Navigating Urban Riskscapes

Everyday Risks, Infrastructure Challenges, and Governance in Monrovia, Liberia

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Abstract

As cities in the Global South encounter increasingly complex urban landscapes shaped by environmental, socio-political, infrastructural, and health-related risks, governance challenges intensify. This thesis critically investigates the interaction between everyday risks and governance mechanisms in Monrovia, Liberia—a post-conflict city confronting critical issues such as flooding, housing insecurity, crime, violence, and insufficient access to essential services like clean water and electricity. Monrovia's unique socio-political history, marked by post-conflict reconstruction, heightens the city's exposure to urban risks and governance challenges. This makes it an ideal case for exploring how formal and informal governance structures respond to the complexities of urban risks and challenges, such as flooding, crime, and infrastructural deficits.

The research is organised around four core objectives. *First*, it explores the interactions between spatial configurations, urban risks, and the governance challenges in Monrovia's complex urban environment. *Second*, it examines informal settlements, such as slums, as key governance objects, assessing the governance tools developed to address these spaces. *Third*, the study investigates how individuals and communities navigate resource-constrained environments, where incomplete infrastructure and unreliable services present daily challenges. *Fourth*, it analyses the adaptive strategies employed by governance actors, focusing on how they balance formal planning with improvisational problem-solving in response to urban risks challenges.

Drawing on qualitative methods, the study integrates theoretical frameworks like 'riskscapes'—the spatial-temporal dimensions of risks shaped by human and institutional actions—and 'evolutionary governance,' a framework that explores how governance structures adapt over time. Fieldwork conducted in four distinct communities—West Point, Peace Island, Clara Town, and Barnesville—offers a comprehensive view of how urban risks shape, and are shaped by, governance processes. The research reveals a non-linear process of development in which governance, infrastructure, and risks co-evolve, providing key insights into the dynamics of resource-constrained, post-conflict urban settings.

This thesis makes several key contributions to urban governance theory. First, it advances the understanding of how subjective perceptions of risk and objective risk assessments influence governance strategies, particularly in spaces where formal state presence is minimal. It highlights the tension between formal governance mechanisms and the organic, often informal, development of urban spaces, shedding light on phenomena like tolerated informality and the risk perception paradox.

Second, the study integrates the concepts of riskscapes and object formation, demonstrating how particular spaces in Monrovia emerge as 'risk objects' that demand governance attention. This integration illustrates the fluidity and multiplicity of governance objects within urban risk landscapes, offering a fine-grained understanding of how risks are governed in dynamic environments.

Third, the research reframes infrastructural incompleteness as a catalyst for governance innovation. Rather than viewing infrastructure in binary terms of functioning or non-functioning, the study presents a continuum of infrastructural functionality that reveals how communities and governance actors adapt and innovate in the face of infrastructural deficits.

Finally, the thesis contributes to evolutionary governance theory by exploring how formal planning and informal 'searching' strategies coalesce to shape urban systems. This perspective enriches the understanding of urban development in resource-constrained environments by highlighting the dynamic interplay between governance structures and emergent community practices.

By positioning Monrovia as a microcosm of broader urban dynamics in the Global South, the thesis advocates for an integrated approach to urban resilience that merges risk reduction, infrastructure development, and adaptive governance strategies. The findings provide valuable insights for urban planners, policymakers, and researchers, underscoring the need for governance systems that are flexible and responsive to the evolving challenges of post-conflict urban environments.

***Keywords**: Urban Governance, Riskscapes, Informal Settlements, Infrastructure Governance, Co-evolution, Adaptive Strategies*

Zusammenfassung

Da Städte im Globalen Süden zunehmend komplexe urbane Landschaften konfrontieren, die von umwelt-, sozialpolitischen, infrastrukturellen und gesundheitsbezogenen Risiken geprägt sind, intensivieren sich die Herausforderungen der Governance. Diese Dissertation untersucht kritisch die Interaktion zwischen alltäglichen Risiken und Governance-Mechanismen in Monrovia, Liberia—einer postkonfliktlichen Stadt, die mit kritischen Problemen wie Überschwemmungen, Wohnungsunsicherheit, Kriminalität, Gewalt und unzureichendem Zugang zu grundlegenden Dienstleistungen wie sauberem Wasser und Elektrizität konfrontiert ist. Die einzigartige sozialpolitische Geschichte Monrovias, geprägt von postkonfliktlicher Rekonstruktion, erhöht die Anfälligkeit der Stadt für urbane Risiken und Governance-Herausforderungen. Dies macht sie zu einem idealen Fall, um zu untersuchen, wie formale und informelle Governance-Strukturen auf die Komplexität urbaner Risiken und Herausforderungen reagieren, wie beispielsweise Überschwemmungen, Kriminalität und infrastrukturelle Defizite.

Die Forschung ist um vier zentrale Ziele organisiert. Erstens untersucht sie die Wechselwirkungen zwischen räumlichen Konfigurationen, urbanen Risiken und den Governance-Herausforderungen in der komplexen urbanen Umgebung Monrovias. Zweitens analysiert sie informelle Siedlungen, wie Slums, als zentrale Governance-Objekte und bewertet die entwickelten Governance-Tools zur Bewältigung dieser Räume. Drittens untersucht die Studie, wie Individuen und Gemeinschaften in ressourcenbeschränkten Umgebungen navigieren, in denen unvollständige Infrastruktur und unzuverlässige Dienstleistungen tägliche Herausforderungen darstellen. Viertens analysiert sie die adaptiven Strategien, die von Governance-Akteuren eingesetzt werden, und konzentriert sich darauf, wie sie formale Planung mit improvisatorischen Problemlösungen im Angesicht urbaner Risiken ausbalancieren.

Unter Anwendung qualitativer Methoden integriert die Studie theoretische Rahmenbedingungen wie 'riskscapes'—die räumlich-zeitlichen Dimensionen von Risiken, die durch menschliches und institutionelles Handeln geprägt sind—und 'evolutionäre Governance', einen Rahmen, der untersucht, wie sich Governance-Strukturen im Laufe der Zeit anpassen. Die Feldforschung in vier verschiedenen Gemeinschaften—West Point, Peace Island, Clara Town und Barnesville—bietet einen umfassenden Einblick, wie urbane Risiken Governance-Prozesse prägen und umgekehrt. Die Forschung zeigt einen nichtlinearen Entwicklungsprozess, in dem Governance, Infrastruktur und Risiken ko-evolvieren und wichtige Erkenntnisse über die Dynamik ressourcenbeschränkter, postkonfliktlicher urbaner Umgebungen liefert.

Diese Dissertation leistet mehrere wesentliche Beiträge zur Theorie der urbanen Governance. Erstens erweitert sie das Verständnis darüber, wie subjektive Risikowahrnehmungen und objektive Risikobewertungen Governance-Strategien beeinflussen, insbesondere in Räumen, in denen die formale Staatspräsenz minimal ist. Sie hebt die Spannungen zwischen formalen Governance-Mechanismen und der organischen, oft informellen Entwicklung urbaner Räume hervor und beleuchtet Phänomene wie tolerierte Informalität und das Paradoxon der Risikowahrnehmung.

Zweitens integriert die Studie die Konzepte der riskscapes und der Objektbildung, indem sie zeigt, wie bestimmte Räume in Monrovia als 'Risikobjekte' hervortreten, die Governance-Aufmerksamkeit erfordern. Diese Integration veranschaulicht die Fluidität und Vielschichtigkeit von Governance-Objekten innerhalb urbaner Risikolandschaften und bietet ein differenziertes Verständnis davon, wie Risiken in dynamischen Umgebungen geregelt werden.

Drittens rahmt die Forschung die infrastrukturelle Unvollständigkeit als Katalysator für Governance-Innovation neu. Anstatt Infrastruktur binär als funktionsfähig oder nicht funktionsfähig zu betrachten, präsentiert die Studie ein Kontinuum infrastruktureller Funktionalität, das zeigt, wie Gemeinschaften und Governance-Akteure sich anpassen und innovieren angesichts infrastruktureller Defizite.

Schließlich trägt die Dissertation zur evolutionären Governance-Theorie bei, indem sie untersucht, wie formale Planungs- und informelle 'Such'-Strategien zusammenfließen, um urbane Systeme zu gestalten. Diese Perspektive bereichert das Verständnis urbaner Entwicklungen in ressourcenbeschränkten Umgebungen, indem sie die dynamische Wechselwirkung zwischen Governance-Strukturen und emergenten Gemeinschaftspraktiken hervorhebt.

Indem Monrovia als Mikrokosmos breiterer urbaner Dynamiken im Globalen Süden positioniert wird, plädiert die Dissertation für einen integrierten Ansatz zur urbanen Resilienz, der Risikominderung, Infrastrukturentwicklung und adaptive Governance-Strategien miteinander verbindet. Die Ergebnisse bieten wertvolle Einblicke für Stadtplaner, politische Entscheidungsträger und Forscher und unterstreichen die Notwendigkeit flexibler Governance-Systeme, die auf die sich entwickelnden Herausforderungen postkonfliktlicher urbaner Umgebungen reagieren können.

Schlüsselwörter: Urbane Governance, riskscapes, informelle Siedlungen, Infrastruktur-Governance, Ko-Evolution, adaptive Strategien

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Acronyms and Abbreviations

CSO	Civil Society Organisations
EGT	Evolutionary Governance Theory
EPA	Environmental Protection Agency
FGD	Focus Group Discussion
HFO	Heavy Fuel Oil
IDP	Internally Displaced Persons
ILO	International Labour Organisation
JEP	Jungle Energy Power
LACEEP-AF	Liberia Accelerated Electricity Expansion Project – Additional Funding
LEC	Liberia Electricity Corporation
LERC	Liberia Electricity Regulatory Commission
MCC	Monrovia City Corporation
NDMA	National Disaster Management Authority
NGO	Non-Governmental Organisation
NHA	National Housing Authority
NUP	National Urban Policy
SLUMDAL	Slum Dwellers Association of Liberia
TEC	Totota Electricity Corporation
USAID	United States Agency for International Development

CHAPTER ONE: INTRODUCTION

1 Introduction

1.1 Overview of Study

This dissertation critically investigates the intricate dynamics of everyday risks and governance challenges amid the co-evolution of planned and unplanned urbanisation in post-war Monrovia, Liberia. At the heart of this inquiry is an in-depth engagement with how informal and under-resourced urban spaces negotiate risks—both perceived and real—within governance frameworks that are frequently fragmented, underdeveloped, or outright absent. Through a combination of empirical data collected via field interviews, case studies, and qualitative analyses, the research scrutinises the risk landscapes of unplanned communities, revealing the multifaceted, interconnected ways in which risks influence disaster resilience, community well-being, and governance efficacy in these informal environments.

A critical aspect addressed by this research is the dearth of nuanced analysis regarding urban risks and challenges in hybridised urban spaces that blur the delineation between formality and informality, as well as between planned and unplanned development. This issue is particularly pronounced in the Mano River Union countries—Liberia, Sierra Leone, Guinea, and Ivory Coast—where the complexities of urban life challenge conventional classifications that adhere to rigid typologies that categorise urban spaces into distinct categories (e.g., informal, formal, peri-urban, reclaimed) or dichotomise them into binary oppositions (e.g., planned versus unplanned). In this region, urban communities often defy categorisation; a community can be a formally recognised component of the city yet function predominantly as an unregulated slum (e.g., West Point), be formally designated but undergo unregulated growth (e.g., Barnesville), or remain unrecognised while engaging in self-organised upgrading (e.g., Peace Island).

Urban categorisations and binaries obscure the complex realities of these hybridised communities in Monrovia, where environmental vulnerabilities, socio-political tensions, and economic instability are pronounced. The blurred boundaries and diverse governance mechanisms in these settings create a landscape fraught with unpredictability, complicating effective risk management. As infrastructure development intersects with policy implementation and residents' adaptive strategies, governance structures often struggle to keep pace with the city’s rapid transformations.

The overarching objective of this dissertation is to explore the interplay between urban risks and governance structures in Monrovia, Liberia, focusing on how informal and formal mechanisms adapt to the complexities of urbanisation in post-conflict contexts. This exploration is guided by four key research

questions:

1. How are everyday risks recognised and integrated into urban governance frameworks in Monrovia, particularly in informal settlements?

2. In what ways do spatial control mechanisms respond to the dynamics of governance in Monrovia's informal communities, and how can they be adapted for better alignment?

3. What factors shape the collective responses of urban actors—residents, local authorities, and informal leaders—to infrastructural challenges in resource-constrained settings?

4. How do urban risks influence the evolution of governance structures and practices in Monrovia, and what insights can be drawn for fostering resilience in similar contexts?

This dissertation integrates key conceptual tools such as riskscapes (Müller-Mahn et al., 2018; Müller-Mahn & Everts, 2013), object formation (Kooij, 2015; Boezeman & Kooij, 2015; Barba Lata, 2015), and Evolutionary Governance Theory (Beunen et al., 2015; Van Assche et al., 2022; Van Assche et al., 2014, 2020; Van Assche, Beunen, et al., 2022) to critically assess urban risk governance in Monrovia. Riskscapes offer a nuanced lens to understand how risk is both socially and spatially produced, shaped by subjective perceptions and objective environmental conditions. These landscapes are not static; they evolve in response to material realities and governance practices—or the lack thereof—that might mitigate or exacerbate risks. For instance, recurrent flooding in West Point has transformed this area into a focal point for governance interventions (Innis, 2023). Despite the absence of formal zoning regulations, this community remains a site of contested governance, revealing the complex negotiation between risk perception, material vulnerability, and governance frameworks that must adapt to the unique challenges posed by informal environments.

Object formation theory enriches this analysis by examining how certain spaces, events, or communities become ‘risk objects’ —entities that demand governance attention (Innis & Van Assche, 2022). These reframing challenges traditional views of risk as a purely technical issue and instead posits that governance tools must evolve alongside the emergence of new risk objects. Informal settlements, too often viewed as peripheral or problematic, are reimagined here as dynamic sites where risks and governance interact in complex and adaptive ways. This critical lens invites a departure from rigid, one-size-fits-all governance mechanisms toward models that are responsive to the specific socio-political and environmental conditions of informal communities. By elevating informal settlements as critical spaces within the urban mosaic, this study challenges prevailing governance paradigms, offering a more inclusive framework for understanding

urban risk governance.

Moreover, this research makes a significant contribution to the concept of strategy formation in urban governance, particularly in contexts where centrally coordinated mechanisms are absent or ineffective (Innis & Van Assche, 2023). By exploring how formal and informal actors collaboratively navigate everyday risks, this study unpacks the emergence of adaptive strategies rooted in local knowledge and community-driven initiatives. These strategies underline the potential of hybrid governance models, where state and non-state actors co-produce governance practices that are more flexible and context-sensitive.

Furthermore, the application of the notions of searching and planning to the governance of unplanned settlements adds further depth to this analysis (Innis et al, 2024). While the integration of these concepts might not be novel in isolation, their adaptation within informal urban settings unveils critical insights into the mechanisms of governance in post-war Monrovia. This research critically examines how the interplay between searching—where local actors improvise solutions—and formal planning produces a dynamic governance landscape capable of real-time responsiveness to emergent risks. This dual approach legitimises community voices in governance processes and enhances overall governance capacity by ensuring that interventions are attuned to the lived realities of residents in informal settlements. While searchers and planners work in tandem, tensions may arise where improvised solutions clash with formal regulatory frameworks. Yet, such friction often produces innovative, context-sensitive approaches to urban risk governance.

