 2021). Huchzermeyer (2021) reports that in March 2021, Gauteng Provincial Government became part of the Task Team; this hoped to expedite the appointment of the requisite professional resource team for the UISP implementation to resume for Slovo Park. One of the SPDCF leaders expressed gratitude to the Task Team for fostering what they judge as positive development approach:

> ‘Since the formation of the Task Team in 2016 after the court judgement, we are working together including identification of extra land where some of our members may be relocated to. We are excited about the possibility of settlement upgrading under the guidance of a Task Team, which is ensuring our participation.’ (SPDCF 2).

Despite the formation of the Task Team, the SPDCF leadership is frustrated with the overall settlement upgrading progress as the CoJ is delaying complying with the court order. The same leader who expressed appreciation in the quote above showed grave concern with the slow pace in the effort needed to move a monolithic edifice that was blocking the UISP implementation. He also expressed dissatisfaction at the desktop layout plan prepared by appointed planning consultants in 2017, who did not recognise existing Slovo Park infrastructure. As documented by SERI (2020), the plan proposed to replace and start a new settlement afresh and thus promoting wholesale settlement relocation (SERI, 2020). The following excerpt expresses the leadership’s worry with consultants’ plan:

> ‘If we shall have as many households as possible remaining in this site for *in situ* development as required by [the] UISP, why not plan with, and accommodate the existing infrastructure, including electricity? This was a question that we posed to the layout plan that was presented by the consultant that completely ignored the existing electricity infrastructure. Surely the planning of the settlement should not ignore important existing infrastructure but instead, incorporate it in an *in situ* design.’ (SPDCF 2).

The senior CoJ regional housing official (CoJ RG1) confirmed the Slovo Park Community rejected the layout plan adding details of how that must have been done with the advice of the Slovo Park technical advisors from CUBES and 1to1:

> ‘As we speak, Slovo Park rejected the layout plan that was done by the consultants, Urban Dynamics, on the basis that the plan does not relate to realities on the ground, arguing the plan did not respect existing development yet the settlement is established already. The [freshly installed] existing electricity infrastructure, for example, was overlooked.’

Concurring with the concerns of the SPCDF leader in the earlier quotation (SPDCF 2), the senior CoJ regional housing official cited the engagement process with respect to the layout plan as lacking in meaningful engagement as required by the Melani judgement, bemoaning the pervasive disengagement as the institutional approach in Slovo Park:

> ‘Yes, we approached [Slovo Park community] with a pre-planned layout plan and chose community representatives. After the workshop, we asked them to inform others of the proposals. While the process is taken as participation, the truth is we are making them understand how Slovo Park would be developed and not how they think it should be. You see, kind of “this is the only way to it, how Slovo Park will be developed”. In that plan, there are 284 houses and walk-up flats, in total 1069 stands, and the remainder would be relocated away from the settlement. But then the community, with the help of professional organisations like Wits [CUBES] and SERI, analyses and concludes the planning processes as flawed, not workable.’ (CoJ RG1).

In Huchzermeyer’s (2021:46) first-hand experience of serving as technical advisor to the SPCDF on the Slovo Park Task Team since its inception, the problem with the professional planning approach is its ‘dominant perception that statutory planning cannot accommodate informal settlements other than on a temporary basis’ and the inclination to idealistic planning and standardisation as opposed to pragmatic planning relevant to UISP and *in situ* upgrading. My engagement with the Slovo Park leadership, however, ended on a high note, with one of the leaders expressing faith that UISP implementation, though belated and protracted, is making headways. In a spirit of forgiveness and togetherness, an ecstatic SPDCF 2 hailed the multi-team stakeholder approach as making a historical exemplar to inclusionary UISP in the CoJ and in South Africa as a whole; this evidently provided a motivation not to give up. In a resilient and pragmatic mode that I sensed throughout many of the SPCDF leadership responses, he explained:

> ‘We can conclude that what has been holding [back] development of Slovo Park was lack of understanding between government and us, a learning process by many standards. There is light at the end of 26 years down the line. Now we have found each other and are working together. The challenges are our challenge[s] together. We need each other, as SPDCF alone failed to make much progress (SPDCF 2)

7.4 SPDCF-driven electrification and other infrastructure: Exemplary active and infrastructural citizenship governance configurations

Instead of the CoJ driving the implementation of infrastructure provision through the UISP, the SPDCF, as discussed under section 7.3 above, took the leading role, with the interim electrification a case in point. The SPCDF demanded that City Power roll out electrification in line with the DoE guideline on Electrification of Unproclaimed Areas (DoE, 2011) as the CoJ was taking time to comply with the 2016 Melani judgment (Huchzermeyer, 2021). The electrification took place in

2018. The only prior electricity infrastructure in Slovo Park was high mast lighting, requested by the leadership to reduce muggings and robberies after dark. However, residents had informally tapped this infrastructure, repurposing it through a network of low hanging live wiring, also with the implication that door-to-door refuse collection by the City's utility company Pickitup had to be ceased. Electricity was also tapped from Eldorado Park across the N12 Highway and from the Nancefield industrial area. In the account of one of the community leaders, these challenges forced the Slovo Park leadership to approach the CoJ 'so that we could move out of the lots of illegal connections to the factories and the neighbourhoods immediately north of N12 Freeway which were very dangerous' (SPCDF 1).

Pursuant to the 2016 Melani judgement, for which the CoJ has been delaying implementing and whose process required applying for funding from Gauteng Province (Huchzermeyer, 2021), the SPCDF had continued pressurising for electrification of the settlement. In this way, the interim electrification was driven and demanded by the SPCDF with technical and legal support from NGOs and a university research centre, all represented on the Slovo Park Task Team together with the CoJ and its relevant entities (as set out in Chapter 4). According to one of the leaders, the electrification (albeit interim, as the area remains unproclaimed) 'came about after a long struggle with government to replace our own "electrification" which was obviously dangerous but assisting the community with the much-needed lighting' (SPCDF 3). The negotiation for electrification was a milestone achievement for the SPCDF, triggering changes in the built environment of settlement (see section 7.6 under this chapter). Meanwhile engagements with the CoJ on the implementation of the UISP as per the court order, which would involve permanent infrastructure provision were still ongoing at the time of writing this thesis (see also Huchzermeyer, 2021). What is not clear is whether this would involve replacing the "interim" electrification with a higher standard, permanent electricity reticulation.

Regarding the benefits of electrification, one of the leaders said it is 'a basic right that is helping to preserve and economise our food reserves through bulk buying and refrigeration' (SPDCF 1). Another acknowledged electrification as addressing multiple challenges:

> ‘Paraffin stoves are very dangerous especially to shack dwelling when mistakenly left unswitched, so are *mbaulas* [brazen stoves]. While these are dirty fuels compared to electricity, they are also very expensive. The “people’s connections” was very dangerous such that many people died because of the *izinyoka nyoka*s. One man died on top of a wet roof when he was shocked to death after climbing up the roof to sort out the wires. Someone used the *izinyoka nyoka* wires as a scapegoat for a fatal accident for a person he had killed himself.’ (SPDCF 3).

The research uncovered that the way electrification was implemented in Slovo Park differed from the other electrified informal settlements covered in this thesis. The SPCDF chose a different approach. It guided the City’s utility company, City Power, for the first time to depart from its normal approach of connecting each shack in an informal settlement. Instead, at SPCDF’s insistence, City Power only connected the stand “owners” (1076 households) and the stand owners, in turn, connected their tenants (a further 20658 households). This reduced the overall cost for City Power, as ‘only the main tenant or owner of the stand is connected and has a meter box. The rest of the households are not metered but gets their electricity through the main tenant’ (SPDCF 3). The SPDCF insisted that the so-called owners’ electricity subsidy, given only once under the DoE, be used by “landlords” to allow the excess or “tenants”’ subsidy to be issued at new relocation site of their would-be permanent settlement at a yet to be identified area by the CoJ. Thus, they could occupy electrified sites, as their entitled electricity subsidies would not have been used up in the Slovo Park informal settlement electrification. Figure 7.1 below shows a typical electricity pole with a meter box for each stand.



Figure 7.1: A typical electricity pole with meter box and multiple wires going out of meter box in Slovo Park: **Source: Author, 2020**

Unlike in Stjwetla and Protea South, the SPDCF, through the Slovo Park Task Team, not only participated but directly shaped the electrification process by City Power, ensuring the Slovo Park community's interests were embraced (SPDCF 3). This also required considerable consensus-seeking and communication by SPCDF to the level of individual households. In this way, Slovo Park's electrification is an exemplar of community-led governance, in which the micro-level, in the form of community-based or civic organisations, is not a passive recipient, but dictates the modalities of the provision, resonating with notions of active citizenship (GGLN, 2013) and the citizen-led infrastructural citizenship (Lemanski, 2019). One of the leaders commented regarding participation:

> 'When the court ruled in our favour of [the] UISP and City Power wanted to supply us with electricity, we told it clearly *there cannot be anything for us without us***.** With the assistance of the Task Team, we ensured our specific interests are articulated. One challenge, though, which affected the Task Team has been [the] resignation of progressive members from the government side where new members are introduced. That [was] retrogressing [the] progress.' (SPDCF 1, *emphasis added*)

In furtherance to the notion of active involvement outlined above, another respondent elaborated on the empowering experiences of how the electrification process unfolded:

> 'Frankly, the electrification involved everybody in Slovo Park. The community agreed with the leadership to the electrification subsidy in one connection per stand, and when other households are moved to final sites, these shall be allocated their subsidies. This arrangement has saved City Power lots of trouble and money. So, the process was proposals from City Power to the leadership and to the people and back to City Power.' (SPDCF 3).

The SPCDF had also taken the lead in trying to solve other infrastructure problems, which I'll touch on briefly because they contrast with the highly complex electrification process, which SPCDF had to lead. As reported earlier in Chapter 4, in terms of sanitation, Slovo Park is serviced by desludgeable VIP toilets constructed in 2007 as a result of organised demands from the community. However, the residents complained that the sanitation system is old, outdated and has intermittent desludging by the contractor:

> 'We fought with Joburg water in 2003 against the bucket system that was in place where 20 families to a bucket system [This] was believed to be very unhygienic. They provided VIP toilets, which they told us then "are nice, ventilated pipe pit latrine" but it turned out to be a pit toilet as it's smelly

> as the vent pipes are no longer serving the purpose owing to lack of maintenance. They are even more smelly at desludging stage.' (SPCDF 1)

One of the other leaders expanded on the sewage desludging challenge saying 'the contractor uses only one honey sucker for the whole of Slovo Park. The removal of the waste is not efficient at all, making the toilets always full and smelly.'

I already mentioned the water taps on every stand, unlike Stjwetla and Protea South, and resulting directly from the high level of social organisation in Slovo Park. One of the leaders explained how this was achieved:

> 'In early times around 1994, our community had no water supply. People would go out to the surrounding factories and industries to buy water. Our leadership finally approached the CoJ, which provided us with water tanks, but the tanks were subjected to misuse and depositing of garbage from the top. Then the leadership approached the CoJ again, and we got communal taps. We innovated around the communal taps as we desired for better, safe, individual water taps at every stand, with assistance and exchange programmes from organisations like the ISN. We had to organise our community to contribute some money towards the innovation, and yes, we succeeded.' (SPDCF 1)

Contrary to my expectation, the water reticulation innovation did not impress state authorities, nor did it lead to opportunities and synergies in state infrastructure provision in the settlement (ibid). The community leader sharing this account dejectedly responded that 'when it is done by the community, it is labelled illegal or informal, but genuine when it is the state institutions themselves that bring it. Yet we call it "helping ourselves" and bringing services closer to the people.' (ibid)

7.5 Judicial intervention for UISP implementation

In a bid to understand how infrastructure is provided in informal settlements and eventually resorting to judicialising its governance, my interviewing included questions on the Slovo Park litigation that culminated in the Melani Judgement in April 2016. One of my questions pertained to what the Slovo Park community prayed the court for and if that was granted. Similar to what the human rights lawyer for Protea South pointed to, one of the leaders of Slovo Park suggested that the CoJ is poorly informed about the UISP:

> 'The Court gave the CoJ three months to comply and initiate the settlement upgrading in line with the UISP. Yet the CoJ showed it did not understand the UISP. So, what the leadership of Slovo

> Park agreed to do with the CoJ was to sit down and agree [on] how to do what the court had ordered as [the] UISP had never been implemented in the City. A process had to begin with the Housing Department. We are currently working on a layout plan together for possible implementation.' (SPDCF 3).

