The Political Ecology of Community-based Adaptation to Flood Risk in Informal Settlements: The Case of a Local Community Organisation

Ashley Fox (FXXASH002)

Supervisor: Associate Professor Gina Ziervogel

Co-supervisor: Dr. Suraya Scheba

African Climate & Development Initiative

Department of Environmental and Geographical Sciences

University of Cape Town, South Africa

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Plagiarism Declaration

I, Ashley Fox, hereby declare that I know the meaning of plagiarism and that the dissertation that I hereby submit is all my own work.

Abstract

As urbanisation rates increase in parallel with growing climate change concerns, African cities are increasingly required to explore and support adaptation planning that reduces climate risks for the most vulnerable. Informal settlements are particularly vulnerable to climate change due to their high density, limited service provision, and a lack of economic and political opportunities for residents. In Cape Town, informal settlements face disastrous floods every year in the rainy season due to their location on degraded, low-lying lands as a result of Apartheid spatial planning. This thesis explores how multi-scalar governance in Cape Town can either empower or undermine efforts at community-based adaptation (CBA) to flooding in informal settlements. Drawing on urban political ecology, this thesis assesses the potential for CBA to lead to wider transformation. Using a case study approach, it focuses on the informal settlement network (ISN), a community-based organisation of the urban poor. ISN members and other actors involved in flood management in Cape Town were interviewed to understand the flood management landscape and the relationships and dynamics that exist between the various actors. The analysis showed that the CoCT's efforts at participatory planning reinforce the hegemonic power dynamics between government and communities, but that everyday governance practices can be used at a smaller-scale to enforce positive change. In reaction to top-down governmental processes, ISN uses insurgent planning to envision a more just city. They navigate sanctioned and un-sanctioned spaces of citizenship to drive development from the bottom-up. The community designed and spear-headed reblocking process (rearranging shacks in a settlement to allow for flood drainage and service delivery) is a powerful example of CBA and represents the potential of community-based organisations to take steps towards transformation. In order to enable true transformative CBA, both the CoCT and ISN need to adjust the epistemological framing of their planning processes in order to address the drivers of vulnerabilities, rather than just the vulnerabilities themselves.

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Acronyms

BNG	Breaking New Ground
CBA	Community-based Adaptation
CoCT	City of Cape Town
DRM	Disaster Risk Management
EPWP	Expanded Public Works Programme
INM	Informal Networks Management
IPCC	Intergovernmental Panel on Climate Change
ISB	Informal Settlements and Backyarders Department
ISN	Informal Settlements Network
LTAS	Long-term Adaptation Scenarios
MoU	Memorandum of Understanding
NEMA	National Environmental Management Act
NGO	Non-governmental Organisation
ODTP	Organisational Development and Transformation Plan
PIE	Prevention of Illegal Eviction (Act)
RDP	Reconstruction and Development Programme
UISP	Upgrading Informal Settlements Programme
UNFCCC	United Nations Framework Convention on Climate Change
UPE	Urban Political Ecology

Contents

1 Introduction

1.1 Background of the Study

More than half of the world's population is now living in urban areas (Dodman & Satterthwaite, 2008). Of these people, about 30 percent live in crowded informal settlements (slums, shanty towns) on the outskirts of cities with limited or no access to basic services, livelihood opportunities, or resources for political mobilisation (PSUP Nairobi, 2016). Many of these settlements are highly exposed to environmental risk such as flooding or landslides (Ziervogel et al., 2016b; Satterthwaite et al., 2007; Douglas, Alam & Maghenda, 2006). Located in high-risk areas and lacking basic requirements, these urban dwellers are extremely vulnerable to environmental hazards, including impacts from climate change. While the attribution of these events to anthropogenic climate change is still being studied, the evidence of vulnerability is clear, and scientists agree that extreme events are likely to increase (IPCC, 2014). Climate change will also lead to higher temperatures, sea level rise, and coastal storm surge which can negatively impact land and soil quality, human health, freshwater resources, infrastructure and services (Munzhedzi et al., 2016).

Adaptation has become a major priority for African countries where reliance on natural resources is crucial for many people's lives and livelihoods (Ziervogel et al., 2016a). However, many adaptation strategies and resources are focused on rural areas, despite the increasing urbanisation rates and resulting challenges for urban service provision and infrastructure (Ziervogel et al., 2016b; Kiunsi, 2013). Governing climate change issues in urban areas is complicated by high levels of informality, where data might be lacking or changing often (Dodman & Satterthwaite, 2008). Informality also exacerbates sensitive issues around land tenure and land security, and overcrowding makes access and service provision difficult (Joubert, 2014).

Community-based adaptation (CBA) has been touted as a pro-poor strategy that can be considered "adaptation as development" (Archer et al., 2014). However, CBA follows the same pattern as general adaptation in that it is often focused in rural areas around natural resource management or agriculture (Satterthwaite et al., 2007). One example explains how an NGO in Bangladesh is working with rural communities to introduce technologies (like floating gardens or hydroponics) into flooded agricultural lands, using consultations to identify community concerns, needs, capacities, and ideas for action (Ayers &Forsyth, 2009).

While this is certainly a commendable project with positive and empowering benefits to the community, it exemplifies how the ability of communities to respond from within is hardly ever the starting point. In urban areas, community-based approaches are rarely considered outside the tokenism of local participation in adaptation decision-making. In practice, this participation is often used to justify decisions that have already been made by NGOs or outside institutions (Christens & Speer, 2006). This thesis engages with this literature gap by focusing on how community-based organisations are adapting to climate risk in informal settlements in Cape Town.

In Cape Town, one of the main environmental challenges faced in informal settlements is severe flooding, which occurs every year during winter rainfall. Climate change is expected to exacerbate this problem (Munzhedzi et al., 2016). Despite the City's efforts in managing flooding through various plans and programmes, pervasive flooding still persists (Ziervogel et al., 2016b; Joubert, 2014). Some communities have taken flood response into their own hands. The Informal Settlement Network (ISN) in Cape Town is an example of a community-driven initiative to better the lives of the urban poor. While not directly focused on issues of sustainability and climate change, ISN is committed to the pro-poor development of informal settlements that in general, leads to less vulnerable communities. However, urban governments also have a great responsibility to reduce the vulnerability of their populations (Dodman & Satterthwaite, 2008). As Satterthwaite et al. (2007: viii) bluntly observe, "…you cannot adapt infrastructure that is not there". Many informal settlements in Cape Town lack basic services and infrastructure (such as functioning stormwater drains) that would help to significantly reduce the risk of flooding in communities (Ziervogel et al., 2016b; Joubert, 2014). Multi-scalar governance, which involves actors at every level of government as well as communities, civil society and private organisations, is necessary for managing complex policy decisions like adaptation plans for climate change (Vedeld et al., 2015). Given the differentiated resources and institutional capacity at different levels of government, multi-scalar governance that is supported by municipalities is extremely important. Multi-scalar governance that supports pro-poor urban development and appropriate adaptation decision-making should also be supported by communities, as climate change will disproprortionately impact the poor.

Urban Political Ecology (UPE) offers a critical lens for understanding flood risk in informal settlements. UPE unpacks the power and politics involved in constructing a particular context, and provides a historical, cultural, and economic perspective on the processes

involved therein (Heynen, Swyngedouw & Kaika, 2006). UPE is an important lens through which to understand and critique urban dynamics because it starts from a normative position of acknowledging the uneven nature of urban environments (Heynen, Swyngedouw & Kaika, 2006). Adaptation as transformation, which addresses structural inequality as the root cause of vulnerability through a social, transformational process (O'Brien et al., 2015), can be a method of responding to and preparing for climate change while also making cities more equal in the process. In Cape Town, one of the most unequal cities in the world (Razvadauskas, 2017), high levels of informal settlements, challenges around flood governance, and the likelihood of future climate risks makes for a good case study for understanding the potential for informal, urban CBA, particularly as this is a noticeable gap in adaptation literature. By analysing this case study from an UPE perspective, this study aims to contribute to a better understanding of how adaptation response can contribute to transformation.

1.2 Problem Statement

There are about 146,000 households in 437 informal settlements in Cape Town (Ndifuna Ukwazi et al., n.d.). A 2011 census revealed that for these households, 32 percent had no access to waste removal by the municipality, 53 percent had no access to sanitation, 19 percent had no water supply, and 35 percent had no electricity (Housing Development Agency, 2013). Some settlements in Cape Town are located on city land, and are therefore serviced by the municipality (Joubert, 2014). However, because of the crowded and often disorganised way in which settlements develop over time, it is difficult for the city to service toilets or manage waste removal in the same way they do in the suburbs (Joubert, 2014). For illegal settlements on private property, the city does not have responsibility for provision of services, and the land owners are not required by law to provide services either, complicating the situation (Joubert, 2014). Outside of access to basic services, residents of informal settlements face many other stressors including health risks, environmental risks (flooding and fires, in particular), crime, unemployment and substance abuse (Richards, O'Leary & Mutsonziwa, 2007).[1]

[1] For more information on residents of informal settlements (demographics, economic statistics, access to services, etc.) see the Western Cape Government Provincial Human Settlement Demand Profile here: https://www.westerncape.gov.za/assets/departments/human-settlements/docs/demand-profile-analysis/western_cape_provincial_human_settlements_demand_profile_and_analysis_-_20150813.pdf

Every year during the winter rainy season in Cape Town, certain townships and informal settlements experience predictable flooding. The City of Cape Town recorded 88,000 homes at risk of flooding in 2009, with up to 13 percent of all informal settlement residents being displaced (Joubert, 2014). As a result of Apartheid spatial planning, many of Cape Town's townships and informal settlements are located on the Cape Flats, a low-lying wetland (once a dune field) with waterlogged soils and a high water table (Joubert, 2014). Natural drainage has been disrupted by developments like houses and roads that alter stormwater patterns, while the formal stormwater management drains and detention ponds are often crowded with new residents and rubbish by the time winter rains arrive (Joubert, 2014). Residents of flood-prone areas experience similar challenges, including damaged property; hygiene and sanitation difficulties; health concerns from stagnant water and the wet and

Figure 1. Flooding in an informal settlement in Cape Town (Bosch, 2013)

cold conditions; work and school disruptions; electric shocks from wet wires; and poor waste management (Joubert, 2014). Many people live with these challenges because they have nowhere else to go, or because they were evicted from farms or government lands because of new housing schemes (Joubert, 2014)[2].

On land which belong to the City of Cape Town (CoCT), they are responsible for providing services and maintaining toilets and standpipes in informal settlements in line with the national government policy of free basic water and sanitation (City of Cape Town, 2017c). The city has set a target higher than the national policy, of one shared toilet per five

[2] For more detailed information on flooding in informal settlements in Cape Town (including impacts and coping strategies) see Rising Waters: Working Together on Cape Town's Flooding here: http://www.adaptationnetwork.org.za/wp-content/uploads/2013/11/Joubert-2013-Rising-Waters-working-together-on-Cape-Towns-flooding.pdf

households and one shared tap per 25 households within 200 metres walking distance. They do acknowledge that flooding, unstable ground, private land, and dense settlements are all challenges making it impossible to place flush toilets in certain areas (City of Cape Town, 2017c). For waste management, the city provides and collects two waste bags per week per household, and employs community members to help with street cleaning and rubbish removal (City of Cape Town, 2017a).

The CoCT has a Disaster Management and Winter Preparedness Programme to address flood risk in informal settlements. It includes assessing risk, creating awareness, delivering disaster aid, improving service delivery, and infrastructure upgrades (Joubert, 2014). In 2017, the city organised the Winter Readiness Task Team, which brought together an inter-departmental group under the City's Organisational Development and Transformation Plan[3] (ODTP) (de Lille, 2017). The following departments participated in flood-risk reduction activities as part of the Task Team and ODTP: Disaster Risk Management Department (DRM); Solid Waste Management Department; Transport and Urban Development Authority; and Social Development Department (de Lille, 2017).

Despite the CoCT's efforts in reducing and responding to flooding in informal settlements, the same problem reoccurs every winter, with the CoCT and residents of informal settlements often blaming each other for the lack of positive change. For example, since the CoCT cannot service each home in informal settlements like it does in the suburbs, they manage waste in some settlements by providing a container that residents can fill with rubbish bags when it is unlocked[4] by the CoCT prior to collection times (Joubert, 2014). However, residents often leave rubbish bags outside the container when it is locked, which leads to waste being washed into the stormwater drains, creating clogs and flooding (Joubert, 2014). The CoCT claims the residents need to manage this unsanctioned dumping, while the residents claim that the CoCT needs to improve communication and consistency with collection times (Joubert, 2014). When flooding inevitably happens, residents use various strategies to cope, such as raising their shacks, covering leaky roofs with plastic, creating makeshift walking bridges from pallets and rubble, digging drainage channels, using sand to absorb water, and finally, evacuating (Joubert, 2014). However, while these coping mechanisms at the household level

[3] See more information on the ODTP here: http://www.capetown.gov.za/work%20and%20business/meet-the-city/Our-vision-for-the-city/cape-towns-organisational-development-and-transformation-plan

[4] Rubbish containers are locked outside of collection hours so that they are not used for other purposes besides rubbish storage.

can be useful, they are short-term solutions, and can often lead to water flow changes that can flood neighbouring houses (Drivdal, 2016).

Researchers have been examining this challenge in order to understand the barriers to improved flood management in informal settlements. A general consensus can be seen in this research regarding a shift from government to *governance* to address these barriers. Previous studies have identified the following challenges:

- Lack of genuine collaboration with and participation by communities (Desportes, Waddell & Hordijk, 2016; Drivdal, 2016; Ziervogel et al., 2016b; Joubert, 2014)
- Lack of internal collaboration between CoCT departments responsible for flood risk reduction (Desportes, Waddell & Hordijk, 2016; Ziervogel et al., 2016b; Joubert, 2014)
- Lack of transparency and trust between CoCT and residents of informal settlements (Desportes, Waddell & Hordijk, 2016; Drivdal, 2016; Joubert, 2014)
- Different perceptions of the problem and ideas for solutions (Ziervogel et al., 2016b)
- Lack of resources and capacity (Desportes, Waddell & Hordijk; 2016; Ziervogel et al., 2016b)
- Over-reliance on technocratic approaches (Ziervogel et al., 2016b; Armitage et al., 2010; Joubert, 2014)
- Insufficient communication and information shared from the CoCT to informal settlement residents (Desportes, Waddel & Hordijk, 2016; Joubert, 2014)
- Lack of longevity in political strategies (Ziervogel et al., 2016b)
- Micropolitical disparities at the level of community governance (Drivdal, 2016).

Many of these challenges were confirmed by the research involved in this thesis. These, along with additional challenges identified during the research process, are described in detail in section 5.2 below.

1.2.1 Climate Change Implications

Climate change projections show that while the Western Cape is expected to get hotter and drier, rainfall is likely to become more variable and extreme (Tadross & Johnston, 2012) . Given the location of most informal settlements on low-lying flood plains, more extreme rainfall would lead to increased flooding risks in these settlements. Importantly, non-climate factors are also driving increased flood risk, such as increasing areas of surface hardening and

blocked stormwater drains. Residents of informal settlements are especially vulnerable to increased flood risk, as they often lack sufficient drainage and infrastructure, their homes are built with low-quality materials, and they have low incomes, which makes responding to flooding more difficult (Moser & Satterthwaire, 2010).

1.3 Aim and Objectives

In line with the research gaps identified in the literature review, the aim of this study is to ***understand community-based adaptation (CBA) to flood risk in informal settlements through an urban political ecology (UPE) lens.***

The following objectives contribute to the aim of the study:

1. Understand how the different actors involved in managing flood risk within informal settlements (government, NGO, community groups) interact, manage and influence flood risk
2. Understand the challenges and opportunities faced by ISN, a community-based organisation based in informal settlements, and the CoCT in responding to flood risk in informal areas
3. Explore how experiences of multi-scalar governance between ISN and local government enables or undermines CBA in urban, informal areas
4. Understand the potential for transformative CBA in urban, informal areas

1.4 Organisation of the Thesis

This research is organised into seven chapters. The second chapter assesses the literature on adaptation and flood adaptation governance in informal settlements, explaining where gaps exist within urban adaptation research, particularly around the potential for CBA and multi-scalar governance. The second half of the second chapter provides an overview of UPE as a theoretical framework. The third chapter explains how this study engages with an UPE approach before providing contextual information to frame the study's results. Chapter four describes the methodology of the study, describing the case study used and the methods of data collection and analysis, as well as limitations and ethical considerations. Chapter five presents the results of the study through a description of the flood management landscape in Cape Town. Chapter six presents the analysis of the results which centres around the potential for multi-scalar governance to enable transformative CBA in informal settlements.

Chapter seven concludes this study, summarising the findings and implications of the research and suggesting future useful research topics in this area.

2 Literature Review and Theoretical Framework

2.1 Introduction

This study grounds itself in existing literature while expanding upon research gaps identified during the literature review process. The conceptual debates and theoretical framework that relate to the problem statement and research objectives are adaptation, climate change governance, and UPE. Given that climate change impacts are already being felt across the globe, adaptation is an invaluable strategy for reducing the impacts of climate risk. This needs to be understood in the context of addressing other challenges plaguing the urban poor, especially in the context of increasing urbanisation in African cities (Satterthwaite et al., 2007). Urban governments have a responsibility to respond to current and expected environmental risks by working to minimise the vulnerability of their residents (Dodman & Satterthwaite, 2008). The challenges posed by climate change require an inter-connected, comprehensive and collaborative multi-scalar governance approach that engages actors at all levels, particularly the most vulnerable actors, such as communities living in informal settlements in or around cities (Vedeld et al., 2015). While climate change is likely to exacerbate the already dire conditions in these settlements (Moser & Satterthwaire, 2010), there are also opportunities for governance mechanisms to capture community-led initiatives to build resilience and adaptive capacity from the bottom-up (Dodman & Mitlin, 2013). This study uses UPE as a critical lens in which to view CBA through ISN, a community-based organisation, as UPE offers the tools and theories necessary to interrogate traditional notions of risk, adaptation, and governance. By unravelling the complex processes at play in the urban environment and focusing on the drivers, rather than symptoms, of risk, UPE can help recognise the potential for CBA to lead to transformative change. This chapter systematically explores the concepts and theoretical framework mentioned above, examining the sub-themes of these concepts and expanding on the interconnections between them. Finally, this chapter identifies where the research could contribute to the literature, particularly on CBA and multi-scalar governance in urban, informal areas.

2.2 Literature Review

2.2.1 Adaptation

2.2.1.1 Adaptation as Development

Adaptation is the "process of adjustment to actual or expected climate and its effects" (Agard & Schipper, 2014:1758). When climate change concerns were first surfaced, adaptation was considered a short-term alternative that detracted from mitigation efforts (Dodman & Mitlin, 2013; Ayers & Forsyth, 2009). However, since the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) exposed that climate change impacts were already occurring, and mitigation efforts were slow-moving, adaptation has become an agenda item for international policy (Ayers & Forsyth, 2009; Huq et al., 2004). Particularly in Africa, adaptation resonates as important because of many people's reliance on natural resources, as well as the likelihood of significant climate change impacts on the continent (Ziervogel et al., 2016a). Adaptation responses can include control (decreasing the likelihood of the problem occurring); coping (decreasing sensitivity to the problem); or avoidance (decreasing potential impacts of the problem) (Few, Brown & Tompkins, 2007). Many responses include engineering and technology solutions, often in the rural context, such as new seed varieties, agricultural techniques, water conservation management and early warning systems (Ayers & Forsyth, 2009). In addition, there is growing recognition of the importance of adaptation as a process that brings together multiple actors, supports social learning and explores the governance of adaptation (Ziervogel, Archer van Garderen & Price, 2016).