By employing these conceptual frameworks, the dissertation significantly contributes to the literature on urban risk governance. This research provides a novel application of riskscapes and object formation to post-war, informal urban spaces, critically examining how governance adapts—or fails to adapt—in response to emergent risks in Monrovia's marginalised communities. Ultimately, this research offers not only a conceptual foundation for understanding the dynamics of urban governance in informal settings but also practical insights into how governance strategies can become more inclusive, adaptive, and effective in responding to the complexities of contemporary urban life.

Methodologically, this study employs qualitative approaches, utilising in-depth field interviews, case studies, and ethnographic observations. This allows for a context-sensitive analysis of the governance challenges and everyday risks faced by residents of informal settlements. Grounded in empirical data, the research interrogates governance frameworks while critically engaging with the socio-political and infrastructural realities on the ground.

This dissertation comprises six chapters that collectively form a coherent framework, contributing to interconnected theoretical discourses. These chapters deepen the research questions and facilitate a comprehensive exploration of the complex dynamics surrounding everyday urban risks and challenges in resource-constrained, post-war contexts.

Chapter 1 serves as a foundational framework, establishing a 'common thread' that links the concepts and chapters to the overarching research questions and objectives. Chapter 2 critically assesses the disparity between official risk assessments and the lived experiences of residents, highlighting how governance practices often fail to align with the realities of these communities. This misalignment can result in ineffective government policies that exacerbate vulnerability rather than mitigate it.

Chapter 3 investigates the emergence of urban phenomena, such as slums, as objects of risk in the post-war period. It illustrates how new risk management tools can either complement or conflict with existing urban risk governance frameworks, thereby shaping community resilience.

Chapter 4 introduces the crucial concept of lagging infrastructure, discussing how the slow restoration of essential services—such as electricity—affects local practices for addressing risks and challenges. It further explores how these localised practices influence community strategy. The chapter demonstrates that the incomplete and ad hoc nature of infrastructure in Monrovia's informal settlements necessitates governance approaches that blend long-term strategic planning with short-term improvisation by both state and non-state actors.

Chapter 5 examines the interplay between formal planning and ground-level experimentation and learning in addressing urban challenges, particularly electricity scarcity. This chapter illustrates how innovative practices emerge in response to infrastructural deficiencies and how these practices, despite persisting questions of their sustainability, can inform more effective governance strategies. Chapter 6 summarises the main conclusions of the study, highlighting key findings that enhance our understanding of urban risk and governance in post-conflict situations. By weaving together these diverse threads, the dissertation contributes valuable insights into the complexities of urban resilience and governance in resource-constrained environments.

In conclusion, this dissertation synthesises its findings, underscoring the importance of integrating riskscapes and object formation into urban governance theory. It challenges static, one-size-fits-all approaches to governance and advocates for more flexible, contextually responsive frameworks. By grounding its analysis in both empirical data and critical theory, this study makes significant contributions

to the discourse on urban governance, risk management, and the co-evolution of infrastructure and practices in post-war cities. Ultimately, it advances debates on governance in hybrid urban spaces and critiques existing models while proposing innovative frameworks for fostering urban resilience and transformation. Through these efforts, this research not only enhances our understanding of Monrovia's unique urban landscape but also offers broader insights applicable to similar contexts grappling with the complexities of governance in informal settings.

1.2 Mapping Monrovia’s landscapes of risks and possibilities

The coexistence of planned and unplanned urbanisation is a prominent feature of metropolitan development, with notable differences between how these processes unfold in the Global South and developed regions (Kamete, 2013; Mabogunje, 1990; Roy, 2005; Songsore, 2020; Watson, 2009). In the Global South, urbanisation often coincides with persistent urban challenges and everyday risks, creating a complex and multifaceted context. This dissertation focuses on the dynamics within these regions, especially in post-conflict settings where urban challenges intersect with and amplify everyday risks. Urbanisation in such areas generates a hybrid landscape, merging both planned and unplanned elements (Dovey, 2012; Kamete, 2009, 2013; McFarlane, 2018; Roy, 2005, 2009; Watson, 2009, 2014a, 2014b), with the spread of unplanned communities (Davis, 2006) contributing to a critical lack of infrastructure aimed at mitigating risks, particularly for the urban poor.

Monrovia’s urban narrative reflects this complexity. Liberia’s prolonged civil conflict (1989–2003) left deep scars, followed by state collapse, military intervention, and a contested democracy in 2005. However, the roots of these challenges trace back to the 1870s, when Liberia was already described as a struggling state marked by corruption and a failure to address fundamental needs (Novati, 2007). The civil wars stemmed from numerous underlying factors, including historical, ethnic, social, and economic divisions, all compounded by governance failures and political instability (Call, 2010; Hegre et al., 2009; Kieh, 2009; Seroo, 2000).

Post-war Monrovia epitomises the fluidity of a southern city—constantly in flux and open to the reconfiguration of urban spaces (Hoffmann, 2016, 2017). Around two-thirds of Monrovia’s population, approximately 1.4 million people, live in informal settlements, mostly in low-lying, flood-prone areas that receive over 5,000 millimetres of annual rainfall (Draper et al., 2018; Sait, 2021). These spaces include unconventional habitats such as abandoned buildings, cemeteries, and fishing boats (Hoffmann, 2017), which Foucault (1986) would term "heterotopias"—spaces that disrupt societal norms but also increase residents' risk of marginalisation.

Despite the harsh conditions, residents show remarkable resilience through self-provisioning and community-based initiatives. However, governance and planning challenges remain, complicating the sustainability of these informal spaces. The slow pace of post-war reconstruction exacerbates the lack of essential services, while precarious livelihoods persist despite the resilience of the informal economy. Nevertheless, Monrovia's diverse habitats enrich its cultural fabric, with residents adapting through the use of local materials, traditional building methods, and small-scale urban farming (Innis, 2023).

Liberia’s rapid urbanisation has outpaced economic growth, leaving formal planning and infrastructure development lagging behind (Hommann et al., 2020). The absence of a cohesive planning framework has allowed state authorities and local communities to shape the urban landscape through their daily practices. The government, for instance, often demolishes illegal settlements or withholds services from squatter communities (Draper et al., 2018; Harmon, 2021; Lupick, 2012). Yet, removing informal settlements is costly and risks displacing hundreds of thousands who rely on these areas for their livelihoods (Innis, 2023; Tipple, 2014).

Unplanned communities develop spatial patterns in response to external pressures, particularly those imposed by state actors (Palmer, 2013), highlighting the adaptive governance systems that emerge. This type of governance involves informal and formal collective decision-making processes within the community, shaping urban spaces in a dynamic fashion (Van Assche et al., 2015).

Monrovia's land use is inefficient; only about 37% of Central Monrovia's land is developed (Hommann et al., 2020), and many government-owned buildings are in disrepair (Hoffmann, 2017). Informality dominates, with slums occupying more than half of Greater Monrovia’s land (Draper et al., 2018; Hommann et al., 2020).

Infrastructure development in Monrovia is hampered by funding limitations, logistical challenges, and population congestion. In certain areas, the crowded nature of unplanned communities makes infrastructure deployment difficult, while investments in electricity are often deemed uneconomical due to the high poverty levels of residents (Innis & Van Assche, 2023). Greater Monrovia’s infrastructure was originally designed for a much smaller population, and decades of conflict and underinvestment have left service connections severely limited. By 2021, only 29.8% of Liberians, and 49.5% of urban residents, had access to electricity (World Bank, 2021), and the Liberia Electricity Corporation (LEC) continues to incur significant financial losses due to illegal connections.

Moreover, the lack of clear institutional roles between local and central governments complicates urban management in Monrovia (Hommann et al., 2020; McAuslan, 2011). The Monrovia City Council (MCC)

oversees local services like waste collection but operates with limited funds. Most major investments in the city are either externally funded or supported by the national government (Hommann et al., 2020).

Monrovia exemplifies the "invisible cities" phenomenon, where informal communities are visible but remain overlooked in official planning and urban discourse (Kamalipour & Dovey, 2019; Simone, 2002). These communities, despite being physically present, encounter hidden barriers—challenges that mainstream urban narratives often ignore. This dissertation calls for a deeper exploration of urban complexity and a rethinking of how we perceive and address the diverse realities within such cities.

1.3 Navigating the Blurred Urban Typologies in Monrovia

Understanding the blurred urban typologies in Monrovia is essential for grasping the complexities of its rapidly evolving landscape as well as to avoid oversimplifications that often obscure the realities of urban life in the city, particularly the distinctions between unplanned communities, informal settlements, and slums. These categories are not merely academic constructs; they embody the lived experiences of residents and are shaped by fragmented governance and socio-economic pressures.

The four communities examined—West Point, Peace Island, Clara Town, and Barnesville—illustrate the nuances of informal growth. Some, like West Point, have gained formal recognition yet retain their informal character, while others, such as Barnesville, are established in formally designated zones but have seen unregulated growth. This dichotomy reflects a deeper paradox in Monrovia's urban development, where legal recognition does not guarantee effective governance or improved living conditions.

Unplanned communities often emerge without adherence to formal urban planning regulations, existing even within legally designated areas. Barnesville serves as a prime example: while officially recognised, its development is largely unregulated, with minimal compliance to zoning laws and building codes. This status positions Barnesville as a *hybrid community*, where formal and informal elements intersect, and complicating Monrovia’s urban typology. Similarly, West Point, although designated as a township, continues to exhibit slum-like conditions, highlighting the governance challenges that arise when formal and informal boundaries blur.

In contrast, formal planned communities in Monrovia—though fewer in number—expose the stark disparities between planned and unplanned living conditions. Areas such as Mamba Point and parts of Sinkor are developed according to official guidelines and feature established infrastructure and services. However, the existence of these communities underlines the challenges of equitable urban planning, as they coexist alongside informal settlements that grapple with severe overcrowding and inadequate access to

essential services like water, sanitation, and electricity. West Point, Clara Town, and Peace Island exemplify such informal settlements, with West Point and Clara Town representing the extreme end of this spectrum—*slums* characterised by deteriorating living conditions and persistent poverty.

Despite their varied origins, these communities are all "*transition zones*," further complicating the urban dynamics of Monrovia. Barnesville fluctuates between formal designations and unregulated to partially regulated growth, while West Point and Clara Town oscillate between formal recognition and complete informality. Peace Island, although lacking formal recognition, harbours aspirations for upgrading and has established a unique form of self-organised regulation. Residents have proactively designated spaces for roads, alleys, and community areas such as halls, facilitating future enhancements. These transition zones highlight the fluid interplay between infrastructure development, policy implementation, and residents' adaptive strategies, as governance structures strive to keep pace with Monrovia's rapid urban changes.

Particularly vulnerable are the *risk-prone zones*, which are exposed to environmental hazards such as flooding and coastal erosion, exacerbated by inadequate drainage. Both formal and informal coastal and wetland settlements, like Peace Island and West Point, face increased risks due to Monrovia's susceptibility to climate change and infrastructural deficiencies. These areas amplify urban vulnerabilities, exposing the limitations of current governance frameworks in effectively managing or mitigating environmental threats.

Lastly, *underserved planned communities* exist within formally recognised areas yet suffer significant deficits in services and infrastructure. Barnesville, despite its official designation, operates similarly to an informal settlement due to weak enforcement of building codes and inadequate infrastructure. This disconnect illustrates broader governance failures, where formal recognition does not translate into tangible benefits for residents.

Ultimately, all four communities studied defy rigid categorisation, often fitting into more than one urban typology. This overlap highlights the fluidity of Monrovia's urban landscape, where formal and informal elements coexist, complicating efforts to categorise these spaces within strict frameworks. The complex interplay between urban typologies reflects not only the chaotic nature of Monrovia's growth but also the vulnerabilities of its residents, as governance structures and infrastructure struggle to adapt to the challenges of rapid urbanisation and socio-economic change.

1.4 The Dissertation’s Golden Thread

The thesis delves into the post-war landscape of Monrovia, providing a comprehensive analysis of the intricate interactions between urban challenges and everyday risks, particularly within unplanned communities. After enduring prolonged civil wars, Monrovia's urban environment now presents both significant obstacles and opportunities. This dissertation examines the nuanced dynamics of urban resilience and governance in Monrovia's informal settlements. It focuses on the interplay between community adaptation, governance strategies, and infrastructural development, shedding light on how these elements contribute to the city's recovery and growth. The dissertation argues that a nuanced understanding and an integrative approach are essential for effectively addressing the multiple challenges faced by unplanned urban communities, as well as by actors such as government agencies, residents, and non-governmental organisations.

In the post-conflict milieu of Monrovia's spontaneous urban enclaves, this study emphasises the need for a contextually refined and comprehensive approach to managing multi-layered urban complexities and opportunities. In this complex landscape, actors at different scales deftly manage everyday risks by skilfully navigating the coexistence and co-evolution of formal planning paradigms and spontaneous and informal urbanisation. The study assumes that the individual components - such as risk assessments and evaluations, the dynamics inherent in risk objects, infrastructure development and governance frameworks – are closely intertwined. This interconnectedness requires a collective view in order to promote long-term resilience and sustainable development in these communities.

The overarching aim of this study is realised through four papers. These papers explore different aspects: first, everyday risks and the interplay of riskscapes; second, the role of risk objects in shaping vulnerability and resilience in urban post-war contexts in the Global South; third, the complexity of sluggish post-war infrastructure and the responses it elicits, including the possibility of strategy formation; and fourth, ongoing efforts by multi-scalar actors to ensure reliable access to vital infrastructure, including emerging infrastructure practices. Consequently, the thematic continuity that runs through these chapters encompasses the domains of the risk landscape, the influence of risk objects, the impact of inadequate or absent risk-mitigating infrastructure, and the latent potential inherent in adaptive governance within Monrovia's urban context.

Consequently, this integrated perspective argues that effective management of everyday risks requires acknowledging and strategically addressing the intricate interplay of various factors. For example, tackling the recurrent hazards of riverine flooding in Monrovia necessitates a comprehensive consideration of

diverse elements. This includes informal settlement patterns in marshy terrains, the repurposing of stormwater drains for construction by residents, and the socio-economic status of residents, which influences their capacity to respond to risks—whether through relocation or the development of risk-mitigating infrastructure. Additionally, it involves collaborative efforts among actors to collectively strategise and self-provide solutions to reduce these risks.

The synthesis of findings from the four distinct papers provides a comprehensive amalgamation of evidence and insights, supporting the overarching argument. This establishes a compelling rationale for the paramount significance of adopting a multifaceted and integrated approach to urban development within Monrovia's spontaneous urban enclaves.

Chapter 2, published in *Urban Forum* (Springer Nature), initiates a foundational exploration of the risk landscapes in Monrovia's unplanned coastal settlements. It focuses on the differing perspectives of official risk assessments and residents' everyday experiences, highlighting the interplay of riskscapes and their impact on community vulnerability to hazards such as floods and disease outbreaks. The insights derived underscore the need for adaptive management strategies that align with the lived realities of the populace. This chapter examines the nuanced relationship between official risks and everyday disasters in two unplanned settlements, emphasising the interconnectedness of riskscapes and their significant impact on vulnerable communities. It makes a substantial contribution to the theoretical understanding of disaster risk production and mitigation.

Building upon the concepts explored in Chapter 2, Chapter 3, published in *Geoforum* (Elsevier), delves more profoundly into the role of risk objects within the riskscapes of Monrovia's unplanned settlements. It scrutinises how informal housing and sanitation infrastructure, as risk objects, influence the overall risk profiles of these communities. This chapter emphasises the importance of considering risk objects within the broader context of riskscapes and their implications for adaptive management. By examining how material and subjective elements shape riskscapes in unplanned settlements, Chapter 3 illuminates the contribution of these elements to community vulnerability, thereby extending the discourse on the spatial dimensions of risk.