I sought to find out if the community of Slovo Park considered alternative strategies before resorting to the court. In this, I wanted to determine what other possible arrangements and options are available for infrastructure provision in informal settlements and how these are mediated in the processes. One of the leaders responded:

> 'I was not part of the leadership by then, but what I know is that no "institutional stone" was left unturned in [the] search for alternative ways to the settlement upgrading. Through the leadership of our late Mohau [Chairperson of SPCDF, who passed away in October 2017], the political figureheads in the ward, the CoJ and beyond, the MMC, MEC, government institutions like South African Human Rights lawyers and other government officials were all approached to intervene in the Slovo Park challenge but to no avail. We were sent from [one] corner post to another without much help. We also tried to close the N12 freeway and burn vehicle tyres in a bid to get [the] attention of the authorities, but that did not work at all. We then finally decided to take [the] CoJ to court as the last resort.' (SPCDF 3)

What the leader elaborated in the passage above is in line with Table 4.2 in Chapter 4, which provides the chronological order of events in Slovo Park. Connected to the judicialisation, I asked how the judgement that commands the CoJ to commit to the UISP has affected relationships with the Slovo Park Community. Two insightful responses were given:

> 'I think it did negatively, but we have tried to improve it. The implementation process has suffered delays through tactics used by officials, for example, doing something in a way not agreeable to us, which takes time to correct to our satisfaction, an agonising process indeed. There are delaying tactics, but also the shifting of leadership in the executive staff in the CoJ that we would have made progress with also frustrates progress.' (SPDCF 1)

> 'The political figureheads of the CoJ are not happy because the glory does not go to them. They always try to derail the process. The officials try to roll out the development, but politicians are a hindrance.' (SPDCF 3)

The last aspect of the litigation route was an evaluative assessment of the progress made in practice in relation to the court judgement that commanded the implementation of the UISP. The aim was to assess the efficacy of the judicial governance in the case of Slovo Park and, in a way, compare this to that of Protea South, which was implemented through case management. The respondent

below was not satisfied with the progress and sincerity of the CoJ, which he allegedly was dragging its feet. To improve this, he suggested the court could put in place stiffer conditions or enforce the judgement by, for instance, case management.

> 'I am happy with [the] judgement but not with what is happening on the ground. Things aren't moving as fast and not as good. Someone up in the offices [of CoJ] is delaying the process. The CoJ was given three months in 2016 by the High Court, but four years later, there isn't much to report about it. We just need to take the City back to the court. We have done our part and tried to engage it, but it continues to drag the process back, sending us from [one] corner to another. We need to prove to the CoJ that it is undermining the same law that they claim to uphold.' (SPDCF 3)

If the CoJ is taken back to the courts as suggested by the SPCDF leader, the court may want to contemplate a case management approach but, in this, treading cautiously to avoid overstepping its mandate (see Rajamani, 2007; Bhan, 2009 in the Indian cases in Chapter 2 above). As explained by the human rights lawyer who I interviewed for the Protea South case, case management is legally contestable as encroaching on the City's constitutional executive prerogative of implementation (HRL). However, this is a question I didn't pursue further in the scope of the Slovo Park case study.

7.6 Dynamics and anxieties: interim-permanent electrification infrastructure misconceptions

As in the case of Stjwetla, and to a lesser extent in Protea South, the implementation of interim electrification has triggered dynamics in Slovo Park, among them housing consolidation in the hope the settlement and electrification are permanent. The most recent house constructions during my field visit are shown in Figure 7.2 below.



Figure 7.2: House consolidation in Slovo Park: **Source: Author, 2020**

The three SPCDF leaders I interviewed admitted that electrification has had a great impact on the brick-and-mortar construction in the settlement. One argued:

> 'People were overjoyed by the supply of electricity. A lot of changes to the built environment was or is still being witnessed in the form of construction of houses, supermarkets and others, although we are advising them against permanent construction. With the outsiders beginning to see hope for the settlement, many are looking for accommodation and backyard construction has become a challenge, albeit only happening behind our knowledge or we reverse the shack farming.' (SPDCF 2).

Another concurred that the electrification has had a great effect on the built environment but gave an assurance those making brick-and-mortar improvements are ready to comply with incoming new township establishment conditions and realignments: 'Yes, there are some people who have started to build houses and shops, these related to the onset of the electrification' (SPDCF 3). The feasibility of reversal or compliance with demolition orders in the case of permanent high-quality investments, as shown in Figure 7.3 and in other images in Chapter 4, seems problematic. What this shows is that the UISP processes needed to have been rapid, responsive, proactive and forward-looking in its planning for the regularisation of the settlement, rather than being slow and reactive in its approach. This calls for planning to be flexible and accommodative of existing spatial developments and infrastructure least there shall be stiff challenges (see Huchzermeyer, 2021). Corroborating this comment, one of the leaders made the following comment about the constructions:

> 'This is the reality. Development has been delayed much. Shack life isn't good at all. People have waited for too long. The disadvantage shall be when the approved layout plan is finalised, one may realise that some infrastructure service like water or sewerage has been proposed through the "permanent" house, and the building will be required to give way to these facilities. We have been telling people not to build permanently but people now tell us they shall comply with the township establishment conditions. The only hope we have is the electricity reticulation to be regularised as is and the eventual stands created within the framework of the electrification or without significant changes (SPCDF 2)

The issue of permanent construction taking place in Slovo Park is becoming a complex matter in the CoJ as questions about what the fate of those buildings found outside the eventual regularisation layout plan shall be. The senior CoJ regional housing official responded to this as follows:

> '[Concerning] the brick-and-mortar structures coming up, what we have been asking the Council is if residents with completed permanent such structures shall be compensated in the event they are to be relocated. But there is no answer yet, not sure if that shall be agreed to or rejected. We know in the event the layout plan fails to respect existing spatial developments in the settlement, organizations like 1to1 and SERI will always be on us.' (CoJ RG1).

The question that the foregoing discussion on electrification raises is why electrification was not done as a permanent measure given the higher investment and costs associated with it also the inherent connotation of permanency ordinarily associated with on-grid electrification (see discussions in Chapter 2 and 3 regarding grid electrification). As in Stjwetla, it appears that the notion of "interim", even if mentioned, did not sink in at the level of individual households, opening the electrification to misinterpretation, notwithstanding DoE officials' position that electrification is always permanent (see Chapter 5). The question of permanent temporariness (see Levenson, 2012) of electrification prompted the following responses from one of the leaders:

> 'Our thinking is that the electrification is permanent, although when City Power installed, it was called interim service. I think the electrification for Slovo has been wrongly generalised with the rest of informal settlements where if they have been in existence for over five years, they are eligible to receive electrification [referring to provisions of the DoE guidelines with respect to electrification in unproclaimed areas]. Yet the Slovo Park should have been done differently, not as [an] interim measure! I have not wanted to question that in all our meetings about the term "interim services" fearing I take people back unnecessarily and perhaps a foolish question, just as I wouldn't ask if the grading of roads done in the settlement was temporary, but now I think I should have done so.' (SPDCF 2).

In further amazement and bewilderment about the temporariness of the Slovo Park electrification, the leader remarked as follows:

> 'That is a worrying question. I have always questioned the officials from CoJ when they talk about temporary electrification. My biggest worry is that the electrification investment and expenditure made on Slovo Park may go to waste. In that, we argued that the electrification could have roughly cost R40 million. and the cost of preparing the layout may have cost R1 million.' (SPDCF 2)

The design of electrification as interim infrastructure investment and the official position that it shall eventually be rendered obsolete and unusable are contentious governance issues. I shall turn to this discussion in the next chapter, where I bring positions from the energy sector stakeholders of the DoE and City Power to hear on the debate.

7.7 Discussion

As in the previous two chapters, I have attempted to incorporate analyses and discussions with the empirical findings of Slovo Park, especially with reference to the theoretical and conceptual frameworks. In this section, I take the discussion further, with the use of relevant theories and complementary observations from my research. As with the other chapters, the discussions are guided by the overarching research question: How is infrastructure provision in informal settlements, in particular electrification, governed in South Africa.

One key finding in Slovo Park pertains to the criticality of the organised and systematised community leadership of the SPDCF, which has successively put in place community governance that prioritises an inclusionary approach for both intracommunity and external stakeholders, the former nurturing the community to coalesce towards the common goal of settlement upgrading. Slovo Park makes a community exemplar that defies critics of community governance as not progressive nor novel in practice, e.g., Katsaura (2012), whose conclusions are based on a complex inner-city neighbourhood setting. Katsaura's (2012) study, as well as the Protea South case, may lead one to generalise community governance as inevitably bogged down by divisive internal socio-political contentions and coalitions that weaken the community and distracts them from the focus on infrastructure provision in the tussle for power, prestige and economic resources. Slovo Park's SPCDF appears to have mastered community leadership in a way that many informal settlements could learn from. The theoretical frameworks of active and infrastructural citizenships as a lens depicting state-society disjuncture and mismatches (GGLN, 2015; Lemanski, 2019a) apply to Slovo Park, but the SPCDF expands this in its desire for polycentric, collaborative systems of governance resulting, which it has used in both its water and its electricity reticulation processes, though in very different ways.

What is also outstanding about the Slovo Park community is its leadership organisation is its capacity to conceive of and carry out infrastructure innovations that defy the frequent underrating of the local knowledge systems. In terms of electrification, the approach of connecting tenants through the stand "owners" connections to save their subsidies is a case in point. This suggests possibilities for the active seeking of state-community synergies in infrastructure provision and

governance not only in the settlement but with other informal settlements in the CoJ and South Africa more broadly. Platforms for experience sharing with informal settlement residents can assist in further refining policies, programmes and implementation thereof for informal settlements generally.

Another theme in this chapter revolves around key lessons that the Slovo Park trajectory should provide to government to introspect with regard to hesitancy, passive resistance and self-contradiction with respect to well-intentioned policies, programmes and plans for informal settlements. The exhibited state resistance to implement the UISP by the CoJ and subsequent intervention by the judiciary, which correctly interprets the UISP, shows unwarranted protective governance when it is not necessary. Quite appropriately, this has been interpreted or criticised as malevolent governance (Flyvbjerg & Sunstein, 2016) and alternatively passive governance (Anheier, 2017), altogether denying residents what the state benevolently intended for them. Concomitantly, the refusal to implement the UISP in Slovo Park is generating governance formulations that effectively contradict the original intention and spirit of informal settlement upgrading as adopted in the National Housing Code and related statutory provisions.

Combining governance and institutional theories to analyse the challenges of UISP implementation in Slovo Park by the CoJ, there are clear indications that the bureaucracy of the Johannesburg Metropolitan City has an unresponsive institutional architecture through which to make infrastructure decisions and investments in line with the UISP (see Dacin et al., 2002; DiMaggio & Powell, 1983). The exception is the emerging collaborative, co-governance approach through the Task Team which, however, requires the City to sustain and refrain from apparently entrenched path-dependent hierarchical morphologies, which meta-governance and neo-Foucauldian analysts find fault with bureaucracies (see Pierre & Peters, 2000; Brenner, 2004; Jessop, 2009).

Lastly, there is a need for government to find ways and means to reconcile with the residents so that infrastructure provision takes place as per the statutory provisions. To achieve that, there is a compelling need for national and or provincial government to monitor, support and ensure

appropriate compliance on the part of the CoJ in terms of UISP implementation and to resolve any challenges related to the lack of understanding and or capacity building by the CoJ regarding the UISP.

CHAPTER 8

8.0 The City of Johannesburg's governance of infrastructure provision in informal settlements

8.1 Introduction

The chapter begins with a brief description of the CoJ overall informal settlement upgrading approach to analyse that strategy. It the gives upgrading and infrastructure governance insights and experiences from within the CoJ and government institutions with respect to the governance of infrastructure in the three informal settlements discussed in Chapters 5 to 7. In some instances, the points made in this chapter are also relevant to informal settlements more generally. The first section looks at internal dissonances within the CoJ in its administration of informal settlement infrastructure provision across three departments, namely Housing, Development Planning and the EISD. The second section turns to contractualisation and corporatisation and how these are intervening in the infrastructure provisions. The chapter then focuses on disconnections across infrastructure sectors, discussing the lack of coordination between DoE, DoHS, NUSP, provinces and municipalities (including CoJ). This section also presents a closer examination of the disconnection between the CoJ and Eskom in the dual electrification in City's jurisdiction. The last part examines the complex contradictions in the electrification that sits uneasily with the temporary services of water and sanitation that form interim housing sector interventions.

8.2 Internal dissonances within the CoJ in the administration of infrastructure provision in informal settlements

This section discusses the lack of coordination among three out of the nine executive departments in the CoJ that have a bearing on infrastructure provision in informal settlements. These are the Housing Department, the Development Planning Department and the EISD. All three have or are supposed to have specific infrastructure mandates for planning and provision of the basic services of water, sanitation and electrification in informal settlements. Through a cluster approach, the CoJ's 2014-2015 IDP 'aims to coordinate the City's programmes around the four outcomes outlined in the Joburg 2040 Strategy' (CoJ, 2014/2015:26).

The three departments fall into two of the clusters under Sustainable Services, while the Development Planning Department is clustered under Economic growth (ibid). The EISD and Housing Department work with City Power and Joburg Water, among other corporatised entities of the City. Through the Sustainable Human Settlements Urbanisation Plan, the Department of Housing is responsible for housing and basic infrastructure provision (water, sanitation and electricity) in both formal and informal areas (ibid). To attain this mandate, the EISD complements the Department of Housing. Given that the Development Planning Department was logically supposed to complement the Housing Department and the EISD because the UISP involves planning that the Planning Department can assist with, it is relevant to problematise this arrangement as leaving out the planning of the informal settlements. As it stands, there is a gap for Phase 1 in the UISP regarding the preliminary planning work, which requires planning skills (DoHS, 2009; NUSP, 2015). In terms of misalignment and or coordination of functions, it is relevant to establish which department in the CoJ is responsible for this key planning function and how it is being carried out. The placement of the Development Planning Department under the Economic Growth Cluster and working with such entities like Johannesburg Property Company among others has the result that the department focusses on the formal and commercially viable parts of the city, smart city concepts, economic growth and providing support to urban competitiveness as guided by a SDF (CoJ, 2014/2015). While the mandate of the Development Planning Department is to restructure the City's historical fragmentation and urban form through city densification (ibid), this mandate does not speak to how informal settlements are to be treated.