A growing number of researchers are beginning to recognise the importance of aligning adaptation with broader development goals. "Adaptation as development" has evolved partially in response to the highly engineering- and technology-based approach to adaptation, recognising that technical solutions alone are not sufficient (Inderberg et al., 2015). Development researchers argue that "risks posed by disasters and natural hazards are often linked more to social, economic, and even political factors in different contexts rather than simply the size of physical events such as storms and floods" (Ayers & Forsyth, 2009:25). The adaptation as development approach focuses on the underlying non-climatic social, political and economic causes of vulnerability (Inderberg et al., 2015). This approach complements development objectives while also advancing the adaptive capacity of the most vulnerable people (Inderberg et al., 2015; Ayers & Forsyth, 2009). Satterthwaite et al. (2007)

describe the “synergies” between local development and successful adaptation, providing an example of how reducing poverty and improving housing, living conditions, and service provision are precursors for adaptation. In the same vein, Pelling (2011) argues that climate change should not be the target of development; that we should not be adapting *to* climate change but *with* climate change.

2.2.1.2 Urban Adaptation

Historically, national responses to long-term global climate change have not been prioritised in African countries, given the competing development challenges (Ziervogel et al., 2016a). However, climate change is increasingly becoming a policy item in African countries, mainly due to international policy processes such as the United Nations Framework Convention on Climate Change (UNFCCC) (Ziervogel et al., 2016a). Thirty-two African countries have submitted National Adaptation Plans of Action as part of the UNFCCC requirements, but despite high levels or urbanisation in African cities, the policy focus for adaptation has remained on rural areas and natural resources management (Ziervogel et al., 2016a; Kiunsi, 2013; Satterthwaite et al., 2007).

Urban adaptation research in Africa has been limited, but literature on the subject is growing (Ziervogel et al., 2016). Many studies have highlighted the institutional challenges facing urban adaptation in Africa, including limiting legislative frameworks based on national mandates, political instability, and limited availability of locally relevant climate change data (Leck & Roberts, 2015; Taylor, Cartwright & Sutherland, 2014; Pasquini & Shearing, 2014). In assessing urban climate change work in a number of African cities, Ziervogel et al., (2016a: 4) have highlighted the “need for increased political interest and will to address climate change, bringing in local actions through real forms of public participation, and overcoming fragmentation and silo-based planning and activities”. Satterthwaite et al. (2007) focus on the incapacity of urban governments to address the major deficiencies that are prerequisites for adaptation, such as ensuring infrastructure is in place to manage disasters and governments actually being willing to work in “illegal settlements”.

2.2.1.3 Community-based Adaptation

Research has increasingly focused on the importance of working with local actors, especially marginalised groups, to respond to climate change (Ziervogel et al., 2016b; Wamsler, 2016; Chu, Anguelovski & Carmin, 2016; Revi et al., 2014; Aylett, 2010). Community-based development grew out of an acknowledgement in the late 1980’s that decades of development

activities were insufficient due to their top-down orientation and lack of context-specific interventions using local knowledge (Dodman & Mitlin, 2013; Scott, 2008). This led to a "participatory" shift in development study and practice that emphasised communities taking charge of their own development processes as a crucial element defining project success (Dodman & Mitlin, 2013). Community-based *adaptation* is defined as "local, community-driven adaptation…that focuses attention on empowering and promoting the adaptive capacity of communities. It is an approach that takes context, culture, knowledge, agency, and preferences of communities as strengths" (Agard & Schipper, 2014:1762). However, Dodman & Mitlin (2013) also highlight some weaknesses within CBA, such as its partial and local nature, its lack of understanding power dynamics within communities, and its failure to recognise risks outside of those related to climate change. Further, CBA tends to focus more on rural areas than urban areas; agricultural and rural livelihood adaptation are prominent features in many development initiatives (Satterthwaite et al., 2007). CBA has the potential to contribute to the adaptation as development approach, but it must address the "social, economic, and political drivers of vulnerability as part of broader development processes" (Archer et al., 2014:346), a concept that mirrors the foundations of political ecology.

2.2.1.4 Urban CBA

CBA in the urban context is a response to increasing urbanisation leading to competition over scarce physical and natural resources in cities, which are also highly vulnerable to the exacerbating effects of climate change impacts (Archer et al., 2014; Soltesova et al., 2014). However, limited work has been done to record community-level adaptation and mitigation responses to climate change in urban areas in Africa (Ziervogel et al., 2016; Simon & Leck, 2015; Archer et al., 2014). A review of literature concerning communities and adaptation in urban areas reveals that engagement with communities in an urban setting is typically labeled as "community participation", implying that there are limited examples of adaptation that are driven from the ground-up. While some research exists on urban adaptation and CBA separately, few studies have combined the two. Soltesova et al.'s chapter (2014) is one of the studies that does focus on the potential for upscaling urban CBA. Soltesova et al. (2014) highlight the importance of both "hard" infrastructure and technological solutions to flooding, paired with "soft" socio-economic and environmental features. The authors also stress the importance of building upon current CBA practices, rather than replacing them, and supporting meaningful participation by marginalised groups (Soltesova et al., 2014).

Data on CBA is especially lacking in informal settlements, where issues of governance are particularly complex. Drivdal's study (2016) is one of the only papers to engage with community-scale adaptation in informal settlements in Cape Town. Drivdal's research (2016) found that three main conditions enable community leaders to motivate community-scale adaptation: favourable location (for example, on public land not located in a detention pond), internal unification in micro-level politics (between community leaders, ward councillors, residents), and a supportive external network. With these three conditions, she found that communities were more capable of moving from household coping strategies, to CBA (Drivdal, 2016).

2.2.1.5 Adaptation as Transformation

Some researchers criticise adaptation efforts as promoting a "development as usual' pathway that does not address the underlying social and political structures that feed "modernization-led economic growth" as the prevailing development paradigm (Eriksen et al., 2015; Inderberg et al., 2015; Bassett & Fogelman, 2013; Dodman & Mitlin, 2013; Ireland & McKinnon, 2013; Pelling, 2011). Pelling (2011) believes that adaptation is an opportunity for radical social and political change that can be seen as transformation, in the sense that it re-shapes future power relations in society. Transformation is defined as "physical and/or qualitative changes in form, structure or meaning-making" (O'Brien, 2012: 670), or as "a psycho-social process involving the unleashing of human potential to commit, care and effect change for a better life" (Sharma, 2007:4). In the climate change context, the IPCC defines transformational adaptation as "adaptation that changes the fundamental attributes of a system in response to climate and its effects" (Agard & Schipper, 2014:1758).

The potential for adaptation to lead to transformation depends on the way in which vulnerability to climate change is understood (Pelling, 2011). If vulnerability is viewed as a symptom of proximate factors like demographic, physical, or infrastructural stressors, then adaptation will be limited to resilient (maintaining status quo) or transitional (incremental change) forms of adaptation (Pelling, 2011). However, if vulnerability is understood through the lens of political ecological, and "framed as an outcome of wider social processes shaping how people see themselves and others, their relationship with the environment and role in political processes" then adaptation as transformation becomes possible (Pelling, 2011: 97) . Transformational adaptation, in its very nature and goals, is a more challenging ideal to achieve than the other forms of adaptation identified by Pelling (2010): adaptation that maintains the status quo, and adaptation that leads to incremental change to social relations.

O'Brien (2012: 672) highlights barriers of power, politics, and vested interests which "are often 'invisible' within systems analyses." My research aims to use literature from UPE (discussed below) to unpack these "invisible" factors at play in adaptation, specifically CBA, to lend some insight to the process of adaptation and transformation in the face of climate change, starting from the community level. Soltesova et al. (2014: 217) summarise Dodman and Mitlin's (2011) ideas on the potential for CBA to lead to transformation in the following statement:

> If CBA is to make meaningful changes in the prospects of urban households and communities to respond to climate change, it needs to engage with a transformative agenda that seeks not only to reduce the surface causes of vulnerability, but also to address underlying social and political drivers.

2.2.2 Climate Change Governance

Termeer et al. (2016: 12) define governance as "the interactions between public and/or private actors ultimately aimed at addressing collective issues." In the context of climate change, a wicked problem, traditional governance approaches have been considered inadequate (Termeer et al., 2016). The complexities of climate change require particular requirements of governance, namely: multi-boundary, -level and -sector comprehensiveness; stakeholder diversity; longevity beyond political tenures; and flexibility in the face of uncertainty (Fröhlich & Knieling, 2013). Stakeholder diversity is emphasised by many researchers (Chu, Angueloveski & Carmin, 2016; Archer et al., 2014, Fröhlich & Knieling, 2013; Leck & Simon, 2012) due to the breadth of potential approaches and solutions to tackle climate change impacts, and the important niche roles that different stakeholders can play. NGOs in particular can be important partners for community communication, raising awareness, and advocating for climate change initiatives (Fröhlich & Knieling, 2013). Termeer et al. (2016) describe five criteria that together constitute good governance in the context of climate change: reflexivity, resilience, responsiveness, revitalisation and rescaling. However, in low- and middle-income countries, many urban governments fail to meet these criteria, or only meet them for certain groups within the population (Dodman & Satterthwaite, 2008).

2.2.2.1 Governing Urban Informality

Urban governments have the greatest responsibility for interventions that should reduce the vulnerability of their population (Dodman & Satterthwaite, 2008), but the large presence of

informal settlements can complicate governance efforts. The UN Habitat Programme defines informal settlements as either "residential areas where a group of housing units has been constructed on land to which the occupants have no legal claim, or which they occupy illegally" or "unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing)" (WHO, n.d,:2). As noted, informal areas are often the most at-risk from climate change impacts (Ziervogel et al., 2016b; Satterthwaite et al., 2007; Douglas, Alam & Maghenda, 2006), and often there is no information base for informal areas on environmental hazards and vulnerability (Satterthwaite, 2017). The reasons for high levels of informal settlements in urban areas vary. Dodman and Satterthwaite (2008:70) cite,

> …institutional legacies from colonial rule and centralisation in post-independence governments, the application of inappropriate imported models of urban planning, external pressures for dismantling or weakening the state and the refusal of many bilateral aid agencies and international non-governmental organisations to work in urban areas.

The high concentration of people, their homes, industries and waste in cities can make urban populations particularly vulnerable to disasters, while at the same time, providing for economies of scale due to the proximity of infrastructures and services that can reduce vulnerabilities (Hardoy, Mitlin & Satterthwaite, 2001). Pro-poor governments can make significant changes that reduce vulnerability for low-income groups, particularly if governments understand the dynamics that shape hazards and vulnerability, especially "the socio-political norms that determine access to opportunity and resources" (Dodman et al., 2017: 3). However, more research is needed on climate change governance in the African context, particularly concerning informality (Ziervogel et al., 2016a). As Sattherwaite et al. (2007: vii) observe, "Successful, well-governed cities greatly reduce climate-related risks for low-income populations; unsuccessful, badly governed cities do not and may greatly increase such risks".

2.2.2.2 Multiscalar Adaptation Governance

Multiscalar governance refers to the interplay and relationships between different actors at different levels of government (as well as citizens, private actors and civil society), in managing complex policy decisions, such as climate change adaptation (Vedeld et al., 2015). Leck and Simon (2013) argue that these multiscalar relationships and dynamics are

invaluable to understanding urban governance in the context of high urbanisation and climate change challenges. Chu, Anguelovski and Carmin (2016) explain how stakeholder engagement has become increasingly valued in adaptation governance in recognition of the uneven impacts of climate change and the differentiation in structural and institutional resources to adapt. They cite three main indicators of inclusive urban climate adaptation governance: 1) consideration of vulnerable residents' needs; 2) procedural justice; and 3) just adaptation outcomes (Chu, Angueloveski & Carmin, 2016). However, despite the understanding that local, context-based engagement generally improves the success of adaptation interventions, participatory governance in urban areas is still hindered by poor commitment to true participation. According to Vedeld et al. (2015) this stems from an incapacity to address the *social* dimensions of multiscalar governance, such as inequality and informality.

Researchers have also stressed how improvements in multiscalar governance have the potential to lead to transformation. Chu, Anguelovski and Carmin (2016) highlight how CBA initiatives can be empowered by local government to encourage both social justice and adaptive capacity while Wamsler (2016) emphasises the transformational potential of collaboration between the state and its citizens on adaptation action. Even further, CBA "presents an opportunity for local-level participation in framing adaptation planning and activities, with wider transformative potential for urban governance (Archer et al., 2014: 345). Chu, Angueloveski and Carmin (2016) and Leck and Simon (2012) explain that many studies focus on one particular actor's role in governing climate change, but that less is known about the dynamics between multiple levels of actors involved in facilitating adaptation. This study will contribute to literature on urban adaptation governance by examining how experiences from multiscalar governance in Cape Town can enable or undermine CBA in informal settlements, and by extension, transformation.

2.2.2.3 Everyday Governance

Everyday governance focuses on the agency of the actors involved in multi-scalar governance and how "their practices, rationales, normative orientations, interests and imaginaries as well as their relative and contextual power" allow them to influence the implementation of policies and practices on the ground (Cornea, Véron & Zimmer, 2017: 2). The concepts behind everyday governance are driven by ethnographic studies that empirically investigate the logics behind the routine practices of governance actors (Bierschenk & Olivier de Sardan, 2014). For Cornea, Véron & Zimmer (2017), this means emphasising non-elite governance

actors such as NGOs, community leaders, municipal councillors, or street-level bureaucrats, who are often the most local and influential implementers of urban policy. As it relates to UPE, an analysis of everyday governance can help expose complex flows of information and influence between governance actors and citizens, as well as "relationships of micropower that contribute to the (re-)production of uneven urban spaces" (Cornea, Véron & Zimmer, 2017: 7).

Blundo and Le Meur (2009) describe how everyday governance can lead to the emergence of new, decentralised and autonomous power structures that contribute to the states' hegemonic project through local grounding. These authors are influenced by the post-colonial perspective, which emphasises the lasting governance implications of the colonial administration on everyday governance, such as "clientelism, the absence of sanctions, impunity and unproductivity of civil servants" (Blundo & Le Meur, 2009: 19). Bierschenk and Olivier de Sardan (2014, 42) critique this perspective as failing to engage with analysis of these elites " 'at work', nor in their relations with administrative bodies", or in other words, the more informal side of politics. Therefore, these authors encourage "studying informality inside the state as well as the gaps between public policies and their implementation or between official norms and actual behaviour" (Bierschenk & Olivier de Sardan, 2014: 51). This study evokes this perspective in its exploration of the informal practices of everyday governance that are realized in the gap between policy and practice in order to better understand the dynamics behind flood management in Cape Town.

2.3 Theoretical Framework

While the literature review positions this study within the relevant academic context, the theoretical framework provides the structural vision and blueprint for engagement with both the literature review and the data collected. This study uses UPE as the theoretical framework due to its normative positioning on inequality and justice and its interrogation of mainstream environmental change narratives (explained below). Soltesova et al. (2014: 215) explain how UPE can help understand CBA:

> Urban CBA is well suited to engage with urban political ecology to identify entry points likely to alleviate imbalances of urban systems. In responding to uneven urban development, it has the potential to act as a bridge between local, often informal, arrangements and formal institutions structuring urban development. Enquiring into the nature of urban vulnerability highlights not only the biophysical condition of

cities, but also draws attention to the socio- political and historical context of urban development as pertinent to specific local communities.

Because of its inquisitive nature and focus on the less visible drivers of urban vulnerability, UPE is well-suited to interrogate CBA as a potential strategy leading to transformation. The following section explains the main ideas and theories of UPE along with its related and supporting theories on urbanism and decolonisation.

2.3.1 Urban Political Ecology (UPE)

UPE theory emerged in the context of resurging Marxist thought and widespread environmental activism in the 1960's and 1970's as a reaction to the apolitical content of cultural ecology and hazard studies (Bridge, McCarthy & Perreault, 2015). UPE departs from a normative position of an unequal and unjust world, the result of an unsustainable metabolism between humans and the production of nature established by the capitalist global system (Castree, 2015; Smith, 2009; Heynen, Swyngedouw & Kaika, 2006). It aims to understand the dynamics and forces behind environmental change in order to advance a political agenda of structural advancements away from market-based, techno-managerial solutions that serve the interests of those in power (Bridge, McCarthy & Perreault, 2015; Swyngedouw & Kaika, 2014; Robbins, 2012).

As a radical political project, UPE is inherently concerned with social justice, but takes a different approach than many of the environmental justice movements of the modern day. Mobilisation around environmental justice is typically related to distributional injustices (Cook & Swyngedouw, 2012), such as the "uneven distribution of both environmental benefits and damages [externalities] to economically/politically marginalised people" (Heynen, Swyngedouw & Kaika, 2006:9), particularly regarding human health (Hollifield, 2015). UPE, in contrast, takes a historical-materialist point of view concerning the systematic processes that lead to distributional injustices (Cook & Swyngedouw, 2012; Heynen, Swyngedouw & Kaika, 2006).

2.3.1.1 Situated UPE

Traditional UPE studies proceed from the starting point of Marxist urban geography and the notion of power via capital accumulation, followed by examining non-human, networked actors to analyse material flows and metabolic processes that shape the city, and finally by "critiquing capitalism, commodification, modernity and neoliberalism"(Lawhon, Ernston & Silver, 2014:498). By drawing on Southern theory and African urbanism, Lawhon, Ernston

and Silver (2014:498) claim that this type of global North application of UPE, “tends to overlook the situated understandings of the environment, knowledge and power that form the core of other political ecological understandings.” In order to tap into these situated understandings and knowledge, Lawhon, Ernston and Silver (2014) suggest a new “situated UPE” that draws from post-structuralism, including feminist approaches to gendered inequalities, post-colonial thinking from South Asia (ethnography-focused), and wider currents of Marxism, such as cultural Marxism and postcolonial studies. Derickson’s (2015) explanation of “urbanization 2” mirrors Lawhon, Ernston and Silver’s ideas for a more heterogenous UPE by borrowing from the intellectual traditions of post-colonial, feminist, and neo-Marxist theory, as well as post-structural epistemologies.

Lawhon, Ernston and Silver (2014) use African Urbanism to develop an approach for situating UPE that includes starting with an analysis of everyday practices, understanding power dynamics outside of just class, and rather than solely critiquing the capitalism system, focusing on the small perturbations of everyday life that can have incremental positive impacts for the urban poor. According to Lawhon, Ernston and Silver (2014), the narrative of capitalist notions of power has limitations in African cities as state and capital are not the only forces shaping African cities and their residents. Thus, Pieterse (2008:209) explains how a focus on the “everyday” inverts the top-down starting point of capitalist power to a bottom-up concept based on how the urban poor use everyday practices to “appropriate the city for their own ends.” This appropriation includes making relationships, securing work and a sense of self, and network scaling to gain opportunities and resources (Lawhon, Ernston & Silver, 2014; Simone, 2011; Simone, 2004). Outside of capitalist power notions based on class, Lawhon, Ernston and Silver (2014) suggest including power dynamics constructed through alternative forms of identity, such as race and gender, as well as power exerted through hegemonic discourses on knowledge, all of which highlight the diffuse and relational nature of power in African cities. Finally, by beginning with a study of the everyday and acknowledging alternative modes of power, situated UPE can open up possibilities for realistic and pragmatic change, or radical incrementalism, to “reclaim power in incremental steps” (Lawhon, Ernston & Silver, 2014: 511) by “securing a certain autonomy” from the “centre” (state, donors, NGOs), where “resources and legitimacy originated” (Pieterse, 2008: 131).

2.3.1.2 Subaltern Urbanism

The concept of the "subaltern" was first raised in social theory by Antonio Gramsci, an Italian Marxist who used the term to describe any person or group suffering under a hegemonic rule that denies them participation in contributing to history and culture (Gramsci, 1971, cited in Louai, 2011). Gramsci's goal was to give a voice to the subaltern, who otherwise have their history written by the dominant party (Louai, 2011). Guha (1983) developed the concept further in his attempts to legitimise the insurgent practices of peasants in colonial India, highlighting the distinction between political mobilisations by elites versus the subaltern. Spivak (1998), drawing on the struggles of women throughout history, tasks intellectuals with making space for the subaltern to "speak". In the process, she emphasises how the voices of the subaltern, particularly women, are not heard because they are always represented by those who try to speak on their behalf (Spivak, 1998).