Chapter 4, published in *Energy Research & Social Science* (Elsevier), shifts the focus to urban challenges, particularly the practices, risks, and possibilities associated with the critical infrastructure challenge in Monrovia, using the incremental development of electricity grid infrastructure as a case study. This chapter examines the practices and strategies encountered in various actors' efforts to ameliorate the impacts of inadequate critical infrastructure and the city's efforts to deploy infrastructure. It provides insights into how

the slow rollout of services impacts adaptive governance and urban resilience. Most importantly, Chapter 4 uncovers the complexities associated with infrastructure practices by demonstrating how these practices and their adaptation are integral to governance strategies in a resource-constrained context. The concept of "infrastructural Incompleteness" is introduced, reflecting on the challenges and strategic implications of infrastructure development in dynamic post-war developing country urban contexts.

Chapter 5, published in *Energy Policy* (Elsevier) and currently under review, expands the investigation into the potential of adaptive governance and adaptable infrastructures in the quest for stable electricity in Monrovia. This chapter enhances our understanding of how formal planning coexists and evolves with unplanned urbanisation, specifically examining the dynamics of adaptive governance and infrastructure in securing stable electricity. It emphasises the interplay between searching and planning, addressing complex, multifaceted urban problems that resist straightforward solutions due to their interconnected nature, involving various actors, ambiguous boundaries, and conflicting values. The chapter highlights the symbiotic relationship between governance structures and infrastructure adaptability, underscoring the crucial role of governance strategies that effectively respond to the evolving needs of the city's infrastructure in a developing-country context. Furthermore, it provides valuable insights that contribute to the ongoing discourse on energy policy.

1.1: Summary of Dissertation Chapters, Focus, Key Insights and Contributions

Chapter	Citation	Focus	Key Insights	Contribution
Chapter 2	Innis, P. G. (2023). *Official Risks and Everyday Disasters: The Interplay of Riskscapes in Two Unplanned Settlements in Monrovia*. Urban Forum, 34(1), 53–77.	Exploration of risk landscapes in Monrovia's unplanned coastal settlements, comparing official risk assessments with residents' experiences.	Highlights the interplay between riskscapes and community vulnerability to hazards like floods and disease outbreaks. Emphasizes the need for adaptive management aligned with real-life conditions.	Establishes a foundational understanding of disaster risk production and mitigation, contributing to the theoretical discourse on riskscapes.
Chapter 3	Innis, P. G., & Van Assche, K. (2022). *The Interplay of Riskscapes and Objects in*	Examination of the role of risk objects (e.g., informal housing, sanitation	Demonstrates how material elements contribute to community vulnerability and the importance of	Extends the discourse on the spatial dimensions of risk by

Chapter	Citation	Focus	Key Insights	Contribution
	Unplanned Settlements in Monrovia. Geoforum, 136, 1–10.	infrastructure) in shaping risk profiles in Monrovia's unplanned settlements.	considering risk objects within the broader riskscapes.	highlighting the impact of physical infrastructure on risk management.
Chapter 4	Innis, P. G., & Van Assche, K. (2023). *Permanent Incompleteness: Slow Electricity Roll-out, Infrastructure Practices and Strategy Formation in Monrovia, Liberia*. Energy Research & Social Science, 99, 103056.	Analysis of the incremental development of electricity infrastructure and associated risks in Monrovia.	Explores how slow service rollout impacts adaptive governance and urban resilience. Introduces "infrastructural incompleteness" to reflect challenges in a resource-constrained context.	Uncovers complexities in infrastructure practices and their strategic implications, offering insights into governance strategies in developing urban contexts.
Chapter 5	Innis, P. G., Van Assche, K., & Müller-Mahn, D. (2024). *Searching for Stable Electricity in Monrovia: Co-evolution of Energy Infrastructure and Practices*. Energy Policy, 193, 114266.	Investigation of adaptive governance and infrastructure adaptability in securing stable electricity in Monrovia.	Examines the co-existence of formal planning with unplanned urbanisation and the dynamics of adaptive governance. Emphasizes the interplay between governance and infrastructure adaptability in addressing complex urban problems.	Enriches the discourse on energy policy by highlighting governance strategies and infrastructure adaptability in a developing-country context.

The framing chapters of this dissertation, Chapters 1 and 6, play a crucial role in contextualising and integrating the research. Although these chapters are not intended for publication, they are essential for demonstrating the interconnectedness and coherence of the published papers.

Chapter 1 serves as the foundation of the dissertation. It provides a broad overview of the study, establishing the central theme that runs throughout the entire work. This chapter sets the stage by outlining the

foundational arguments and presenting the research objectives. It clarifies how the subsequent chapters are interconnected and how the papers in Chapters 2, 3, 4, and 5 contribute to the overarching narrative. By mapping out the relationships between the various components of the research, Chapter 1 ensures that the reader can grasp the cohesive thread that ties together the diverse elements of the dissertation. This approach not only contextualises the published papers but also highlights their relevance to the central themes of the study.

Chapter 6 functions as the capstone of the dissertation, offering a comprehensive synthesis of the research findings. It consolidates the insights gained from the preceding chapters, reflecting on their interconnections and the broader implications of the study. This chapter articulates the dissertation's overall contribution to the field, emphasising how the individual elements of the research converge to enhance our understanding of Monrovia's urban challenges and governance dynamics. Chapter 6 provides a critical reflection on the integration of findings, discussing how the insights from the various chapters collectively advance theoretical and practical knowledge. By doing so, it underscores the significance of the research in addressing complex urban issues and informs future studies and policy-making efforts.

Together, these chapters form a coherent narrative that advances understanding of Monrovia's urban situation. The thesis contributes to the broader debate on urbanisation, risk management, and sustainable development, integrating micro-level risk dynamics with macro-level infrastructure practices and governance impacts. The narrative illustrates how adaptive governance, strategic improvisation, and community resilience are interwoven in addressing the unique challenges of urban infrastructure in a post-conflict setting. By integrating local knowledge with formal planning and policy frameworks, the study provides effective and sustainable solutions for urban development in similar contexts.

1.5 Research objectives and questions.

Urbanisation in Monrovia, Liberia, presents a complex mosaic of challenges driven by socio-economic instability and infrastructural deficiencies in the aftermath of conflict. As the city grapples with rapid growth, informal settlements emerge alongside formal developments, highlighting the intricate relationship between urban risks and governance. The inadequate provision of essential services—such as electricity, water, and sanitation—exacerbates the vulnerabilities faced by urban actors, particularly in resource-constrained environments. This research critically investigates how governance mechanisms evolve within this dynamic landscape, focusing on the interplay between everyday risks and the adaptive strategies employed by diverse actors. By examining the intersection of formal and informal governance structures, this study seeks to illuminate pathways for resilience and adaptation in Monrovia's urban landscape,

ultimately contributing to broader discussions on urban governance in post-conflict settings across the Global South.

The following research questions are addressed:

1. **How are everyday risks conceptualised and integrated into urban governance? (Chapter 2)**

This inquiry explores how authorities, communities, and urban actors recognise and integrate the multiple dimensions of everyday risks—ranging from environmental to socio-economic—into Monrovia's urban fabric. It seeks to identify effective strategies for incorporating these risks into broader urban planning frameworks and risk mitigation policies, especially within informal settlements where formal governance is often lacking. Additionally, this inquiry aims to derive insights from Monrovia's experiences that may inform risk governance practices in other cities across the Global South.

Critical Focus Questions:

i. How do authorities, communities, and urban actors recognise the multiple dimensions of everyday risks in Monrovia, including environmental and socio-economic factors?

ii. In what ways do these stakeholders incorporate these identified risks into the urban fabric of Monrovia?

iii. What strategies can be developed to effectively integrate everyday risks into broader urban planning frameworks and risk mitigation policies?

iv. How can these strategies be adapted to address the specific challenges faced in informal settlements where formal governance is limited?

v. What insights can be drawn from Monrovia's experiences that may apply to risk governance in other cities across the Global South?

2. **How do spatial control mechanisms intersect with governance in informal and unplanned communities?** (Chapter 3)

This inquiry examines the extent to which spatial control mechanisms—such as zoning, land use regulations, and informal spatial practices—are responsive to the everyday risks present in Monrovia's informal settlements. It explores how the shortcomings or fragmentation of these mechanisms shape governance responses and investigates whether new, adaptive governance models can be developed to align formal spatial controls with the realities of informal urban growth and infrastructural incompleteness.

Critical Focus Questions:

i. How do spatial control mechanisms currently operate in Monrovia's informal settlements, and how do they address the everyday risks faced by these communities

ii. What specific shortcomings or fragmentation exist within these spatial control mechanisms, and how do they influence governance outcomes?

iii. In what ways can adaptive governance models be designed to better align formal spatial controls with the dynamics of informal urban growth?

iv. How can the integration of informal spatial practices enhance governance responses to the challenges posed by infrastructural incompleteness in unplanned communities?

v. What lessons can be drawn from Monrovia's experience that may inform the development of more effective spatial governance strategies in other Global South cities?

3. **What circumstances shape the collective responses of urban actors—including residents, local authorities, and informal leaders—to urban risks and challenges related to infrastructural scarcity in resource-constrained post-war contexts (Chapter 4)**

This inquiry examines how urban actors, including residents, local authorities, and informal leaders, collectively respond to challenges like inadequate electricity, water, and sanitation in resource-constrained environments. It explores the informal strategies and governance practices that emerge in the absence of central coordination and how these responses reflect broader trends in urban governance in post-conflict settings.

Critical Focus Questions:

i. How do urban actors—residents, local authorities, and informal leaders—collaborate to address challenges related to infrastructural scarcity, such as inadequate electricity, water, and sanitation, in resource-constrained settings

ii. What informal strategies or governance practices emerge when central coordination is absent, and how do these strategies fill gaps in service provision and risk management?

iii. How do these collective responses shape broader trends in urban governance in post-war and resource-constrained cities?

iv. In what ways do these governance practices inform the evolution of urban management in the Global South, particularly in post-conflict contexts like Monrovia?

4. **How do urban risks and challenges shape the co-evolution of governance structures, infrastructure, and urban practices (Chapter 5)?**

This inquiry explores how urban risks, characterised by incomplete infrastructure and socio-economic uncertainty, drive the adaptation of governance structures and institutional arrangements in Monrovia. It examines how the dynamic process of 'searching' for solutions—complementary to, yet sometimes conflicting with, formal planning—affects governance in unplanned spaces. The insights drawn from this investigation aim to inform strategies for fostering adaptive and resilient governance in post-war cities across the Global South.

Critical Focus Questions:

i. How do urban risks, including infrastructural incompleteness and socio-economic challenges, influence the adaptation of governance structures in Monrovia?

ii. In what ways do institutional arrangements evolve in response to the uncertainties and complexities of Monrovia's urban landscape?

iii. How does the process of 'searching' for solutions, which may complement or conflict with formal planning, shape governance in unplanned or informal spaces?

iv. What lessons can be drawn from Monrovia's experience to foster adaptive and resilient governance in post-war cities across the Global South?

v. How do evolving governance structures and urban practices coalesce to manage long-term urban risks and challenges in resource-constrained environments?

1.6 Theoretical Approaches

The study adopts a theoretical framework that integrates concepts from everyday risks and challenges, riskscapes, and evolutionary governance theory. This approach allows for an in-depth analysis of the temporal and spatial dimensions of risks and urban challenges within the context of the co-evolution of planned and unplanned urbanisation in Monrovia. By applying this approach, the study seeks to understand how actors and institutions adapt and evolve in response to these challenges and how they leverage potential opportunities.

1.6.1 Everyday Risks, Urban Risks, and Urban Challenges

This section explores the interconnected concepts of everyday risks, urban risks, and urban challenges, particularly within the context of informal settlements. By examining how these risks manifest and interact, we can gain insights into the complexities of urban living, especially in cities like Monrovia. This conceptual framework will facilitate a deeper understanding of the dynamics at play, enabling more effective strategies for addressing the challenges faced by urban populations.

Everyday Risks in Urban Contexts

Everyday risks represent a manifestation of urban risks, encompassing a range of challenges arising from systemic issues such as poverty, inadequate urban planning, and insufficient infrastructure. These risks are pervasive, significantly impacting the daily lives of individuals and communities, particularly in informal settlements. They manifest through limited access to essential services, such as safe drinking water, reliable electricity, and healthcare, thereby creating environments where vulnerabilities thrive (Adelekan et al., 2015; Bull-Kamanga et al., 2003; Dodman et al., 2019; Manda & Wanda, 2017; Satterthwaite & Bartlett, 2017).

These everyday risks not only threaten the immediate well-being of urban residents but also exacerbate existing vulnerabilities, curtailing opportunities for socio-economic advancement and community resilience (Adelekan et al., 2020; Adelekan & Satterthwaite, 2019; Fraser et al., 2017; Mitlin & Satterthwaite, 2013; Ramalho, 2020; Satterthwaite et al., 2020; Songsore, 2017; Zerbo et al., 2020; Zweig & Pharoah, 2017). For example, individuals may encounter hazards related to infrastructural inadequacies, such as unsafe drinking water leading to health crises, or unreliable electricity supply disrupting livelihoods and daily activities.

Moreover, everyday risks extend beyond physical hazards to include emotional, social, and financial dimensions that can significantly impact individuals' quality of life. Daily activities—such as securing income, commuting through unsafe areas, or navigating weak public services—are fraught with inherent risks. These challenges are further magnified by broader deficiencies in urban infrastructure, which can render basic tasks perilous and undermine community stability.

The cumulative effect of these everyday risks disrupts the structure of everyday life and perpetuates a cycle of vulnerability that is challenging to escape. Addressing these risks necessitates targeted urban interventions and integrated development strategies prioritising the foundational issues contributing to urban vulnerabilities.

This study highlights the crucial linkage between everyday risks and spatial dynamics. Unplanned communities experience a noteworthy, often underreported, toll of negative impacts and fatalities attributable to everyday risks (van Voorst et al., 2015; Wisner & Gaillard, 2009; Zerbo et al., 2020). Despite this, prevailing discourse and resource allocation in disaster risk reduction and climate change disproportionately emphasise intense hazards with the potential for catastrophic outcomes (Satterthwaite et al., 2020). This trend persists despite the awareness that the compounding effects of everyday risks interacting with other phenomena, such as climate change, are poised to intensify existing challenges in risk and development (Bull-Kamanga et al., 2003; Zerbo et al., 2020; Ziervogel et al., 2017).

Urban Risks and their interplay with challenges

Urban risks, as applied in this study, refer to immediate threats or hazards that residents face, ranging from natural disasters and health crises to everyday risks such as accidents and disease outbreaks resulting from poor infrastructure. These risks, whether sudden or chronic, carry an immediate potential for harm. In contrast, *urban challenges*, when used in this study refer to persistent structural problems that require long-term attention. These challenges include inadequate infrastructure, housing shortages, poor transportation networks, governance weaknesses, and social inequality.

Crucially, urban challenges frequently give rise to urban risks. For instance, infrastructural deficiencies such as unreliable electricity, unsafe drinking water, and poor sanitation contribute to environments where risks like health crises, accidents, and social unrest become more likely. The inability to address these foundational issues creates a cycle of vulnerability that hampers sustainable urban development.

In Monrovia, this dynamic is evident. Poor infrastructure, including poorly maintained roads and inadequate sanitation, leads to everyday risks like accidents and health problems, while rapid urbanisation and insufficient housing create broader structural challenges. The resulting interplay between risks and challenges underlines the complexity of urban problems in Monrovia, where deficiencies in infrastructure heighten vulnerabilities. This study, by focusing on infrastructural challenges—using electricity as a case study—illustrates how addressing foundational urban issues can mitigate everyday risks while promoting sustainable urban growth.