A critical reflection of the City's coordination strategy for infrastructure provision was gleaned from the Executive Director for EISD (CoJ EXD) who was standing in for the City Manager, that also giving insights into the city administration with regard to informal settlements and infrastructure provision. I discuss responses from this senior CoJ respondent first, although he was the last of the City officials to be interviewed, as it provides an overarching picture of the City in this regard. The Executive Director confirmed the analysis I had drawn from the other interviews:

> 'You have concluded from your interviews with Housing, Planning and EISD Departments that there are disconnections and or misalignments with respect to infrastructure provision in informal settlements such that the city has no integrated approach to informal settlement upgrading. You

> also talked about the roles that each of the departments are playing in the informal settlements. In that, you talked about the disconnects and disintegration, and I think you are correct, I can confirm that. In addition to the three core departments, to supplement the delivery of basic services, we have created an urban management approach too by creating seven administrative regions and a CRUM unit that [responds to] expanding requirements for coordination.'

My engagement with City officials had found that there are interdepartmental misalignments and lack of coordination, this corroborating with Mvelase's (2020) earlier findings. In the foregoing quote, the Executive Director (standing in for the City Manager) also admitted that there is no strategy for integrating infrastructure operations in informal settlements among Housing, Planning, and Infrastructure Departments in the CoJ. Many of the other respondents in the City generally cited the lack of coordination, a departmental silo approach and or misalignment in the departments' functions as chief challenges to the informal settlements phenomenon. Beginning with coordination, one senior CoJ housing official reiterated 'coordination, coordination and coordination' as the missing component (CoJHS 2). A senior respondent from the Department of Planning (henceforth called City Transformation and Spatial Planning, CT & SP) put forward a strong case about the disconnection between the department and informal settlements, also citing a policy-practice disjuncture in that department:

> 'I think our role as the City Transformation and Spatial Planning is [more] limited than it should be. Informal settlements have been delegated to [the] Department of Housing. We are not involved at all, to be frank. We work on the Spatial Development Framework (SDF), which is a spatial framework for the whole City, where SPLUMA, the Planning and Land Use Management Act, says the SDF must include informal settlements, their location, and determine which are suitable for upgrading and which are not. Currently, the SDF doesn't do that, and we are busy reviewing our SDF to have more details working in conjunction with Housing to get that to work. Our role is [more] limited than it should be.' (CoJ CTSP)

The respondent gave details about how the disconnection unfolds and brings the question of misalignment or misplacement of informal settlements in the Department of Housing to the fore:

> 'Currently how it works, whether right or wrong, is another story, is the Housing Department decides to upgrade an informal settlement through whatever process goes with it. Electricity grant, for example, is one that comes into play. To do that, I think a service provider who is a planning consultancy who deals with the design and the engagements with the informal settlement communities is appointed. Urban Dynamics [a planning consultancy] is one that normally gets appointed in the CoJ in this regard, like in Slovo Park. These consultants only get to this Department

> to get the plan approval. A good question to ask about UISP is whether informal settlements should be located in [the] Housing Department or in City Transformation and Spatial Planning (CoJ CTSP).'

The same official considered various routes through which informal settlements could receive better attention, but it was apparent that this issue was not as yet being debated in and between the departments.

> 'I definitely think that there is a disconnect, and I am not too sure how it can be fixed or what it should be like, whether there should be regulations coming from national Government telling us what the arrangements should be or whether internal discussion with the Mayor that the approach isn't working and how can we rearrange and make it better or whether there isn't political will and it's not given priority or whether this isn't important and not given priority by the administration.' (CoJ CTSP)

A senior official from the EISD echoed the same sentiment about the disconnected way in which informal settlements were being treated, identifying the Department of Housing (CoJ DoH) as the source of the challenge and giving insight into how politics are influencing electrification:

> 'We are uncoordinated, as City of Joburg's Department of Housing initiates informal settlement projects, and we get political pressure to join the department in the project/s it is working on. That is not the best way to do a project. A councillor puts pressure that a project in their ward must be electrified, even if the feasibility considerations may not dictate that the settlement shall be permanent, hence [the reality is that] we follow the political view. It is politically driven electricity infrastructure provision with councillors dictating where the infrastructure investment should go, and sometimes also which settlement was longest established. This is not necessarily based on the rapid assessment and categorisation processes.' (CoJ EISD)

The CoJ's Department of Housing officials, in turn, appeared to be overwhelmed with various functions, some of these tending to be mandates that overstepped the actual boundaries of what the Housing Department should be handling, i.e. functions that could be carried out by other departments. This was notwithstanding that the department may be more forthcoming in terms of informal settlements upgrading endeavours than others. A senior housing official from one of the regional offices elaborated on the *de facto* distribution of functions:

> 'The Department of Housing in [the] City of Joburg is the core management department in [regard to informal settlement upgrading] with other Departments like [the] Water Department, Electrification Department & Environment getting invited. As for Town Planning, remember [the] Department of Housing is the one doing the planning. We appoint consultant Town Planners. The

> City of Joburg Planning Department works with our appointed consultants. Any other departments are supporting functions to the Housing Department as the main actor. If we want City Power to go and reticulate an area, what we do is we provide a layout plan and the energy utility may advise us that these areas are too close to the river, move them up, etc.' (CoJ RG2)

The hiring of Town Planning consultants (discussed in the next section) when the CT & SP has capacity (over 20 planners according to respondents from the Planning Department, CoJ CTSP), and can play a significant role in the planning and thus reduce total costs for the informal settlement upgrading project, shows a level of disconnection. The CT & SP's official involvement with Town Planning consultants appointed to do the plan for informal settlement upgrading appeared to be limited, underlining the silo approach:

> 'I haven't been involved in any of these [Town Planning consultant projects], and what I know about such settlements like the Slovo Park, the only reason I know about it is through engagements outside the City, at conferences when it is presented. There should be more consultation and more involvement.' (CoJ CTSP).

Outsourcing of town planning projects to Planning Consultancies at the surface suggested shortages in town planning personnel, skills and capacity in the CT & SP; this appeared not to be the rationale for the use of town planning firms, but rather the lack of collaboration between the departments:

> 'No, no, it's not about capacity of CT & SP. I think it is because of CoJ DoH does its own work, even if it might not have technical skills and or capacity to do that. My Executive Director has 20 planners, I don't think it's a case of our ability to plan, but it's a question of whether the work is given or not.'

To show dysfunctionalities related to the use of consultants, it was not clear who monitors the work of town planning consultants to determine whether compliance with town planning conditions and stipulations in the approved layout plans are complied with. The official from CT & SP said, 'I think it's Housing that does it'. However, it would be strange for a nontechnical department to enforce planning standards. However, a senior official in the City's Housing Department defended the department for taking a pro-active stance in relation to the informal settlement challenges:

> 'Departments at local city level, for example, Joburg Water, can argue it is not authorised in terms of the Water Services Act to reticulate water in an unproclaimed informal settlement and thus not

> subjecting itself to the UISP process. Yet [the] UISP, by its design, is aimed at supporting incremental upgrades, which, however, places tensions and or complications. City Planners are also not given the "teeth" [and are] limited by established principles, guidelines and plans, like the Inner-City Plan, SDF, industrial and residential areas' zoning and standards applicable in particular areas.' (CoJHS 3)

The Executive Director, who spoke on behalf of the City Manager, identified the framing of informal settlements as illegal as the source of the hands-off approach by the City's planning department:

> 'Yet the background that informs the fragmentation is the pervasive thinking that informal settlements are illegal and [are] occupying space illegally. As such, the settlements require complex urban planning analyses, land ownership, suitability, safety considerations and lots [of] other analyses and procedures till they comply with township establishment.' (CoJ EXD).

In terms of the way informal settlements should be treated in the City, a senior housing official cited informal settlement upgrading as a critical challenge, which

> 'practitioners see as a human settlement issue, be it at city, province or national levels. Yet, at the city level, [the] UISP should not be a human settlement issue but a City issue. The Planning Department should come in with new planning tool that responds to the new challenge, but our own planning has not responded correspondingly. The conventional planning approach is lagging, [and] that [is] offending the good intentions of the UISP.' (CoJHS 3).

The CT & SP official corroborated the preceding response from the City's Housing Department, further arguing that informal settlements must not only be seen as housing but a planning issue. In this, he recommended that a specific department or unit for informal settlements be created:

> 'I think informal settlements shouldn't necessarily be located in the Department of Housing but in the City Transformation and Spatial Planning or in the Joburg Development Agency. Yet if that section were suddenly moved to City Transformation, we wouldn't have the capacity immediately to deal with it, the capacity requiring to be built over the years. Possibly a better thing would be to have an Informal Settlement Directorate, which is a mixture between [the] City of Joburg's Department of Housing and City Transformation and Spatial Planning with staff dedicated to informal settlements. [It is] the institutional arrangement in [the] CoJ that makes informal settlements a housing issue, yet it's a much bigger issue, planning included. I also suggest one City entity should be very involved - Joburg Property Company, which owns land on behalf of the City and manages it.' (CoJ CTSP).

While my respondents put forward various seemingly workable solutions, the Executive Director standing in for the City Manager confirmed the status quo, namely that these had not as yet received official consideration. He reiterated the need for an 'integrated programme to be coordinated and cross-managed from the City Manager's Office, but we have not succeeded in accommodating that programme … we haven't really put a programme in place yet' (CoJ EXD).

In the next section, I turn in more detail to the issue of outsourcing in relation to informal settlements in the City to understand how this mediates in upgrading and infrastructure provision.

8.3 Contractualisation and corporatization of infrastructure provision for informal settlements

Infrastructure provision in the CoJ is facilitated through outsourced service providers with a tendency inclining towards contracting rather than utilising existing skills and expertise (see PARI, 2014; Cameron, 2015). Contractualisation, as discussed in Chapter 3 and alluded to in one of the responses in Chapter 7 (Slovo Park), has been promoted under the BBBEE empowerment philosophy that aims to promote hitherto disadvantaged Black people. This sub-section analyses responses on the modalities and implications of this in relation to service provision to the disadvantaged communities of informal settlements. An official in the City's planning Department (CoJ CTSP) summarized the practice of outsourcing as excessive

> 'Outsourcing is not only unique to the UISP, but there is [a] general trend across [the] City of Joburg to get consultants to do [things] for us, whether it's a new plan or doing a substation. All sorts of stuff, and I think it [is] a critique of government in general in South Africa that government does outsource too much, but I don't know the reason for that.'

One of the regional housing officials commented on the multiple planning consultants commissioned for Slovo Park, signalling discomfort and frustration at the situation:

> 'A consultant is a professional service provider appointed by government. Yet some of their work is merely cut and paste. Consultants come to do the work, get millions, then later, like now another consultant is brought in again [in Slovo Park]. This is why I said government is contributing to the confusion in informal settlements. I remember Mabune Consultants were once assigned to Slovo Park, and yet Urban Dynamics was still having a contract and working in the settlement. Junior as

> I was, I refused to take Mabune Consultants, knowing that will cause a clash and add confusion in the settlement. As we speak now, I am happy Slovo Park was supposed to be part of a new consultancy, but that was removed to allow continuity with the existing consultant, Urban Dynamics.'

The National Treasury respondent (NT 2) added a voice to the complex debate on contractualisation, which illuminated the thinking and or suggestions from with the department funding UISP implementation:

> 'Treasury has been in the forefront to limit or reduce outsourcing in municipalities and thus to gradually decrease dependence on contracting. Sometimes contracting is needed in instances where government doesn't have the expertise. It's interesting you are asking this question to a Treasury official that is preaching these things to municipalities but then we are guilty of the same.'

Furthermore, and in concurrence with the respondent based in the City's planning or city transformation department (CoJ CTSP), the National Treasury official commented on what could be driving contractualisation in practice:

> 'We thought we were bringing a good practice when we said to municipalities 'if you spent beyond this percentage on your labour, then it's not sustainable.' But what do municipalities do: instead of increasing the staff compliment, they contract out to service providers because these are not paid from the labour payroll of the municipality. So, I agree with you, it's quite rough around municipalities but consultants are not needed where there is existing expertise and competencies.' (NT 2)

Discussions on the reasons for the extensive outsourcing and even duplication of work through multiple consultants returned to the argument about BBBEE:

> 'That is a very difficult question. What I can say is that government envisages black empowerment in appointment of consultants. Government was supposed to use its various departments, even our own City of Joburg, but it is now spending millions of monies for informal settlement upgrading on consulting, work that could be done if we have relevant people.' (CoJ RG1)

On further probing about why skills and expertise believed to be available in the City and government departments, in particular town planning and social facilitation, were not tapped into, as the discussion turned to the kinds of practices that the country's Zondo Commission into state capture was in the process of exposing at the time of my interviewing:

> ‘We have educated personnel who have acquired various qualifications in Geodesy, Architecture, Planning etc. Why we need these companies, I don’t know. Look at the recent case of a Bloemfontein consultant who was appointed to assess aspects around the effects and or efficacies of using asbestos. The consultant was awarded a R 255 million contract. The consultant went on to subcontract and paid that subcontractor R44 million. The subcontractor also subcontracted another and paid that sub-subcontractor R7million. How does the government pay R255 million before any work was done?’ (CoJ RG1)

The respondent from one of the regional offices suggested wide-spread indignation among officials about these practices: ‘One of my bosses at the CoJ always says “we don’t need these consultants. They are money-making ventures.” Government should instead employ own professionals’ (CoJ RG1). As discussed in Chapter 7, the National Treasury respondent (NT 2) also commented on worrying practices among consultants indulging in duplication of work: ‘We know these consultants have tendencies of moving from one municipality to the other and they simply copy and paste their plans. Treasury and COGTA had to confront three municipalities where documents had exactly the same demographics.’