Roy (2011: 224), concerned with the political agency of the subaltern and disillusioned with apocalyptic narratives of the "slum", uses subaltern urbanism in reference to the subaltern's "terrain of habitation, livelihood and politics." In an attempt to disrupt how typical urban theorists describe megacities, she uses four concepts to express the heterogeneity of the subaltern: peripheries, urban informality, zones of exception, and grey spaces (Roy, 2011). Sheppard, Leitner and Marianganti (2013: 897) support the non-homogenisation of the subaltern that can result from studying cities at a distance, and in line with situated UPE, stress the importance of studies that "privilege everyday lived urban life" and "the tactics of survival and subversion resorted to by subaltern or subordinated populations."

Holston (2009) characterises the political action taken by those in the periphery as "insurgent citizenship." According to Holston (2009: 246), this insurgency "begins with the struggle for the right to have a daily life in the city worthy of a citizen's dignity" with an end goal of a "vast new city…with a different order of citizenship." Miraftab (2009) introduces the concepts of "invited" and "invented" spaces to conceptualise the strategies used by insurgent citizens. Invited spaces are those sanctioned and legitimized by governance actors and invented spaces are those constructed from below to challenge the status quo (Miraftab, 2009). These spaces are not mutually exclusive, and are navigated strategically and with fluidity in order to best maximise counter-hegemonic actions (Miraftab, 2009). Another strategy utilised by the subaltern is insurgent planning, which "aims at decolonizing the planning imagination by taking a fresh look at subaltern cities to understand them by their own rules of the game and values rather than by the planning prescriptions and fantasies of

the West" (Miraftab, 2009: 45). In this way, marginalised people become the "protagonists of urban development" in an attempt to appropriate space and power in a movement towards liberation (Miraftab, 2009).

2.3.1.3 Decolonial Theory

Questions of power and politics are imperative in UPE, which draws parallels to decolonial theory. Decolonial theory, which started in South America and has taken hold in Africa, challenges the "insularity of historical narratives and historiographical traditions emanating from Europe" (Bhambra, 2014: 115). It seeks to liberate colonized locales from the false universalisms and reproduced hierarchies of race, gender and geopolitics that the Euro-North American colonial project forced upon the colonized in the name of "modernity" (Ndlovu-Gatsheni, 2015; Bhambra, 2014; Nelson, 2007). As it relates to UPE in particular, decolonial theory contests patterns of knowledge creation and dissemination that place European epistemology at the top of the hierarchy, allowing Euro-American scholars to pass off subjective universalisms onto the rest of the world under a guise of legitimacy (Mignolo, 2009).

Decolonisation and the crisis of the global North homogenising experiences in the global South is one that directly relates to adaptation, development and governance. In terms of environmental change, Robbins (2012:19) problematizes the assertion that "superior environmental knowledge originates in the global north for transfer to the global south" as it reproduces "paternalistic colonial knowledge relations and a priori discounting [of] the environmental practices of indigenous and local communities". Further, governmental planning systems in Africa are artefacts from colonial days and international development agencies enforce models based on false, homogenising assumptions of localities (Broto, 2014; Parnell, Pieterse & Watson, 2009). In this way, climate change has opened up new opportunities for international actors to deploy adaptation interventions (interwoven with power dynamics) that reinforce the global, capitalist system. Ground-up initiatives represent an alternative to the colonial hierarchy that has led to "the dominance of international elites of academics, finance experts and consultants in climate change debates at the local level" (Broto, 2014:262). However, local interventions also risk being captured by outside interests, be it government, NGO, or international organisations. Dodman & Mitlin (2013:642) explain how CBA has become a "mainstream entry-point for development agencies."

2.4 Conclusion

In analysing CBA in urban, informal areas, UPE offers a particular interrogation of risk, adaptation and change that provides an opening for transformation to become a reality, rather than adapting to the status quo. Pelling (2010: 69) explains how the "promotion of stakeholder participation in decision-making" can lead to transformational change through the "inclusion of new perspectives and values in emerging policy." It is therefore important to understand the extent and nature of participation in CBA. In the context of dynamic informal settlements, multi-scalar governance and everyday governance are appropriate lenses through which to understand participation, engagement and implementation across scales, as they offer insight into the CoCT's influence in informal settlements and how informal settlement residents in turn influence the process. This study fills certain literature gaps related to urban, informal CBA and urban climate change governance with the goal of using situated UPE to understand how multiscalar governance can either enable or undermine the potential for true, ground-up CBA to lead to wider transformation.

3 Historical and Political Economic Context

3.1 Introduction

UPE is not only the theoretical framework for analysis, but also the methodological approach and framing of this study. Soltesova et al. (2014: 217) explain, “A political ecology approach provides a strong theoretical basis for understanding the complex processes that are constantly being negotiated within the context of the urban environment.” As explained by Bryant & Bailey (1997) in their book, *Third World Political Ecology*, this theoretical basis comes from a normative understanding that these complex processes are, for the most part, a result of the historical global spread of capitalism into the developing world during colonialism. In some cases, the state also influences the uneven socioeconomic structures further due to a political leader’s personal interest in power, security or self-enrichment (Bryant & Bailey, 1997). Environmental ‘goods’ and ‘bads’ then mirror these uneven socioeconomic conditions (Soltesova et al., 2014; Bryant & Bailey, 1997), meaning that “addressing environmental problems requires engaging with their ultimate rather than proximate causes” (Soltesova et al., 2014: 217). Since addressing environmental problems can threaten the power of dominant political groups, actors across different scales must work in synergy to effect change (Bryant & Bailey, 1997). This understanding of environmental problems and their wider political drivers will be used as the starting point to analyse flood risk management in this study. This chapter provides the context to the normative UPE approach taken in this study. First, the historical and political factors that influence flooding in Cape Town’s informal settlements are explained, followed by an overview of the relevant regulatory context (environmental and housing) that also significantly influence vulnerability to flooding. Finally, wider political economc factors that are beyond the scope of this thesis, but still influential, such as global capitalism and South Africa’s political agenda, are briefly described.

3.2 Historical and Political Context

As mentioned above, political ecology as a theoretical framework attempts to uncover and understand the hidden dynamics leading to environmental change, such as historical, political, social, epistemological and economic factors. Due to the time and resource limitations on this research project, each of these factors cannot be explored in depth. However, given the particularly influential history of colonialism and Apartheid in South

Africa, it is important to understand certain of these factors to frame the problem related to flooding in informal settlements, described above. The proliferation of informal settlements in South Africa stems from two processes, in-migration from the former homelands and gentrification.

After the Union of South Africa was established in 1910, the Government of South Africa began heavily restricting access to land for black South Africans (Hoffman, 1999). The Land Act of 1913 and the Native Trust and Land Act of 1936 limited black South Africans to only 13.7 percent of the national territory (Hoffman, 1999). In total, ten homelands, or "Bantustans", were created based on ethnic background (i.e., those of Zulu origin were assigned to the homeland of KwaZulu): Transkei, Bophuthatswana, Cisekei, Venda, Gazankulu, KaNgwane, KwaNdebele, KwaZulu, Lebowa, and Qwa Qwa (*The Homelands,* 2011). As one of the main strategies of Apartheid spatial planning, the goal of the Bantustans was to make black South Africans citizens of their "homelands" rather than South Africa, so that white South Africans could control South Africa. Under the Apartheid government that took power in 1948, the Group Areas Act of 1950 gave the government the power to further delineate where each racial group could live (*Cape Town the Segregated City,* 2017). Certain neighbourhoods in Cape Town were declared white only, and non-whites were forcibly relocated (*Cape Town the Segregated City,* 2017). Many Africans, Coloreds and Indians were relocated to the Cape Flats, some of the most marginal land in the area and several kilometres away from the city, giving it the nickname of Apartheid's "dumping ground"(*Cape Town the Segregated City,* 2017; Joubert, 2014).

As environmental degradation, unequal access to land and high population density led to deteriorating conditions in the Bantustans, the townships in the Cape Flats increasingly became a refuge for those escaping the homelands in search of a better life in the city (Percival & Homer-Dixon, 1998), a pattern of in-migration that still exists (Joubert, 2014). Somewhat paradoxically, the same processes of environmental degradation and inequality that drove people from the homelands are now occurring in informal settlements and townships surrounding cities, due to similar factors: high population density and a limited resources base (Percival & Homer-Dixon, 1998). To begin with, Apartheid spatial planning condemned black townships to overcrowded sites with poor service provision, often within the sphere of pollution from dirty industries (Percival & Homer-Dixon, 1998). High rates of urbanisation combined with a lack of resources have led to removal of vegetation, soil erosion, and water pollution as growing numbers of people try to meet their basic needs for

housing, water, sanitation, and waste disposal on the periphery of cities (Percival & Homer-Dixon, 1998). Because many informal settlements are located in flood plains or water catchment zones, environmental degradation, particularly the removal of vegetation, also increases the risks of negative impacts from environmental hazards like floods, mud slides, and sinkholes (Lawson, 1991).

In addition to in-migration from rural areas, gentrification works in the opposing direction, forcing low-income residents further and further from the city centre. While Apartheid spatial planning did this legally, gentrification is mirroring these processes in a class-based, rather than race-based mechanism (Visser & Kotze, 2008). Harvey (2008) calls this "accumulation by dispossession", referring to the process by which cities become the centre of a consumer culture that increases the value of land, leading to dispossession and forced removals where low-income populations are pushed to the periphery. In Cape Town, the development of the Central Business District "was achieved through planning frameworks that are linked to political structures that aim to position the city within a neo-liberal, global economy" (Visser & Kotze, 2008: 2572). In this way, the city's economic priorities have favoured the negative implications of this development for the urban poor. More recently, a new phenomenon is taking place whereby gentrification, known as "state-led suburban gentrification", is occurring in the townships as well (Visser & Kotze, 2008: 2587). While on one hand, there are benefits to bringing services and shops closer to the urban poor, it also leads to the same issues of displacement and exclusion of the poorest that exist in the centre of the city (Visser & Kotze, 2008: 2587). Cape Town's residents are protesting the lack of affordable housing, drawing on the similarities between Apartheid spatial planning and patterns of gentrification (McCool, 2017).

South Africa is still considered extremely unequal, with a Gini coefficient of .65[5] in 2014 (World Bank, 2018). Inequality is highly differentiated by race, whereas poverty estimates for Black and Coloured population groups are 63 percent and 40 percent respectively, compared to Whites (6 percent) and Indians (16 percent) (David et al., 2018). This inequality can be seen clearly in the presence and proliferation of informal settlements, which can be directly linked to Apartheid spatial planning and patterns of gentrification occurring thereafter. This makes the resolution of environmental issues in informal settlements, such as

[5] The Gini coefficient measures income inequality based on wealth distribution of a country's residents. Zero corresponds to perfect equality while 1 corrseponds to total inequality.

flooding, not only a matter of physical and geographical security from environmental hazards, but of justice for historical and continued wrongdoings.

3.3 Regulatory Context

In South Africa, government is divided into three tiers: National government, which dictates laws and policies; Provincial Government, which dictates provincial legislation and shares responsibilities with national government in terms of health, education and social services; and local government, which provides basic services and promotes safety, health, and community development (*Know your Government*. 2017). Local government is further divided into three different categorizations of municipalities: metropolitan, district and local, dating back to the Local Government: Municipal Demarcation Act 27 of 1998 (Leck & Simon, 2013). Cape Town, as a major city, falls under the "metropolitan" municipality category, which denotes a high level of functional independence to the mayoral executive council (*Municipalities in the Western Cape*, n.d.*)*. The Cape Town municipality is further divided into 116 wards, which are groups of neighbourhoods that are clustered together to make service delivery more manageable (City of Cape Town, 2017b).

3.3.1 Environmental Management and Risk

South Africa's 1996 constitution, along with several other acts, form the regulatory framework surrounding environmental management and environmental risk in South Africa and its provinces and municipalities. South Africa's Bill of Rights in the constitution specifically details:

> Everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development (Republic of South Africa, 1996).

The National Environmental Management Act (NEMA) is the embodiment of this constitutional right. NEMA sets out the practicalities of managing the environment, including principles, procedures, cooperation, decision-making, international obligations, compliance and enforcement (Republic of South Africa, 1998). Importantly, the act recognises that "sustainable development requires the integration of social, economic and environmental

factors" (Republic of South Africa, 1998:3). In terms of environmental risk, South Africa's Disaster Management Act (DRM, original 2002, amended 2015) addresses the prevention, reduction, mitigation and response to disasters (Republic of South Africa, 2002).

At the International Level, South Africa is party to the Kyoto Protocol and the UNFCCC, under which the Paris Agreement was ratified in 2016. As the strongest international climate change strategy to date, the Paris Agreement's goal is to keep global temperatures from increasing 2 degrees Celsius above pre-industrial levels (*The Paris Agreement,* n.d.*)*. To this end, party countries are required to meet certain reporting deadlines that detail their mitigation and adaptation strategies, particularly around GHG emissions reduction. In response to its international commitments, South Africa has strategic documents to address climate change and development concerns, such as the National Climate Change Response White Paper[6] and the Long Term Adaptation Scenarios (LTAS)[7]. Both strategies highlight the specific nature of climate change vulnerability in informal settlements, and emphasise the importance of adaptation responses. While at the provincial level, the Western Cape Climate Change Response Strategy solely mentions "improving the resilience and adaptive capacity of informal settlements" (Western Cape Government, 2014: 33), the LTAS highlights the importance of informal settlements upgrading, relocation, and reblocking as integral to reducing environmental risks (Department of Environmental Affairs, 2014).

Between national, provincial and local government strategy, disconnects exist that highlight a broader issue of integration and coordination between the different tiers of government (vertical), as well as between departments within the same government level (horizontal). For example, while national policy mandates that municipal level governments address climate change adaptation, there is no funding at the municipal level to enact this mandate (Ziervogel et al., 2014). While NEMA and the DRM act are full of references to collaboration, cooperation, harmonisation, and consistency, practice has shown that it is not as simple as the legislation indicates. Leck & Simon (2013: 1226) demonstrate "a distinct weakness in vertical managerial and administrative interaction and a lack of formal and functioning procedures, regulations and guidelines for addressing EC [environmental change]-related issues between governmental spheres." This is especially prevalent in environmental change

[6] See the National Climate Change Response White Paper here: https://www.environment.gov.za/sites/default/files/legislations/national_climatechange_response_whitepaper.pdf

[7] See the Long Term Adaptation Scenarios here: https://www.environment.gov.za/sites/default/files/docs/summary_policymakers_bookV3.pdf

governance, as different parties interpret the severity of environmental change differently, and therefore prioritise environmental management according to their own perspectives (Leck & Simon, 2013). Further, the dominant development paradigm pits economic development and environmental management as trade-offs, a mind-set prevalent in all levels of government (Leck & Simon, 2013).

3.3.2 Human Settlements and Housing

South Africa's 1996 constitution is the basis for all housing policy in the country. The Bill of Rights in the constitution states the following:

> (1) Everyone has the right to have access to adequate housing.
>
> (2) The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right.
>
> (3) No one may be evicted from their home, or have their home demolished, without an order of court made after considering all of the relevant circumstances. No legislation may permit arbitrary evictions. (Republic of South Africa, 1996).

The 1997 Housing Act and the National Housing Code set out how the government can fulfil the constitutional housing commitments to its citizens (Republic of South Africa, 1997). Since 1994, the post-Apartheid government had already been implementing the Reconstruction and Development Programme (RDP) housing policy. Although this policy attempted to rectify the shelter crisis the new government inherited, it never managed to provide enough houses to meet supply (Siame, 2013). The RDP programme is also criticised for its unsustainability and inadequate public service provision that incited many protests (Siame, 2013). The Breaking New Ground (BNG) housing policy of 2004 is the successor to the RDP policy. The BNG aims to deliver a more diverse range of possibilities for housings and settlements, and in line with the Millennium Development Goal of improving the lives of those in informal settlements, BNG aims to in-situ upgrade or relocate informal settlements through the Upgrading Informal Settlements Programme (UISP) (Siame, 2013).

The UISP uses a holistic approach that favours community participation, prioritises service delivery and discourages irrational relocations (Siame, 2013). It consists of four phases: 1) application, where municipalities apply for funding for upgrading; 2) project initiation, where the municipality acquires land, profiles the settlement, installs services, conducts preplanning studies, and develops a business plan; 3) implementation, including construction

of infrastructure and facilities, establishing support services and formalising land rights; and 4) housing consolidation, where the township is finalised, owners are registered and houses are constructed (National Upgrading Support Programme, 2015). Critics of UISP claim community participation is ineffective because of controversial ward committee politics (Siame, 2013). Further, they argue that UISP fails to resolve the dichotomy between housing being an individual/family need (where the housing waiting list is based on households) and settlement upgrading as a communal project (Siame, 2013). Siame (2013) discusses the limitations of the BNG due to the government's neo-liberal macro-economic policies that reinforce the growing gap between the rich and the poor, making the UISP unsustainable.

3.4 Political Economy Implications

The majority of the challenges and practicalities faced by the actors involved in the flood management landscape relate directly to the particularities of Cape Town's multi-scalar governance network. However, many of the challenged identified in the data also relate to wider, structural issues beyond the scope of this study. The role of global and national-level political economic structures in influencing local level challenges is undeniable. Some of these broader political economic factors that influence flood risk are alluded to above, such as urbanisation and constraining national- level regulations.

Multiple CoCT officials expressed the challenge of keeping up with service provision and private land protection due to high amounts of people moving from the Eastern Cape to Cape Town in search of jobs (Interview 7; Interview 8). This urbanisation is the main contributing factor of density in informal settlements (Interview 7). Urbanisation cannot be discussed without reference to the influencing driver of capitalism. Harvey (2008) describes how capitalist debt-financing led to cities becoming the centres of consumerism. The elite control the surplus value of labour and capital in cities, which means they can decide how it is reinvested, and therefore control the development of the city (Harvey, 2008). Democratic control over this surplus value would help ordinary people drive the city's development agenda (Harvey, 2008). However, capitalism is now a global phenomenon, and cities play a central role (Harvey, 2008). Changing the control of surplus value is thus no small endeavour.

Another important factor influencing flood risk from above is the Government of South Africa's political agenda. As noted directly above, Apartheid spatial planning allocated black South Africans only 13.7 percent of the land. Since democracy, the Government of South

Africa has grappled with policies of land reform to resolve this injustice. However, critics have cited the following weaknesses in the Government's land reform policy:

> Slow pace of land redistribution; failure to impact significantly on the land tenure systems prevailing on commercial farms and in the communal areas; and perceptions that what redistribution of land has taken place has not been translated into improvements in agricultural productivity or livelihood benefits for the majority of participants (Lahiff, 2008: 1).

Recently (2018), South Africa's ruling party, the African National Congress, supported a motion tabled by the Economic Freedom Fighters to expropriate land without compensation (Thambo, 2018). Many of the subjects interviewed cited lack of housing and by connection, lack of land, as a major factor influencing their ability to better manage flood risk in informal settlements. Therefore, the results of the national debate around land reform will be highly influential at local levels, particularly in regard to informal settlements, where those settled on private land have limited options for receiving municipal services.

3.5 Conclusion

As explained above, the historical, regulatory, and political economic environment all have significant influence on the current nature of flooding and vulnerability in Cape Town's informal settlements. While the focus of this thesis is primarily the micro-level network involved in managing flood risk in informal settlements, it is important to understand these inherent drivers that continue to influence vulnerability at a more macro-level. The UPE approach uses these factors as both a normative starting point and framing of this analysis in order to express how vulnerability is more than just the physical factors in the urban environment, but "complex processes that are constantly being negotiated" (Soltesova et al., 2014: 217).