Conceptual Integration of Everyday Risks, Urban Risks, and Urban Challenges

Urban risks, whether everyday or more acute, are closely linked to underlying infrastructural challenges. Everyday risks, such as health issues or accidents, emerge from routine urban conditions, particularly in areas with poor infrastructure. Urban infrastructural challenges, like inadequate housing or failing transport

networks, heighten these everyday risks while also amplifying the impact of broader urban risks, such as natural disasters or economic shocks.

Addressing both requires integrated strategies that tackle the structural deficiencies of urban environments while also reducing the immediate risks that shape everyday life. This framework highlights how individuals in vulnerable communities, particularly those living in informal settlements, navigate the normalcy of everyday risk exposure. Understanding these dynamics is key to fostering resilience and ensuring that urban development strategies address both the immediate and long-term needs of urban populations.

1.2: Interconnections between everyday risks, urban risks, urban infrastructural challenges

Category	Everyday Risks	Urban Risks	Urban Infrastructural Challenges	Connections
Definition	Daily hazards or threats stemming from urban conditions, often linked to poor services, poverty, and inadequate planning.	Broader, more immediate hazards that pose direct risks to urban residents, including natural disasters, social unrest, and health crises.	Persistent infrastructural deficiencies like unreliable electricity, unsafe water, poor transport, and inadequate housing.	Urban infrastructural challenges exacerbate both everyday risks and broader urban risks by creating vulnerable conditions for residents.
Examples	Accidents, disease outbreaks due to poor sanitation, exposure to unsafe living conditions.	Floods, fires, social unrest, pandemics, environmental degradation.	Inadequate electricity, housing shortages, poor transportation, unreliable public services.	Everyday risks (e.g., health issues from poor sanitation) worsen due to infrastructure deficits (e.g., unsafe drinking water or electricity instability).
Nature	Immediate and recurring, directly affecting residents' day-to-day life.	More acute but can also be chronic, posing direct harm to people and property.	Systemic, structural issues that require long-term planning and development.	Both types of risks are interwoven with infrastructural weaknesses that amplify daily and large-scale

Category	Everyday Risks	Urban Risks	Urban Infrastructural Challenges	Connections
				vulnerabilities.
Impact	Direct harm to individuals' health, safety, and livelihoods, with gradual but cumulative effects.	Can cause widespread damage to life, property, and the urban economy.	Long-term negative effects on urban functionality, social equity, and resilience.	Inadequate infrastructure amplifies the impact of risks by preventing effective response, access to essential services, and safety.
Response Required	Localised interventions, risk awareness, adaptive behaviours in routine activities.	Emergency response, risk reduction policies, crisis management.	Policy interventions, infrastructure upgrades, and sustained investments.	Integrated urban planning is needed to address both daily vulnerabilities and large-scale risks by fixing infrastructure and improving service delivery.
Frequency	Occurs on a daily or routine basis, especially in informal settlements.	Intermittent but with the potential for high impact and recurrence.	Continuous and long-standing issues that affect development over time.	Everyday risks serve as constant reminders of underlying urban and infrastructural problems, leading to long-term risk accumulation.
Scope	Localised to specific communities but widespread across informal settlements.	City-wide, often affecting both formal and informal settlements.	Broad and systemic, touching various sectors like housing, transport, and water.	Solutions for urban infrastructural challenges can reduce everyday risks by enhancing the availability of safe, reliable services and resilience to larger hazards.
Impact on Population	Especially detrimental to	Affects both vulnerable and	Disproportionately affects low-income	Vulnerable populations are

Category	Everyday Risks	Urban Risks	Urban Infrastructural Challenges	Connections
	vulnerable groups, such as those living in informal settlements.	affluent communities but more severely impacts the former.	residents, exacerbating inequalities.	most affected by the intersection of both every day and larger urban risks, driven by deficient infrastructure.
Visibility	Often underreported, as the impacts accumulate gradually.	More visible during crises, receiving greater attention from authorities and media.	Visible in public discourse but typically less urgent compared to crises.	Urban infrastructural deficiencies are less visible compared to intense hazards but remain critical in risk amplification over time.
Mitigation Strategies	Risk adaptation through modified daily behaviours (e.g., water storage, alternative power sources).	Crisis mitigation through governance, emergency preparedness, and risk reduction measures.	Upgrading infrastructure, improving basic services, long-term urban planning.	Both require adaptive governance to balance immediate risk management and long-term infrastructure development for sustainable urban growth.

1.6.2 Riskscapes

The concept of riskscapes offers a comprehensive perspective on risk, going beyond established binaries. It highlights the multiplicity of risks, their intricate interconnections, overlaps, and tensions (Müller-Mahn et al., 2018; Müller-Mahn & Everts, 2013). It requires an approach that considers risks not in isolation but in conjunction with the entire spectrum of potential risks (Dodman et al., 2019; Satterthwaite & Bartlett, 2017). Emphasising both spatial and temporal dimensions, it acknowledges power dynamics inherent in various practices (Bohle, 2018; Frick-Trzebitzky, 2018; Müller-Mahn et al., 2018; Müller-Mahn & Everts, 2013). Building on insights from Müller-Mahn et al. (2018) and others, the following paragraphs elaborate

on the foundational elements of riskscapes, particularly those relevant to analysing everyday risks and challenges in Monrovia.

First, the concept of riskscapes, as articulated by Müller-Mahn et al. (2018) and Müller-Mahn & Everts (2013), emphasises the importance of spatial dimensions in understanding risks. Beyond simply identifying hazards, riskscapes delve into the spatial distribution, arrangement and interconnectedness of risks within specific contexts. Valerie November's (2008) concept of the spatiality of risk complements this perspective by emphasising how spatial context shapes risk dynamics. Therefore, rather than being uniformly distributed, risks are influenced by their spatial surroundings. Utilising a riskscapes framework to analyse spatial distribution of risk can unveil latent patterns, thereby enriching our comprehension of risk dynamics.

Second, practices are central to understanding riskscapes, encompassing both tangible actions and conceptual representations that shape how risks emerge in space (Schatzki, 1996, 2001, 2002). For example, driving involves a complex interplay of human actions, infrastructure, norms, and cultural implications, illustrating how practices evolve over time and introduce or alter risks due to technological, cultural, or societal changes. Practice theory emphasises the role of human activities in shaping complex interconnections, overlaps, and tensions related to risks. Schatzki's framework also highlights how power relations influence the evolution of practices, determining dominant aspects and marginalising others.

Third, subjectivity, or the diverse ways actors perceive, interpret, and respond to risks, is integral to understanding riskscapes (Müller-Mahn et al., 2018). Subjectivity implies a range of perceptions rooted in unique experiences, beliefs, and values (Hatfield, 2016; Lau et al., 2022). For instance, a community's past experiences with natural disasters significantly influence its current perceptions and responses to similar risks. Temporally, subjectivity influences how risk perceptions evolve over time due to scientific knowledge, technological advancements, cultural shifts, or historical events (DeCarlo, 2010; Haanstad, 2009; Mayer & Floriani, 2022; McWade, 2015). Subjectivity in riskscapes is intertwined with power dynamics, as different groups or organisations wield varying degrees of power, impacting risk perception and resource allocation for mitigation and adaptation (Flax, 1993; Krause & Schramm, 2011; Maestri, 2017)

Fourth, risks are interconnected; they rarely exist in isolation, but are part of intricate interactions and mutual influences within each space (Müller-Mahn et al., 2018; Müller-Mahn & Everts, 2013). Riskscapes emphasise the need to move beyond a narrow focus on individual risk factors and instead promote a thorough analysis that explores the intricate relationships and feedback loops between different risks. In Monrovia, for example, heavy rains lead to flooding in coastal communities, causing displacement and economic hardship. Inadequate waste management exacerbates the problem by contributing to water

pollution and the spread of waterborne diseases.

Fifth, the multi-scalarity of risks across various spatial and temporal scales is fundamental to the riskscapes framework. Risks operate from local to global levels, encompassing short-term events and long-term processes, highlighting their dynamic and complex nature. Integrating multi-scalarity into the framework allows for a comprehensive examination of how risks manifest and interact across diverse dimensions, supported by studies such as Davies et al. (2020), Gebreyes and Theodory (2018), Müller-Mahn et al. (2020), and White and Lawrence (2020), enhancing the framework's depth and applicability.

Sixth, the temporal dimension of risk is fundamental to the concept of riskscapes, recognising risks as dynamic entities responsive to changes in environmental, technical, social, and economic contexts (Müller-Mahn et al., 2018). For instance, environmental hazards like floods or forest fires often exhibit distinct temporal patterns that are essential for proactive mitigation efforts. Understanding the timing and likelihood of risks across diverse spatial contexts is not only a strategic element of risk management but also a cornerstone in building resilience. It enables risk management strategies to adapt effectively to changing conditions, fostering the development of adaptable systems capable of recovering from adverse events.

Finally, risk cascades, which are characterised by the sequential or simultaneous occurrence and escalation of multiple risks triggered by a single event (Alexander, 2018; Pescaroli & Alexander, 2016, 2018; Suppasri et al., 2021), are highly relevant to riskscapes. In modern society, increased interconnectedness amplifies the widespread negative consequences of disasters (Davies et al., 2020; Müller-Mahn et al., 2020; Pescaroli & Alexander, 2016, 2018). Risk cascades reinforce the need to move away from isolated risk assessments and consider broader potential consequences. For example, a powerful tropical storm can pose an immediate threat to life and property while simultaneously triggering secondary risks such as infrastructure failure, economic downturn or public health crises. This interconnectedness is especially evident in urban areas, where different risks intersect and can reinforce each other.

1.3: Key elements of the riskscapes framework (adapted from Müller-Mahn et al., 2018; Müller-Mahn & Everts, 2013)

Element	**Description**
Spatial Dimensions	Riskscapes focus on the spatial distribution and interconnectedness of risks. This element examines how risks are arranged and influenced by their spatial contexts.
Practices	Practices include both tangible actions and conceptual

Element	Description
	representations that shape how risks emerge and evolve. This concept covers the role of human actions, norms, and cultural implications in risk dynamics.
Subjectivity	Subjectivity refers to diverse perceptions, interpretations, and responses to risks shaped by experiences, beliefs, and values. It explores how personal and collective risk perceptions evolve over time.
Interconnected Risks	Risks are interconnected and part of complex interactions and feedback loops rather than isolated events. This element highlights how risks influence and exacerbate each other.
Multi-Scalarity	The multi-scalarity of risks spans from local to global levels and includes short-term and long-term dimensions. This concept helps in understanding how risks manifest and interact across different scales and timeframes.
Temporal Dimension	Risks are dynamic entities that change over time in response to environmental, social, and economic factors. This dimension involves analysing how the timing and likelihood of risks evolve and impact risk management strategies.
Risk Cascades	Risk cascades refer to the sequential or simultaneous escalation of multiple risks triggered by a single event. This concept underscores the need for comprehensive risk assessments that consider broader, cascading effects of disasters.

1.6.3 Evolutionary Governance Theory

Monrovia, Liberia, faces a myriad of urban governance challenges and risks, including rapid unplanned urbanisation, informal settlement growth, high crime rates, a burgeoning population, inadequate infrastructure, and environmental degradation. These issues are exacerbated by social fisures like political polarisation and the "Zogo crisis," which refers to widespread street vagrancy among socially disadvantaged urban youth. Addressing governance in Monrovia requires a deep understanding of the

complexity and interconnectedness of these challenges, which are influenced by various actors and factors shaping urban development.

Framework of Evolutionary Governance Theory

Evolutionary Governance Theory (EGT) provides a valuable framework for understanding the complexities of risk and urban governance in Monrovia. Emphasising adaptability, flexibility, learning, experimentation, and continuous improvement, EGT is particularly relevant in contexts where informal governance structures coexist with formal ones, reflecting a mix of bottom-up and top-down governance approaches. EGT supports decentralised decision-making and the integration of local knowledge, essential for effectively managing urban risks (Van Assche et al., 2014, 2020; Van Assche, Beunen, et al., 2022). Studies demonstrate how EGT principles enhance urban governance and resilience (Beunen et al., 2015; Van Assche et al., 2022).

In Monrovia, urban growth is largely characterised by informal and spontaneous developments, often in areas designated for other uses, such as commercial or residential. Informal settlements like West Point have emerged in flood-prone zones, underlining the inadequacies of existing planning frameworks to accommodate the rapid population growth. This proliferation of informal settlements poses significant governance challenges, as these areas frequently lack basic infrastructure and services, heightening vulnerabilities to risks like environmental hazards and health crises.

The interplay between formal and informal urbanisation complicates governance efforts. While formal structures aim to establish regulations, the realities of informal urbanisation often render these efforts ineffective. For example, attempts to regulate land use in central Monrovia have been undermined by the spontaneous emergence of informal markets, which, while addressing immediate community needs, often conflict with formal plans.

The governance landscape is characterised by a complex interplay between formal institutions, such as the Monrovia City Corporation, and informal mechanisms, including community-based organisations and local leaders. Community leaders in informal settlements mobilise residents to tackle urgent issues like sanitation crises, providing timely responses that formal institutions may overlook. This duality presents opportunities for collaboration but also challenges in ensuring accountability and inclusivity. Understanding how these governance forms interact is vital for effective risk management, as informal structures can facilitate rapid responses while potentially undermining formal governance.

The co-evolution of governance structures and urban growth patterns has significant implications for urban risk dynamics. The interplay between formal and informal urbanisation can exacerbate vulnerabilities and create new risks for disadvantaged populations. As informal settlements expand without adequate infrastructure, associated risks like environmental degradation and public health crises are likely to intensify. Historical factors, including civil conflict and political instability, continue to shape governance configurations, affecting institutional responses to contemporary challenges. Understanding these historical influences alongside current socio-economic conditions is vital for developing comprehensive governance frameworks that adapt to Monrovia's urban complexities.

Feedback Mechanisms and Adaptive Practices

Another relevant notion of EGT that pertains to adaptivity is feedback mechanisms (Van Assche, 2021). Effective governance in Monrovia requires mechanisms for feedback and learning, allowing governance systems to adjust policies and strategies based on outcomes and experiences. Adaptive practices within unplanned communities empower residents to cope with and mitigate risks, showcasing resilience and innovation.

Community engagement in decision-making is foundational, allowing authorities to co-create policies and strategies tailored to local needs. Flexible policies and regulations are integral, enabling dynamic responses to evolving risks. Collaboration with stakeholders facilitates resource pooling and coordinated efforts to reduce risks and enhance resilience. Strategic investments in risk-reducing infrastructure become feasible through effective governance structures.

Object Formation

Object formation is a crucial component of EGT, focusing on how certain phenomena become recognised as 'risk objects' that require governance tools for management. In the context of Monrovia, understanding object formation is essential for identifying and addressing governance tools.

Boezeman and Kooij (2014) illustrate how the reification of new objects within governance can reshape urban policy and adaptation strategies, using examples form the Netherlands. In Monrovia, urban risks such as flooding, inadequate infrastructure, and public health crises similarly undergo processes of object formation. Informal settlements, often characterised by heightened vulnerabilities, become recognised as distinct risk objects necessitating targeted governance interventions. Drawing on Kooij's (2014) insights, we see that the changing relationships among key institutions—such as government, civil society, and community organisations—impact the formation of these objects on the ground. In Monrovia, the

reification process underscores how emerging risks can transform governance priorities, creating a pressing need for responsive policy frameworks.