The foregoing passages correspond with shortcomings and or abuse of the BBBEE policy as discussed in Chapter 3 with reference to sources such as PARI (2014), Shai (2019) and Moloto (n.d). The NUSP official, however, defended the use of contractors and service providers in UISP implementation. NUSP has appointed consultants to carry out RAC exercises for municipalities across the country, and understands this as catalytic and cost-saving:

> ‘I am going to give you two contexts to think about. In Musunduzi, KZN, they have 22 informal settlements. It cost us 2.5 million Rands to develop RACs and upgrading plans in those informal settlements where the total cost of that development was 220 million and the cost of contracting being [an] insignificant 0.1%. The whole idea of RACs and upgrading plans was to try to reduce the cost of consulting and catalyse municipalities’ work. Those contractors become part and parcel of the municipalities on behalf of city planners, a negotiated process between the cities, provinces and national levels. NUSP’s budget per annum in this regard is not much, not more than 50 million, to do the RACs and develop the plans. In comparison, ask the CoJ and find out how much they pay Urban Dynamics for those plans. It is four times what I have spent on 20 informal settlements.’ (NUSPOFF).

Though defending NUSP’s outsourcing of feasibility planning work, the respondent in NUSP did concede that the use of consultants to provide services in relation to the upgrading of informal

settlements has shortcomings, in particular regarding the participation processes that consultants tend not to carry out with necessary depth. With reference to Slovo Park, he commented 'that is why the City lost in [the] Slovo Park court case, as the court found the City as not having consulted sufficiently. You give the city money, but they find many innovative ways of how to spend it' (NUSPOFF).

Regarding infrastructure provision by CoJ's entities City Power and Joburg Water, the Executive Director standing in for the City Manager commented earlier that the CoJ's core departments do not directly control the utility companies. The entities were created in a bid to improve service delivery efficiencies, but in the process, became decreasing coordination. However, the Executive Director of the EISD commented that fragmentation of service provision increased, and coordination deteriorated in the City:

> 'In a bid to overcome the complexities associated with the core departments in the CoJ and the mere size of the metropolitan area and administration, the CoJ adopted the creation of stand-alone municipal-owned entities, but with [an] arms' length relationship governed by company legislation in line with business ethics, company boards, CEOs, etc. In this way, integration and coordination become more complicated.' (CoJ EXD)

A senior regional housing officer also commented on the CoJ DoH's relationship with the municipally owned enterprises or utility companies saying, 'we are not coordinated, especially with respect to UISP, until perhaps when we change our mindset. We are working in uncoordinated ways' (CoJ RG1). From within City Power, a respondent identified the same shortcoming:

> 'It's less likely that you find City Power and Housing sitting around the table to discuss about the bulk services around an informal settlement that could be used for determination of whether a settlement should be upgraded. The conversations do happen [as through the Slovo Park Task Team], but they are not to the level they should [be], so there is an element of lack of coordination. Maybe smaller municipalities tend to talk to one another better, but [in] bigger metros, sometimes you don't know what the other department is doing, yet you work for the same organisation [CoJ]. We talk of integrated planning, but I don't think it's really that integrated, to be honest.' (CTPow 2)

A respondent from within Joburg Water described infrastructure provision in informal settlements as dependent on settlement formalisation through proclamation, this being the prerogative of the City's Housing Department. The respondent compared Protea South and Slovo Park:

> 'For the informal section [of Protea South], City of Joburg's Department of Housing has stands that have three or four households in one stand and so there [they] still need to decant some of the households. As a result, Joburg Water can't provide services to individual stands as there is no formal layout plan. As such, we have only provided communal water standpipes for Protea South. For Slovo Park, the settlement has basic services. It is organised in terms of layout planning, but there has been a court case against the City regarding service provision. The City still has to approach Joburg Water and advise us what to do after the court cases and whether there is a proclamation yet'. (JWFR)

8.4 Disconnections across infrastructure sectors operating in informal settlements

This section features two key debates concerning the lack of coordination between the government institutions DoE, DoHS, NUSP, provinces and municipalities in infrastructure governance, given the absence of an active framework that brings these institutions to work in an integrated manner. The section also shows tensions and contestations between the CoJ and Eskom arising from the fact that they operate in the same jurisdiction, namely Johannesburg.

8.4.1 Lack of coordination between government departments, NUSP and municipalities

As there is no active implementation, monitoring and evaluation framework for policy applying to informal settlements, in resemblance to the 2005 GWME, which, however, was not operationalised (Ijeoma, 2010; Van der Waldt, 2012), the infrastructure sectors are besieged with coordination challenges. The fissures have revealed in the three cases studies in this thesis between DoE and DoHS with respect to electrification in informal settlements. One of the senior officials in the DoE first showed mild disconnections between the two key departments:

> 'In terms of the linkages, we have one issue with [the] DoHS when they want to replace a shack dwelling with an RDP house, for example. What normally happens is that [the] DoHS is simply concerned with the construction of the house but does not take responsibility [for] of the transfer of the connection from the shack to the new house. This becomes a point of disjuncture in the way we approach informal settlement development.' (DoE 2)

Later, the same respondent was more candid in disclosing the *de facto* siloed institutional reality surrounding electrification:

> 'You are asking about how integrated [the] Department of Energy's operations are with other departments. From what I know, government departments operate in isolation, but not necessarily everything, but in terms of [the] INEP programme. Much as we say it's an integrated programme, but I know we are operating very much in that [unintegrated] state, except that we can't isolate ourselves from the municipalities that we are serving. But at national level, I think we are very much isolated. One example is we sent out consultations to the environmental department, but it takes [a] very long time to get a response as [the] DoE can't control it. What we do in such instances, therefore, is if a municipality applies for funding from us, we dispatch our team to go and check on the ground and proceed [without the feedback from the environment department]. [In] the recognition that there are other stakeholders we need to work with is on paper [but this may not in practice].' (DoE 2)

The other senior DoE official confirming the inherent absence of integration in the implementation of DoE policies:

> 'Just to add, he is correct with that. We have challenges at national level of [a] disintegrated approach and consultation gaps with other departments. To cover ourselves, we make sure municipalities make sure a project application is part of the IDP as we believe [the] IDP should be the guiding document for project implementation at that local level for the next five years. Yet we do not necessarily check if the project is in the IDP, but especially if the project is in line with our funding criteria. As said earlier by [DoE 2], our team goes on the ground to check the merit of each application [on] which we base our decision for funding, also checking if other government departments like DoHS have also allocated funding to the same project. Yet our policies do not necessarily link to specific policies in other departments, but we try to do that with municipalities.' (DoE 1)

According to a senior housing officer in the CoJ, there is a need for institutional re-arrangements with respect to informal settlement upgrading.

> 'For me, the barrier to [the] UISP is especially the need for alignment of the planning tools. Municipalities are using IDPs, and provinces use [the] MTSF. Because it is the IDPs that inform the MTSF, the national and provincial officials must come to participate at city level UISP planning process such that those levels' planning realistically reflects what is practicable at the city level. As such, there won't be thumb-suck figures for upgrading in a year. The realignment is possible by invoking the Cooperative Governance provisions in the Constitution and the intergovernmental relations framework.' (CoJHS 3)

This official believed that the realignment he was suggesting was possible but reiterated that this had not been attempted so far.

> 'In Chapter 10 [of the Constitution], there is [a] part that deals with public administration and [it] talks of how a public servant[s] within the space of government must respect the public management principles, that is governance issues. The Municipalities have the right to call other spheres of government to operationalise the section that "public administration must be development-oriented". But this is not happening because there is a notion of territorial space, each sphere focusing on its own space.' (COJHS 3)

A Gauteng Provincial official (GAUPROV) concurred with the IDP-MTSF systematization and synchronization concerns of the CoJ:

> As mandatory plans, IDPs are the footprint of [the] municipal structure [and] are produced in a consultation with the citizens yet provinces do it from the boardroom. It is true the IDPs should be feeding into provincial and national plans. This is an intergovernmental issue that requires our MTSF calendar to be synchronised with [the] IDP.

Regarding the CoJ's settlement upgrading trajectory, the NUSP official added the challenge of entrenched approaches within municipalities:

> 'You talked of ambivalence and institutional capacity in the complexities earlier on. There are municipalities that have internalised the NUSP methodology, but they are caught wanting on how they should do it and how they are doing it. Talking about the CoJ case, they have internalised the NUSP method, but they have not moved away from [their] own way of upgrading. That is not informal settlement upgrading but resort to relocations.' (NUSPOFF)

Whether or not the UISP is mandatory is understood, and binding on municipalities is understood differently. The NUSP official believed the Housing Code should be changed so as to make it mandatory:

> 'We have the National Housing Code, which is the legal document, but I think the way it has been crafted creates a lot of discretion [for] municipalities. It doesn't say "you shall", but it is a guide that opens an opportunity for provinces and metros to find shortcuts to infrastructure delivery. We recommend that the Code be amended to make [the] UISP mandatory as [the] UISP is an instrument that they can choose or not.' (NUSPOFF)

However, Huchzermeyer (2016), citing a statement by SERI at the time of the Melani judgement in the South Gauteng High Court, points to the court's finding that it was unlawful for the CoJ not to apply for funding under the UISP for Slovo Park. Huchzermeyer (2016:204) therefore states that 'the judgement is binding for all municipalities in Gauteng Province and is a persuasive or guiding precedence in all other provinces in South Africa'. If this is the case, the UISP could be read to be mandatory, at least in Gauteng.

Given poor coordination between departments and misinterpretations of the applicable policy, NUSP's role in relation to promoting RAC at the level of municipalities potentially played an important role in reaching a common understanding and implementation process for the UISP. However, it was not easy for NUSP to yield such results. Tension and contestation seemed to be inherent in the governance system in which municipalities are increasingly empowered through the direct transfer of funds from Treasury:

> 'Provinces and cities can do [RAC] also. So far, the only province that has sought to do their own process, is the Western Cape, and the only metropolitan municipality *that decided to do their own thing* is eThekwini. *We still have fights* as there are provinces which say "why NUSP, we can do our own in line with the Housing Code". It's a *contestation* because, remember, as national level, we make the rules, but provinces and metros receive funding directly, hence they do what they want. In some instances, *we have developed over 1700-1900 assessments, and metros and provinces have decided to ignore that and followed their own*.' (emphasis added) (NUSPOFF)

Two main points emanate from this response from within NUSP. Firstly, there is the possibility of the provincial and local government spheres to conduct RAC according to their own approaches, possibly based on different interpretations of the UISP, and the freedom to discard RACs conducted by NUSP-appointed consultants, implying a settlement may be assessed at least twice. Both scenarios do not appear to be desirable. Secondly, it also shows disconnections in the funding streams, which ideally would be synchronised. In summary, the RAC process is a potential source of disjuncture in UISP. To reflect other specific disconnections, I turn a discussion of relationships between the CoJ and Eskom.

8.4.2 Tensions between CoJ and Eskom

Contestations between Eskom and CoJ revolve around allegations of mismanagement of electrification infrastructure in Protea South by Eskom, but also other related electrification challenges in the Soweto Townships where CoJ has had to finance electrification in Eskom-supplied areas or actually electrify Eskom-supplied areas. Other tensions relate to noncompliance with CoJ's statutory requirements by service providers under the CoJ. This sub-section expands on these two challenges while also discussing operational challenges relating to City Power and Eskom operating in the same municipal jurisdiction.

Starting with the institutional framing and governance conundrums surrounding the electrification in Protea South, tensions between Eskom and the CoJ were leading residents to suggest that the CoJ take over the maintenance of the electrification. However, a senior CoJ housing official cited technical challenges in taking over the electrification, saying:

> 'We cannot take over. It's the issue of assignment of functions. If you remember, the Premier for Western Cape approached the President for assignment in terms of section 156 of the Constitution. What then happened is he was asked to make a submission, but while making the submission, he was also reminded of the Constitution and reminded where the powers of Provinces start and end. But he contemplated the judiciary route arguing the Province has the capacity to implement the programme, but he could not proceed with the litigation as the likelihood of winning such is zero out [of] ten. Remember also, the same Premier took NERSA to court over the proposal by [the] CoCT to delink from Eskom's unreliable power supplies and get supplies from independent power producers. Yet the court turned it down as [a] case requiring intergovernmental resolution.' (CoJHS 3)

The challenge in Protea South questions the appropriateness of Eskom's involvement in electricity distribution in the CoJ jurisdiction. Several analysts, including Jaglin and Dubresson (2016), Eberhard (2005) and PMG (2007), have argued against Eskom's takeover of metropolitan electrification. A senior housing official in the CoJ cited Eskom's financial distress as worsening the electrification mismanagement in Protea South. He also said the 'CoJ ends up utilising [the] USDG grant to electrify Eskom-supplied areas, but the assets are unfortunately transferred to Eskom for 'free' to ensure continuities in operations' (CoJHS 1). In further analysis of Eskom, a senior CoJ EISD official framed Eskom as

> '…a systemically dysfunctional, vertically integrated SOE whose ballooning capital and operational costs are unable to meet targets primarily due to inefficiencies within its organisation. It also undermines municipal distribution by doing the distribution in parts of the CoJ's jurisdictional areas where it is shifting costs [it] incurred to the CoJ. Eskom also doesn't provide public street lighting but leaves that aspect to the CoJ.' (CoJ EISD)

The senior CoJ's EISD official further elaborated on public lighting, which Eskom does not provide, thereby making

> 'CoJ to do it, and thus pay for that service in all Eskom-supplied areas. There are also electricity poles installed a long time ago in the 1970s for public lighting in Soweto townships that illuminate day and night, each with an illumination of 1000 watts. Eskom charges the CoJ for that public lighting, and this cost[s] the City millions of Rands.' (CoJ EISD).