4 Methodology

4.1 Introduction

The purpose of this chapter is to provide a detailed explanation of the methodology of this thesis. The chapter begins with a justification for the methodology selected, followed by a description of the ISN case study. Next, the data collection methods (document review and semi-structured interviews) are outlined, as well as the data anlysis process. The chapter concludes with an explanation of the limitations of thes thesis and the ethical considerations of the research process.

4.2 Justification

In order to meet the research aim of understanding CBA to flood risk in informal settlements through a UPE lens, a case study approach was taken that utilised document review and semi-structured interviews. The case study allowed for the most extensive UPE analysis possible within the time and resource constraints of this thesis. By focusing on a single network of actors and the challenges they face (flooding in informal settlements), I was able to unravel some of the more nuanced, dynamic, and intricate factors involved in flood risk management that would not have been possible had I engaged with a broader scope for this research. Even within the narrow scope of a case study, there were still limits to the extent of UPE analysis I was able to undertake (see limitations below), such as examining differentiated risk in communities. Therefore, the methodological goal of this thesis was to provide an in-depth UPE analysis at a small-scale that could talk to some of the challenges to adaptation and transformation at-large.

To meet the research aim and objectives (identified in chapter 1), it was vital to have a comprehensive understanding of the perspectives of the actors involved, as well as their relationships and experiences. While document review helped to provide the necessary historical, political, regulatory and economic context (see previous section, chapter 3) that is crucial in an UPE approach, semi-structured interviews with the different actors involved helped to uncover the processes, perspectives, and power dynamics that ultimately determine the potential for CBA to lead to transformation. While other theoretical frameworks might have provided more insight into the networks or social movements involved in this case study, I ultimately determined that UPE would provide the most comprehensive, inclusive

and nuanced approach to analysing such a complex situation, particularly with UPE's focus on environmental and urban challenges.

4.3 Case Study Description

This project will focus on a case study of the community-based organisation, ISN. ISN is "a bottom-up agglomeration of settlement-level and national-level organisations of the urban poor", and is a local affiliate of the global NGO, Shack/Slum Dwellers International (SDI) (SDI Alliance, 2012a). ISN's main objectives are as follows:

- Create solidarity and unity of the urban poor so that they are well organised, and equipped with the skills, knowledge and scale needed to create meaningful change
- Building a national urban network of the poor for learning and lobbying so that local, community-level initiatives drive any citywide or national agenda, city governments are obliged to consult communities in development plans, and communities develop the capacity to hold local authorities, especially at ward council level, to account
- Change the way our cities are planned and developed and how public funds are used so that they are inclusive, and that ordinary people are involved (SDI South African Alliance, 2012a).

One of the issues ISN has been working on is flood response in informal settlements. Some of the activities they engage in are mapping of water pipes and flood prone areas, organising drainage digging, collaborating with street committees around flooding issues, contacting CoCT officials to secure services during flood events, lobbying for improved services from the CoCT, and consulting with ward councillors[8].

Per Ritchie & Lewis (2003), a case study approach uses multiple perspectives to gain a comprehensive understanding of a particular context. Thus, in order to understand ISN's specific role, ISN members were interviewed, along with the NGO, ward, and municipal authorities they work with. The case study examined how these actors are interlinked and how they work together to manage and govern flood risk in the informal settlements that ISN works in. The NGO, while it will remain anonymous, acts as a community support and capacitating mechanism for ISN, as well as a link between the community and the municipal authorities. Ward councillors, elected every five years, also act as a link between communities and municipal government (City of Cape Town, 2017b). As the political leader

[8] A map of informal settlements in Cape Town can be found here: http://ismaps.org.za/mobile-map.html

of the ward, councillors are the chairperson of the ward committee, which helps identify the priorities of their constituents and decide how to allocate funding to development projects in the ward (City of Cape Town, 2017b).

The CoCT has various departments that work in informal settlements (see Figure 2), but the main departments that are relevant to managing flood risk are DRM (within Disaster Management & Public Emergency Communications Centre), Informal Network Management (INM), Informal Settlements and Backyarders (ISB), and indirectly, Water and Sanitation, Solid Waste Management, City Health, and Recreation & Parks. DRM plays a coordination role within the CoCT in response to flooding in informal settlements. They assess flooding risk, and make requests of the relevant CoCT departments to address those risks (Interview 7). INM is responsible for ensuring that municipal service providers can access informal settlements, and they also manage roads and stormwater management (Interview 1). ISB mainly deals with monitoring and surveying informal settlements, as well as with housing

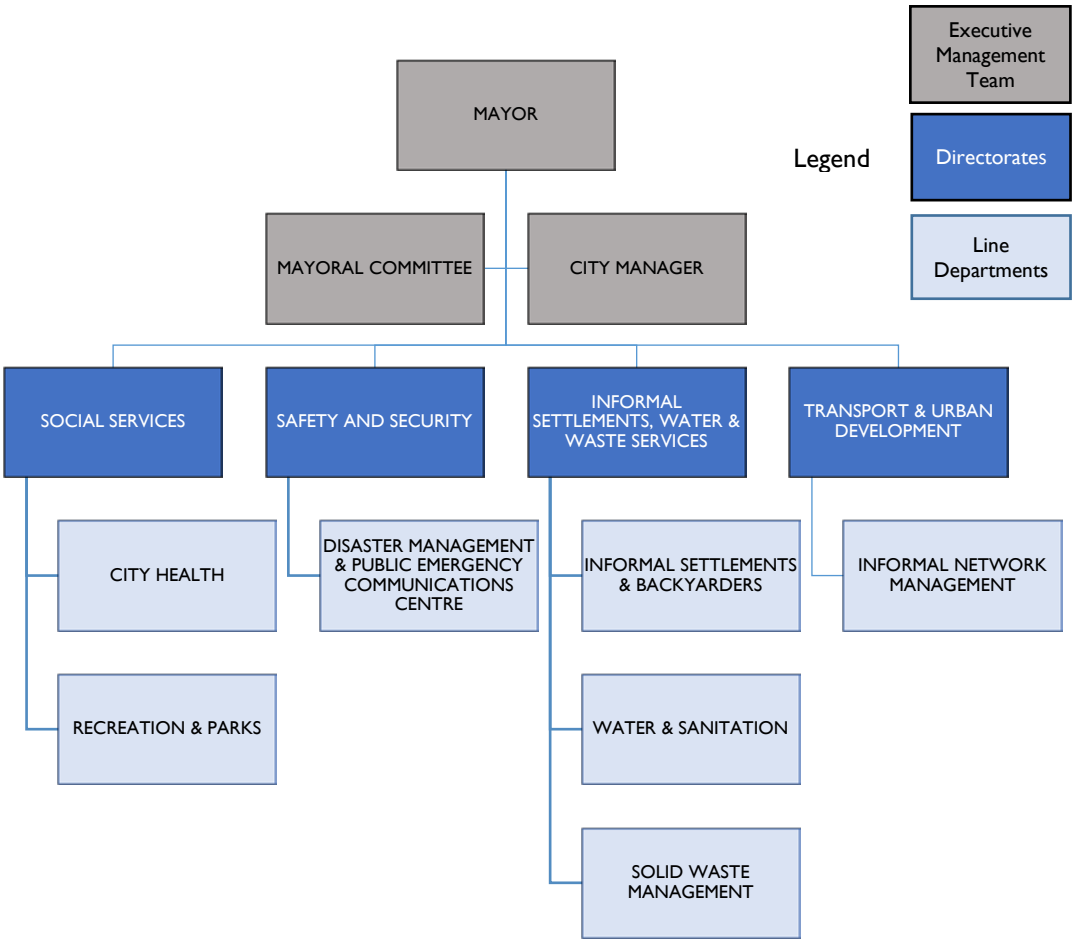

Figure 2. City of Cape Town institutional organogram showing directorates and line departments directly or indirectly responsible for informal settlement flood management

(Interview 8). Water and Sanitation manages the provision of Water and Sanitation

infrastructure in informal settlements such as toilets and taps (Interview 12), and waste management is responsible for collecting rubbish from communities in informal settlements and providing cleaning services (*Solid Waste Management Department*, n.d.*)*. During my fieldwork, I was able to interview CoCT officials working in INM, ISB, DRM, and Water and Sanitation.

4.4 Data Collection

4.4.1 Document Review

Document review was used as a supplemental data collection methodology to complement semi-structured interviews. The document review primarily informed the background, problem statement, and context sections of this study. As Ritchie & Lewis (2003: 35) explain, "Documentary analysis is particularly useful where the history of events or experiences has relevance" or "when situations or events cannot be investigated by direct observation or questioning." In the case of flooding in informal settlements, particularly from an UPE perspective, historical events are vital to understanding the problem statement in context. Further, not all of the background data could be collected through investigation of primary sources. Thus, this study used existing documents to understand the problem of flooding in informal settlements, as well as the historical, political, and regulatory context that shaped the nature of this problem.

4.4.2 Semi-structured Interviews

Semi-structured interviews were conducted as the main data collection methodology. Interviewees were chosen through a combination of three types of sampling: Criterion-based, convenience, and opportunistic. Criterion-based sampling was the primary strategy used, as I needed interview subjects in each of the different categories of actors who manage flood risk in informal settlements: ISN members, CoCT employees, Ward Councillors, and NGO staff. In criterion-based sampling, interviewees "are chosen because they have particular features or characteristics which will enable detailed exploration and understanding of the central themes and puzzles which the researcher wishes to study" (Ritchie & Lewis, 2003: 78). Thus, affiliation was the main criterion for sampling interview subjects. Within the different affiliations, convenience sampling, or sampling according to ease-of-access (Ritchie & Lewis, 2003) was used as the next sampling strategy. I was connected to individuals at the NGO and at the CoCT mainly through my supervisor's network. NGO employees then connected me to ISN leaders through their networks. Finally, opportunistic sampling (Ritchie

& Lewis, 2003) was used primarily to identify ward councillors to interview. Opportunistic sampling allows the researcher to take advantage of opportunities as they arise to identify interview subjects (Ritchie & Lewis, 2003). As I wanted to interview ward councillors with experience working with ISN around flooding issues, I asked the ISN members I interviewed to identify ward councillors within their communities.

The interviews were designed to be semi-structured to allow for flexibility and for conversations to flow more naturally towards the interviewee's areas of expertise. Rather than ask solely specific, rigid questions, interviewees were first prompted to tell stories about their own experiences related to different topics that were relevant to the research (See Appendix 1). The specific interview questions, designed to be open-ended, were used to fill in any gaps that were not covered by the narrative. Interview guides were used to ensure consistency across the data collected to allow for more meaningful data analysis. Ritchie & Lewis (2003: 115) explain that interview guides help steer the conversation "to ensure that relevant issues are covered systematically and with some uniformity, while still allowing flexibility to pursue the detail that is salient to each individual participant."

Interviews were mainly conducted in the interviewee's office. ISN member's interviews were conducted at their home, at a community centre, and at a coffee shop. The interviews ranged in length between 30 minutes and 1 hour 15 minutes. Besides the interview with the NGO, which was a group interview due to their limited availability, every interview was with an individual. First, the consent form was presented along with a verbal explanation of the research and research process. Interviews were recorded after receiving verbal consent, so that the researcher could engage fully in the conversation without needing to take copious notes. Interviews were transcribed immediately after completion of the interview, so that the material was fresh in the researcher's mind, and to make the transcription process as easy as possible.

4.5 Data Analysis

A thematic analysis was used to analyse data from the methods outlined above. The interview questions were designed to understand the dynamics surrounding flood risk and the politics and power balances imbedded in the relationships between the actors involved in flood management. To that end, the interview questions were structured around the following elements:

- Roles and responsibilities of interviewees, and how they came to be in their current positions
- Processes of decision-making
- Challenges and opportunities in collaborating with the different case study groups (community-based organisation, NGO, ward councillors and CoCT)
- Opinions on the effectiveness of policies and procedures related to flood risk
- Level of community involvement in governing flood risk
- Reasons for changes in flood governance over time

The following steps, outlined by Braun & Clarke (2006), were used, to conduct a thematic analysis of the data:

1. Familiarisation with the data, including transcription
2. Generate initial codes
3. Search for themes
4. Review themes
5. Define and name themes
6. Interpretive analysis and write-up

The data was interpreted using an inductive process (i.e., data-driven) (Braun & Clarke, 2006), but through the theoretical lens of UPE which has a focus on power and politics. Themes were identified at the semantic (explicit) level from a constructionist perspective, which "seeks to theorise the socio-cultural contexts, and structural conditions, that enable the individual accounts that are provided" (Braun & Clarke, 2006: 14). The themes are presented and discussed in relation to the literature in chapters 5 and 6.

4.6 Limitations

As this research is based on a single case study, the results cannot apply to other scenarios. Within the single case study, and due to the length and time constraints on this research project, only a few main actors were interviewed. Critiques of case study approaches include the inability to generalize and verification bias (Flyvbjerg, 2006). The results from a single case study approach can therefore not be useful in influencing policy. Further, given the length and time constraints on this research project, a differentiated analysis of flood vulnerability in informal settlements was not possible. This limitation is important to note given that vulnerabilities can be disproportionate based on race/ethnicity, gender, age, class,

and ability, which has implications for development practitioners and policy makers. In recognising these critiques, the goal of this study is to contribute to the literature around multi-scalar governance and CBA in urban, informal areas, acknowledging that further research still needs to be done, using diverse and differentiated research methods.

Researcher bias is another limitation inherent in qualitative research studies. Interviewer bias can be expressed throughout the research process and includes preconceived notions about results, favouring data that supports the researcher's theory or implicitly legitimising a certain category of actors over another (Colarusso, 2016). Further, interview subjects can also express bias. For example, CoCT officials may have tailored their responses due to their responsibilities and loyalties to the City.

4.7 Ethical Considerations

I have abided by the department and university policy by filling out the required ethics forms. Additionally, I asked permission of the NGO and ISN before conducting research in their communities and made the nature of my research clear to study participants. Interviewees were informed that their participation was voluntary and anonymous, and they signed consent forms (see appendix 9.3). Interviewees are only identified by their organisation, and their names and other personally identifying information are not used. I will report back to the communities, NGO, ward councillors and municipality on the results, and of any knowledge that might be of value to them in their adaptation work.

4.7.1 Researcher's Positionality

As explained by Neely and Nguse (2015: 142) "…knowledge is shaped by the people and places involved in its creation; in order to fully render that knowledge, we must reflect on our position and how it shapes our research." Throughout the research process, I reflected on how my positionality as a white, American, female University of Cape Town student could impact data collection and relationships with community leaders. For the aspects of my positionality that are not clear at first glance, I tried to make these clear to my interviewees (i.e., my background and nature of my work). I tried to find common ground with community leaders to reduce the binary between "researcher" and "researched" (Neely & Nguse, 2015: 145). I aimed to make community leaders as comfortable as possible by conducting interviews in locations that were convenient and familiar to them- such as their home, neighbourhood community center or NGO's office. I also considered how my own values and biases have the potential to impact the research process. To minimize bias, I tried my best to maintain a

neutral stance and represent interviewee's opinions exactly as they were intended – often using direct quotes to do so. For issues that were contentious, I tried to present both sides of the debate fairly.

4.8 Conclusion

This chapter has outlined and justified the research methodology used for analysing the case study in this thesis, and provided an explanation of the limitations and ethicial considerations involved therein. As explained, the case study was well-suited to the UPE theoretical approach because it provided a small network of actors for comprehensive analysis, aided by the methodological tools of document review and semi-structured interviews. While the limitations and ethical considerations described did not allow for a completely neutral and differentiated analysis of the data, the results (described in the next chapter) still allow for an improved understanding of the complexities surrounding flood risk in informal settlements in Cape Town.

5 Results

The semi-structured interview data painted a complex picture of the problem of flooding in informal settlements in Cape Town, and of the processes involved to either mitigate or respond to floods. This chapter describes the flood management landscape through the roles of actors, the challenges they face, and the barriers and realities of multi-scalar governance in practice.

5.1 Actors

The actors involved in managing flooding in informal settlements play a combination of distinct, complementary, and overlapping roles throughout the flood management process. Despite a recent power struggle with the Democratic Alliance, the CoCT Mayor, Patricia de Lille, (while not a distinct actor identified nor interviewed in this study), sits atop the CoCT governmental hierarchy. Mayoral influence was mentioned several times throughout the interview process, whereas de Lille was seen as influential in increasing service delivery in informal settlements (Interview 5) and even intervening to force the relocation of a settlement out of a detention pond (Interview 7). The mayoral committee, consisting of the Mayor and 10 members of council and four area-based members, has the power to grant decision-making authorities to different departments and individuals within those departments, and therefore

holds a certain amount of indirect influence over the flood risk management process (Interview 7; City of Cape Town, n.d.).

Within the CoCT, INM is the main department directly responsible for managing flooding in informal settlements. INM's flood management process consists of three steps: Identification, mitigation, and evaluation (Interview 1). First a flood risk assessment is carried out to identify informal settlements that are vulnerable to winter flooding (Interview 1). The mitigation phase consists of actions taken as part of the Winter Readiness Plan, such as maintenance of formal and informal drainage channels in settlements, awareness raising and education on coping mechanisms through the Expanded Public Works Programme[9] (EPWP), and the issuance of weather alerts and warnings (de Lille, 2017). Two types of relief are offered: soft relief, where food and blankets are provided and hard relief, which is more engineering-based, such as physically digging a trench to drain water out of the area (Interview 1). An evaluation is conducted monthly throughout the winter, and is based on the level of effort exerted, and where improvements could be made (Interview 1).

Both INM and DRM play important coordinating roles with the other CoCT departments in the process of managing flood risk (see Figure 3). INM's mandate includes roads and stormwater management, and ensuring that informal settlements can be accessed and serviced by the CoCT. Therefore, they can dig trenches to drain stormwater and open up spaces in informal settlements to allow maintenance crews to work, but any other flood risk reduction or response activities that fall outside that mandate are governed by other departments. For example, DRM, through the logistics office, provides soft relief (Interview 7), and if a settlement needs to be relocated, either the Recreation and Parks department, or ISB would need to be involved to identify temporary housing or a piece of land that could accommodate residents (Interview 1). Within DRM, disaster risk officers are continuously monitoring risks and responding to disasters, such as fires and floods, within their regional jurisdictions (Interview 7). If a settlement is particularly vulnerable to flooding, but ISB cannot relocate or temporarily house people, DRM will make recommendations to the specific departments responsible for addressing the flood risks in that area (Interview 7). For example, if a canal is blocked by rubbish, or a platform needs to be built to raise the level of homes above the flood line, they will coordinate with INM (Interview 7). If toilets are clogged with rubbish, Solid

[9] The EPWP program is a government initiative to reduce poverty and build skills by providing temporary work opportunities to unemployed people. See more information here: https://www.westerncape.gov.za/general-publication/expanded-public-works-programme-epwp-0

Waste Management will be asked to run an education and awareness campaign to reduce dumping while the water and sanitation department will be called for maintenance (Interview 7). If the sanitation situation at the toilets is dire enough, City Health will be called to intervene (Interview 7). While DRM can make recommendations to the different departments, they do not have authority to force action on behalf of the other departments (Interview 7).

The ward councillors' primary role is elevating the community's needs, vulnerabilities and complaints to the attention of the CoCT. For ward councillors, on a day-to-day basis, this can be responding to complaints directly where it is within his/her power, or playing a coordinating role, where community members are directed to the relevant department and informed about how to register complaints with the CoCT's online system (Interview 10; Interview 11). Complaints registered by a ward councillor, whether online or through monthly departmental meetings or sub council meetings, carry more weight (Interview 10; Interview 11). Ward councillors also work with communities to identify priority projects to be funded by the ward's budget, and sometimes these projects can reduce flood risk in a community, if, for example, they relate to upgrading stormwater infrastructure (Interview 11). Two of the councillors interviewed were members of committees or portfolios where opportunities exist to influence flood risk reduction at a higher level. Depending on the level of hands-on involvement the councillor decides to take in his/her ward, they can also coordinate with DRM risk officers and identify risks themselves by spending time in their communities (Interview 10). Others set up structures or networks themselves within their wards, where liaisons act as their eyes and ears on the ground (Interview 6; Interview 11).