Furthermore, as noted by Duineveld et al. (2013) and Duineveld and Van Assche (2014), object formation involves a discursive evolution encompassing the techniques of reification, solidification, and codification. Reification entails recognising an object as a distinct entity, separate from its environment, while solidification strengthens internal connections, resulting in a more defined conceptualisation of the risk object. Codification simplifies boundaries, making the object more comprehensible for governance processes.

In Monrovia, the objectification of urban risks must consider the local context, where challenges posed by informal settlements often lead to complex governance dynamics. As urban challenges evolve into recognised risk objects, understanding the mechanisms behind their formation is vital for developing effective governance strategies. Policymakers must be attuned to the socio-political landscapes and community perceptions that shape these objects, ensuring that governance frameworks are both adaptive and resilient in addressing the multifaceted risks faced by unplanned communities in Monrovia.

Polycentrism in Governance

Monrovia is marked by multiple centres of decision-making, including formal institutions, informal actors, and community-based organisations, each contributing to the governance process. Understanding this polycentric governance system is essential for addressing the complexities of urban risks and challenges.

In Monrovia, the recognition of polycentricity emphasises the existence of diverse sources of authority that operate at different scales, reflecting the multifaceted nature of governance. Formal institutions often establish regulations and policies, while informal actors and community-based organisations play vital roles in local decision-making and service delivery. This interplay can lead to innovative responses to urban challenges, as local knowledge and informal practices fill gaps left by formal governance structures.

However, the coexistence of multiple decision-making centres also presents challenges, as conflicting interests and power dynamics may arise. A comprehensive understanding of Monrovia’s polycentric governance is therefore essential for fostering collaboration among stakeholders, ensuring that urban resilience is built through inclusive and adaptive governance strategies.

Path and Material Dependencies and Path Formation

Monrovia's risk landscape and urban challenges are deeply rooted in the enduring effects of conflict-

induced destruction on governance structures, emphasising the ongoing interplay between historical legacies and current governance configurations. The concepts of path and material dependencies, along with path formation within Evolutionary Governance Theory (EGT), illustrate how historical processes influence contemporary governance arrangements and practices. Understanding these dependencies is essential for clarify why certain governance structures persist or change over time, particularly in light of the city's governance challenges.

In Monrovia, path dependence manifests through historical governance decisions that shape current responses to urban risks. As articulated by Van Assche et al. (2014), institutional change results from the interplay of path dependence, interdependence, and goal dependence. For example, past policies may have favoured particular forms of urban development, entrenching informal settlements in vulnerable areas. This historical context creates governance frameworks that often struggle to integrate these informal settlements into formal planning, leading to conflicts with established practices and regulations.

Material dependencies further complicate the governance landscape by highlighting how physical and social materials shape governance systems. Van Assche et al. (2022) emphasise that material events and dependencies illuminate the connections between physical changes in the urban environment and their governance implications. In Monrovia, inadequate infrastructure in informal settlements exacerbates risks related to flooding and health crises. Thus, understanding the interplay between these material realities and governance responses is crucial for developing effective policies that enhance community resilience.

Ultimately, managing urban risks in Monrovia necessitates a strategic approach that acknowledges both historical paths and material influences. While these dependencies can pose challenges to effective governance, they also present opportunities for innovative responses. As the city navigates its ongoing challenges, a comprehensive understanding of these dependencies is vital for crafting adaptive governance strategies that bolster urban resilience and address the complexities of informal urbanisation.

1.7 Key Propositions

To effectively understand and manage urban risks and challenges in rapidly changing environments like post-war Monrovia, a multifaceted approach is essential. As the city grapples with the legacy of conflict and rapid urbanisation, immediate action is paramount to mitigate ongoing risks. The following key propositions offer a comprehensive framework that integrates various strategies to address these complex urban challenges, with a specific focus on informal settlements and infrastructure development.

Proposition 1: The Transformative Framework of Riskscapes

The riskscapes framework serves as a transformative lens for understanding the complex realities of everyday risks, resilience strategies, and subjective practices in the urban Global South, particularly within Monrovia's unplanned communities. This framework highlights the necessity of integrating community knowledge into risk management strategies, illustrating how individual experiences shape perceptions of risk and inform responsive governance systems. Additionally, it adeptly assesses the nuances and contours of a bundle of interacting risks that collectively shape the urban landscape, rather than concentrating on single risks in isolation. By accounting for the multiple realities that influence risk governance, the riskscapes framework offers a comprehensive perspective essential for effective urban risk management.

Proposition 2: Integrating Object Formation Theory and Riskscapes

The integration of object formation theory with riskscapes into an analytical framework enhances our understanding of urban governance dynamics amid rapid change and uncertainty. This proposition illustrates how governance objects—shaped by socio-political contexts—interact with community perceptions of risk. Through the lens of the Monrovia Slum Initiative, this integration highlights the complexities of governance outcomes and emphasises the necessity for inclusive strategies that address the diverse realities of urban environments.

Proposition 3: Evolutionary Governance Theories in Urban Infrastructure Planning

Incorporating evolutionary governance theories into urban infrastructure planning provides a novel framework for understanding how actors in Liberia adapt to the complexities of delayed post-war infrastructure. This approach emphasises the dynamic adjustment of strategies by various stakeholders in response to evolving challenges, highlighting the importance of flexibility and adaptability in infrastructure planning. Effective governance must not only address immediate infrastructure needs but also foster inclusive community engagement and consider long-term sustainability within broader development objectives

Proposition 4: Integrating Searching and Planning for Adaptive Urban Governance

The interplay of searching and planning within governance is crucial for effectively tackling the evolving urban challenges faced in post-war contexts like Monrovia. By blending flexible, adaptive 'searching' practices—such as experimentation and community engagement—with strategic 'planning' efforts, governance systems can navigate the complexities of incomplete infrastructure and social inequalities. This dynamic approach facilitates immediate responses to pressing issues like electricity scarcity while

promoting long-term sustainability by ensuring that diverse community needs are considered and addressed within broader governance frameworks.

1.8 Advancing Critical Understanding of Urban Risk Governance and Infrastructure Practices in Post-Conflict Settings: Insights from Monrovia's Unplanned Communities

This study offers significant insights into the governance of urban risks and infrastructure in Monrovia's unplanned communities, particularly in the context of post-conflict challenges. Through an examination of how informal and formal systems co-exist and adapt, the research provides a deeper understanding of urban dynamics and offers a framework for addressing complex urban risks.

First, the study explores the co-evolution of formal and informal urbanisation in Monrovia, highlighting how communities actively engage with the risks they face. Rather than being passive recipients of risk, local actors innovate and improvise, shaping their urban environments in response to socio-political, environmental, and infrastructural challenges. By applying the concept of riskscapes, the research reveals how these everyday risks are interconnected and influence governance outcomes, underscoring the need for more flexible and responsive governance models.

A key innovation of this dissertation is the integration of riskscapes with object formation, offering a fresh perspective on urban risk governance. This approach illustrates how risks become formalised into governance objects, such as slum clearance projects or settlement formalisation, shaped by both state initiatives and local practices. The study demonstrates that these governance mechanisms reflect not only the perspectives of state actors but also the lived experiences of informal communities, who play an active role in shaping urban policies even in the absence of direct state involvement. This challenges conventional governance models that often overlook the agency of local actors.

The research also contributes to the field of infrastructure governance, particularly in contexts of delayed or incomplete projects. Rather than viewing these delays solely as failures, the study frames them as opportunities for innovation. Communities respond to delayed infrastructure by adopting adaptive strategies that often align with, or substitute for, formal governance efforts. These findings suggest that infrastructure delays create spaces where community-driven initiatives can emerge, calling for more inclusive governance frameworks that recognise the potential of local actors in shaping sustainable urban development.

Finally, the dissertation introduces the concept of co-evolution between governance, infrastructure, and urban risks, showing that their development is not linear but rather a continuous process of adaptation. By examining how urban challenges are managed through cycles of 'searching' and 'planning', the study

highlights the need for governance systems that can respond to both immediate risks and long-term vulnerabilities in unstable urban environments. This new perspective emphasises the importance of resilience and adaptability in governance frameworks, particularly in post-conflict cities like Monrovia.

1.9 Research Design, Context, and Methods

1.9.1 Research Approach

The research adopts a qualitative and interpretive epistemological stance, prioritising understanding and interpretation rather than quantitative measurements. This aligns with the social constructivist paradigm, which asserts that reality is shaped by subjective meanings and perceptions assigned by actors (Creswell & Poth, 2018). This methodology was chosen to explore the complexity of everyday risks and challenges in Monrovia's post-war urban landscape. It aims to delve into the subjective dimensions of reality, recognising that individuals contribute to the construction of meaning.

By focusing on qualitative methods, the research explores the nuanced aspects of urban development in Monrovia, capturing the details and subtleties of the interplay between space, risk and practice. This approach provides a better understanding of the complexity of everyday challenges and risks in Monrovia's dynamic post-war urban development context.

With an interpretive epistemological stance, the research recognises the subjective nature of knowledge and emphasises the importance of context and meaning in understanding everyday risks and their interaction with urban challenges. This approach is consistent with Easterly's (2006, 2007) emphasis on the importance of feedback mechanisms and the responsiveness of development strategies to local conditions.

By focusing on post-war urban environments, the study aims to shed light on how risks manifest and evolve in the complex interplay between reconstruction, social dynamics and economic growth. This qualitative and interpretive framework provides a rich exploration that aims to contribute valuable insights into the multifaceted nature of risks in these specific contexts.

The aim of the study is not to identify overarching patterns or generalise the findings, but to derive insights and contextual knowledge from specific case studies. It delves into the intricate mechanisms and dynamics that can catalyse further insights and stimulate further research in the field of risk and governance development. While the findings may have relevance for Liberia or analogue contexts in the Global South, certain elements, such as the emergence of risk governance objects that rely on path dependency, the interplay of risks and opportunities within urban incompleteness, and the co-evolution of formal and informal governance systems, have broader applicability and warrant in-depth investigation beyond the

immediate scope of this study.

1.9.2 Data Collection

The fieldwork was conducted in two different phases. The first phase took place from September 2019 to February 2020 and the results are described in chapters 2 and 3. The second phase of the fieldwork took place between April 2022 and December 2022. The substantive results of the second phase, together with the data collected from the first phase, are presented in Chapters 4 and 5.

A total of 164 people actively participated in the study, including different segments of Monrovia's population. One hundred participants took part in semi-structured in-depth interviews, including seventy residents from different communities such as West Point, Peace Island, Clara Town and Barnesville. In addition, eighteen government officials and twelve representatives of civil society organisations, universities and non-governmental organisations were interviewed. The residents interviewed represented a wide range of occupations, including shopkeepers, teachers, stay-at-home mothers, journalists and day labourers.

As part of the study, eight focus group discussions (FGDs) were also held in these communities, involving a total of sixty-four participants. These discussions provided further insights into the perspectives and experiences of community members regarding urban challenges and risks in Monrovia.

1.4: overview of interviews and respondents

Type of Interviews	**Number of Interviews**			**Number of Participants**		
	Male	Female	Sum	Male	Female	Sum
Residents	44	26	63	44	26	70
Focus Group Discussions	4	4	8	32	32	64
Government Officials	11	7	18	11	7	18
NGOs/Civil Society/Academia	5	7	12	5	7	12
Total Respondents	**64**	**44**	***108***	**92**	**72**	***164***

Respondents for interviews and focus group discussions (FGDs) were selected meticulously using a combination of purposive sampling and snowballing methods. Purposive sampling involved selecting participants based on diverse criteria such as age, gender, socioeconomic status, and occupation. This ensured a comprehensive understanding of urban risks and challenges from a variety of perspectives.

Geographic representation and professional expertise were also considered to capture localised and systemic aspects of urban issues.

Snowball sampling was used to expand the participant network. Initial participants with direct experience in urban risks and challenges from the study areas or selected institutions were chosen. These participants, selected for their diverse backgrounds and community connections, provided referrals, ensuring a representative and comprehensive perspective. Criteria for selection emphasised firsthand experience, network connections, diversity, and active involvement in addressing urban challenges.

Ethical considerations were paramount throughout the research process. Participant names were anonymised using codes to maintain confidentiality. Strict protocols were in place for secure data storage and transportation. Small data storage devices prone to loss were intentionally avoided, with data primarily stored on secure external hard drives, phones, and in cloud storage to ensure accessibility and security.

In addition to interviews and FGDs, field observations were conducted. This provided opportunities for informal interactions with residents and key informants, as well as to observe practices in space. These observations facilitated the examination of landscape and patterns, photographic documentation, and an immersive understanding of the study area. The utilisation of public spaces and the mapping of spatial functions and characteristics were integral components of the research. These activities served as a method for testing the theories' applicability and identifying points of complementarity or divergence from spatial mapping perspectives. A detailed diary was maintained to record observations stemming from the mapping exercises.

At the initiation of the fieldwork, a comprehensive document analysis was undertaken. This included scrutinising government documents, antecedent national economic development plans, consultancy studies, academic publications, and articles. Document analysis served as a multifaceted tool, facilitating a fine-grained understanding of policy content across both temporal and spatial dimensions. This approach complemented interviews and other data sources, contributing to triangulation. Document review provides valuable insights into how information and ideas are formally presented and assisted in fleshing out the framing of the issues under investigation (Dalglish et al. (2021).

The recorded interviews, a rich source of qualitative data, underwent daily verbatim transcription. This transcription process, coupled with a careful reading of the transcribed data, enabled researchers to gain deep insights into the participants' perspectives. Impressions and responses were systematically cross-referenced with other collected data, ensuring the reliability and consistency of the findings. A proficient

research assistant fluent in both Standard English and Liberian Kreyol was involved in the transcription process, enhancing the accuracy and cultural relevance of the data analysis.

1.9.3 Data Analysis

Data Examination

The data analysis process began with a rigorous coding and categorisation approach to align the collected data with the research questions. Before coding, the data were thoroughly examined to understand the contextual profile of Monrovia and the historical evolution of risks and challenges within the communities studied.

Through coding, the research revealed a multitude of risks that were characterised by their multifaceted nature, highlighting the need for deliberative, inclusive and negotiated resilience processes. This deep dive sought to elucidate not only the immediate risks and long-term challenges, but also the nuanced interactions and adaptations required for sustainable urban development, especially given that the city is predominantly unplanned.

Coding and categorisation

The coding process began with open coding, followed by selective coding and axial coding. These methods were chosen for their compatibility with the research. Each method served a distinct purpose in analysing qualitative data and was deemed appropriate for different stages of the analysis process:

Open Coding was used initially to explore the data and identify key concepts related to urban risks and challenges. It allowed for a flexible and exploratory approach, enabling the unpacking of a range of factors without preconceived categories. Given the complex and multifaceted nature of urban complexities in Monrovia, open coding was essential for capturing the diverse array of issues present in the data.

After identifying key concepts through open coding, selective coding focused on specific data points that best represented these concepts. It helped to organise the data into more coherent themes and categories, facilitating a deeper understanding of the underlying issues. Selective coding was particularly useful for identifying patterns and connections between different aspects of urban risks and challenges in Monrovia.

1.5: Examples of key concepts during interviews for subsequent coding

Key Concepts	Description
Socio-economic Factors	Examines data related to poverty levels, unemployment rates, and income disparities in Monrovia.
Governance Challenges	Analyses the effectiveness of governance structures, corruption levels, and the lack of regulatory enforcement.
Environmental Risks	Evaluates data on climate change impacts, natural disasters, and inadequate waste management practices.
Critical Risk Governance Objects	Includes informality, unplanned urbanisation, and urban incompleteness, along with specific concepts like slums, substandard housing, and the absence of risk-reducing infrastructure.
Adaptive Governance and Practices	Focuses on how governance mechanisms at various scales respond to and manage urban challenges, particularly emphasizing incomplete electricity infrastructure.
Incomplete Infrastructure	Investigates frequent power outages, infrastructure challenges (e.g., unfinished construction of electrical facilities), and access and distribution issues like limited coverage of electricity services.
Community Perceptions and Coping Strategies	Exemplified by codes such as public perception of electricity services in Monrovia, as well as community awareness and activism.