My respondents within City Power viewed this situation differently. One proffered an optimistic view:

> 'There are important policy developments in the electricity sector. However, the policy changes take [a] long to get done and effected. In terms of operations, Eskom and City Power have specific areas and licenses as guided by NERSA. Soweto townships, for instance, are under Eskom jurisdiction. If a dispute arises between the two, we always determine which of the two entities is best to service the customers considering which has [the] comparative advantage of nearness of electricity facilities.' (CTPow 1)

The other, more senior City Power official gave an in-depth institutional analysis considering the relations between City Power and Eskom as follows:

> 'The coordination between City Power and its own areas is a lot better than the coordination between [the] City and Eskom supplied areas. There is also an argument that has been going on for years with SALGA [South African Local Government Association] that if municipalities oversee the planning in the City, it is the City which should tell Eskom and City Power what to do. While there is some coordination, Eskom does pretty much what it likes, also without corporate service level agreement[s] in place between the CoJ with Eskom as required by Municipal System Act and SALGA, yet there are service agreements between City Power and the City.' (CTPow 2).

Furthermore, this official used the example of the central business district of Sandton to explain the poorly conceived pricing mechanism between Eskom and City Power, though with optimism that this would be resolved with the unbundling of Eskom in future:

> ‘We have two distributors in the same area of supply, but City Power is a retailer customer of the other. It goes one step crazier; if you have business in Sandton, you can get the Eskom mega flex tariff. Unfortunately, that same tariff, or very close to it, is what City Power pays for that kind of energy. So, across the street in Rosebank, that same customer can’t get the mega flex tariff but has to buy a marked-up City Power tariff resulting in price distortions. In practice, this creates odds against locating in the Joburg City Power area because electricity is expensive. So, when you see all these Company Head Offices built in Sandton, one of the reasons is the energy cost is lower. Until we get to a point where Eskom unbundles, we will always be seen as retailer customers of Eskom distribution. Yet the CoJ ends up contributing to Eskom’s cross-subsidies for their own low-income areas.’ (CTPow)

The senior official in the City’s EISD expanded on how Eskom’s unbundling might unfold, with reference to implications for CoJ:

> ‘In my own opinion, let unbundling start with handing over of assets and infrastructure to the municipality, then appoint a distributor, which should be none other the CoJ, which then liaises with the Eskom, the generator and or transmitter. Unbundling can bring about greater efficiency and sustainability to the electricity distribution sector in the CoJ area. Instead of adopting the [REDS] approach to unbundling, which may turn out to be a very tricky and difficult task for the expanded municipal responsibility, e.g. City of Ekurhuleni extending its tentacles to as far as Bloemfontein, it is better to start with unbundling in the form of handing over of distribution assets by Eskom.’ (CoJ EISD)

The same official hinted, however, that municipalities will have challenges related to electricity voltage distributional differences because of

> ‘…the two different voltage systems existing in the CoJ as Eskom operates at 22kv, yet City Power is at 11kv. Eskom moves, say from 33kv to 22kv to 400volts while [the] CoJ moves from 11kv to 400 volts, which shall make it difficult to adopt Eskom distribution system.’ (CoJ EISD)

8.5 Complex contradictions: inconsistent interim electrification sitting awkwardly with other basic infrastructure services

This section focuses on contradictions between UISP and INEP where electrification is evaluated as a (more) permanent infrastructure than the housing sector water and sanitation services. According to a National Treasury official,

> ‘The DoE has often given a very big challenge and condition to metros for informal settlement electricity infrastructure installation by demanding an assurance that the infrastructure would not be a fruitless expenditure as the funding should go only into permanent settlements. How about settlements that shall be there for ten years?’ (NT 1)

One of the DoE officials, as already noted in Chapter 7, confirmed his department’s position that interim electrification is permanent, reflecting further on the pervasive thinking this is, in fact, temporary:

> ‘The DoE policy ‘Electrification of Unproclaimed Areas’ has since changed to informal settlement guidelines as we realised the settlements are not proclaimed, and there is no undertaking to upgrade it by the concerned municipality. Investing in unproclaimed areas would be money lost. The DoE cannot fund electrification in unproclaimed areas as funding of such areas would entail wasteful infrastructure if the settlement is not going to be permanent. In this, we realised the proclamation process was taking long, yet [it was] critical to make the municipality to take responsibility for the electricity infrastructure investment. The difference in the new policy is that it requires assurance from the municipalities that settlements undergoing electrification will be permanent.’ (DoE 1)

Apart from the change in policy focus, which I doubt was fully communicated to NDoHS, NUSP, municipalities and other stakeholders in informal settlements as none of my other respondents appeared to be aware of it, the issue of RAC and the related decision as to whether a settlement will be proclaimed or not becomes critical. If the above statement was perhaps ambivalent about the permanence of the informal settlement electrification in unproclaimed areas, the following quotation from the other DoE official is very clear about this:

> ‘We do not have electrified informal settlements which will be relocated. There are going to be very few [if] any such settlements because of extenuating circumstances. Once grid-electrified, the settlement is upgraded automatically. This is surely permanent.’ (DoE 2)

Sensing the confusion that the above statements from the DoE would have for the informal settlement upgrading stakeholders I had interviewed across different institutions, I sought clarification from the NUSP as to why all infrastructure services for informal settlements are not coordinated from one central programme to avoid such contradictions. The NUSP official responded:

> ‘You are correct, very correct. One of the things we have motivated for informal settlements is that the portion of the electricity fund going into informal settlements must be added to [the] informal settlement upgrading grant. In that way, we will be able to direct the investment towards

> electrification, unlike having the DoE moving on its own, which presents institutional coordination challenges.' (NUSPOFF)

The NUSP official demonstrated the disjuncture between the DoE's electrification policy and RAC through the case of Ekurhuleni Municipality, which has

> '…over 70% of their informal settlements [are] in category C, implying people in those settlements must be relocated, but we have the electricity department lobbying for 200 million Rands every year. Why ask for such huge sums of money to do massive electrification when, in fact, most [of] the settlements must be moved? Aren't you wasting money?' (NUSPOFF)

Taking up this argument of the NUSP official, it would make logical and technical sense to electrify category C informal settlement as well as other unproclaimed settlements using off-grid alternatives. According to an expert in electrification, in the South African context, 'electrification, as in supplying households, is always capital intensive yet temporary provision, as in isolated battery charging, as is possible with water or sanitation, is not seen as a utility service'. (Exp Elec). However, consideration of alternatives to grid electrification is not a high priority for DoE:

> 'We do have a non-grid electrification solution, but there are guidelines. The challenge is that it is not permanent and designed for areas where [the] DoE perceive to take time for grid electricity to reach such areas. We have a small budget for such, but it's not our primary focus at all. A solar photovoltaic installation costs about R9 000, temporary, per unit while currently about R17000-R18000 per unit, permanent, is spent on grid solutions. In the event the settlement gets grid-electrified, what use would the solar panels be for? Does that not become more costly and wasteful? Remember, the electrification is also an electioneering tool.' (DoE 1)

Given the above position that the electrification in the informal settlements is not temporary as housing officials would have it, the consolidation dynamics that electrification induces in informal settlements appear not to be misplaced after all. Yet electrified settlements like Stjwetla are caught in further confusion as there are contradictory moves to relocate a selection of households post electrification (see Chapter 5). The electrification expert provided a historical dimension to this conundrum and, as the following interview extract for my thesis, brought this back to the question of governance:

> 'It's a mess. It has been a mess since Eskom "grabbed" the Development Boards, previously Administration Boards, in 1993/94, claiming only Eskom could solve the problems. However,

> many of the municipalities have done no better. City Power, for example, has a disastrous achievement record, though a few municipalities have done reasonably well, at least for periods within the past 25-30 years. The discoordination is also clear in the Departments of Human Settlements and Energy regarding infrastructure provision in the settlements. This is a question of governance, reality and responsibility. Some serious attitude changes are needed to resolve the problems.' (EXP ELEC)

The announcement of a new ringfenced financial grant framework by National Treasury in 2021 set to be introduced by the ministry in mid-year 2021 in the form of an Upgrading of Informal Settlement Partnership Grant (UISPG) would not reduce the contradictions in the infrastructure sectors. A National Treasury official (NT 2) consented that 'although we have designed a new grant, it doesn't take away the need to have that kind of enabling institutional arrangements. If it isn't in place, we shall suffer the same fate.' This implied that the new funding instrument may not single-handedly address the contradictions and inconsistencies in the infrastructure sectors. As with the unsystematized IDP-MTSF discussions in section 8.4 above, the Gauteng Provincial respondent (GauProv) analysed the new funding framework as likely to encounter challenges at national, provincial and the CoJ hence maintaining dislocated informal settlement upgrading trajectories. In line with the suggestions from officials in the CoJ, the provincial respondent cited the need for specific macro-meso structures dedicated to informal settlements:

> 'there is need for more specificity. The NDoHS now has taken up another ministry of Water and Sanitation [making it a bloated ministry at the time of the interview– note this has since been reversed]. In our case at Province, the DoHS is under Cooperative Governance and Traditional Affairs (CoGTA). There is no specific unit dedicated to informal settlements but planners are having to include these [albeit other tight workloads].' (GauProv)

Because the USDG and now the UISPG funding mechanisms by-pass the Gauteng Province where National Treasury disburses them directly to the metros, the provincial respondent (GauProv) analysed the funding approach as exacerbating the challenges of informal settlements. In this respondent's view, the exclusion of the provincial watch over municipalities, this watch now confined only to district municipalities, implies there is no oversight in the implementation of infrastructure provision in the settlements in the CoJ where national departments (NDoHS and NUSP) cannot undertake regular monitoring. Signaling a challenge in the new governance arrangements that came with the new grant system, the respondent simply said, 'concerning

Metros, it is difficult for me to answer as we are now working on different platforms. It's a difficult [question] for me.' Enlightened about the need to systematize informal settlements, the National Treasury respondent (NT 2) contemplated creating specific units to manage the settlements:

> 'That would be their job [dedicated staff]. If you are within a broader component, the bigger mandates overshadow. When we prioritise and or ringfence funding for informal settlements, someone would be responsible for and reporting about that specific aspect.'

8.6 Discussion

As in the previous chapters, I incorporated some comparisons, analyses and discussions for this chapter in the presentations of my findings above. In this section, I carry over the most pertinent issues for further discussion by invoking relevant conceptual frameworks, theories and personal observations, this based on the key informants perspectives presented. The guiding question for the discussions is once again the main research question: How is infrastructure provision in informal settlements, in particular electrification, governed in South Africa?

The chapter sought to bring together a lively discussion between the CoJ and its three infrastructure departments concerned with infrastructure provision in the City's informal settlements. The dialogues revealed internal dissonances with regards to the governance of informal settlements, at times pitting three departments against one another. The greatest disconnections were revealed between the two departments of Housing and Development Planning or CT & SP, more than with the EISD. The Housing-Planning disjunctures are reflected in the cluster approach (CoJ, 2014) that peripheralised CT & SP from the Sustainable Services cluster, the former dealing directly with infrastructure provision in informal settlements. That cluster arrangement obligates the planning, implementation, administration, monitoring and or evaluation of informal settlement infrastructure mandates to the Department of Housing which resorts to outsourcing the planning services, but with little or no linkages with the CT & SP department. This is leading to interdepartmental disjuncture and dysfunctionalities such that existing local planning expertise and experiences are excluded from the infrastructure provision and upgrading processes. In this way, the City's Department of Housing is evaluated as departmentalising informal settlements even for specialised aspects that the department does not specialise in. However, this is notwithstanding the seeming

unwillingness of CT & SP to engage with informal settlements because of the inflexible planning statutes and standards, which are not conducive to the informal settlement cause (Huchzermeyer, 2016; 2021). The Executive Director of the EISD admitted the disharmonies and misalignments in the departments and takes responsibility for the lack of oversight and confusion between the departments, as there is no framework yet to resolve the dissonances. The CoJ may do well to draw together and analyse the recommendations that officials in various entities and with varied experience are able to make (as they did in my interviews) so as to look at informal settlements as a larger issue that can be dealt with by housing or human settlements, and thus to promote an integrated approach. One suggestion that came forth through my interviews was to create a new, cross-sectoral unit that focuses and deals specifically with informal settlements. Discussions with National Treasury and Gauteng Province respondents also supported the idea of creating independent units at all levels dedicated for informal settlements.

Through another theme, contractualisation and corporatisation of infrastructure in informal settlements, my interviewing brought national to local government institutions into another conversation. The informal settlement infrastructure provision discourse is closely aligned with PARI's (2014) observations about South Africa as having become a contract state. As discussed in Chapter 6 for Slovo Park, contractualisation has become an iterative and or cyclic process that does not contribute meaningfully to the advancement of infrastructure provision, with many of the respondents in this inquiry associating it with duplication, negativity and even alleged corruption. Outsourcing, thus, is cited as a barrier to upgrading initiatives. Infrastructure services provision by City Power and Joburg Water have been analysed as influenced by the bigger decision-making in the CoJ's Housing Department, but these corporatised entities claim there are disconnections between them and the Department, this also not helping the governance of informal settlements. Eskom is portrayed (in the interview extracts) as being in tension with the CoJ, owing to several contentious points, including the mismanagement of electrification in Protea South. The SOE is also not complying with the CoJ statutory requirements to sign service agreements and thus be liable to control by the local authority. The control is necessary for oversight in electrification infrastructure delivery under the City's jurisdiction.