ISN and the NGO work to strategically organise communities to lobby the city for projects and services that can reduce flood risk. The NGO helps to organise the profiling, enumeration and mapping of informal settlements by ISN members, so that when they make requests of the CoCT, the CoCT has all of the information they need to respond to the requests. For example, in order to determine how many toilets to provide in an informal settlement at the ratio of one toilet to five households, ISN can provide the CoCT with the number of households in that informal settlement, and where the toilets should be located. From the NGO's side, their role in working with ISN is not to "spearhead projects or to speak for them and do things for them, it's capacitating to do things for themselves and to take ownership of their own development agenda" (Interview 4). Through the process of profiling and enumeration, ISN is able to identify the community's main concerns and ideas for

development interventions (Interview 4). The NGO then helps the community turn these ideas into realistic projects, and helps to liaison with the right people in the CoCT to implement them. The NGO has some funds to experiment with for more catalytic projects that aim to get the attention of the City either to prioritise a certain issue, or to highlight the effectiveness of community-designed interventions (Interview 4). For example, ISN members spearheaded the first "reblocking" which is now widely recognised as an effective strategy to re-organise informal settlements (based on community-drafted spatial designs) to reduce density, while creating access for services as well as drainage channels to dispel stormwater (Interview 2; Interview 3; Interview 4; Interview 5; Interview 7) . The CoCT even adopted reblocking as a policy after seeing the success of the first pilot reblocking project in the Mshini Wam informal settlement (Interview 2; Interview 4). The NGO and ISN have become specialists in this strategy, and spend much of their time attempting to actuate new reblocking efforts (Interview 4).

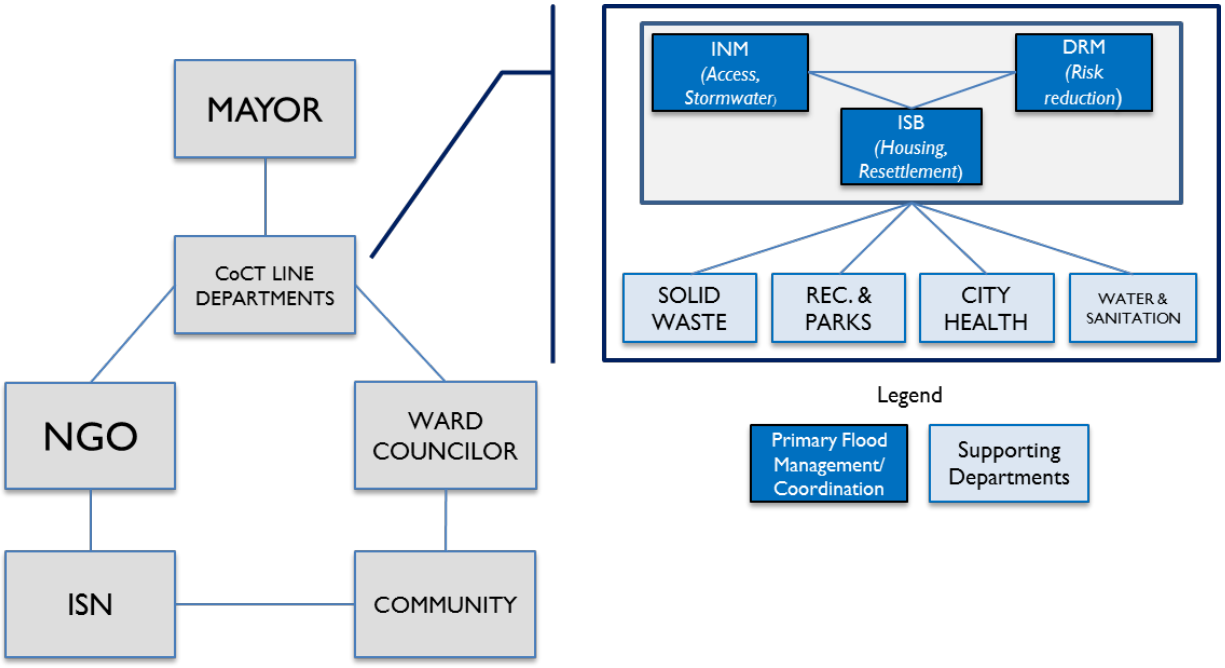

Figure 3. Relationships amongst actors in the flood management landscape. This diagram shows the most prominent and authentic connections amongst actors, but does not represent every connection that exists.

5.2 Challenges

Across the flood management landscape, the different actors involved face various challenges that complicate the management of flood risk in informal settlements. Similar to McFarlane and Silver's (2017) analysis of different way of "seeing" sanitation issues in Cape Town, this study also distinguishes between the differing perspectives of the CoCT and communities on

issues of flooding in informal settlements. Ways of seeing can encompass "distributions of the body, the infrastructural and the sensorial, but in so doing, becomes a question of dignity, race, gender, citizenship, history and the prospects of urban social justice" (McFarlane & Silver, 2017: 127). The challenges identified by the actors represent their particular perception of the relevant issue at hand, and "those particular conceptions lead to different forms of politicization," (McFarlane & Silver, 2017: 128) which in turn shapes the nature of the city. For that reason, the below section is divided into two sections: challenges faced by the CoCT and challenges faced by ISN. The politicisation of these perceptions is discussed in chapter 6.

5.2.1 Challenges faced by CoCT

Many of the challenges faced by the CoCT in trying to reduce flood risk relate to the conditions in informal settlements and the nature of their development. Due to the unplanned nature of settlements, the CoCT is forced to mostly play catch-up, where they try to provide the basic services guaranteed by the constitution once a settlement has already developed. The CoCT is obliged to prevent the proliferation of South Africa's informal settlements, particularly when they develop on private land. ISB has to balance the Trespass Act and the Prevention of Illegal Eviction (PIE) Act when attempting to prevent illegal land occupation (Interview 5). The Trespass Act allows forced eviction within 48 hours of occupants setting up a structure (Cupido & Hartley, 2010). After that, the PIE Act is activated, which requires a formal court order to evict occupants (Interview 5). The anti-land invasion team tries to monitor the construction of new structures, but there are not enough staff to ensure that structures are removed within 48 hours, after which the eviction process becomes much longer, allowing settlements to grow (Interview 5). A CoCT official explained:

> People know by now that officials are working from 8 until 4:30 or 5:00…people are so desperate that they will even build at night…if they are there now for 48 hours or longer, than you cannot really come and carry out this stuff [eviction] or you will at the end go and maybe have to explain yourself in court (Interview 5).

Once settlements are established, the CoCT is obligated to provide basic services. However, often the shacks are so close together that the CoCT cannot find access routes for service vehicles, nor can they identify locations to place toilets or taps (Interview 2; Interview 4; Interview 5; Interview 6; Interview 8; Interview 10). When settlements are on private land, the CoCT is not allowed to provide services (Interview 1; Interview 12). As one official said,

"Land rights should always be respected", so providing services on private land equates to "eroding the rights of the landowner" (Interview 1). In some cases, the CoCT can provide temporary facilities (Interview 12), or can provide services on municipal roads that border the settlements located on private land (Interview 1), but options are extremely limited.

Once the CoCT has provided basic services in an informal settlement (to whichever extent possible), maintaining those services becomes a major challenge because of dumping and vandalism, which exacerbate flooding issues. As mentioned above, dumping (leaving rubbish in unsanctioned areas) is a major problem because it clogs toilets, sewage, and stormwater drains which results in flooding, and it also creates unpleasant living conditions in informal settlements (Interview 7; Interview 11). One ISN leader explained "They only built the piping system that would accommodate those number of people that were living here before. Since now the number has grown, now the pressure onto the pipe is not enough to contain" (Interview 2). While community members blame overcrowding, poor waste management, and the need for infrastructural upgrades (Interview 2), the CoCT believes dumping is more of a social issue requiring behaviour change interventions (Interview 8; Interview 12). One CoCT official was shocked to see the difference in cleanliness between villages where he used to work in the Eastern Cape (where many residents of informal settlements immigrate from), and the amount of rubbish in informal settlements (Interview 8). He/she had an explanation for dumping that came from a friend of his/hers living in an informal settlement: "His deduction is that if you are exploited, by government, or by a political party, or by your ward council or whatever, it's easy to exploit your fellow human being…But it's not something you can legislate…It's a mindset" (Interview 8). This "mindset" of indifference or exploitation of others in *response* to exploitation relates to the issue of vandalism, which can be more directly related to civil unrest, and potentially criminal activity. In one instance, the government spent 200 million rand to place toilets in a settlement, and the residents destroyed half of them because they preferred to have individual toilets at the household level (Interview 7). From the community's viewpoint, walking a far distance from the household to the toilets is very dangerous, especially for women in crime-ridden areas, whereas the CoCT felt the settlement was too dense to be able to service toilets at the household level (Interview 7). A CoCT official working in water and sanitation felt that vandalism was mainly the result of gang activity and crime (Interview 12). He/she explained"

> "You'll find where crime and gangsterism and drugs are happening in the areas itself, we tend to have a larger proportion of vandalism because people will vandalise the

> material and taps and things like that to try and sell the materials for drugs. (Interview 12).

Addressing flood risk in informal settlement generally requires some level of temporary or permanent displacement on behalf of the residents, whether residents receive a formal house, incremental upgrading, reblocking, or temporary relocation during floods. One consistent challenge faced by the CoCT is finding land for this. The CoCT has to negotiate with national and provincial government in order to make land available, and officials recognise how difficult this is (Interview 7). According to one official in DRM, "The only thing for us to address the vulnerabilities in informal settlements is to make land available, to make houses available" (Interview 7). One CoCT official went so far as to say, "Why is there flooding? It's because of the housing shortage" (Interview 1). Land is so scarce that in some situations, there is nowhere to relocate people during flood events, or nowhere to even temporarily locate people so that in-situ upgrading or reblocking can be done in their community (Interview 2; Interview 7). ISN members can essentially carry out reblocking plans on their own, but without land to temporarily house residents, it is extremely difficult to demolish and rebuild homes (Interview 2). When land is not available, residents and the CoCT are forced to take coping measures in response to flooding. For residents, this includes creating makeshift walking platforms (Interview 2) and digging trenches to drain water away from houses (Interview 10). For the CoCT, this means providing soft relief (Interview 1; Interview 7); and milling, which is a material less-porous than sand that can help raise the level of the floor in households (Interview 5; Interview 7).

In the rare occasions when land does become available, residents (or prospective residents) are able to exploit loopholes in order to secure land, sometimes at the disadvantage of those on waiting lists. If word gets out that the municipality has purchased land, people will begin settling there in anticipation of housing opportunities nearby (Interview 8). An ISB official explains, "You find people running to where they see there's a lot of developments taking place you know? Also hoping that they would get an opportunity quicker than the normal way" (Interview 5). Another official explained:

> …it's very dangerous for the municipality to purchase land up front with the intention of housing people there because if you cannot guard that thing, that piece of land, people will flock to that and you have to move those people out, and they think that they are the legitimate owners of that land (Interview 8).

Sometimes the CoCT will successfully relocate people away from a flood-prone area, or will relocate those in an informal settlement to formal housing, only to find that the area is occupied again before long (Interview 5). One official described it as a "constant cycle of managing that space until everyone gets removed from an area" (Interview 7). This requires anti-land invasion, metro police, law enforcement, and a huge cost (Interview 7; Interview 8). Other opportunistic residents will have multiple family members putting their names on the housing waiting list from various locations, hoping to get a housing opportunity before others (Interview 8). Some residents have become paranoid and untrusting of the upgrading system. They do not want to be reblocked, or even relocated to a proper service site, because they feel like they will be forgotten by the government after their immediate needs are met (Interview 10).

Another interesting challenge was mentioned by only one CoCT official, but is worth mentioning. This official came from the Eastern Cape, where the municipal reach is limited, and thus some communities still do not have basic services (Interview 8). In these areas NGOs fill the gaps left by the municipality, which he/she appreciates (Interview 8). However, in this official's opinion, NGOs in Cape Town are reactive, in that they "knock the City for services that have already been rendered where in other areas there is nothing being done and they also do nothing there" (Interview 8). In his/her opinion, the CoCT does not fail, they *provide* services; but a toilet that is working properly will never make the news (Interview 8). It is hard to argue with the opinion that the CoCT rarely gets credit from NGOs or community-based organisations on services that are functioning properly. Other officials also touched on the fact that the CoCT *has* carried out a lot of development in informal settlements (Interview 5; Interview 7). For the official in question, it is frustrating that the NGO exploits the CoCT's weaknesses in order to gain funding, and does not acknowledge or appreciate the positive actions taken by the City (Interview 8). Having interviewed the NGO and ISN leaders, I can confirm that the majority or anecdotes are related to the failings of the CoCT rather than their successes.

5.2.2 Challenges faced by ISN

The majority of the challenges faced by ISN relate to difficulties in attempting to work with the CoCT. Poor communication between residents, ward councillors, and the CoCT was highlighted by ISN leaders as a major frustration for residents. One ISN leader said,

Figure 4. Stagnant floodwater in an informal settlement near toilets where a CoCT official took samples

> The most challenge with the City is that when we try to actually make an appointment with them; you agree to a date, you agree to a time, but when that specific day comes…They always postpone meeting to another day. 'We are busy.' (Interview 2).

Another ISN leader recalled a CoCT official coming to the settlement to determine if the stagnant floodwater near their toilets was sewer water or not (Interview 3). The official took samples and pictures, and then never came back (Interview 3). The water was still there at the time of the interview, six months later (see Figure 4). One ward councillor also acknowledged the problem of communication: "You see, some of the officials…when you trying to communicate with them, you will see sometimes…maybe he is busy or what, but they ignore the calls. That is the main problem…communication" (Interview 10). This ward councillor feels communication is vital for providing service to the people, even if it means communicating that the service provision "cannot happen today", as this type communication is better than nothing at all (Interview 10). Researchers in the field of flooding and governance in Cape Town have long acknowledged this communication issue. Joubert (2014: 16) emphasises that "for flood risk management to be effective, there needs to be better communication and collaboration between formal and informal leadership in the City, and in communities." Desportes, Waddel and Horijk (2016) suggested that communication issues can also be a result of political standoffs between ward councillors and community members

that can escalate into issues between the community and CoCT, exacerbating the already weak relationships that exist.

The issue of communication relates to one of the main challenges identified, a lack of coordination and collaboration between CoCT departments involved in managing flood risk. Almost every interviewee made explicit or implicit references to the silo-based nature of departmental planning and implementation. In one instance, the NGO was responsible for coordinating the first interaction between two CoCT officials, one of whom worked for Recreation and Parks and one who worked for DRM (Interview 4). In the NGO employees' words, "there is no interdepartmental integration. They do not talk to each other" (Interview 4). Another NGO employee provided the following example:

> They'll…deliver like a block of toilets and then you know, you'll do a reblocking project like 5 months later and the lack of conversation and correspondence between the silos in the city and us…means that things get taken down and repeated rather than doing something well once…" (Interview 4).

This mirrors Ziervogel et al.'s (2016b: 13) conclusion that "flood risk management is constrained because of overlapping yet disconnected activities of departments with the CoCT and those in provincial and National Government." In a CoCT official's opinion, the issue stems from officials performing their specific department's mandate and no more (Interview 7). In his/her opinion, when trying to influence another department, someone might say: "I'm performing my mandate so who are you to come and tell me this type of thing?'" (Interview 7). A Water and Sanitation official said, "We are not actually involved with reblocking…It's a different level of service and a different funding source and things like that...We purely go in to provide the toilets and the taps if and when the space is available" (Interview 12). The fact that the Water and Sanitation department is "purely" focused on its own mandate supports Desportes, Waddell and Hordijk's (2016: 73) observation that "Silo-based reporting structures and operating and funding mechanisms also hamper collaboration between departments."

In parallel to this lack of collaboration, the silo-based nature of the different CoCT department also allows responsibilities to be skirted and blame to be placed somewhere else. According to NGO employees, they often hear that their requests will be handled by a different department, even in meetings where the CoCT was supposed to ensure the right officials would be in the room (Interview 4). For one particular collaboration between the

NGO and the CoCT to build a park in an informal settlement, it took the NGO over a year to find the right people to talk to (Interview 4). According to an employee of the NGO: "It's a long time for communities who you kind of shared the idea and they are saying 'When are you going to implement?" (Interview 4). When the different departments *are* in a room together, such as when the Flood Task Team meets, a lack of accountability can prevent actions from taking place. The CoCT Flood Response Task Team evaluates their flood response based on level of effort, not action (Interview 1). They ask themselves, "So if we responded to something, how good was our effort at the end of the day?...What could we do better?" (Interview 1). One CoCT official was even kicked out of a task team meeting for trying to hold another official accountable for not following through on building a platform in a settlement to raise the services off the ground (Interview 7). According to an NGO employee:

> It is that thing of like, no-one's responsible. Then the higher you go, there's always someone else who's responsible so you never get to the cause of the problem because it's always the contractor who doesn't do his job or an official who doesn't have the power to make decisions. So as a community… people get disabled because there's actually…no structure to hold anyone to account (Interview 4).

One thing that exacerbates the lack of collaboration, both between departments and between actors at all levels, is the amount of bureaucracy and red tape required to get things done. Within the CoCT, it is not particularly easy to work with another department. Special forms and approvals are required, and in the case of a DRM official, comprehensive motivations are necessary for one department's recommendations to be considered by another, and when the motivation is complete, sometimes it is "dumped in the rubbish bin because I don't have any bylaw that brings some kind of enforcement" (Interview 7). From the community and NGO side, outside of registering complaints online or by phone, trying to actually *work* with the CoCT requires reinventing the wheel every time. One NGO employee talked about what happens during successful engagesments with the CoCT as follows:

> …it's not really a process. You get the right officials, you connect, they buy into what you're saying. You have a good working relationship, good communication, they are very responsive to your queries and so on and it happens… But it's not something that you can say you finally nailed this thing and can replicate it (Interview 4).

When a process finally gets rolling, one ISN member feels like there are constant delays, which is why he/she prefers to work with NGOs, who tend to act more quickly (Interview 9). When delays occur, whether it's the CoCT's delay or an NGO's delay, it leads to cascading negative consequences such as weakened leadership, weakened organisation, distrust, and a lack of will to restart the process over again (Interview 4).

Even when formal processes exist, such as the housing waiting list or UISP, the lack of procedural transparency frustrates community members and the NGO. When questioned about how the CoCT decides which informal settlements to upgrade, officials gave mixed responses. One official said "we try to find a solution as close as possible to where people is current residing" (Interview 8), while another official said that the age of the settlement and the particular conditions in the settlements are considered (Interview 5). However, despite the fact that "the City tries to be fair", Interviewee 5 also stated that "you'll find that settlements that were not that old have been developed simply because…they actually *demanded* something to be done you know, in terms of flood relief…" (Interview 5). While it is reassuring to know that community pressure works, it is also unclear how "fair" this decision-making process is. One thing that *is* clear from the community's side, is that any process dealing with housing opportunities or service provision is a long-term process. Some people who received a plot through UISP in the early 2000's are still waiting for their houses to be built (Interview 5).

This disconnect between the short-term mindset behind the CoCT's interventions, and the long-term, on-the-ground reality in informal settlements, is a major challenge for community members. From the CoCT's perspective, if a settlement is slated to be moved or upgraded in the next couple of years, then it is considered a waste of resources to reblock or upgrade infrastructure in that area (Interview 7; Interview 11). However, even CoCT officials acknowledge the long wait that residents face when they put their names on the housing waiting list. One official said, "The list is so long and the delivery is so slow that people will remain on that list for another 20-30 years before they get helped" (Interview 8). The community understands how long these processes will take, which is why they want longer-term solutions to the flooding problem, such as reblocking, which eliminates flooding and allows for services intended for long-term use to be established (Interview 3). One ISN leader used the example of chemical toilets, which the CoCT says they will change within six months. In reality, they can stay in a settlement for decades (Interview 3). In his/her words:

> If we have the flood, maybe they come with blankets, saline and food. But these things, they don't help us….the city they say 'no, this thing is temporal [temporary]', but you remind that this is not temporary, it's a long-term process…we need a permanent solution- you must reblock the people (Interview 3).