Validation of Coding

In this qualitative research, several methods were used to validate the coding process. Triangulation was employed to compare coding results with other data sources or methods, ensuring consistency and reliability. Peer debriefing involved discussing the coding process and findings with colleagues in colloquia presentations at the Center for Development Research (ZEF) and other seminars to identify biases or inconsistencies.

An audit trail was maintained, documenting coding decisions and changes, enabling other researchers to review the process. Additionally, member checking involved presenting coded data and findings to community workshop participants to verify accuracy, ensuring interpretations accurately reflected their perspectives.

Limitations

During the coding and categorisation process, several limitations and challenges were encountered. One significant challenge was the inherent subjectivity in qualitative research could potentially introduce bias. Additionally, the complexity of the data on urban complexities in Monrovia made it challenging to categorise and code effectively, requiring a comprehensive coding scheme to capture all relevant aspects.

The quality of the data, including its accuracy and completeness, also posed a challenge, as incomplete or ambiguous data which characterized Liberia impacted the coding process. Time and resource constraints were another limitation, as coding and categorising qualitative data can be time-consuming, especially with large datasets. Furthermore, the unique context of Monrovia, including cultural norms and political dynamics, influenced the coding process, requiring a culturally sensitive approach.

Finally, overlapping themes in the data made it challenging to categorize them into distinct categories, necessitating careful consideration and refinement of the coding scheme. Despite these challenges, researchers can mitigate them through rigorous coding techniques, reliability checks, and reflexivity.

1.10 Dissertation Structure

This dissertation comprises six chapters. Chapter 1 serves as an introduction, establishing connections between subsequent chapters and their collective efforts to address the research questions and fulfil outlined objectives. It provides a comprehensive overview of theoretical underpinnings and methodology, contextualising the study within post-war Monrovia and highlighting historical and contemporary planning and urbanisation dynamics shaping the landscape under scrutiny.

Chapter 2 shifts focus to a detailed exploration of Monrovia's unplanned settlements, analysing the co-evolution of planned and unplanned urbanisation in post-war Liberia. Emphasising the complexities of everyday risks, this chapter examines the multiple reality shaping the urban landscape.

In Chapter 3, an analytical framework incorporating 'riskscapes' and 'object formation' provides perspectives on risk governance within a milieu of diverse practices. This chapter elucidates the intricate process through which risks are socially constructed, influencing the emergence of governance objects. It explores the codification, categorisation, and solidification of phenomena such as slums as risk objects demanding effective 'management' from regulatory bodies.

Chapter 4 investigates how various actors navigate the complexities of urban risk landscapes, focusing on incomplete urban electricity infrastructure. This chapter reveals a landscape of infrastructural

vulnerabilities while also portraying it as a realm of possibilities where competing strategies, collectives, commons, and the interplay between new collective actions and state policies emerge.

Chapter 5 examines the adaptability of practices and governance in the context of pervasive scarcity. Exploring options of searching and experimentation within governance contributes to a refined understanding of development in the Global South. This chapter highlights interconnected processes of searching and adaptation, shaping a distinctive perspective on urban governance.

In the concluding Chapter 6, a retrospective analysis is conducted on the dissertation's overarching objectives. This chapter elucidates the study's contributions to the theory and practice of urban governance and risk while also outlining potential avenues for future scholarly exploration. It underscores how the convergence of everyday risks, the concept of riskscapes, and evolutionary governance theories in the Global South—exemplified by Monrovia, Liberia—provides a valuable framework for comprehending and managing the multifaceted challenges inherent in rapidly growing cities within developing regions marked by fragility.

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CHAPTER TWO: RISKSCAPES OF UNPLANNED SETTLEMENTS

2. Official risks and everyday disasters: The interplay of riskscapes in two unplanned coastal settlements in Monrovia[1]

Abstract: Monrovia's unplanned settlements provide a window into the diverse rationales and practices that go into planning and managing urban space. Even though unplanned settlements are economically, spatially, and socially integrated into cities, the desire to eliminate or formalise them persists. In the essay, I examine how everyday risks are addressed in the coexistence and co-evolution of planning and unplanned urbanisation in postwar contexts. As well as showing how expert-recommended risk management approaches cross over into local practices, I explain how and why multiple understandings of 'risk' and 'resilience' can influence practice. The unequal power dynamic suggests that the practices of state actors influence the residents of unplanned settlements, in a manner that is discernible of governmentality. As riskscapes, and by extension resilience, represent multiple realities to stakeholders, the question of coalescing the mosaic of practices into a common risk governance framework is critical. The essay emphasises that resilience-building should evolve from a thorough understanding of the dynamics of the multiplicity of riskscapes. Finally, the paper argues that an evolutionary approach to risk governance, paying attention to the interacting elements and configurations that link discourse, actors, institutions, power, and knowledge, will provide a platform for negotiating the links between risk perception and risk assessment within the emerging riskscapes. This will be the basis of a deliberative and negotiated resilience pathway that will integrate the priorities and interests of all stakeholders in the planning and decision-making process.

Keywords: *Unplanned urbanization, riskscapes, negotiated resilience, multiple reality, Liberia*

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2.1. Introduction

Koffa recounted the incident that prompted his relocation to Peace Island, one of the ever-growing unplanned settlements in Monrovia.[2] Previously, he had lived in a small cement house he had built on 24th Street in the Sinkor suburb for 12 years. In May 2012, he watched helplessly as his house, along with other surrounding buildings, was destroyed by bulldozers of the city's government, the Monrovia City Council (MCC). He admits that he did not have the right to build on the land but argues that the affected families were not notified beforehand. Later, Koffa moved to Peace Island, where he acquired land from another settler and immediately built a mudbrick house for his family. His hasty move to Peace Island had a knock-on effect. He was now far away from the workshop where he had once worked as a mechanic.

Small unplanned settlements, like this one in Sinkor, found throughout Monrovia on formerly unused land, are regularly demolished, while the larger and most prominent ones, such as West Point and Peace Island, home to tens of thousands of people, remain. A situation such as this illustrates the risks associated with evictions and demolitions of smaller unplanned settlements, as well as the reasons why larger unplanned settlements continue to proliferate.

The positioning of unplanned settlements as blights is rooted in the modernist thinking prevalent in urban planning in sub-Saharan Africa (Fält, 2016; Hoffmann, 2016; Kamete, 2013; V. Watson, 2009). In 2013, for example, in preparation for the United Nations High-Level Panel (HLP) meeting on the Post-2015 Development Agenda, the MCC launched another campaign to remove informal structures in Sinkor to eliminate eyesores. In response to the criticisms that followed, the city mayor is reported to have said: "We want to make this city the greenest and cleanest city in West Africa".[3]

Despite their similar features, unplanned settlements have a vast array of morphologies, from districts to waterfronts and from easements to enclosures (Dovey & King, 2011; Kamalipour & Dovey, 2020). These settlements are not marginal to urban life and productivity. Rather, they are economically, spatially, and socially integrated into most developing cities, and yet the desire remains to remove them (Dovey & King, 2011). Proximity to opportunities is a key driver for the emergence of these areas near or within cities. Their residents serve the formal city, where they often form a large part of the labour force. Attempts to move these settlements to the periphery, therefore, exacerbate poverty and harm the productivity of the city (Dovey & King, 2011).

[2]Not his real name. Interview, Peace Island, November 12, 2019.

[3] Liberian Homes Demolished as Global Leaders Meet. January 31, 2013, Inter Press Service (IPS). http://www.ipsnews.net/2013/01/liberian-homes-demolished-as-global-leaders-meet/

The current development patterns of sub-Saharan African cities are characterised by the morphological juxtaposition of visionary modern mega-projects and the persistent unplanned urbanisation (Fält, 2016; V. Watson, 2014). The notion that unplanned settlements represent urban disorder is therefore at odds with the reality of many African cities, where informal processes are often the main driver of urban development (Myers, 2011; Pieterse, 2011). The gradual, unauthorised, and self-organised emergence of these settlements has become the primary method for providing affordable housing in developing cities (Dovey et al., 2020).

Unplanned urbanisation does not necessarily mean disorganisation. However, the patterns tend to be uniquely place-specific and in some cases reflect traditional urban planning. Indigenous planning models, mostly 'unplanned' but organised, were deeply rooted before the emergence of African colonial cities (Amankwah-Ayeh, 1996; Okpala, 2009). Some elements of traditional African planning, particularly 'courtyard architecture', remain a key feature of unplanned urbanisation addressing the housing crisis in some African cities (Eguavoen, 2021, 2022; Steyn, 2005).

The essay examines how everyday risks are addressed and accounted for as visionary modern planning and unplanned urbanisation coexist and co-evolve in postwar environments. To this end, it examines the interplay of riskscapes of unplanned settlements in Monrovia, focusing on the extent to which expert practices guide residents' conduct, and shape everyday risks in unplanned settlements. Furthermore, it raises the question of how the multiplicity of risks and priorities constructed by stakeholders can be integrated by authorities into ongoing risk reduction planning and policy. This paper argues that discussions on riskscapes should foreground a more holistic approach to resilience, recognising its multiplicity and emphasising a negotiated path to its realisation.

The rest of the paper is divided into seven parts. It begins with the background to the study, followed by the main theoretical thrusts. It then discusses the characteristics of the study areas and the methods of data collection and analysis. Three empirical sections follow, the first on the riskscapes of unplanned settlements, the second on governance and institutional responses to riskscapes, and the third on how residents navigate risk and opportunity landscapes. The last section contains the main conclusions.

2.2. Background

Although Liberia was not formally colonised, the development of Monrovia, beginning in 1822, followed a segregated urban planning pattern similar to colonial African cities (Amoako, 2016; Hoffmann, 2017;

Home, 2015).[4] As a result, infrastructure development was concentrated in the parts of the city historically associated with the settler population known as Americo-Liberians[5], while the local population remained on the fringes of the city in the largely unplanned slum-like communities. It is estimated that up to 70% of Monrovia residents currently live in an unplanned neighbourhood (Draper et al., 2018).

The exclusive planning and land rights regimes created the basis for informality to flourish. It took several decades for areas outside direct settler control to be integrated into the Liberian state after its independence in 1847 (Ellis, 2007; Gerdes, 2013; Verbrugge et al., 2015). Initially, state policy only recognised customary usufruct of land. Fee simple property rights were reserved for Americo-Liberians and acculturated groups. Planning in Monrovia also prevented the permanent settlement of the cheap labour force, which consisted largely of Indigenous groups. This led to the emergence of a dark form of "temporary urbanism" in which unplanned settlements served to provide access to labour for elites while denying workers permanent access to the city through adequate housing or land ownership.[6]

Liberia is reeling from decades of civil unrest. More than a century of one-party rule dominated by the Americo-Liberian elites ended with the 1980 coup d'etat (Casper, 2011; Harris, 1999; Munive Rincon, 2010). Attempts to restore democracy were thwarted by the rigged 1985 elections, which had cascading effects, including a failed coup attempt in 1985 and an escalation to all-out war in 1989 (Gershoni, 1996; Kieh, 2009). The first civil war ended with the election of the main rebel leader, Charles Taylor, as president in 1997. By 1999, Taylor's rule was contested by two rebel groups, leading to the second Liberian civil war, which ended with Taylor's resignation in 2003.

The civil wars claimed the lives of about 250,000 Liberians and more than 500,000 were displaced (Johnson-Sirleaf, 2011). People were uprooted and cities, villages and rural areas were almost completely abandoned. Many flocked to Monrovia seeking shelter and settling in camps, abandoned buildings and other vacant spaces (Hoffmann, 2016; Williams, 2011).[7] Many of the displaced people who fled to Monrovia during the war still live there today. The population, which was about 600,000 before 1989, grew to about 1.2 million in 2008 during the last census (LISGIS, 2008). The estimated population of Monrovia for 2020 is 1.52 million. There are no official current figures available, as there has been no census since

[4]Whether Liberia was colonised or not is disputed. Unlike other colonies in Africa that were controlled by Western powers, Liberia was founded by an organisation, the American Colonisation Society (ACS), created in 1816 with financial support from the US Congress to help repatriate freed Black people from the US to Africa.

[5]Collective term for the resettled peoples of African descent from North America and the Caribbean.

[6]Interview with Human Rights Lawyer, Monrovia, January 6, 2020

[7]Monrovia was controlled by peacekeeping forces from the Economic Community of West African States (ECOWAS) between 1990-1997 while the rest of the country was in the hands of the warring factions.

2008.

The return to peace in 2005, characterised by stability in the political and economic space, coincided with instability in the physical space for the urban poor, especially internally displaced persons (IDPs). The influx of capital into the country by Liberian returnees and international donors led to massive infrastructure development projects. Beginning in 2006, the MCC pursued an aggressive slum clearance policy and took strong measures against other forms of informality, such as street vending, but since then the approach has become more cautious (Hoffmann, 2016; Lupick, 2012; Weeks, 2012; Williams, 2011). Many IDPs were evicted from private and public properties they had occupied, while refugee camps were closed, prompting many to move to already overcrowded unplanned settlements such as West Point or to build new settlements such as Peace Island (Fagen, 2011; Williams, 2011).

As in many West African countries, Liberia's land tenure system is characterised by legal pluralism, which in many cases limits the scope for action of local governments. The fact that statutory and customary land tenure systems operate according to different and often mutually exclusive procedures but are supposed to co-exist within the same land use framework, often leads to gaps, violations and uncertainty, as Frimpong-Boamah & Walker (2016) have shown in Ghana. In waterfront areas, land tenure can be even more legally fragmented, leading to multiple legal interpretations by actors, forum shopping, land conflicts, fraud and the loss of public space, as Eguavoen (2022) demonstrated for Abidjan.

The Liberia Land Rights Policy (2013) defines four land rights categories: Public Land, Government Land, Customary Land, and Private Land.[8] Government land is owned and used for government activities; public land is used and managed for the public good; customary land is owned by local communities and used or managed according to customary practices and norms; and private land is owned by individuals or private companies whose management and use decisions are secured by legal titles issued by the Ministry of Lands, Mines and Energy. The Liberian Land Authority (LLA) was established in 2016 as an autonomous body to assume the fragmented land functions previously spread across various government agencies, including the Ministry of Lands, Mines and Energy (MLME), the Centre for National Documentation Agency (CNDRA) and the County Land Commissioners of the Ministry of Internal Affairs.

2.3. Conceptualising riskscapes of unplanned spaces

There is a growing awareness of the need to understand and address risks associated with the specificities of urbanisation in Africa. In comparison to the growing body of literature on specific risks associated with

[8]Liberia Land Rights Policy. https://ekmsliberia.info/wp-content/uploads/2019/11/Land_Rights_Policy-1.pdf

urban growth, particularly flooding (e.g Aalders, 2018; Amoako, 2016; Amoako & Inkoom, 2018; Frick-Trzebitzky et al., 2017), there are relatively few studies on how the specificities of African urbanisation address and account for everyday risks (Adelekan, 2020; Adelekan et al., 2015; Dodman et al., 2017).