Another important discussion concerns the lack of coordination across the infrastructure sectors, where wide disconnections are showing between the DoE, DoHS, NUSP, provinces and municipalities, including the CoJ. The high levels of disjuncture are also responsible for the retrogressive governance configurations that characterise the limited informal settlement upgrading progress and infrastructure provision challenges or obstacles discussed in Chapters 5 to 7. One of several possible explanations of the disjunctures is the unimplemented GWME policy, whose design targeted to put in place a government-wide monitoring and evaluation mechanism. The Department of Planning, Monitoring and Evaluation (DPME) is indirectly but minimally intervening in informal settlements.

The last discussion reflects on the complex contradictions between interim electrification through the energy sector and the housing sector's basic services of water and sanitation. My respondents in the DoE indicated that the electrification is not temporary but, in fact, permanent, this concurring with pervasive assumptions of residents of informal settlements. The resultant consolidation dynamics may, therefore, be explainable on account of this revelation (although it is unlikely that residents have had any direct communication from DoE on this). The UISP, as set out in the Housing Code, requires interim services to be upgradable to permanent, in an *in situ* upgrading trajectory towards permanence, which it sets out as the dominant approach, with exceptions to this only as a last resort (DoHS, 2009). The confounding position of the housing sector by and large still steers against these prescripts of the UISP. The emerging dislocation in the informal settlement trajectory makes an exciting revelation that may require authorities to analyse. The improvements to the ringfencing of grants to municipalities for UISP implementation, which were being improvised by National Treasury at the time of my research, may not make a meaningful impact if the current interdepartmental disconnections are maintained.

In many ways, the emerging governance approaches resonate with the Passive Hand governance configuration (Anheier, 2017). Typical dimensions in the Passive Hand model applicable to the South African governance of informal settlement upgrading include awareness by government departments of what needs to be done but a bureaucratisation that does not trigger integrated action. More importantly, the administrative staff has a negative attitude towards the UISP policy and its

implementation, leading to what could be routine upgrading work being labelled as problematic or unimplementable, as Anheier (2017) found for other settings. Allegations of corruption in the resultant governance point towards the Malevolent Hiding Hand model of governance in which unprincipled tendencies and corrupt approaches thrive (Flyvbjerg & Sunstein, 2016).

8.7 Conclusion

This chapter provides important insights and clues to the challenges and governance configurations that were identified in the case study of Stjwetla, Protea South and Slovo Park. Centring on the CoJ, DoE, NDoHS, Gauteng DoHS, NUSP, and City Power, which are key stakeholders in infrastructure provision in informal settlements (noting that these stakeholders shared insight on Eskom's role, although Eskom officials refused to partake in an interview). The thesis has identified and associates these government organizations as major sources of the key challenges that besiege the upgrading and infrastructure provision in the settlements. The internal administrative dissonances in CoJ makes a particular contribution to the problems surrounding infrastructure provision in the three informal settlements. Disconnections and or misalignments in the city's infrastructure departments and the phenomenon of repeated rounds of outsourcing are twin challenges in the bedeviled infrastructure provision trajectory. Yet the disconnections and contradictions in the bigger national, provincial, local government spheres and entities also contribute significantly to poor governance of informal settlements. The silo approaches of key national departments, namely DoE and DoHS, are making a particular overarching contribution to the dynamics that occur in the informal settlements, in particular the perpetual settlement temporariness, undecidedness, and the concomitant complex contradictions in the infrastructures of electrification on one hand and water and sanitation on the other. These have instructed an upgrading trajectory that seemingly runs parallel to the principles of UISP. As highlighted in Chapter 5 and 6 (Stjwetla and Slovo Park respectively) the residents are confused about the upgrading statuses leading to permanent constructions which further complicate informal settlement upgrading in the CoJ

CHAPTER NINE

9.0 Introduction

In its search to understand the governance of infrastructure provision in informal settlements using the case of electrification of three contexts of unproclaimed areas, i.e. informal settlements, in the CoJ, this thesis shows distinct but complementary governance configurations in the case contexts. Firstly, in Stjwetla, electrified by City Power, the provision of electrification is entangled in prolonged temporariness and temporary relocation or TRAs associated with the political promise for housing. In the Eskom-supplied Protea South, the interim electrification is fanning community fragmentation. In Slovo Park, also electrified by City Power, the community has used interim electrification as a strategy to bridge delays in implementing a court order for permanent upgrading and to push for a commitment to take the existing settlement into account in the layout planning for upgrading. The thesis also examined the roles of the CoJ and departments to understand the complexities in the governance of infrastructure provision in the City. The thesis finds that there is seeming unwillingness, undecidedness and or misunderstanding by the CoJ regarding the implementation of the state-approved informal settlement upgrading approach of the UISP. The refusal led to contestations, with Protea South and Slovo Park communities successfully litigating against the CoJ. The CoJ is also evaluated as increasingly relying on contractualisation to provide services for the settlements with evidence that this is not mediating meaningfully in the infrastructure provision. The thesis also casts its net wider to glean insights from key infrastructure sectors at the national and provincial state departments of the DoE, DoHS, NUSP and National Treasury to make sense of the infrastructure challenges. This approach revealed further important disconnections and tensions in informal settlement infrastructure provision owing to the complex contradictions in the electrification, the latter sitting uncomfortably with housing sector's temporary water and sanitation.

This final chapter provides a brief summary of the empirical component of the thesis with a focus on the three case studies presenting a discussion in relation to the research questions and key conceptual contributions of the thesis to then provide a synopsis of the contribution to knowledge. The chapter also reflects on the research methods and presents recommendations arising from the

research, before, lastly, considering further research themes and approaches that may arise from this study.

9.1 Brief summary of the empirical component of the thesis

The governance of informal settlement infrastructure provision in three contexts of the CoJ's electrified but unproclaimed settlements of Stjwetla, Protea South and Slovo Park manifests an unclear informal settlement upgrading trajectory. Of the four broad approaches to informal settlement upgrading discussed in the international literature, three reflect the way the state has handled the situation in the three contexts of the case studies in this thesis. These are firstly, to do nothing or practice the "quiet diplomacy" (Satterthwaite, 2012), secondly, eviction, relocation and den-densification (Huchzermeyer, 2011; Visagie & Turok, 2020) and thirdly the mere acknowledgement of informality and resultant provision of minimal basic utilities although without a clear vision for a better future. The fourth developmental approach, which resonates with the UISP, is the state making a bolder commitment to develop, upgrade as well as manage the settlement in partnership with the community. This is not yet accepted and practiced in the settlements under study.

Closely aligning the eviction, relocation and densification approach, the state's approach to Stjwetla makes a typical exemplar in the politics of promises and related removals, reversals thereafter and removals again. The grid electrification that has taken place in all the three settlements, though a commendably generous gesture, is poorly planned and without piloting as was done in Indian and Brazilian informal settlement electrification cases (see USAID, 2009; ESMAP, 2011; Luque-Ayala, 2016). Poor planning is reflected in that the state has not concluded rapid suitability assessment and categorisation processes that should guide the development approach for the three settlements. For Stjwetla, the outcome of such an assessment would, on the basis of technical criteria (the settlement being located on a former refuse dump) be the basis of complete removal, although deeper investigation may find that an engineering intervention could rehabilitate the land and allow for the minimisation of relocation, at least for partial in situ upgrading. However, there are on-going implicit and iterative removals and reversals.

The provision of the benevolent grid electrification in three settlements that are not yet proclaimed, albeit long in existence, without consideration of alternative off-grid options epitomises hierarchical and or political fixation associated with electrification infrastructure in informal settlements in South Africa (see Jaglin, 2014; Jaglin & Dubresson, 2016). Given that electrification is an elaborate and high-investment engineering process, careful planning was required before the NDoHS and the CoJ committed grid electrification investments as the future of the settlements is still ambiguous (see Rahman. 2008; Anandan and Ramaswamy, 2014). In this way the electrification closely resonates with the hiding hand governance principle as the unrealistically optimistic state is meeting unexpected challenges where harsh realities are ultimately leading to net disbenefits (see Hirschman, 1967b). The grid electrification is also turning out to be permanent unlike explicitly temporary water and sanitation infrastructures. As such, the residents in all the three cases have interpreted the grid electrification as permanent, this precipitating far-reaching dynamics. Notable among these are increased settlement densification (in particular in Stjwetla and Protea South, where community organisations are unable to prevent this) as formal electricity supply increases the hope for permanent settlement. Another complex dynamic is a self-consolidation trajectory tending towards permanent buildings that are connected to individual electricity (most pronounced in Stjwetla and Slovo Park) amidst communal and impermanent water and sanitation provisions. All three settlements, however, face an uncertain future as the CoJ is unwilling or incapable to implement the UISP. Stjwetla faces a more ambiguous future than the other two settlements, owing to the trajectory of removals and temporary relocations. Organised communities of Protea South and Slovo Park litigated against the CoJ's unwillingness to provide infrastructure (with reference to the UISP) whereupon the judiciary upheld that the UISP be implemented, including meaningful citizen engagements. Much as the CoJ has made a commitment to an inclusionary and participatory approach, there are no significant improvements in the two settlements yet. The Protea South case in particular illustrates how poorly conceived formal electrification can worsen the situation for communities.

Two settlements, Protea South and Slovo Park, have particular but unique forms of community governance that are instructing infrastructure provision in specific ways. Protea South has deep-seated community divisions, which were deepened by Eskom's phased electrification process

where the initial electrification left out some sections which triggered illegal connections and consequent breakdown of electricity supply to the formally electrified areas. This has promoted community electricity connection conundrums. Slovo Park, unlike Protea South, has an extensive community leadership structure, the SPCDF, where the residents-driven infrastructure governance is setting an example of a community engaging and persuading the state to provide permanent infrastructure through the UISP trajectory.

The thesis has shown that there is little if any horizontal coordination between the housing and energy sectors resulting in inconsistent infrastructure provision and complex governance (see Ijeoma, 2010; Van der Waldt, 2012; National Treasury, 2022). Disconnections have emerged between the DoE's pragmatic electrification policy and approach to informality that intends to trigger permanent upgrading and the DoHS's and CoJ hierarchical approach to infrastructure provision that treats the substantial investment in electrification of unproclaimed areas as impermanent, despite the City's own ability to move settlements beyond that impermanent status and residents responding through their own, brick-and-mortar investment. The City still prefers relocations to greenfield sites over *in situ* upgrading as per the UISP. This has precipitated fissures between DoE-led energy and DoHS-led housing sectors, but there are also fractures between NUSP and meso-level of provinces and municipalities regarding informal settlement upgrading. The CoJ has interdepartmental contradictions and misalignments that also militate against infrastructure provision and informal settlement upgrading initiatives.

9.2 Revisiting and answering the research questions

The main research question focuses on how infrastructure provision in informal settlements, in particular electrification, is governed in South Africa. This key question is connected to question 1, which looks at how infrastructure is provided in informal settlements in post-apartheid South Africa, i.e. the ways or means through which infrastructure is delivered. The UISP and related *in situ* upgrading is the main trajectory through which incremental infrastructure provision and improvements ought to be delivered (DoHS, 2009). The UISP is designed as a state-residents approach where the residents are supposed to participate in meaningful ways in the infrastructure delivery (Fieuw, 2015; NUSP, 2015; SERI, 2020). In practice, and as informed by analysis, the UISP is scarcely practised according to its principles, and residents are not playing any

participatory role as envisaged in the upgrading trajectory (de Visser, 2009; Huchzermeyer, 2009; 2021; GGLN, 2013; Fieuw, 2015). Instead, the CoJ prefers relocations to greenfield projects (see Satterthwaite, 2012; Huchzermeyer, 2021). The first research question dovetails to the third research question about the arrangements that exist for the governance of infrastructure provision in the informal settlements in South African cities and how these mediate the infrastructure challenges. In this regard, the 1996 Constitution, legislation and other statutory provisions were analysed as key governance arrangements enacted to ensure the infrastructure provisions. The 1998 White Paper on Local Government, 1997 Housing Act, the 2004 BNG housing policy (UISP and *in situ* upgrading encapsulated) and the 2009 National Housing Code (UISP and *in situ* upgrading amendments) are the main legal instruments that were designed to support incremental infrastructure provision (WPLG, 1998; DoH, 2004; DoHS, 2009). However, these instruments are not significantly intervening in the implementation of the UISP, and resultant infrastructure challenges in informal settlements make residents to demand the provisions by expressing their democratic rights through protests and ultimate resort to litigation for intervention (Madlingozi, 2014; Chenwi, 2012; 2015; Clark & Tissington, 2016). Nevertheless, judicialisation has also its limits to governing infrastructure (Huchzermeyer, 2011).

The second research question pertains to how electricity is institutionally framed and the ways in which the institutional structure manifest in informal settlement upgrading in Johannesburg. Two electricity companies, City Power being the CoJ's MOE and Eskom the SOE, distribute electricity in the same jurisdiction of Johannesburg. This arrangement of two state utility companies supplying electricity under one jurisdiction is licensed by NERSA, the national electricity regulator, albeit the arrangement contestable (Tait, 2015). The findings have revealed that the arrangement is not workable as the SOE is not coordinated with the CoJ in many ways. Comparison between City Power supplied areas (Stjwetla and Slovo Park) and Eskom-supplied Protea South revealed key differences relating to negligence, ineffectiveness or inefficiency and a lack of responsibility by Eskom in Protea South. The fourth and last research question pertains to the dynamics that are triggered in the implementation of electrification and how these are governed. The grid-linked electrification prompted several dynamics, in particular raised hopes for permanent *in situ* upgrading implemented in line with the UISP guidelines and the supportive

pragmatist approach of DoE and the energy sector generally. Because the CoJ is delaying the UISP implementation in these electrified settlements where the electrification has increased chances of permanent stay, residents have begun to construct permanent brick-and-mortar structures, although without express authority of the CoJ to do so (see Caldeira, 2017).