There is a major disconnect between the length of time spent on the housing waiting list, and the short-term nature of flooding interventions. One CoCT official explains, "Long-term planning is our housing roll-out plan…when the housing program is rolled out, it will eradicate the conditions under which people are currently living." However, the contradiction of strategies based on "*long-term* planning" to eliminate how people are "*currently* living" is not lost on communities, who are fed up with soft-relief and coping mechanisms.

5.3 Barriers to Multi-Scalar Flood Governance

The challenges faced by the CoCT and ISN shape the nature of multi-scalar flood governance in informal settlements. Understanding these challenges helps to understand the practices of multi-scalar governance, and the barriers to improving collaboration. The sections that follow describe the main barriers to improved multi-scalar flood governance in Cape Town: inconsistency, a lack of genuine participation in decision-making by residents of informal settlements, and the suppression of community-based movements. Reblocking is used as an example of multi-scalar flood governance in practice.

5.3.1 Inconsistency

As explained above, there are numerous people and mandates involved across the flood management landscape. On paper, the CoCT encourages harmonisation across policies and departments. In reality, the approaches taken and advocated for by the various actors involved are extremely varied, and policies do not always align with practice. This had led to a cascading dissolution of trust between the CoCT and communities, the NGO and ISN, and even ISN and the communities they work in, which undermines the potential for CBA.

Numerous challenges result from the varied approaches of actors involved in the flood management landscape that ultimately limit the opportunities for empowering CBA in informal settlements. While these approaches tend to range between the extremes on a spectrum (for example, bottom-up approaches as one extreme versus top-down approaches as the alternative extreme), the data reveals a surprising number of divided approaches, which leads to challenges, roadblocks, and mixed outcomes across the flood management landscape.

An example between “old school” and “new school” approaches helps to demonstrate this inconsistency. “Old school”, defined by Interviewee 7, are approaches that have typically been used in the past, which are normally top-down, low technology, and performed in a “tick-the-box” mentality (Interview 7). “New school” approaches are, as the name suggests, *new* ideas that address underlying vulnerabilities through sustainability and bottom-up initiatives (Interview 7). One CoCT official embodied the “old school” mentality in his reaction to the “fancy” technological and environmentally-friendly approaches that NGOs were advocating. He/she said:

> I think it’s maybe too sophisticated for the end-user. If you take a guy from, an absolute poor guy, who has never had a formal house and they give him a formal house with a solar geyser and a photovoltaic and an electricity meter, I mean it’s just, I think it’s too overwhelming (Interview 8).

On the other end of the spectrum, one official advocated for Jo Jo tanks and community-run gardens to improve flood management, beautify neighborhoods, and empower communities (Interview 7). However, decision-makers, who are more likely than not to have an “old school” outlook, must approve “new school” approaches. The “new school” official acknowledged that “my approach is not necessarily accepted, so you have to really motivate to bring these type of things…to address these risks of vulnerabilities within the communities” (Interview 7).

Even more confusing than the lack of a harmonised approach to flood risk reduction, is the inconsistency in which the CoCT follows its own policies and procedures. The most glaring example of this is the CoCT’s policy towards building in detention ponds, depressions in the land used to capture stormwater to minimise flooding. A water and sanitation official explained, “We are not allowed to provide services in detention ponds or any other such city-owned asset” (Interview 12). The justification is as follows:

> …remember a detention pond- that is its function. And its function is not in isolation. It functions in line with a network of pipes that forms the reticulation or the attenuation network of that storm water system. So it doesn’t change it just because people are now living in it (Interview 1).

Even though the CoCT uses this reasoning to reject the NGO and ISN when they want to re-purpose detention ponds, the CoCT often decides to fill in these ponds themselves, which sends mixed messages to community members. For example, Mshini Wam, which was the

first reblocked informal settlement as part of a collaboration between ISN, the NGO, and the CoCT, was originally in a detention pond (Interview 2). The CoCT approved filling in this pond in order to reblock, but now, when ISN wants to organise the reblocking of other settlements that are located in detention ponds, the CoCT pushes back, citing policy (Interview 2). The NGO describes how this type of experience undermines their work with ISN:

> …we're really active in development, in the reblocking process. And if the city is not ready with their funding, delays. And that undermines the process. It weakens leadership. It weakens organisation and it creates distrust and then it's difficult to start again (Interview 4).

An ISN leader echoed this concern, explaining how the NGO can also pull the plug on reblocking efforts:

> We give the community promises, when it comes to the support to implement that [reblocking]. Maybe with [the NGO], they say "No, we don't have the budget to do this." So the community, they don't trust us. They say, "No you are lying, guys. Because you said you gonna do this, you gonna make a reblocking."...the people, they contribute the money when it comes to support to implement this. The [NGO] and the municipality maybe, they don't agree. So who's gonna suffer? It's us. It's not [the NGO], it's not the City of Cape Town. It's us. We are going to suffer because we already promised these people we are gonna do this. (Interview 3).

The inconsistency of the CoCT's actions causes confusion, which results in the NGO and ISN unintentionally breaking promises with each other and with communities. This makes their work more challenging, and undermines their respect and authority with communities.

5.3.2 Lack of Genuine Community Engagement in Decision-Making

Trust is further eroded by the lack of true community engagement in decision-making around flooding in informal settlements. The CoCT's slogan is "Making Progress Possible. Together", but does this ideology really translate to practice? While CoCT officials certainly understand the value of community consultation, this understanding rarely transgresses beyond token inclusiveness. Rather, most decisions are taken from the top-down, and any efforts or ideas for real collaboration are either bogged down by bureaucratic challenges, or under-resourced.

There *are* examples where consultations with communities led to positive outcomes in terms of service provision. In one instance, a community complained about the lack of privacy surrounding public toilets in their neighbourhood. The CoCT consulted with the community, and requested a screen to be placed in front of their toilets to improve privacy (Interview 1). According to the CoCT official involved, "the community was enrolled, and they were on par as to what needs to happen and so when infrastructure was implemented, there was no vandalism on it" (Interview 1). However, there are more examples of top-down decision making that results in negative implications for communities, particularly in regard to flooding. In one example, a community was not consulted before a new standpipe was built at the edge of a women's yard (Interview 8). The official involved explained, "The result of that is, this all of a sudden became a meeting place in this lady's yard. Her safety is compromised. Her yard is compromised. Her fence is compromised" (Interview 8). Further, due to the slope of the land, if the tap is left running, the water "is just running straight through her house" (Interview 8). Thus, "just by placing this [tap] one meter this way…literally one meter, then it will flow around her house. We in actual fact, jeopardized somebody else to an extent that they cannot live with that service" (Interview 8). While it is reassuring that the CoCT admits fault in this situation, the official described this example as "typical things…that is causing problems in communities" because "engineers has got maybe a harder approach, quick solve, less pipe, less to maintain…And we've got a tick in the box…Meanwhile, it's rendering a huge frustration to a lot of people" (Interview 8).

Further, consultations alone do not go far enough. This type of engagement is primarily a one-way street where a decision has already been made, and communities are called upon to provide comments or concerns. However, because of the challenges mentioned above, if ISN has an idea or issue they want to broach with the CoCT, it is not easy for them to get an audience. Even when the NGO had regular meetings with the CoCT, it was difficult to make progress (Interview 4). One ISN leader explained:

> …they are supposed to deliver what is needed on the ground but now the approach from the city now is a service approach. It's supposed to be a bottom-up approach but what they do, they take decisions and throw them down. Because they don't engage with the communities on what the communities want. They only come with decisions of what they want to do (Interview 2).

Outside of reblocking (explained in detail below), there is one example from the interview data of a project conceptualised and spearheaded from the bottom-up, that eventually received support from the CoCT. Communities identified an area between four settlements that was unsuitable for households (because it was a detention pond that flooded) that they wanted to develop into a public space (Interview 4). This required the intermediary support and coordinating skills of the NGO, and from inception to completion, took over 3 years to materialise (Interview 4). Because the NGO kick-started the process and was committed and willing to pay for the park, the CoCT then engaged with the needs of the community, and decided to collaborate and invest in a formal drainage system (Interview 4). However, the collaboration was far from ideal, as CoCT officials were reluctant to meet with the community's steering committee, preferring to speak to the NGO (Interview 4). Further, now that the park is completed, the CoCT departments responsible for management and maintenance do not share their plans with the community, who have ideas of how the park can be maintained in a collaborative way (Interview 4).

Examples like this, that can actually be considered as a narrow definition of a success, show why the community and NGO are frustrated with the CoCT, and how the CoCT actually undermines the efforts of the community. However, trust goes both ways. Often community based initiatives can be idealized, but it is important to remember that on a situation-by-situation basis, communities have also given the CoCT reasons to be cautious in engagement. Some of these reasons are mentioned above, such as vandalism and the exploitation of loopholes, but exploitation also exists within communities themselves. Informal settlement landlords monopolise large structures and rent them to multiple families to make a profit (Interview 7), while others will purposefully sell[10] land that floods seasonally to newcomers (Interview 5). Further, one official recounts an incident where community members stored, rather than distributed, relief provided by the city, and then sold the goods or used them for themselves (Interview 7). While neither side is perfect, increasing the amount of true collaboration between the CoCT, NGOs and community-based organisations will increase trust and minimise exploitation and corruption within communities.

Despite the general lack of "togetherness" that exists currently, one CoCT official has a vision for community upgrading that serves as a beacon of hope for the potential of future collaboration. He/she wants to use aerial photography to develop large maps of settlements,

[10] This land actually belongs to the City, so sale is illegal.

and then work with communities to determine the best places to place toilets and taps, given the topography of the land and the relevant community dynamics involved (Interview 8). In his/her words:

> …now I realize that consultation is not enough. People still vandalise it because it's provided by the city. But if you now provide this base plan, and this base plan was developed by the community then they can say, 'Hey, if you're angry at this toilet, don't break it off. Let's just move it this way or that way.' (Interview 8).

While this initiative would come from the top, it still allows communities to make their own development plans, similar to reblocking (discussed below). Unfortunately, because this idea is very labour intensive, it is not currently being considered in the CoCT's pipeline (Interview 8).

5.3.3 Supression of Community Movements

The NGO's main goal is to "build strong, independent social movements" (Interview 4). While ISN and the NGO both strive to mobilise communities towards self-development, ISN leaders are increasingly frustrated with their limited independence and lack of resources (Interview 2; Interview 3; Interview 9). As explained above, the one good example of a truly collaborative experience between the CoCT and ISN that emerged from the interview data was negotiated and coordinated by the NGO, and further, it was far from an ideal process. Because of the trust issues between the CoCT and ISN, the CoCT prefers to use NGOs as intermediaries between themselves and communities. For example, when the CoCT assesses flood risk, they elicit community perspectives and compare this information with their own data. However, they prefer NGOs or universities to engage with the communities during this process, rather than engaging themselves (Interview 1). According to one official, "It's all to do with expectations…my experience is that many times when the City does it [an evaluation with the community], it's not a fair reflection of what really happens" (Interview 1). From the community side, they would prefer to meet with CoCT officials directly, but arranging these meetings is difficult, and they do not feel as if they are taken seriously (Interview 3). The NGO is trying to help set up processes that social movements can plug into, but they admit that it is difficult (Interview 4). While it is useful for the NGO to facilitate engagements with the CoCT on behalf of ISN, the parties involved also become accustomed to this arrangement, which is not necessarily productive for ISN's independence. For example, one CoCT official explained that the NGO and ISN can "automatically deal with whatever

community issues there is", suggesting that there is not really a role to play for the CoCT to engage with communities directly.

In general, the NGO and ISN have a strong working relationship. However, two of the ISN leaders interviewed indicated growing resentment over their lack of compensation. Being an ISN leader is essentially a full-time job (which I can confirm, having personally witnessed their busy schedules when trying to set up interviews) but they only receive a small stipend for travel and per-diem. Profiling and enumeration of informal settlements is one of the main tasks of ISN members, which the NGO facilitates (Interview 9). This information feeds through the NGO to the City, and helps the city plan for service delivery in informal settlements. Because the NGO considers profiling and enumeration as "community work" they justify the non-payment of ISN (even for provisions) because the information is for the community's own benefit (Interview 9). However, the NGO also benefits from this data, as the CoCT relies on them for this information, fortifying their role and purpose as an NGO (Interview 7). This issue is exacerbated by the fact that other NGOs, as well as the EPWP program, are paying community members for the same data collection work that ISN members are doing for the NGO (Interview 9). Further, one ISN leader accused the NGO of taking credit for ISN's work in order to receive funding from donors (Interview 3) and one CoCT official criticised the NGO for charging a surplus fee for reblocking when residents want to have the same size house that they previously had (since normally, reblocking requires minimising house size) (Interview 7).

Working with the NGO is a double-edged sword for ISN. On one hand, they are empowered by having access to urban planning professionals who support them and help them liaise with the CoCT. On the other hand, they feel as if their power is stifled by their lack of independence. While some of the NGO's funding is used to support ISN, as a non-profit, the NGO only exists because there is a need for their services in the community. Complete independence of ISN would mean the community no longer needs the support of the NGO. The NGO's mentality and strategy speaks to an independent ISN; one NGO employee explained, "…the idea is to coordinate but *you* do the work. We will create the space and give other support but you do the work, you do the thinking. We will bring our knowledge to that and ultimately, it's your project" (Interview 4). However, one ISN leader described the relationship as follows:

> There's a lot of things we cannot do, we *want* to do but we cannot do because we don't have the funds to do that…So we can't get anything. So now we have the power, how to use it?...Because [the NGO] do whatever they want to do. If they say 'no we don't have a budget for this'. We can't do nothing…It's our power, they use it. You understand? (Interview 3).

ISN would not be where they are today without the help of the NGO, but at the same time, reliance on the NGO is keeping ISN from growing independently. Further, the NGO has positioned themselves between ISN and the CoCT when it comes to reblocking, cementing their role in this process for the indefinite future.

5.4 Multi-Scalar Flood Governance in Practice: Reblocking

Reblocking is a strategy created by informal settlement residents to improve living standards in their communities. It involves "the reconfiguration and repositioning of shacks in very dense informal settlements in accordance to a community-drafted spatial framework" (SDI Alliance, 2013). De-densifying settlements allows access for emergency vehicles and allows space for municipal services provision (Interview 4; Interview 7). Reconfiguring settlements also allows for proper drainage to be established to prevent flooding, and reduces the risk of fires spreading (Interview 4). According to an ISN leader, ISN was able to sell this idea to the CoCT, who "didn't actually believe that there is capability that we will be able to make access within the dense informal settlement" (Interview 2). This is confirmed by a CoCT official, who said, "In fact, when I looked at that place, how it looked, I never thought that we would be able to organise it in such an orderly manner and they have been making it looks so beautiful as it is now" (Interview 5). Most actors interviewed consider reblocking to be an excellent intervention, particularly as it relates to flood risk reduction (Interview 2; Interview 3; Interview 5; Interview 7; Interview 11). One ISN leader even considers reblocking a "permanent solution" because people are satisfied with the outcome for the indefinite future. He/she said, "Because if you reblock people…even they don't need the houses, because they say 'I have my water. I have my toilet. I don't have flood. If there is a raining…I am still safe.' You understand? That is the permanent." (Interview 3). The challenges are the need to downsize structures in order to make space and the need to negotiate complicated community dynamics (Interview 7). For instance, some of the more powerful landlords in settlements prefer the current arrangement (Interview 7), and others worry that the government will forget about them once they have proper services installed (Interview 10).

In 2012, a Memorandum of Understanding (MoU) was signed between ISN, the NGO and the CoCT to formalise a partnership in upgrading informal settlements (Interview 4). After that, the Mshini Wam informal settlement was used as the first pilot collaborative reblocking

Figure 5. Before and after pictures from the reblocking of Flamingo informal settlement. Source: SDI Alliance, 2015

project (Interview 2). This settlement has now become a learning centre both nationally and internationally to share experiences and lessons around engaging governments in inclusive development (SDI Alliance, 2013). In 2013, the CoCT adopted reblocking as an official city policy, and identified 22 new prospective collaborative projects, many of which included reblocking (SDI Alliance, 2013). However, the NGO explained, "but ever since then, you know it's been a challenge for us to actually get cooperation from the city. So you have this policy that show some intent, but resource-wise, you have one person that's assigned to this thing" (Interview 4). The NGO explained that out of the 22 prospective projects, four ended up on the CoCT's budget, and only one was implemented (Interview 4). One of the ISN leaders explained his/her frustration:

> We have a partnership with the CoCT. We say so. But the partnership we don't see the partnership because most of the time when it comes we need something, the CoCT, they say "No. We can't do this because this land is belong to this and this and this… (Interview 3).

This further highlights the CoCT's inconsistency between their policies and practices, as they now have a formal reblocking policy, but in practice, very few reblocking projects are approved.

6 Discussion

As can be seen from the above findings, top-down flood response planning processes with token inclusiveness reinforce the hegemonic relationships that exist between the CoCT and communities. The lack of true inclusive decision-making, coupled with inconsistent actions and internal bureaucratic challenges, guarantees that flood response interventions will only maintain the status quo, and will not lift communities beyond the levels of vulnerabilities that make them susceptible to flood risk in the first place. Active communities recognise that their voices are missing in decision-making. ISN pushes back against this hegemonic governance relationship by coordinating planning processes from the ground-up that take community opinions seriously. ISN's design and implementation of the reblocking strategy highlights the ability of communities to make transitional CBA efforts when empowered by the right actors. The following chapter analyses the nature of the flood response approaches taken by the CoCT and ISN. It begins by discussing the limitations of the CoCT's flood-response efforts to lead to effective adaptation, emphasising the lack of true community inclusion. A counter-example is also provided where everyday governance practices have enabled certain CoCT staff to truly engage with bottom-up approaches. The next section (6.2) explains how ISN pushes back against hegemonic governance norms by navigating invited and invented spaces of citizenship. The strategy of reblocking is used as a prime example, where relationships with the right actors allowed the community to influence government policy from the ground-up. The last section (6.3) describes how these top-down and bottom-up approaches relate to eachother, and how they can be reconciled as a step towards transformative CBA.

6.1 Top-down: Adaptation that maintains the Status Quo

6.1.1 "Don't call me resilient again!"

The CoCT's responses to flooding help residents in informal settlements cope with flooding, but they do not reduce the vulnerabilities that make residents susceptible to flooding in the first place. Before the rainy season, the CoCT may capacitate residents, maintain trenches, and provide milling to raise the level of homes. These efforts help residents withstand the seasonal floods and return to life as usual following the winter. This aligns with Pelling's (2011: 42) definition of resilience "as the degree of elasticity in a system, its ability to rebound or bounce back after experiencing some stress or shock." While resilience may sound like a positive attribute, Kaika (2017) objects to using the term to describe victims of

disasters. She cites Tracie Washington, the President of the Louisiana Justice Institute, who started a public campaign around the argument “Stop calling me resilient”, referring to how victims of Hurricane Katrina and the BP Oil spill were praised (Feldman, 2015; cited in Kaika, 2017). Kaika (2017: 95) explains, “If we took Tracie Washington’s objection seriously, we would stop focusing on how to make citizens more resilient…as this would only mean that they can take more suffering, deprivation or environmental degradation in the future.” This relates directly to residents of informal settlements, who, despite years of winter readiness plans and flooding task teams, still find themselves susceptible to flooding year after year.