The rapid unplanned urbanisation in sub-Saharan Africa is increasingly associated with cycles of risk accumulation (Allen et al., 2017; Pelling et al., 2018). Urban risks cover a wide spectrum, ranging from everyday risks to smaller recurrent risks such as floods, to large and significant but generally rare hazards such as earthquakes (Adelekan et al., 2015; Bull-Kamanga et al., 2003; Manda & Wanda, 2017; Satterthwaite & Bartlett, 2017). The concretisation and reproduction of vulnerability through everyday risks, combined with an eroded capacity to respond, is a common feature of life in unplanned settlements in Africa. This is because vulnerable groups are constantly exposed to everyday risks at home, at work and in the community, including environmental pollution, crime and violence, lack of access to healthcare, food poisoning and heatwaves, psychological stress, poor housing conditions, and the constant fear of eviction (Adelekan, 2020; Bull-Kamanga et al., 2003; Fraser et al., 2017; Ramalho, 2020; Satterthwaite & Bartlett, 2017; Songsore, 2017; van Voorst et al., 2015; Zerbo et al., 2020; Ziervogel et al., 2017; Zweig & Pharoah, 2017). Understanding risk accumulation is important because most risks in urban Africa are not visible and catastrophic or even episodic disasters; instead, they are everyday events that shape the lives of poor urban dwellers (Allen et al., 2017; Pelling et al., 2018; Satterthwaite & Bartlett, 2017).

Unplanned spaces are shaped by different material configurations, relationships, practices and conditions, thereby creating multiple constructions of risk. According to Mol (2002), there are not only many ways to perceive a phenomenon, but also many ways to practice or enact it, resulting in different versions of the phenomenon. The notion of riskscapes emphasises the multiplicity, fluidity and overlapping nature of risks, arguing that different conceptualisations of risk can be applied to the same space with different conclusions as risks are dynamic, uncertain and contested (Aalders, 2018; Gebreyes & Theodory, 2018; Lundgren, 2018; Müller-Mahn & Everts, 2013; White & Lawrence, 2020). Furthermore, the concept considers risk as a multi-layered and intersecting assemblage that encompasses material and discursive aspects of risk (Neisser & Runkel, 2017). Riskscapes allows for a multidimensional analysis of landscapes of risk and opportunity in terms of material risks and the modes in which groups of actors interpret, experience, communicate, construct and respond to these risks (Müller-Mahn et al., 2018).

When considering the multiplicity of the riskscapes, it is important to note that reality is multiple (Law & Singleton, 2014; Mol, 2002). Just as riskscapes are multiple (Müller-Mahn et al., 2018), so too is resilience (S. Simon & Randalls, 2016). Following Annemarie Mol's (2002) concept of the "body multiple", Simon

and Randalls (2016) propose the term "resilience multiple", as there is more than one resilience, but not a fragmented "many", as resilience is realisable in multiple ways but remains singular and actionable through certain processes. The multiplicity of reality embodied in riskscapes, and resilience raises the question of how to integrate them into a common governance framework. (Blaser, 2009, 2014) work on multiple ontologies is also instructive in understanding the 'multiplicity' of ‘riskscapes’ and 'resilience multiple'.

Given the ontological multiplicity of riskscapes (Frick-Trzebitzky et al., 2017; Müller-Mahn et al., 2018; White & Lawrence, 2020) and resilience (Fraser et al., 2017; Harris et al., 2018; Simon & Randalls, 2016), adaptation practices require compromises and trade-offs for stakeholders (Harris et al., 2018). However, planning and practices can crystallise dominant political agendas (Flyvbjerg, 1996; Muchadenyika & Williams, 2017; D. Simon, 2015; Yiftachel, 1994) or exacerbate social exclusion (Abubakar & Doan, 2017; Parnell & Pieterse, 2016; Watson, 2009). Consequently, recent debates have increasingly favoured a more equity-oriented approach to resilience planning that emphasises inclusive and participatory processes, including those of local voices and marginalised groups, and that is receptive to different and non-traditional framings of resilience (Anguelovski et al., 2016; Harris et al., 2018; Krüger, 2019; Meerow & Newell, 2019; Vale, 2014; Ziervogel et al., 2017). This approach ensures that resilience initiatives do not systematically reinforce the status quo (Agyeman, 2013; Anguelovski et al., 2016; Harris et al., 2018; Meerow & Newell, 2019). This negotiated perspective draws attention to the contextuality of risk and resilience as phenomena that are constantly experienced and shaped in different contexts (Harris et al., 2018).

Riskscapes offer a variegated understanding of urban risk, particularly regarding how people translate risks embedded in physical landscapes and discourses into everyday practices. In addition, it provides an insightful way to explore how practices are balanced in the governance of urban risk, ranging from expert assessments and their recommended governance measures to local perceptions and their approaches to risk management. Third, it provides insight into why certain risks are emphasised within the dominant practices and others are 'neglected’. Finally, applying the concept of riskscapes allows us to address the ontological multiplicity of the notion of resilience concerning informal spaces, particularly in terms of how risk reduction is enacted in practice by different stakeholders, thus highlighting the need for a negotiated resilience (Harris et al., 2018; Simon & Randalls, 2016; Ziervogel et al., 2017).

2.4. Study Area and Methodology

Two settlements were selected in Monrovia: West Point and Peace Island (See Fig. 1). With an estimated population of over 80,000, West Point is Liberia's most populous slum. The settlement emerged in the

1940s when fisherfolks settled on the sandy peninsula reclaimed from the Atlantic Ocean. West Point is recognised as a township, while Peace Island has no official status. Therefore, West Point has the presence of the state, as evidenced by the appointment of a township commissioner, a magistrate's court, and a police station. Peace Island, located on a peninsula jutting into the Mesurado Wetlands, an endangered mangrove forest and Ramsar protected area, was uninhabited before the civil war.[9] The settlement was founded in 2005 by IDPs who had previously occupied the Ministry of Defence building the Congo Town suburb and has a significant proportion of former combatants. Both settlements are considered squatter settlements located on public land.

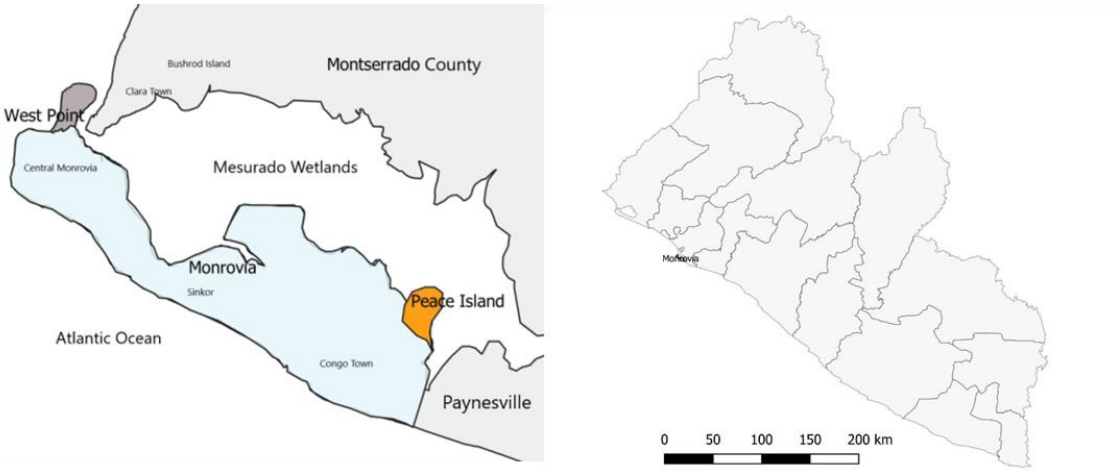

Figure 1: Study Areas (Author, 2022)

The structures in the two settlements are mixed. In West Point, there are few cement houses located further from the beach, but most are built of zinc sheets and recycled materials. These materials can be easily reassembled after seasonal flooding or when the sea recedes. Buildings on Peace Island are more diverse, ranging from cement to mud bricks to zinc huts (See Fig. 2). The dynamics of development on

[9]Mesurado Wetlands, Ramsar Sites Information Service. https://rsis.ramsar.org/ris/1631.

Figure 2: Structure made of concrete on Peace Island (Author, 2019)

Peace Island show that while the number of buildings at risk of flooding is increasing, the number of concrete buildings, which are less at risk of leaching, is also increasing. However, the rapid spatial sprawl and increasing density of the area means that more people are exposed to additional risks.

Data were collected in Monrovia, Liberia from August 2019 to March 2020 and drawn from five main sources: semi-structured interviews with government officials and members of non-governmental organisations (NGOs) and civil society organisations (CSOs); informal interviews with residents; focus group discussions (FGDs); review of official documents and grey literature; and field notes from direct observations.

2.1: Overview of interviews and focus group discussions

Type of Interviews	**Number of Interviews**			**Number of Participants**		
	Male	Female	Sum	Male	Female	Sum
Residents	17	12	29	17	12	29
Focus Group Discussions	2	2	4	16	16	32
Government Officials	8	5	13	8	5	13
NGOs/Civil Society	5	7	12	5	7	12
Total Respondents	**32**	**26**	***58***	**25**	**19**	***86***

The interviews and FGDs were recorded and then transcribed. Interviews with government officials, NGOs and CSOs were conducted in English. The FGDs and interviews with residents were conducted in Koloqua (also known as Liberian Pidgin English), and the transcriptions were validated by local language experts from the University of Liberia's English Department.

To obtain sound and objective data/information on the diversity of the urban riskscapes, fifteen (15) officials from twelve (12) government agencies, NGOs and civil society organisations were purposively pre-selected, while the rest (10 officials from 9 organisations) were selected through snowballing. Participants for the FGDs and interviews were recruited primarily through a snowballing process that started with a small group that was purposively selected with the help of community leaders, the research assistant and others known to the researcher. The initial respondents helped to identify additional respondents.

2.2: List of Institutional Interviews

Preselected Institutions	**Number of Officers**
National Disaster Management Agency (NDMA)	2
Environmental Protection Agency (EPA)	2
Ministry of Public Works (MPW)	1
Monrovia City Corporation (MCC)	2
National Public Health Authority (NPHIL)	1
Liberia Land Authority (LLA)	1
Habitat for Humanity (HFHI)	1
Liberia Water and Sewer Corporation (LWSC)	1
Liberia Institute of Statistics and Geo-Information Services (LISGIS)	1
National Housing Authority (NHA)	1
Township Commissioners Council	1
Liberia National Police (LNP)	1
Institutions Selected through Snowball Sampling	
Slum Dwellers Association of Liberia (SLUMDAL)	1
Researchers from two Liberian universities	2
West Point Women's Health and Development Organization (WPWHDO)	1
Urban Development Consultants	3

Office of the Township Commissioner of West Point	1
Human Rights Lawyer	1
Federation of Petty Traders and Informal Workers Union of Liberia (FEPTIWUL)	1
Total	25

The interviews with institutions took place at the premises of the respondents. Interviews with residents took place in the community, either in the participants' homes or in a central area. Individual interviews generally lasted 60 minutes, while FGDs averaged 90 minutes. The observations were non-intrusive and non-participatory and included observation of activities in public spaces, spatial features and informal interactions with residents.

Four gender-segregated FGDs were conducted with eight participants each: two were exclusively male and two were exclusively female. As the discussions on "everyday risks" included culturally sensitive topics such as women's access to primary health care, it was decided to conduct separate FGDs so that women could speak freely. Additionally, it ensured the inclusivity and representativeness of women's voices and avoided the 'peacock effect' where men tend to dominate mixed-gender groups (Krueger & Casey, 2000; Umaña-Taylor & Bámaca, 2004). This group dynamic created an ‘equal’ and 'friendly' atmosphere where the research benefited from participants' shared experiences while avoiding hierarchy and power relations influencing the discussion. Participants related each other's statements to real events from their everyday lives and clarified the contradictions between their actions and perceptions (e.g., "Didn't you ignore the community leaders' instructions not to put your container (kiosk) in the place designated for the hand pump?").[10]

The measures taken to protect and control information obtained from or about the participants and the institutions they represented included encryption or password protection of all storage devices to prevent the risk of data loss and leakage. Participants were informed of their right to withdraw their participation at any time. All personal data was fully anonymised. The data were analysed using Atlas.ti, mainly through content analysis.

2.5. Riskscapes of unplanned settlements

Riskscapes are socially constructed phenomena. While riskscapes are the confluence of actors' practices, one can observe the shades of objective riskscapes and subjective riskscapes, especially in terms of how

[10] Focus Group Discussion, Peace Island, February 8, 2020

risk is perceived. These nuances are generally the result of the interplay of experts' risk assessments, which dominate the discourse on urban risk, and residents' risk perceptions. Although expert assessments for several unplanned settlements in Liberia have consistently estimated higher risks associated with conditions such as coastal erosion and flooding, residents' perceptions of risk are an ongoing process of construction and reconstruction shaped by their daily experiences. [11]

2.3: Overview of emerging riskscapes

	Emerging Riskscapes	**Preferred Actions**
Expert/State Actors	Geophysical hazards: 2 exposure to flooding, sea erosion, etc. Survival strategies of locals leading to: 3 Destruction of the Mesurado Wetlands 4 Conversion of the flooding control infrastructures	● Demolition ● Relocation ● Upgrading
Locals	Insecure land tenure ● threats of eviction /demolition ● Conflicts due to overlapping and competing interests for use of the same parcel. Lack of infrastructure (electricity, potable water, sewage lines, etc) Everyday risks ● poor sanitation, overcrowding, poor housing, pollution, diseases, etc	● Upgrading ● Coastal Defence ● Infrastructure Provision

A prism through which to explore practices at the local level is the recommended actions of experts and the risk management actions of residents (See Fig. 3). West Point, for example, has a community-wide sea erosion prevention committee that collects resources and solicits the interventions of the city government.[12] But while residents seek solutions for coastal defence, infrastructure and other basic services, the government advocates dismantling the settlement, mainly because of the threat of sea erosion. This position is summarised in the following comment from a former official of the Ministry of Public Works:

[11]Interview with EPA official, (November 11, 2019) and NDMA official (November 14, 2019)
[12]Interview with staff in the office of the Commissioner, West Point. January 16, 2020

"It has always been the desire of the government to relocate West Point. Time and circumstances are forcing the government closer and closer to this decision. This settlement cannot continue to exist". (October 28, 2019)

A West Point leader explained that they are habituated to the challenges of cyclical displacement due to flooding.[13] Floods can last up to 12 weeks at certain times of the year, but residents live daily with the effects of inadequate infrastructures, such as lack of sanitation and clean drinking water, as well as extreme poverty and violent crime. For example, energy scarcity increases the risk of fire outbreaks when candles, paraffin and portable generators are used in congested environments where buildings are constructed of combustible materials, or of food poisoning because many people cannot store food properly.[14] Respondents also noted that non-functioning sewers and storm drains, due to their conversion to landfills and construction sites, exacerbate the flooding problem, underlining the link between land use and everyday risks.[15]