9.3 Contribution to knowledge

This thesis makes substantial contribution to knowledge by carefully identifying and discussing conceptual themes and debates of longstanding importance in the sophisticated terrain of infrastructure provision and governance in informal settlements in South Africa. This was achieved by detailing how electrification of the unproclaimed areas unfolded and the dynamics this unravelled. To do this, pertinent robust debates about informal settlement upgrading revealed policy-practice disjuncture where, despite many benefits to adopting well-intentioned policies, governments are not always committing to the upgrading processes. Particular debates and knowledge contribution were made to the indecisive, uncoordinated South African typology of informal settlement upgrading (see Huchzermeyer, 2009; 2011; 2021; Clark and Tissington, 2015; Cirolia et al., 2016; Isandla, 2019; SERI, 2020). However, as elaborated under the further research section below, this theme requires to investigate ways through which it can be innovated, improved or strengthened. Other useful ideas debated pertained to infrastructure governance where benevolent, malevolent and passive governance conceptualisations typically epitomise hierarchical state infrastructure provision (see Hirschman, 1967; Jordan and O'Riordan 2004; Martuzzi & Tickner, 2004; Flyvbjerg & Sunstein, 2016; Anheier, 2017). Governance has also been conceptualised as self-governance signifying self-improvisation practices of informal residents in settlements with insignificant or no state interventions (McFarlane, 2010, Huchzermeyer, 2006; 2009; 2011). The study then investigated and recommended co-governance as the intervening multiscale and polycentric form of governance (see Rhodes, 1996; Collier & Lo¨fstedt, 1997; Emelianoff, 2014; Jaglin, 2014). Governance and its key components are often de-emphasised, becoming the missing link in infrastructure provision initiatives in South Africa and many developing countries (see Anheier, 2013; Hammerschmid & Wegrich, 2016).

Apart from the foregoing, valuable institutional-legal ideas were extensively looked into to determine how they mediate the infrastructure provision and governance impasses. Institutional administration capacity and judicial intervention were also discussed (Scharpf, 1994; Rajamani, 2007; Bhan, 2012; 2016; UNDP, 2017). Other significant conceptual contributions of the thesis relate to grid and off-electrification discussions which analysed the former as a costly capital-intensive investment and the latter locally relevant, community-involving and sustainable electricity options (Gaunt et al., 2012; Tait, 2015; Runstein, et al. 2018; Lemaire & Kerr, 2016). Overall, the debates brought to the fore South African state ambivalences to infrastructural provisions; unfulfilled political promises; infrastructure sector fragmentation; siloes and discoordination in the CoJ, and between the CoJ and national departments and Eskom; informal infrastructure consumptions, housing consolidations among other key dynamics in informal settlements (Ijeoma, 2010; Van der Waldt, 2012; de Visser, 2009 SERI, 2013; GGLN, 2013; Lemanski, 2019; Ziervogel, 2019). Political promises are discussed further below as requiring further research to containing them.

While the theoretical and background chapters provided insights into governance of infrastructure provision in informal settlements, Chapters 5 to 8 (empirical chapters) contributed original, new understanding of the various and shifting governance configurations contexts in the discourse of infrastructure provision in the poor communities in the CoJ, to some extent applicable beyond Johannesburg. This has allowed this thesis to provide a localised and context-specific contribution to the nascent literature on infrastructure governance in informal settlements. The comparison of the literature for Johannesburg municipal governance and institutional framework in Chapter 4 with empirical observations in Chapters 5 through to 8 was instrumental in connecting the City's vision and how, in reality, this visualisation translates in practice and the implication for the informal settlement residents. Analysis of the case study contexts of Stjwetla, Protea South and Slovo Park from a governance perspective, namely how infrastructure challenges are manifesting and governed, provides important insights and resonances to infrastructure governance models of the benevolent Hiding Hand, Malevolent Hiding Hand, Protective Hand and Passive Hand, which demonstrate the CoJ's changing governance approaches (see Hirschman, 1967; Jordan and O'Riordan 2004; Martuzzi & Tickner, 2004; Flyvbjerg & Sunstein, 2016; Anheier, 2017). These

comparisons of approaches in infrastructure governance give a key lens with which to understand government in the governance of infrastructure in the impoverished communities of informal settlements. The comparisons and variations of infrastructure governance across the three case studies give a particular meaning and value to this thesis by revealing the different configurations for infrastructure provision and how politics and hierarchical intergovernmental disconnections manifest to informal settlement residents. The hierarchical and malevolent trajectories suggest the need for genuine collaborative and participatory mechanisms with stakeholders and communities to reduce frustration and contestation between the state and inhabitants. As such, this thesis contributes towards the understanding of the inconsistencies in infrastructure provision and settlement upgrading, which must be used towards reaching a co-governance trajectory in the CoJ and in municipalities across South Africa more broadly (see Rhodes, 1996; Vymětal, 2007; Jaglin, 2014; Ansell & Torfing, 2016). All three case studies provide deep insights into the infrastructure governance phenomenon, which the state and stakeholders can use to achieve inclusionary and empowering informal settlement upgrading outcomes.

The analysis of the CoJ, central government departments of the DoE, DoHS, NUSP, Eskom and the municipal entity City Power provides crucial interdepartmental conversations and reflections. These bring to the fore behind-the-scenes situations, perceptions and thinking in each of those institutions regarding the informal settlement upgrading in the CoJ and South Africa in general. This makes a significant contribution to how we can understand the contradictions, confusions and complexities inherent in informal settlement upgrading and infrastructure governance. At national level, the acknowledgement in the energy sector of the electrification as permanent infrastructure in contrast to its conceptualisation in the housing sector as interim, just like the housing sector's other temporary services (water and sanitation), is a telling revelation about the disjuncture that needs urgent attention, realignment and clarification and or re-invention in relation to the UISP. Equally important is the gap that exists between NUSP and provinces and municipalities that need to be resolved to ensure a more uniform approach and understanding to processes of the UISP (the planning, RAC among others) and synchronise with new progressive funding mechanisms already underway (NT 1 & NT 2). The contradictions, disconnections and or misalignments in key infrastructure departments in the CoJ also provide important lessons about infrastructure

governance for informal settlements. All in all, engagement with state officials provided important pedagogies for infrastructure governance in South Africa.

9.4 Reflection on the research methods

The background to challenges in infrastructure provision in informal settlements are related to limited informal settlement upgrading and the concomitant temporariness, undecidedness and conservatism to implement the state approved UISP trajectory (see Huchzermeyer, 2021; Anheier, 2017). Accordingly, I decided to use an interpretive research design that engages a qualitative, inductive case study methodology comprising different qualitative methods well-suited to understand infrastructure governance in informal settlements (see Etkan, et al, 2014; Yin, 2014; Creswell, 2013; Lincoln, et al., 2011). The qualitative research design was appropriate in that it led to in-depth understanding of underlying reasons, experiences, resulting opinions and motivations by government officials behind the lack of implementation in the case studies (see Etkan, et al, 2014). The design allowed me to understand the (dis)connections within communities and the shortcomings in interdepartmental relations in the CoJ, NUSP and municipalities, DoE, Eskom, DoHS and National Treasury. The qualitive approach was revealing in that it allowed me to interface with South African institutional organisations for the first time as a foreigner in this country, making a difference between our reading about them and the live talking, face-to-face until onset of the COVID-19 pandemic when I had to turn to online communication. Where I was able to interview in person, it was a fascinating experience to walk in high offices of national government and the head offices of the CoJ as well as to visit the three regional offices in Region D, E and G (see Ismail (2017: 37). The associated use of the qualitative in-depth semi-structured, key informant interviews enabled deeper understanding, more than what I was able to gain from reading policy documents, as interviews, in many cases, turned to lively exchanges and discussions of issues, which is not possible in desktop approaches (Denscombe, 2010). As such I found the in-depth interviewing technique particularly important to understand the dynamics surrounding informal settlement infrastructure governance.

I also found the multiple case study approach (Stjwetla, Protea South and Slovo Park) that is embedded in one case study area of the CoJ as critical for a deep understanding of the governance

of infrastructure provision (see Yin, 2014). Rich insights were obtained from each of the three settlements, which altogether allowed a meaningful understanding and reflections. To support the case study approach, I used a framework that allowed me to include in my study the various institutions of the CoJ and its entities, the DoE, DoHS, National Treasury and NUSP, to provide information that enabled a fuller understanding of infrastructure provision in the case studies. Transect walks through the three case studies were also an invaluable qualitative research instrument. Through the walks, I elicited real-life realities of infrastructure provisions in the three case studies and could bring these into the in-depth interviews at the settlement level (see Creswell, 2013).

Much as I had planned to access interview respondents by scheduling interview meetings in a particular order that began with state institutions aiming to get insights about policy, programmes and plans before turning to communities, for pragmatic reasons, the process changed such that I started with community-level respondents. It was difficult to secure interviews with the state officials; this often took longer than planned (Duke, 2002; Perera-Mubarak, 2014). Beginning with the informal settlement communities turned out to be more appropriate, as these respondents were generally less difficult to access and provided an opportunity to appreciate the realities of infrastructure provision in the settlements, which I could then bring into my discussions with officials in the various tiers of government and across the relevant entities. Based on this experience, I recommend an iterative approach to other researchers, starting with interviewing and transect walks in the affected communities to gain a more informed position before approaching officials. However, communities, in turn, also benefit from insights the researcher gains at the "high offices", and my follow-up interviews with community leaders were, therefore, important in a number of ways.

9.5 Recommendations arising from the study

A major lesson from this study is that the state should not embark on infrastructure investments unless there is full study taken and or piloting before full operationalisation is recommended (see USAID, 2009). Guesswork, political opportunism and unrealistic expectations of success should be avoided (see Flyvbjerg & Sunstein, 2016). Instead, infrastructure should be plan, appraised,

feasibility and financially evaluated, implemented and evaluated (National Treasury, 2022). Another key recommendation emanating from my engagement with the three settlements and state institutions is informed by the need for ~~an~~ externally linked community governance as exemplified by Slovo Park. The SPCDF is making an important contribution to a transformative and inclusionary infrastructure governance approach because it is well-organised and interacts with its own internal block and thematic structures as well as external partners. This is unlike Stjwetla, which, to the extent that I could establish, does not have this level of internal organisation and no external linkages, therefore relying far more on the state's benevolence and responsiveness. Much as one of the community formations in Protea South has a collaborative partnership with a human rights organisation, the leadership managing to engage the judiciary to intervene in the settlement upgrading, community leadership across Protea South is heavily fragmented along political party divisions. Community governance as practised in Slovo Park is compelling the unwilling CoJ to implement the UISP, although this is a drawn-out and frustrating process requiring sustained commitment of the leadership which is not readily replicable. This suggests that a community such as Stjwetla would benefit from external assistance or community-to-community learning to develop the structures that can hold the City or the DoHS to account in terms of making clear and statutorily compliant decisions on the future of the settlement.

In addition, there is need for the CoJ to prioritise and realign infrastructure-providing departments to bring the Planning Department (CT & SP) into a shared responsibility with the City's Housing Department in terms of planning for informal settlements. This would reverse the current setup that has Department of Housing responsible for the planning, categorisation, geo-technical and feasibilities assessments, for which it seeks external expertise. The outsourcing of all these functions through contractualisation and consultancy in ways that are neither aligned with nor actively builds internal planning expertise and capacities is not sustainable. This is notwithstanding a need to reform and realign planning statutes of the SPLUMA and SDF, which, although they recognise informal settlements and the need for their *in situ* upgrading wherever possible, need to compel this approach more clearly. Because informal settlements constitute a significant and growing typology of housing in the City, which neither the Housing Department nor CT & SP can handle given their involvement in other bigger mandates in formal areas, it may be sensical to

create a department that is specific to informal settlements and coordinating across the existing infrastructure departments, as suggested by one of the respondents. Such an entity would be aligned with the new thrust of ringfencing financial disbursements from National Treasury and other national departments of the NDoHS and DoE. This would make governance of the funding streams more accountable and efficiently used for informal settlement upgrading and infrastructure provision. The last recommendation pertains to the need to revive and functionalize NUSP, the national technical support programme, conceived to coordinate informal settlement upgrading and infrastructure sectors at a national level.

The thesis recommendations have been summarised and tabulated below for easy reading and comparison across the three settlements and the state institutions as shown in Table 9.1 below.