In fact, the CoCT’s flood interventions are really better defined as coping strategies, meaning they reduce sensitivity to flooding, rather than avoiding flooding or reducing the likelihood of it happening again (Few, Brown & Tompkins, 2007). Some efforts are purely reactive, such as the provision of “soft relief.” One ISN leader thought the money spent on reactive measures like soft relief or fire kits would be better spent on preventing the disasters in the first place (Interview 2).The CoCT shows resistance to actual adaptation measures, such as reblocking and infrastructural upgrades, which would help to reduce or eliminate flooding all together. As mentioned in the results section (chapter 5), the CoCT’s short-term vision of informal settlements makes them hesitant to upgrade sewage and stormwater drains (which are often sources of flooding), and means that reblocking projects have not been actualised as promised. Pelling (2011: 43) characterizes this type of response as “resistance to change”, motivated by a desire to maintain the status quo and only effect small changes that do not disrupt the current power system. These small changes address symptoms, but not causes of vulnerability (Pelling, 2011). The CoCT’s actions certainly align with Pelling’s (2011) explanation of resilience as “maintaining the status quo.” In the case of informal settlement residents, the status quo is still high levels of vulnerability, both to flooding, and to other everyday risks, as noted earlier. As mentioned in the literature review (chapter 2), Pelling (2011: 50) contrasts this definition of resilience with transformational adaptation, which is “indicated by reform in over-arching political-economy regimes and associated cultural discourses on development, security and risk.” This aligns with Kaika’s (2017) solution to the “don’t call me resilient” problem, which is to target the actors and processes that drive vulnerability in the first place. Following this line of reasoning, the CoCT is maintaining the status quo of vulnerability, rather than exploring the potential of adaptation as transformation by targeting the drivers of vulnerability. Targeting the drivers of vulnerability would mean

engaging with the more social, economic and political dynamics of informal settlements, rather than focusing on techno-managerial solutions. As described in the historical and political economic context section (chapter three), flood vulnerability in informal settlements is related to historical injustices, uncertain regulations, global capitalistic forces, as well as national political agendas. Addressing vulnerability in informal settlements requires acknowledging, engaging, and addressing these wider drivers that ultimately result in vulnerability and everyday risk for residents in informal settlements.

6.1.2 Domination through inclusion

As alluded to in the results section (chapter 5), the CoCT's engagement with communities is mostly symbolic, and they are reluctant to engage directly with community members. There are numerous examples of top-down interventions where decisions are made at the City level, and communities are simply asked their opinions. For example, one ward councillor described a new formal housing project where "we [The CoCT] finish all of the professional services and then bring the product to the community and say, 'this is the product. What is your view on it?" (Interview 11). Kaika (2017) references a growing reluctance amongst communities of being "included" in conversations with authorities about issues that affect them. For example, the Rosiene community in Romania rejected "inclusion", acknowledging that "When invited to be "included", there was already a clear role assigned to them: not that of the equal co-decision maker in setting development goals and allocating resources, but that of the subordinate subject…" (Velicu & Kaika, 2017; cited in Kaika, 2017). The CoCT's inclusion of communities mirrors this hegemonic relationship, which reinforces existing power dynamics. Miraftab refers to this type of relationship as "domination through inclusion" (2009: 39), where people might gain access and participation in a governance system that, at the same time, avoids making any substantive redistributive actions. This domination is exemplified by one CoCT official who described how his department will "feed into" community actions plans because "if there is quick wins within those plans, we actually grab it because sometimes you can't always do the one big thing people ask for" (Interview 1). This "legitimation" of community demands is what Miraftab (2009: 41) claims is "central to hegemonic relations of power."

The idea of domination through inclusion can also be leveraged to understand the relationship between ISN and the NGO. As explained above in the results section (chapter 5), ISN feels stifled by their lack of authority and resources. The Anti Eviction Campaign (AEC) of the

Western Cape, another bottom-up movement of the self-organising urban poor, reject NGOs entirely, declaring that, "NGOs often control social movements through the power of their funds and legitimation" (Miraftab, 2009: 36). This resonates with ISN's relationship with the NGO, which is further convoluted by the NGO's (and CoCT's) use of the data that ISN collects. Dodman and Mitlin (2013: 25) summarise an argument made by Kothari (2001, cited in Dodman and Mitlin, 2013) to explain how "including local knowledge within an externally determined framework is simultaneously a mechanism for controlling information, its analysis, and its (re)presentation." Regardless of ISN's participation in processes of profiling and enumeration, and even in consultation, they are still excluded from the most important processes: those related to decision making. Drawing on decolonial theory, Miraftab (2009: 45) explains:

> Historicizing the notion of inclusion from the vantage point of the ex-colonies allows us to see how the participation of the oppressed in their own conditions of oppression functions to normalize those oppressive relations, in the post-colony as it had in the colony. That helps us to understand the political career of citizen participation, how the inferiority and superiority of oppressed and oppressor may well continue in an 'inclusive' planning process.

Thus, by participating in inclusive planning processes without having substantive input into decision-making, ISN is contributing to the historical power dynamics that have maintained an inferior/superior relationship with the CoCT, and even with the NGO.

6.1.3 Exceptions: Defying Norms through Everyday Governance

It is important, especially within a situated UPE approach, not to homogenise the experiences and efforts of the actors involved across the flood management landscape in Cape Town. Therefore, this study highlights the experiences and efforts of one CoCT official in particular, through exploring practices of everyday governance that expose the "heterogenous on-the-ground realities of policy implementation and resource use" (Cornea, Véron & Zimmer, 2017). However, while the literature on everyday governance tends to focus on the micropolitics and power that reinforce inequalities (Cornea, Véron & Zimmer, 2017; Blundo & Le Meur, 2009), this example focuses on the positive outcomes that can result from individuals leveraging their agency to *fight* inequality. The individual in question even uses loopholes to bypass bureaucratic processes when it helps the community (Interview 7). For example, if toilets are extremely flooded or vandalised, he/she will contact City Health, rather

than Water and Sanitation, because issues that are considered a health risk will be prioritised by the CoCT (Interview 7). In another instance, the official wanted to reduce the flooding risk of a particular river by filling in part of it to move the floodplain away from a settlement (Interview 7). He/she knew the process would either be delayed or denied because procedure requires abiding by NEMA, so he/she asked the community to fill it in themselves, so the CoCT could not be fined for disregarding environmental acts (Interview 7). In this way, the official uses everyday practices to ensure that flooding risks are reduced, even if it means diverging from official CoCT policies and procedures.

While Lawhon, Ernston and Silver.'s (2014: 507) description of everyday practices is focused on the perspectives of the urban poor, the authors' main ideas can be applied to this setting to emphasise "the ordinary practices of city-making" that highlight the limitations of the state in controlling and structuring city's residents. In Cornea, Véron and Zimmer's words, "…even with structures led by written rules, guidelines, regulations, and laws, there is often disparity between the official model and actual behaviour on the ground" (Corbridge et al., 2005, Bierschenk & Olivier de Sardan, 2014b, Mountz, 2010, Olivier de Sardan, 2014, Roy, 2002, Tarlo, 2000; cited in Cornea, Véron & Zimmer 2015: 6). Further, outside of official rules and regulations, this official also defies the CoCT's norms when it comes to flood risk reduction by applying a "new-school" approach. He/she has been striving to change the status quo by cultivating meaningful relationships with community members, taking indigenous knowledge seriously, and vying for sustainable options to flood management that address the underlying vulnerabilities in communities (Interview 7).

6.2 Bottom-up: Insurgent Citizenship

6.2.1 ISN's Insurgent Citizenship

ISN understands that the CoCT's decision making process is far from inclusive. As mentioned above, one ISN leader suggested that: "…they take decisions and throw them down" (Interview 3). In fact, ISN's organisational objectives are seemingly designed to combat this hegemonic relationship. They specifically aim to "challenge the way our cities are planned" and ensure that "local, community-level initiatives drive any citywide or national agenda" (SDI South African Alliance, 2012a). These objectives speak to the ideology behind the theory of insurgent planning, which "seeks to achieve real, substantive inclusion which is either not present in the mandate of synoptic planning, or is being co-opted by the neoliberal state in participatory/ partnership planning" (Shrestha & Aranya, 2015:

427). ISN's version of insurgent planning involves leading by example. Even though there are distinct regional ISN leaders, their planning process is truly horizontal. One ISN leader explained, "…we are not leading the people, the people they must lead themselves…so if I am going to your informal settlement, it's you who must wake up…you must go first, you must go in front of me" (Interview 3). ISN's vision of a just city is represented well by Miraftab (2009: 44):

> Whoever the actors, what they do is identifiable as insurgent planning if it is purposeful actions that aim to disrupt domineering relationships of oppressors to the oppressed, and to destabilize such a status quo through consciousness of the past and imagination of an alternative future.

While ISN is not yet disrupting or refusing the process of symbolic "inclusion" like the Rosiene Community in Romania, they *are* exploring how different practices of citizenship can be harnessed to achieve their goals.

The navigation of invited and invented spaces of citizenship can be a powerful strategy for insurgent movements (Miraftab, 2009). ISN is inventing new ways of organising and developing their settlements, but presenting these ideas to the CoCT in a language and format the City understands. In this way, their use of invited and invented spaces aligns with Piper and Nadvi's (2010: 214) definition of state-driven (invited space) versus social-movement-driven (invented space). For example, reblocking is a strategy that ISN "invented" outside of formal governance channels, but in order for the CoCT to understand its merits, they have to collect data through enumeration and profiling, and liaise with the CoCT through the NGO partner in order to be taken seriously. The oscillation between inclusion and resistance is characteristic of insurgent citizenship practices, where spaces of invited and invented citizenship are flexibly traversed (Miraftab, 2009). One ISN leader explained a new strategy ISN plans to use that also operates in both spaces of citizenship. He/she came up with a plan to create a forum of all of the settlements that have drainage problems, so that they can approach the CoCT with numbers, and ideally get a better response than when ISN leaders have gone individually (Interview 3). He/she explained "…but if we are going there [the Civic Centre], we are a lot of people complaining one thing…MAYBE they are listening" (Interview 3). It is clear that the use of both invited and invented spaces of citizenship can influence the CoCT. As one CoCT official admitted, the CoCT prioritises action in informal settlements where communities demand something to be done about flood relief (Interview

5). Both approaches, the fluidity between the two, and the successes therein, illustrate the main idea of subaltern urbanism: the subaltern (in this case, residents of informal settlements) has political agency, and uses it strategically to meet their goals.

6.2.2 Importance of Strong Networks

ISN's relationship with the NGO is complex. On one hand, it is not surprising that ISN worries about funding and power. However, there is no denying the importance of their relationship with the NGO, and the doors that this relationship has opened for them. Both Soltesova et al. (2014) and Drivdal (2016) discuss the importance of networks in empowering the actors involved in CBA. These networks include technical experts, government officials, and other NGOs, each of whom have their own extensions of networks that can be accessed (Drivdal, 2016; Soltesova et al., 2014). For example, one ISN leader explained how the NGO is "trying their best to bring the City within the communities and understand what is needed on the ground" (Interview 2). The NGO's utility in the reblocking process is widely recognised (Interview 2; Interview 3). The interview data also revealed how important particular individuals can be within networks, and how this can be geographically limiting. For example, the CoCT official who defies the CoCT's norms through everyday governance has a particular regional mandate (Interview 7). The ward councillor in his region described in admiration how he/she is active and present in communities, and how community members even phone him/her directly when they have issues (Interview 10). In this individual's region, community members might find themselves beneficiaries of community gardens or Jo Jo tanks, while in other regions, community members might be faced with officials who prefer "old school" approaches. What is clear from the literature on urban adaptation governance, is that strong political champions are critical in networks to both spearhead adaptation initiatives and to facilitate true inclusivity (Chu, Angueloveski & Carmin, 2016; Leck & Roberts, 2015; Vedeld et al., 2015).For CBA actors to be empowered, and for their efforts to be scalable, they need strong networks that support bottom-up initiatives. This includes the type of political champions mentioned above, but also access to resources and inclusion in the political processes that shape their lives.

6.2.3 Reblocking as transitional CBA

Despite the challenges that ISN and the NGO face in growing the reblocking movement with the CoCT, reblocking is still one of ISN's greatest successes. There is no question that reblocking reduces and/or eliminates flooding altogether, and is therefore a method of

adaptation, specifically CBA. The question is to what extent this method can lead to transformation. In terms of Pelling's (2011: 68) characterisations of responses to climate change, reblocking coincides with transitional adaptation, defined as "incremental change to social (including economic, political and cultural) relations". ISN took a community-designed idea, executed it successfully, and influenced the CoCT to the degree that they adopted reblocking as an official policy. Reblocking meets the criteria for economic, political and cultural change that characterises transitional adaptation. Politically, reblocking was adopted as a CoCT policy, which can be considered a "reform in the application of governance" (Pelling, 2011: 69); economically, short-term jobs are created through the EPWP during the reblocking process (SDI Alliance, 2012b); and culturally, the reblocking process leads to improved collective action and self-reliance in communities (Lande & Zimmermann, 2018).

Reblocking has no intention of regime change, and thus falls short of full transformational adaptation, but it is an assertion and pathway towards citizen's rights, which Pelling considers "an intermediary level of engagement" with the governance regime (2011: 50). In addition to the successful expression of citizens' rights and resulting reform in governance, reblocking also allows informal settlement resident's to take advantage of their constitutionally-guaranteed rights to free basic services. By opening up spaces in informal settlements, the CoCT can then install municipal services, a win-win situation for both residents and government. However, reblocking is limited in its ability to enact transformation by several factors. ISN's objectives speak to a concern with the broader processes shaping flood risks, but their framing of the flooding issue is still mainly local, i.e., concerned with infrastructure upgrades, formal drainage channels, and land-use. Pelling (2011) emphasises the importance of framing, which has implications for determining who is to blame, and who will bear the costs of adaptation. Further, ISN and the NGO's actions are not motivated by a responsibility towards sustainable development or environmental protection (Interview 3; Interview 4), although the NGO acknowledged this as a weak point in their projects (Interview 4). Pelling (2011) cites the importance of a relationship with the environment towards transformation.With impending (and current) climate change impacts, an understanding of environmental risks and environmental balance would be useful for ISN and the NGO to plan for the future. While ISN and the NGO's actions, reblocking in particular, are great examples of adaptation as development, they would not describe their own work in those terms, for better or worse. Finally, while reblocking *does* address the underlying vulnerabilities in communities, it does not address the drivers of these

vulnerabilities. Pelling (2011: 97) equates this to the "distinction between treating the symptoms and causes of illness."

6.3 Towards Transformative CBA Enabled by Multi-Scalar Governance

6.3.1 Negotiating Tension through Relational Power

The competing modes of practice initiated by the CoCT (top-down) and ISN (bottom-up) to eliminate flood risk have created an "in between" filled with tension, confusion and frustration for the actors involved. This disorder is fuelled on one hand by opposing approaches to flood management driven by different ways of seeing the issue of flooding. For example, even with an understanding of the long-term nature of housing delivery, informal settlements are often still treated as temporary occurrences. In describing an upcoming housing project in his/her ward, one councillor explained, "…there won't be a reblocking process because of the current [housing] project we have planned…otherwise we waste resources" (Interview 11). This conflict in notions of permanence versus temporariness is a fundamental tension between the CoCT and ISN, as the CoCT cannot adequately address the vulnerabilities that exacerbate flood risk in informal settlements without understanding the on-the-ground, long-term realities of the residents who live there. ISN designed reblocking as an attempt to resolve this disjuncture and come up with a long-term solution, but, as mentioned, these efforts have stalled. This disjuncture is most easily witnessed in the continued flooding of the same informal settlements year after year, where residents are forced to once again prove their "resilience".

On the other hand, tension is also created by the CoCT's lack of authentic commitment to community engagement, which, as mentioned above, reinforces a hegemonic power imbalance between government and communities. The lack of true engagement with communities stems from an incapacity and unwillingness to address the *social* dimensions of multiscalar governance, such as inequality and informality (Vedeld et al., 2015). In response to this imbalance of power, ISN makes inequality and informality central to their vision of a just city. This vision involves the inclusion of residents of informal settlements in decision-making that impacts their lives, an assertion that represents the will of the people to appropriate some of the power that the CoCT exerts over them. Miraftab (2009: 34) explains that while neoliberal governments practice dominance by inclusion, "...the process also creates a disjunction that insurgent movements are able to take advantage of". ISN recognises the disjunction that "symbolic inclusion does not necessary entail material re-distribution".

Their response to this recognition is well characterised by Miraftab (2009: 34), who explains how "Counter-hegemonic movements may use such contradictory conditions to destabilize the neoliberal hegemonic order". ISN's insurgent planning practices and navigation of invited and invented spaces are an attempt at this destabilisation.

This relational power struggle is not only expressed at the organisational level, but also at the network and individual level. Rocheleau and Roth (2007, cited in Lawhon, 2012: 957) explain, "A relational view of power is a reminder that power is always being reshaped dynamically with respect to the type, terms, and strength of a relationship, and the structure of and position of an actor within a network." For example, changes in the nature of the relationship between the NGO and the CoCT have impacted the prospects for reblocking projects, despite the fact the the CoCT adopted this as an official policy. When the MoU between the CoCT and the NGO was originally signed, regular meetings were held and 22 future reblocking projects were identified (Interview 4). This momentum faded as elections were held and the CoCT went through an organisational transformation process (Interview 4), effectively altering the network that the NGO used to initiate reblocking projects. Now, as the NGO tries to rebuild their partnership with the CoCT, reblocking projects have been side-lined because the CoCT claims not to have the funding, the funding is reassigned (Interview 4), or, as mentioned above, a community might be expected to receive housing, and reblocking would be considered a waste of resources in the "short-term". Because the relationship between the CoCT and the NGO is currently weak, it is easier for the CoCT to exert power by "selectively responding" (Lawhon, Ernston & Silver., 2014: 510) to the NGO's requests.

At the individual level, everyday practices present an entry point to exercise relational power in contrast to institutional norms. As mentioned above, one CoCT official created positive change within the network of his/her influence by exploiting loopholes (or even disregarding protocols) to ensure community members received as much support as possible. Pelling (2011) explains how governments are made up of actors (i.e., "individual policy entrepreneurs") who "negotiate" their varying degrees of power in the design and implementation of rules. These actors have the ability to change a governance system, not through norms or principles, but through rules and decision-making (Krasner, 1932:5, cited in Pelling, 2011). Pelling (2011: 71) explains, "Over time…discontinuities between norms and principles on one hand and governance mechanisms and practices on the other can potentially trigger transformative change in the regime or top-down pressures for transitional change in

the governance system." In this way, and in lieu of an overarching regime change, political actors can begin exerting internal pressure on governance systems to slowly transition towards norms and principles that support true community engagement in decision-making.

6.3.2 Shifting Epistemological Framing

Given both the potential and limits of CBA in urban, informal areas, how can transformative adaptation in Cape Town be achieved in the future? As mentioned, reblocking *does* address underlying vulnerabilities in informal settlements, but not the *drivers* of these vulnerabilities, which limits its ability to enact transformation. Behind policies and approaches is epistemology, "the ways people and organisations behave and organise values and perceive their place in the world", which also must be targeted when aiming to achieve transformation (Pelling, 2011: 86). This study has shown that the CoCT's role in multi-scalar governance, while occasionally enabling of CBA, is primarily an undermining factor. This is mainly because their approaches to flood risk management are driven by a development paradigm inherent in most governments that have been touched by coloniality that prioritises economic growth and undervalues true community engagement (Miraftab, 2009). Miraftab (2009: 44) explains, "…the ideal of the Western city has been deployed historically in the colonial era, and is now deployed in the neoliberal era to advance a certain paradigm of development and capital accumulation." However, given the importance of strong networks for CBA (Drivdal, 2016, Soltesova et al., 2014), as well as the importance of cohesive multi-scalar governance for managing climate change (Leck & Simon, 2013), it is crucial that the CoCT take community initiatives seriously, like they did with reblocking, in order for communities to be truly engaged in decision-making processes that affect their lives.