Table 9.1. Summary of thesis key recommendations

Recommendation or Implication	**Case Study Where the Recommendation is Applicable**			
	Stjwetla	**Protea South**	**Slovo Park**	**State Institution/s**
No need to embark on infrastructure project unless full information and or piloting has been done				State and its institutions
Need for feasibility studies, planning, appraisals, integrated implementation, monitoring and evaluation				State and its institutions
Collaboration with external stakeholders to foster inclusionary transformation, infrastructure governance	Yes	Room for improvement		CoJ; NUSP & infrastructure sectors; Housing-Energy sectors
Internal (re)organisation, integration	Room for improvement	Yes		CoJ;
Depoliticization; Sustained leadership commitment	Room for improvement	Both	Sustained commitment	
Capacitate and revive NUSP and make UISP and *in situ* upgrading mandatory				NDoHS; NUSP; National Treasury
Create stand-alone department for informal settlements				From national to local government

9.6 Suggestions for further research

The obtaining challenges of stalled infrastructure provision processes under the UISP inspire a need to improve, strengthen or invigorate the informal settlement upgrading approach to be effective, proactive and tolerable by the implementing meso-level institutions. Whereas this is already underway at the NDoHS, further research in this respect is needed to trace or determine the dislocations in the current upgrading programme, be it in the conception and design, training and capacity building, and to suggest how the programme can be revived. Aspects of piloting the programme, consultation and gaining the support of the municipalities should be explored. The extent of political influence in the programme must also be investigated to suggest viable ways of containing the current hyper promises that are linked to the RDP housing delivery trajectory. Another, but related, aspect that requires further research pertains to the need to investigate and understand what is behind the phenomenal increases in informal settlements and how this can be addressed in a holistic way. Growing informal settlements are further complicating infrastructure provision by making informal settlements appear as an insurmountable task in the face of local governments.

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Appendix A: Ethics Clearance

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Chikomwe

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H19/11/05**
PROJECT TITLE	Governance of infrastructure provision in informal settlements: The electrification of unproclaimed areas in the City of Johannesburg
INVESTIGATOR(S)	Mr S Chikomwe
SCHOOL/DEPARTMENT	Architecture and Planning/
DATE CONSIDERED	15 November 2019
DECISION OF THE COMMITTEE	Approved Permission letters are required before data collection can commence
EXPIRY DATE	08 December 2022

DATE 09 December 2019 **CHAIRPERSON** (Professor J Knight)

cc: Supervisor : Prof M Huchzermeyer

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix B

Savory Chikomwe
University of the Witwatersrand
School of Architecture and Planning
Private Bag 3
2050

17 February 2019

Eskom

Dear Sir/Madam,

APPLICATION FOR PERMISSION TO UNDERTAKE AN ACADEMIC RESEARCH WITH YOUR ORGANISATION: SAVORY CHIKOMWE PhD RESEARCHER

I am applying for permission to undertake a PhD academic research with your Organisation on a research thesis titled **Governance of infrastructure provision in informal settlements: the electrification of unproclaimed areas in the City of Johannesburg**

The research aims to better understand aspects of governance in the provision of infrastructure in unproclaimed or informal settlements undergoing electrification processes. Setjwetla, Slovo Park and Protea South informal settlements, all within the jurisdiction of the City of Johannesburg, are my proposed case studies. The specific objective of the inquiry pertains to understanding the electrification process and how this is situating in the bigger realm of infrastructure provision in the settlements. While the study aims to understand the reality of governance at implementation stage and how this relates to policy intentions, one of my key research themes (Electrification) analyses the utility of grid powered electricity to off-grid alternative solutions for the unproclaimed informal settlements. Perhaps needless to say, unproclaimed settlements are those informal settlements whose future destiny has not yet been pronounced by government, and thus unknown, yet some of these settlements are undergoing or have undergone grid electrification. This makes this study keen to find out what viable alternatives are possible, specifically what non-state and civic societies actors are doing and can do to power the temporary settlements as opposed or complementary to grid electrification as the dominant paradigm in the temporary unplanned areas. In the event of eventual settlement relocation, on grid investment which is capital intensive may prove to be wasteful, costly investment.

For this reason, I am identifying your organisation as relevant to share with me your experiences and recommendations in off-grid and solar lighting for temporary housing or informal settlements. It is hoped that your research input will add value to infrastructure planning and implementation in informal settlements in the City of Johannesburg in particular but should also be important for other cities in South Africa and beyond.

I would be grateful to you for allowing me to conduct an interview with a senior official in your organisation.

Should you have any questions, please do not hesitate to contact me. May thanks in advance,

Yours faithfully,

Savory Chikomwe
Wits University, Johannesburg: 749079@students.wits.co.za, chikomwes@gmail.com, +2760 363 5129
Supervisor: Marie Huchzermeyer, Wits University, Johannesburg: marie.huchzermeyer@wits.ac.za, Cell +27834242457; Phone: +27117177688
Ethics committee contact person: Shaun Schoeman, ph: +27117171408, shaun.schoeman@wits.ac.za

Appendix C

Questionnaire for key-informant interview: City of Johannesburg

Good day. Thank you for agreeing to be interviewed. As mentioned, I will be asking you some questions about your understanding of governance of infrastructure provision in informal settlements, a case of electrification in the unproclaimed areas in the City of Johannesburg (CoJ). Please interrupt me at any time and let me know if you have questions or if you are unclear or uncomfortable about any of the questions. So, if you're ready, let's start.

1. When was Setjwetla, Slovo Park and Protea South informal settlements established?
2. What key issues and concerns do you have in informal settlement infrastructure provision and upgrading processes in CoJ?

3 a) Does each of the settlements have organised community-based organisations?
   a) Are there are NGOs or other organisations which network with the community structures?
   b) How have the organisations networked to get lobby for infrastructure services?

4. Through which policy is your jurisdictional service provided?
   b) How is the policy coordinated with other policies operating in the same community?
   a) Since when did you start providing those services?
   c) Did you provide the service when it was demanded by residents?
   d) How do you relate to the strategies taken by residents to enforce delivery?

5. How are infrastructure issues and concerns being addressed at the city level, provincial and national levels?

Let's focus the next few questions on the provision of electricity to your settlement

8. What led your organisation to roll-out electrification?
7. How do you compare the provision of temporary water & sanitation versus electrification?
8. How much did make in the planning and implementation of electrification programme? Exapnd

9. How has the community responded to electrification?
   a) Did you notice any change in the settlement as a result?
   b) What indications do brick structures point to?
   c) Do you think there is a connection between electrification and residents building structures in brick? Can you expand?

10. How do you involve residents in the planning and implementation of electrification processes? Expand
    a) Do you receive any complaints from the informal settlements residents about the quality-of-service delivery (electrification)? How do you resolve grievances?
12. How do you see the resort to courts of law by residents for infrastructure provision and settlement upgrading?
    a) How do you react to the court judgements and orders in this regard?
    b) How do they affect the relationship with the residents?
    c) What alternatives would you suggest for residents take and not to resort to courts?

13. In your opinion, do you think the housing and energy policies and approaches in informal settlements are well-coordinated?

a) What do you think about the involvement and distribution of electricity in CoJ by two state enterprises: City Power and Eskom?

14. What governance arrangements for coordination are in place for CoJ's City Power and Eskom to distribute electricity in CoJ's jurisdiction? And Departments of Housing and Energy regarding infrastructure provision in the settlements?
15. How can the apparent silo approaches to infrastructure provision in informal settlements be resolved?
16. Do you think the electrified informal settlements will be upgraded *in situ?*
17. How do you see relationships existing between CoJ, civil society organisations and residents of informal settlements regarding infrastructure provision and settlements upgrading in general?

Thank you very much for your time and help. As mentioned, I might need to ask some follow up questions in a few weeks' time. I hope you're ok with me contacting you again. Can you recommend any interview candidates that you think would be valuable for this research?

Appendix D Participant Information Sheet

Participant Information Sheet,

Good day

Governance of infrastructure provision in informal settlements: the electrification of unproclaimed areas in the City of Johannesburg

My name is Savory Chikomwe, a PhD student in School of Architecture and Planning at Wits University in Johannesburg. For my PhD, I am investigating governance of infrastructure provision in informal settlements using the electrification of unproclaimed areas in the City of Johannesburg as my case study.

As part of this project, I would like to invite you to take part in an interview, preferably at a place convenient to you which may not cause interruptions to the interview process. This will involve answering a set of questions which I can make available in advance and will take around 50 minutes. With your permission, I would also like to record the interview using an audio recording, in addition to hand-written notes. The recording, if allowed, will be stored and safeguarded safely in password protected devices computer. With your permission again, I would like to take some photographs of the physical electrification processes not of people in any recognizable way merely for illustrative use purposes.

Please note that you will not receive any direct benefits from participating in this study, and there are no disadvantages or penalties for not participating. You may withdraw at any time or not answer any question if you do not want to. The interview will be completely confidential (used only for the purposes of this research and not shared with anyone else) and if this is your preference, it will be anonymous, meaning I will not use your name in my thesis and academic papers that may lead from it. Note, however, that anonymity may not be guaranteed if your expert positions may be recognized as yours by others in the field. I will be using a pseudonym (false name) to represent your participation in my final thesis. The information you give to me in the course of the interview will be held securely by using a password protected computer

If you have any questions about this research before or after the interview, feel free to contact me on the details listed below. This study will be written up as a thesis which, once examined and accepted by the University, will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you upon request. If you have any queries, concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (non-medical), telephone + 27(0)11 717 1408, email Shaun.Schoeman@wits.ac.za

Yours sincerely,

Savory Chikomwe
Wits University, Johannesburg: 749079@students.wits.co.za, +2760 363 5129
Supervisor: Marie Huchzermeyer, Wits University, Johannesburg: marie.huchzermeyer@wits.ac.za, Cell +27834242457; Phone: +27117177688

Appendix E Sample of Consent Form

Governance of infrastructure provision in informal settlements: the electrification of unproclaimed areas in the City of Johannesburg

Consent of Participant

I ……. agree to participate in and be interviewed for Savory Chikomwe's research project on governance of infrastructure provision in informal settlements, a case of electrification, in the City of Johannesburg for his doctoral degree at the University of Witwatersrand. The research has been explained to me and I understand what my participation will involve. I understand that despite anonymity, I understand I may still be identifiable in the resulting thesis write-up

Please circle yes or no for the following statements:

I agree that my identity will be kept anonymous	YES	NO
Do you allow me to use anonymous quotes from this interview in the thesis?	YES	NO
Do you allow me to use identifiable quotes from this interview (referring to your name) in the thesis?	YES	NO
I agree that the interview may be audio recorded	YES	NO

…… (signature)

…… (name of participant)

…… (date)

Appendix F List of Interviewees

Name	Date	Organization	City	Place of interview	Mode or technique used
CTPow 1	17-12-2020	City Power-CoJ	CoJ	Wits Campus	Zoom
CTPow 2	10-12-2020	City Power-CoJ	CoJ	Wits Campus	Zoom
Stj Cllr	20-11-2020	City of Joburg	CoJ	Malboro	Face-to-face
PS Cllr	01-12-2020	City of Joburg	CoJ	Protea South	Face-to-face
SP Cllr	20-11-2020	City of Joburg	CoJ	Slovo Park	Face-to-face
CoJ RG1	02-12-2020	City of Joburg	CoJ	CoJ Region G Offices	Face-to-face
CoJ CTSP	15-12-2020	City of Joburg	CoJ	CoJ HQ	Zoom
CoJHS 1	03-06-2020	City of Joburg	CoJ	Zimbabwe	WhatsApp Call
CoJ RG3	21 12-2020	City of Joburg	CoJ	CoJ Region E Offices	Face-to-face
CoJ RG2	03- 2-2020	City of Joburg	CoJ	CoJ Region D Offices	Face-to-face
CoJHS 2	7-11-2020	City of Joburg	CoJ	Zimbabwe	WhatsApp Call
CoJHS 3	01-12-2020	City of Joburg	CoJ	CoJ HQ	Face-to-face
CoJ EISD	21-08-2020	City of Joburg	CoJ	Zimbabwe	WhatsApp Call
DoE 1 & DoE 2	13-03-2020	Dept of Energy	Pretoria	Dept of Energy	Face-to-face
NONST	19-02-2020	Non-State Actor	CoJ	Randburg	Face-to-face
Exp Elec	06-11-2020	UCT	Cape Town	Zimbabwe	WhatsApp Call
NT 1	18-11-2020	National Treasury	Pretoria	Zimbabwe	WhatsApp Call
NT 2	13-02-2021	National Treasury	Pretoria	CoJ	Zoom
NUSPOFF	09-12-2020	NUSP	NUSP	CoJ/Pretoria	Zoom
PS 1	02-12-2020	Protea South	CoJ	Protea South	Face-to-face
PS 2	28-06-2020	Protea South	CoJ	Zimbabwe	WhatsApp Call
HRL	03-07-2020	Webber Wenzel	CoJ	Zimbabwe	WhatsApp Call
PS 3	03-07-2020	Protea South	CoJ	Zimbabwe	WhatsApp Call

PS 2 & PS 3	21-1-2020	Protea South	CoJ	Protea South	Face-to-face
Stj 1	04-02-2020	Setwetla	CoJ	Setwetla	Face-to-face
Stj 2	06-05-2020	Setwetla	CoJ	Zimbabwe	WhatsApp Call
Stj 3	04-02-2020	Setwetla	CoJ	Setwetla	Face-to-face
StJ 4	25-02-2020 & 01-06-2021	Setwetla	CoJ	Setwetla; CoJ	Face-to-face; WhatsApp
SPDCF 3	08-08-2020	Slovo Park	CoJ	Zimbabwe	WhatsApp Call
SPDCF 1	29-07-2020	Slovo Park	CoJ	Zimbabwe	WhatsApp Call
SPDCF 2	19-11-2020	Slovo Park	CoJ	Slovo Park	Face-to-face
JWfr	16-02-2021	Joburg Water	CoJ	Joburg Water, CoJ	Face-to-face
EXP	12-03-2021	Wits University	CoJ	Wits University Campus	Zoom
GAUPROV	9; 12 & 29-03-2021	Gauteng Provincial Govt	CoJ	CoJ	Zoom; Mobile Call
CoJ EXD	25-05-2021	City of Joburg	CoJ	CoJ HQ	MS Teams