In South Africa, where the colonial wound (see Mignolo, 2009) is far from healed, decolonial theory can play a central role in disrupting epistemological paradigms. Mignolo (2009: 161) explains how the "former anthropos" [i.e., those who have been "invented" by the Europeans] which draws parallels to the subaltern, "are no longer claiming *recognition by* or *inclusion in* the *humanitas* [i.e., locales defined by Europeans). Instead, they are "engaging in epistemic disobedience and de-linking from the magic of the Western ideas of modernity, ideals of humanity and promises of economic growth and financial prosperity" (Mignolo, 2009: 161). Capitalism is one of these "Western ideas of modernity" that promises "economic growth and financial prosperity" and ISN's insurgent planning is an effort to delink from these ideals. ISN's website (SDI Alliance, 2012a) says the following:

> Fostering inclusive, pro-poor and sustainable urban development can only occur when the resource base is shared and a vision of long term upgrading is adopted. This requires the fundamental inputs of community members into the allocation of state resources, opening spaces to influence policy deliberations and decision-making.

This vision mirror's Harvey's (2008) hypothesis that democratic control over capitalism's surplus value could help drive people-centric development in cities. Building on this, ISN organises international exchanges that contribute to a global consolidation of the urban poor, a practice that addresses Harvey's (2008) concern that the global financial system is highly interconnected, while social movements are not. To quote Miraftab (2009: 40):

> In this neoliberal moment tangible citizenship does not arrive through the state's legislative institutions. It rather grows under the skin of the city, that is as an invisible city, through the insurgent practices of marginalised communities – be it disenfranchised immigrants; ethnicized, racialized and gendered minorities of the industrialized world; or the squatter citizens of the global South.

Thus, ISN's movement towards this vision through insurgent planning and global consolidation of "the squatter citizens of the global South" is an indication that the prospect for transformation is there, growing under the surface. This prospect needs to be taken seriously and given space to grow if future CBA efforts in informal settlements are to have transformational potential.

7 Conclusion

The aim of this research was to understand CBA to flood risk in informal settlements in Cape Town through the lens of UPE. With a focus on a single case study of a community-based organisation and the network of actors they interact with (CoCT officials, NGO staff members, and ward councillors), this study used interviews to understand the relationships and dynamics between actors, the challenges and opportunities they face when responding to flood risk, how the practice of multi-scalar governance between these actors either enables or undermines CBA in informal areas, and finally, the potential for CBA to lead to wider transformation.

While previous researchers have engaged with themes relevant to this study including CBA, multi-scalar governance, and adaptation as transformation, few studies have engaged these themes in the context of urban informality, particularly through the lens of UPE, which explores notions of power, justice, decoloniality and alternative theories of urbanism. Through this lens, flood risk management in informal areas can be understood as a complex and evolving web of actors who use their particular perspectives and relationships to enact change within the limits of the power they possess. Depending on the way an actor or an organisation (through institutional norms and epistemological framing) "sees" the issue of flooding, and based on how much power they stand to win or lose from a particular response, CBA in informal areas can either be enabled or undermined.

The CoCT wants to eliminate flooding in informal settlements. However, because the issue of flooding is seen as a problem that can be fixed with technical or physical solutions, the City's incremental flood responses are not addressing the underlying causes of vulnerability in the first place, and are therefore limited. In general, the results of this study found that the CoCT's flood management actions are largely superficial, and undermining of ISN's efforts for CBA. By targeting surface-level vulnerabilities rather than the drivers of vulnerabilities in informal settlements, residents are meant to cope with flooding year after year, rather than truly adapt. Further, the practice of symbolic inclusion in adaptation planning reinforces the hegemonic power dynamic between the CoCT and communities, which stifles efforts at bottom-up adaptation. Importantly, there are exceptions to this generalisation, as certain CoCT officials use their relative power to encourage community-based solutions through everyday practices on the ground.

Holston (2009: 252) defines empowerment as what happens "…when a citizen's sense of an objective source of right in citizenship entails a corresponding sense of subjective power – power to change existing arrangements (legal and other), exact compliance, compel behaviour." ISN's response to the CoCT's lack of empowering actions is to push for this "right in citizenship" and "subjective power" through insurgent planning and by seeking a source of empowerment elsewhere- through the NGO. While ISN's relationship with the NGO is complicated through their own struggles with relational power, the NGO has also been able to use their relationship with the CoCT to promote community initiatives, such as reblocking. Reblocking is an example of CBA with the potential to lead to transformation. As a community designed initiative that was adopted by the CoCT as an official policy, reblocking has led to both political and socio-economic benefits for community members. However, due to changes in networks and relationships between the CoCT and the NGO, reblocking has been stalled in recent years.

This research has suggested how important it is to understand the networks and characteristics of actors involved in CBA. However due to time and resources, this was not explored in a comprehensive manner. Further studies in this area could undertake in-depth actor-network analysis (in the discipline of political ecology) to better understand the roadblocks to the implementation of reblocking projects and the potential for up-scaling reblocking efforts. Additional research could also use insights from this study, and its use of UPE, to determine how CoCT policy could incorporate and support urban, informal CBA. Informal settlements would also benefit from site-specific climate vulnerability assessments that take the differentiated context of each settlement into account, allowing residents to be better informed about the future challenges they will face.

Understanding CBA through an UPE lens has led to important insights about the potential for transformative action in urban, informal areas. Many of the challenges faced by the urban poor in South Africa today, whether it be everyday vulnerabilities or exposure to environmental risk, can be traced back to historical events, political decisions, and economic systems with wide-reaching, even global, implications. While it may be difficult for community-based movements to influence political ecological factors at the national or global level, there are entry-points for transformative action within the network of actors involved in flood risk management in Cape Town. This case has shown how this is possible through different examples including CoCT officials who "see" the issue of flooding through

the eyes of the community and use everyday practices of rule-making and implementation to slowly shift institutional norms towards a community-centred epistemological approach.

ISN's vision of a just city offers a contrasting approach to the CoCT, one that emphasises bottom-up solutions and inclusivity. However, the barriers to supporting this approach are entrenched in a history of oppression and neoliberalism that makes the potential for transformative CBA difficult to achieve. While community-based approaches can chip away at structural injustices from the bottom, a wider movement is needed to turn the tide of the global neoliberal economy that impacts all levels, including residents of informal settlements. To this extent, ISN's insurgent planning could be more revolutionary if framed through a vision of wider decoloniality that rightfully places blame with the state and trusts in the people for solutions.

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9 Appendices

9.1 Redacted Interview List

Interview no.	Interviewee Affiliation	Data and Time of Interview
1	CoCT	16 January 2018 – 12:00
2	ISN	17 January 2018 – 11:00
3	ISN	18 January 2018 – 10:00
4	NGO (5 interviewees present)	18 January 2018 – 14:30
5	CoCT	26 January 2018 – 11:30
6	Ward Councillor	30 January 2018 – 09:00
7	CoCT	31 January 2018 – 08:00
8	CoCT	05 February 2018 – 08:30
9	ISN	06 February 2018 – 12:00
10	Ward Councilor	07 February 2018 – 11:00
11	Ward Councillor	13 February 2018 – 10:00
12	CoCT	20 February 2018 – 10:00

9.2 Questionnaires

ISN Leaders (3)

Prompts:

1. Can you tell me about how you became involved with ISN, your responsibilities, and how ISN operates within informal settlements?
2. Why is flooding a challenge?
3. Can you explain how ISN works with government, ward councillors and NGOs to reduce and respond to flood risk in settlements?
4. How has flood management changed over time, and how could it better in the future?
5. How does the community view environmental hazards and climate change?

Specific Questions:

General ISN Information

1. What settlement do you live in?
2. How did you get involved with ISN?
3. How long have you been involved with ISN?
4. What are your roles/ responsibilities with ISN?
5. Which settlements do you have experience working in?
    a. Can you describe these settlements? (who owns the land, number of homes, number of people, set-up of settlement (in a detention pond, wetland, etc.))
6. What is the leadership structure of ISN like?
    a. How do you recruit new leaders/members?
    b. Do you know how many leaders are women, and how many are men?
7. How are decisions made?
8. How are responsibilities delegated?
9. How are activities monitored/reported?
10. How do non-ISN members participate (or not)?
11. How do ward committees and councillors fit in or work with ISN?
12. What are the main challenges that ISN tries to address in informal settlements?

ISN Activities

1. What types of activities does ISN engage in in informal settlements?
2. What activities does ISN engage in related to stormwater/flood risk reduction?
    a. What are some ways that flood risk can be reduced in the settlements you work in?
3. What have been some of the main enabling factors leading to ISN's accomplishments?
4. What are the main challenges ISN faces?
    a. How do you think these challenges can be overcome?

Relationship with City of Cape Town

1. What services does the city provide in the settlements you work in?
    1. Which services are working well and which are not working well?

2. How does ISN engage with the city of Cape Town?
    1. What regulations/policies/relationships does ISN use to help secure services or responses from the city?
    2. Particularly around flooding?
3. What challenges do you face with working with the city of Cape Town?
    1. What is the nature of these challenges (technical, political, resource-based, etc.)?
    2. Can you provide some examples?
4. Can you share some success stories of working with the City?
5. What could the City do or provide to make ISN's work easier?
6. Have you experienced situations where the city's actions on the ground don't seem to line up with their policies? In detention ponds, for example?
7. Has anything changed since the CoCt Mayor signed an MOU in 2012 promising increased basic service delivery?
8. Have you noticed changes in flood policies, regulations, or procedures over time? Have they been an improvement or not?

Relationship with NGOs

1. How does the NGO support ISN?
2. Do you work with any other NGOs?
3. Do you face any challenges working with these organizations?

Environmental Considerations

1. Does ISN discuss sustainability or resilience in reference to their activities?
2. Do ISN's strategies see the environment as something important to consider, or do social considerations usually take precedent?
3. Does ISN consider how the environment (and climate change) might impact their activities or the settlements they work in?
4. Generally, do people in settlements see climate change as an important concern?
5. Have you experienced any changes in flooding, fires, etc. that might be related to the weather and climate?

City of Cape Town Officials (5)

Prompts

1. Can you tell me about how you became involved with the municipality, and what your roles and responsibilities are for managing flood risk in informal settlements?
2. Why is flooding a challenge?
3. How are plans and policies for flood risk developed?
4. Can you explain how you work with NGOs and community-based organisations to reduce and respond to flood risk in settlements?
5. How has flood management changed over time, and how could it better in the future?

Specific Questions

General

1. What is your role within the municipality for managing flood risk in informal settlements?
2. How long have you been in this position?
3. How did you get involved with this type of work?
4. What are the biggest challenges in managing flood risk in informal settlements?

Flood Policies and Procedures

1. What are the different policies, regulations and procedures that address flood risk reduction?
2. How does decision-making around flood policies and procedures work?
3. How do the different departments collaborate on flood risk?
4. How is the "Winter Readiness Plan" developed every year?
    a. Does it change from year to year?
5. What kind of data goes into the decision making process?
    a. How is the data collected?
6. Are community members consulted in the decision-making process?
    a. How do you choose which community members are consulted?
7. What is the city's policy on developing or providing services in detention ponds, wetlands, and private land?
    a. Are exceptions ever made, for example, if a community has been living in the area for a certain amount of years, and it is no longer functioning as a detention pond/wetland?
8. How are policies and procedures evaluated after the fact (post-Winter)?
9. Looking back, what could have been improved this past winter?
10. How does Cape Town's position as one of the 100 resilient cities influence policies and procedures around reducing flood risk, particularly in informal settlements?

Relationship with NGOs and Communities

1. Do you coordinate with any NGO's to plan for flood risk reduction, or to gather information about informal settlements?
    a. How do you choose the NGO's you work with?

    b. Have you ever collaborated with the NGO, or ISN?
2. What type of collaboration do you do with NGOs or community members on proactive measures to reduce flood risk?
3. Do you ever collaborate directly with communities, or ward councillors?
4. How does the “Be Flood-Wise Programme” work?
    a. What impacts has this programme had?
    b. Did community members help design this program?
    c. Where and when was it rolled out?
5. Are there long-term plans for reducing flood risk in informal settlements?
6. What are the main challenges you face in working with NGOs and/or communities?
7. What are the main benefits of working with NGO/s and/or communities?
8. Have the working relationships with NGOs and communities changed over time?

NGO

Prompts

1. Can you explain how you became involved with this NGO, and what your roles and responsibilities are in this position?
2. Why is flooding a challenge in the communities you work with?
3. Can you explain how you work with ISN and the municipality to reduce and respond to flood risk in informal settlements?
4. How has flood management changed over time, and how could it better in the future?
5. How does this NGO consider the environment or climate change when planning community projects?

Specific Questions

General

1. What are your roles and responsibilities at this NGO?
2. How long have you been in this position?
3. How did you get involved with this type of work?
4. Does this NGO have any programs or projects addressing flood risk in informal settlements?
5. What do you see as the biggest challenges in managing flood risk in informal settlements?

Programs and Projects

1. What programs or projects does this NGO have that address flood risk?
    a. [if none directly] Which programs or projects address underlying vulnerabilities, such as unemployment, housing, service provision, and political capacitating?
2. Who decides which programs and projects will take place?
    a. What role does the community play in this process?

Relationship with CoCT

1. What services does the city provide in the settlements you work in?
    a. Which services are working well and which are not working well?
2. How does this NGO engage with the city of Cape Town?
    a. What is the nature of the relationship? (Who makes the decisions, leads the charge, etc.)
    b. What regulations/policies/relationships does this NGO use to help secure services or responses from the city?
    c. Particularly around flooding?
3. What challenges do you face with working with the city of Cape Town?
    a. What is the nature of these challenges (technical, political, resource-based, etc.)?
    b. Can you provide some examples?
4. Can you share some success stories of working with the City?

5. What could the City do or provide to make your work easier?
6. Have you experienced situations where the city's actions on the ground don't seem to line up with their policies? In detention ponds, for example?
7. Has anything changed since the CoCt Mayor signed an MOU in 2012 promising increased basic service delivery?
8. Have you noticed changes in flood policies, regulations, or procedures over time? Have they been an improvement or not?

Relationship with Communities

1. What level of influence does ISN have over the programs and projects that the NGO offers?
2. How is the effectiveness of the programs and projects evaluated?
3. What challenges do you face in working with ISN?
4. Do you witness any internal challenges among ISN members?
5. Can you share some of your greatest success stories in working with ISN?
6. Is ISN the only way you engage with community members, or are there other means of engagement?

Environmental Considerations

1. Does this NGO discuss sustainability or resilience in reference to their activities?
2. Do your strategies see the environment as something important to consider, or do social considerations usually take precedent?
3. Does this NGO consider how the environment (and climate change) might impact their activities or the settlements they work in?
4. Generally, do you think people in settlements see climate change as an important concern?
5. Have the informal settlements experienced any changes in flooding, fires, etc. that might be related to the weather and climate?

Ward Councillors (3)

Prompts

1. Can you tell me about how you became involved with politics, your responsibilities as ward councillor, and the ward committees' responsibilities to the community?
2. Why is flooding a challenge in the communities you work in?
3. Can you explain how you and the committee work with the city, NGOs and/or community-based organisations to reduce and respond to flood risk?
4. How has flood management changed over time, and how could it better in the future?
5. Do community members ever raise environmental or climate change risks as issues of concern?

Specific Questions

General

1. How long have you been ward councillor?
2. How did you get involved with politics?
3. Which neighbourhoods are in your jurisdiction?
4. What is the current makeup of the ward committee?
    a. Gender balance?
    b. Sectoral representation?
5. What are your responsibilities as ward councillor?
6. How do you communicate with your constituents?
7. How do you identify issues of concern in the community?
    a. What are the main challenges identified by the community?
8. Are you involved with any ongoing ward projects?
9. What responsibilities does ward government have for managing flood risk?
10. What measures do you take to reduce flood risk before heavy rain is expected?
11. What support is provided after flooding occurs to assist residents who have been flooded?

Relationship with City of Cape Town

1. What services does the city provide in the settlements you work in?
    a. Which services are working well and which are not working well?
2. Do you work with the municipality to reduce flood risks in communities?
3. What challenges do you face in working with the city?
    a. What is the nature of these challenges (technical, political, resource-based, etc.)?
    b. Can you provide some examples?
4. Can you share any success stories from working with the city?
5. What could the city provide to make it easier for the ward committee to address issues of concern in the community, particularly around flood risk?
6. Have you experienced situations where the city's actions on the ground don't seem to line up with their policies? In detention ponds, for example?

7. Has anything changed since the CoCt Mayor signed an MOU in 2012 promising increased basic service delivery?
8. Have you noticed changes in flood policies, regulations, or procedures over time? Have they been an improvement or not?

Relationship with Community/ISN

1. Do you coordinate with any NGO's to plan for flood risk reduction, or to gather information about informal settlements?
    a. How do you choose the NGO's you work with?
2. Do you work with any community-based organisations?
    a. Have you ever collaborated with the NGO, or ISN?
3. What type of collaboration do you do with community-based organisations on actions to reduce flood risk?
4. What are the main challenges you face in working with community-based organisations?
5. What are the main benefits of working with community-based organisations?
6. Have the working relationships with NGOs or community-based organisations changed over time?

Environmental Considerations

1. Is the ward committee concerned with sustainability or resilience in communities?
2. Do you think community members see the environment as something important to consider, or do social considerations usually take precedent?
3. Generally, do you think people in settlements see climate change as an important concern?
4. Have the informal settlements experienced any changes in flooding, fires, etc. that might be related to the weather and climate?

9.3 Consent Form

DEPARTMENT OF AFRICAN CLIMATE DEVELOPMENT INITIATIVE & ENVIRONMENTAL AND GEOGRAPHICAL SCIENCES

UNIVERSITY OF CAPE TOWN
PRIVATE BAG X3
RONDEBOSCH 7701
SOUTH AFRICA

RESEARCHER: Ashley Fox
TELEPHONE: +27-78-375-4701
FACSIMILE: n/a
E-MAIL: ashleynfox7@gmail.com
URL: http://acdi.uct.ac.za/

Informed Voluntary Consent to Participate in Research Study

Project Title: The Political Ecology of Community-based Adaptation to Flood Risk in Informal Settlements: The case of the Informal Settlement Network (ISN)

Invitation to participate, and benefits: You are invited to participate in a research study conducted with members of ISN, NGO employees, City of Cape Town officials, and ward councillors. The study aim is to understand the potential for community-based adaptation to flood risk in informal settlements by exploring multi-scalar governance. I believe that your experience would be a valuable source of information, and hope that by participating you may gain useful knowledge.

Procedures: During this study, you will be asked to talk about your experience in working with the other study participants (mentioned above) in managing flood risk in informal settlements.

Risks: There are no potentially harmful risks related to your participation in this study.

Disclaimer/Withdrawal: Your participation is completely voluntary; you may refuse to participate, and you may withdraw at any time without having to state a reason and without any prejudice or penalty against you. Should you choose to withdraw, the researcher commits not to use any of the information you have provided without your signed consent. Note that the researcher may also withdraw you from the study at any time.

Confidentiality: All information collected in this study will be kept private in that you will not be identified by name or by any other personally identifying information. Confidentiality and anonymity will be maintained as pseudonyms will be used. Although confidentiality and personal anonymity will be maintained through the use of pseudonyms, it might be necessary to use your affiliation (i.e., NGO, ISN, Ward Councillor, City of Cape Town) when reporting on the findings of this work. Other identifiers, such as department, or area of jurisdiction, will not be identified.

What signing this form means:

By signing this consent form, you agree to participate in this research study. The aim, procedures to be used, as well as the potential risks and benefits of your participation have been explained verbally to you in detail, using this form. Refusal to participate in or withdrawal from this study at any time will have no effect on you in any way. You are free to contact me, to ask questions or request further information, at any time during this research.

I agree to participate in this research (tick one box)

☐ Yes ☐ No _____ (Initials)

_____	_____	_____
Name of Participant	Signature of Participant	Date
_____	_____	_____
Name of Researcher	Signature of Researcher	Date