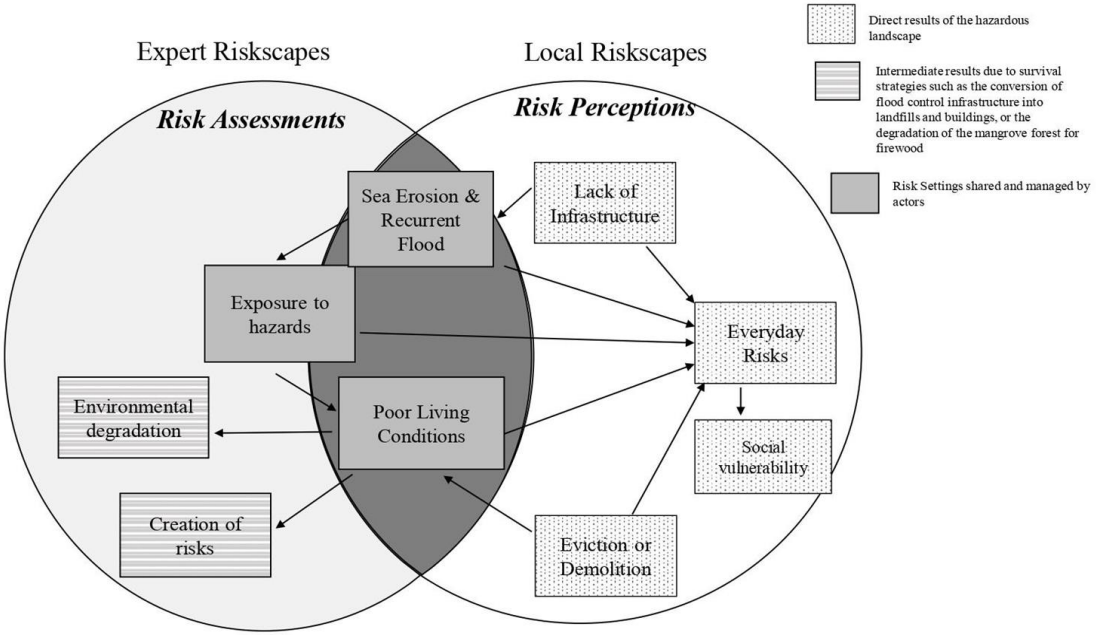

Figure 3: Riskscapes of informal settlements (Author, 2021)

West Point is generally considered a non-viable settlement mainly because of the threat of coastal erosion and increasing severity of the seasonal flooding, and the interaction between these hazards with socio-

[13]Interview with a community leader from the Grand Cess Yard, West Point, January 14, 2020

[14]Focus Group Discussion, West Point, February 8, 2020

[15]Focus Group Discussion, West Point, February 8, 2020

demographic factors such as widespread poverty, vulnerability to epidemics and the prevalence of crime.[16] For example, the Monrovia Metropolitan Climate Resilience Project, funded by the Green Climate Fund to improve coastal protection in parts of Monrovia, is an example of this focus on physical geography. This points to the institutional context in which expert responses to risk often take place. While this line of thinking understandably helps to promote protectionist measures that translate into the demolition or upgrading or unplanned settlements, it does not necessarily resonate with the local population. The reaction of an official of the Environmental Protection Agency (EPA) shed some light on the matter when he remarked:

> *"People need to understand that we do not just wake up and make pronouncements. All the decisions we have made on these squatter settlements are based on science…detailed studies. But 'our people"*[17] *don't understand that. We must do what is right..." (EPA Official, November 11, 2019).*

But far from showing a "lack of understanding", residents demonstrate a thorough appreciation of spatial dynamics, recognising both the spatial dimensions of risks and embedded opportunities. In this respect, risky spaces are also spaces of opportunity, when hedged against alternatives. This is the case for Mr Sloh[18], a middle-aged teacher and former IDP who moved to West Point in 2003 after the second Liberian civil war in 2004. He teaches at a secondary school just outside the community, his wife sells fresh fish on the beach and his adult daughter trades in clothes and other goods at the Waterside Market a few kilometres from the settlement. He also deals in building materials, a business that is booming because of the constant need to repair and build temporary structures. Although he indicated a high perception of risk in his responses, he elaborated on the factors influencing his continued investment in the settlement, such as the expectation that he would make money from his business.[19] So there is a risk perception paradox where residents have a high awareness of risk but decide to stay rather than leave based on trade-offs.

While West Point´s non-viability is down to the threat from coastal erosion and flooding, Peace Island on the other hand represents the threat of unplanned urbanisation to environmentally precarious ecosystems. The EPA has taken a strong stance against encroachments and sees Peace Island as the most audacious threat to the Mesurado Wetlands.[20]

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[16]Interview with Habitat for Humanity official, Monrovia, September 19, 2019
[17]"Our People" is a reference to the inhabitants of unplanned settlements.
[18]Not his real name
[19]Interview, West Point. December 12, 2019
[20]Interview with EPA Official, November 15, 2019

2.6. Governance and institutional responses to riskscapes

To understand the dominant practices, it is important to grasp the role of power relations and knowledge production. Risk assessments not only influence the choice of risk management that maintains the prestige and objectivity of scientific research but also establish the dominant actor in urban planning. Bohle (2018), in tracing hurricane riskscapes in the Caribbean, points to the two dimensions of Foucauldian governmentality evident in them: first, directing the conduct of others using strict coercive mechanisms, and second, directing the conduct of the self, amidst multiple possible actions. We can apply these two dimensions in the case study to understand the interrelationships of risk, space, and power within Monrovia's unplanned settlements, and what that means for resilience building.

The attitude of the city government towards unplanned settlements can be summarised in three approaches: first, a degree of tolerance, characterised by neglect; second, demolition and eviction; and third, legal recognition. Residents are aware of the government's attitude to unplanned settlements, particularly its reluctance to allow the expansion of new settlements and its preference to improve existing ones. This awareness effectively "guides" the behaviour of residents, especially on Peace Island.[21] Moreover, this awareness places the onus on the residents to adopt practices to meet the demands of state actors. For example, fulfilling the government's expectations, such as preserving the Mesurado Wetlands seriously jeopardises residents of Peace Island access to fuelwood or building materials. This is part of the landscape of risk that residents must navigate, in the form of trade-offs: If the degradation of the mangrove forest attracts attention, it may hasten the government's determination to relocate the settlement but preserving the mangrove forest also means losing access to a source of energy and building materials.

The contested riskscapes have important implications for resilience: how can resilience be achieved when state expectations and local survival strategies diverge? This question underlines the importance of a negotiation pathway that accommodates the multiplicity of riskscapes and resilience-building. For example, whilst the EPA considers Peace Island a threat to the Mesurado Wetlands,[22] other actors, such as Habitat for Humanity and Cities Alliance, as well as MCC, see Peace Island as a promising opportunity for in-situ slum upgrading.[23] Therefore, resilience on Peace Island does not mean the same thing to the different actors; hence, risk reduction practices are likely to be different. However, it is important to understand what the different practices mean for residents in unplanned spaces.

[21]Interview with a community leader, Peace Island, September 19, 2019
[22] Interview with EPA Official, November 15, 2019
[23]Habitat for Humanity (March 18, 2021). Creating a decent place to live for residents of Peace Island in Monrovia. https://www.habitat.org/emea/newsroom/2021/creating-decent-place-live-residents-peace-island-monrovia

This raises the question: How can governments incorporate multiple risk and resilience priorities into current plans or decisions? We start by considering these questions: "Resilience to what?", "For whom?", "In what timeframe?" (Meerow & Newell, 2019). It has been argued that many cities' risk mitigation and adaptation strategies exploit the poorest while benefiting the wealthier parts of the city (Agyeman et al., 2016; Anguelovski et al., 2016; Blok, 2020). Any strategy to build resilience or mitigate risk must therefore consider the multiples of riskscapes and resilience and the multiplicity of practices they trigger (Fitzgibbons & Mitchell, 2021; Harris et al., 2018; Ziervogel et al., 2017). This recognition of multiplicity must consider both the multi-scalar and actor's-specific interpretations of risk and resilience, as well as the priorities and strategies that meet their requirements for 'resilience' (Harris et al., 2018; Müller-Mahn et al., 2020; Raman, 2020). More importantly, resilience building efforts should reflect unequal power relations and promote a trajectory that prioritises inclusivity and participation (Fitzgibbons & Mitchell, 2021; Harris et al., 2018; Meerow et al., 2019; Ziervogel et al., 2017).

But how can inclusion and participation be achieved without a formal mechanism? The lack of a formal negotiation mechanism does not imply the absence of negotiations. The multi-scale governance alliances that exist in the two settlements shed light on how participatory processes work to manage complex riskscapes. Currently, NGOs such as Habitat for Humanity and CSOs such as the Slum Dwellers Association of Liberia (SLUMDAL) have established productive relationships with locals in West Point and Peace Island and mediate between them and national institutions. These governance arrangements exist along the formal and informal continuum. However, these interactions do not sufficiently address issues of justice and equity or the development of a negotiated pathway that could foreground them.

Where multi-scalar management and negotiation platforms are not prioritised, synergies appear through other modes, such as the governmentality of the state. The spatial transformation of Peace Island into a candidate for formalisation through rudimentary self-upgrading by residents is illustrative. These efforts are informally coordinated. Residents stated that awareness of the state's uncompromising stance on unplanned settlements influenced these actions.[24] From the outset, Peace Island residents sought to mimic Monrovia's 'orderly' vision as a strategy against future demolitions.[25] The most common reason respondents gave for investing in durable structures and maintaining rudimentary zoning in an area with insecure tenure was the hope that the government would interpret these measures as a first step towards upgrading, which would increase their chances of tenure.[26] However, some residents said that permanent structures also

[24]Focus Group Discussion, Peace Island, February 8, 2020
[25]Interview with community youth leader on Peace Island, December 12, 2019
[26]Focus Group Discussions on Peace Island on January 14, 2020, and February 8, 2020

provide security for them to receive compensation if their structures are demolished by the government in the future.[27] A similar scenario was observed in Abidjan, where insecure land tenure enabled private investment and speculation with rental property (Eguavoen, 2021). This is of strategic importance because the residents are aware that the survival of their settlement or the acquisition of land ownership depends on the position of the government, which may be influenced by whether the settlement is suitable for habitation and is viable for upgrading, whether the issue of land ownership can be resolved or whether other commercial actors are interested.

Because risks are overlapping and interconnected, it is important to look at them relationally, rather than hierarchically. Insecurity of land tenure and land use, for example, are linked to risks of eviction and further displacement.[28] Challenges with land tenure and land use, however, also points to a bigger challenge of poorly functioning land and housing markets which links to other risks, such as fires, landslides, or floods due to ineffective urban planning.[29] The interconnectedness of risks and their different interpretations (see Fig. 3) is directly linked to stakeholder practices, which are reflected in the different tendencies to mitigate risks. For example, residents associate insecure land tenure with the risk of eviction. The lack of modern cooking or lighting systems means using dirty fuels and candles for lighting, which has health consequences through indoor pollution and other risks such as fire outbreaks and burns, as well as crucial implications for education and productive, income-generating activities. The lack of other risk-mitigating infrastructures, such as water, sanitation and drainage systems, is also associated with everyday risks, such as the spread of waterborne diseases. These findings are consistent with several concerning studies linking infrastructure deficiencies to a range of urban risks (Baruah & Enweremadu, 2019; Butera et al., 2016; Kimemia et al., 2018; Kimemia & Van Niekerk, 2017; Zerbo et al., 2020).

The contrast between expert-recommended risk management and locals' view on risk mitigation is instructive for understanding the links between risk perception, risk assessment and risk management. For example, the view that West Point should be demolished is based on risk assessments (see e.g., Wiles, 2005) which stresses the settlement's vulnerability to coastal erosion. Residents, on the other hand, argue that the settlement's vulnerability is due to inadequate infrastructure and blame this on the government's failure to establish a coastal protection system.[30] This argument is not based on scientific research, but rather on the

[27]Interviews on Peace Island with an ex-combatant on December 1, 2019, and secretary for a local savings club on February 14, 2020

[28]Personal Communication with an official of the Slum Dwellers Association of Liberia (SLUMDAL), September 14, 2019

[29]Interview with NHA official, September 14, 2019

[30]Focus Group Discussion, West Point, February 12, 2020

fact that other communities around Monrovia, such as New Kru Town and Hotel Africa, benefit from a coastal protection project.[31] This is revealing and could be interpreted as state actors' resignation to the destruction of West Point by the Atlantic Ocean. The fact that the coastal protection project launched by the government in 2018 with international partners to curb coastal erosion does not include West Point, perhaps the most at-risk settlement, was taken by one expert as a sign that saving the community is a hopeless endeavour. [32]

This again raises the question of how risk reduction plans can integrate diverging priorities and interests into a risk governance framework. An evolutionary approach to risk governance, focusing on the co-evolving elements and configurations that link discourse, actors, institutions, power and knowledge, will provide the platform on which the links between risk perception, risk assessment and risk management are debated and emerging riskscapes encountered (Van Assche et al., 2015). Returning to the ideas of 'multiplicity of riskscapes' and 'resilience multiple', evolutionary governance, with its emphasis on collectively binding decision-making by a diversity of actors inside and outside government, with formal and non-formal roles, can lay the foundation for inclusion and participation and thus provide the basis for a negotiated pathway to resilience building (Harris et al., 2018; Van Assche et al., 2015).

2.7. Navigating risky landscapes

Residents join a range of associations to expand their scope of action, build social networks and strengthen their interests. These associations range from religious to economic and recreational activities. The West Point Women's Health and Development Organisation (WPWHDO), for example, fights sexual and gender-based violence in West Point and provides education, health care, empowerment and safe spaces for rape survivors. Peace Island Community Youth (PICY) was established primarily as an advocacy group to provide opportunities for youths. These associations create spaces to shape and share ideas, strengthen and stabilise identities and develop a shared vision of a "better future". This resonates with Vigh (2010) study on navigating risky conflict-affected landscapes in Guinea-Bissau, where associations in a shifting social environment provide some stability and predictability through their structure and function.

An important role for these community-based associations is to negotiate visibility and assert spatial claims. These associations work closely with NGOs and CSOs, including the Slum Dwellers Association of Liberia (SLUMDAL), the Liberian branch of Slum/Squatter Settlement Dwellers International (SDI). Since 2008, SLUMDAL has been campaigning for rent control and negotiation of land rights for squatted land but has

[31] Coastal Defence Project, https://www.adaptation-undp.org/projects/enhancing-resilience-liberia-montserrado-county-vulnerable-coastal-areas-climate-change

[32] Interview with a former official of the Ministry of Public Works, October 28, 2019.

had little success in doing so. SLUMDAL has worked with government agencies on issues related to unplanned settlements but has been excluded from the process of developing the "2019 National Urban Policy (NUP)", a policy that will have critical implications for unplanned settlements.

Residents' alliances with NGOs, CSOs and international partners, particularly on the Peace Island, have led to increased upgrading activities. In March 2021, the EU and the government committed to including Peace Island in the co-funded electrification of Monrovia's suburbs. In March 2021, settlement leaders and international partners gathered to unveil new facilities completed, under the auspices of Habitat for Humanity and the Cities Alliance. The facilities include a community centre and two wells with solar pumping systems, as well as six elevated poly-tanks, three water kiosks, and two new and two refurbished toilet facilities.

Negotiations between informal actors are often the most common form of interaction concerning the use of unplanned spaces. For example, residents of Peace Island negotiate the location and use of spaces for houses, shops, temporary market stalls, etc. As mentioned elsewhere, squatting at West Point was authorised through negotiations with city officials, law enforcement and long-term residents who exercise a degree of quasi-control over the land. Residents also alleged that in some cases bribes were paid to people posing as law enforcement representatives, and in some cases to gangs. Several factors influence the negotiation of space. The first settlers on Peace Island and West Point built their houses at higher elevations to avoid flooding and sea erosion. However, some of the first settlers on Peace Island settled near the marsh, which they used primarily for farming and fishing. The location of market stalls on Peace Island is determined by the flatness of the land, which was ideal for tables, or by physical features such as a greater distance from the marshes to avoid seasonal flooding. In West Point, fishmongers tended to locate their stalls closer to shore to interact more easily with fishers. Some residents are involved in controlling the space, which often leads to the exclusion of less powerful residents. Community leaders who generally oppose development in the mangrove forest for fear of a backlash from the EPA, for example, have themselves been accused of exploiting the forest. This shows how ongoing negotiations at the local level can be undermined by local leaders.

Another issue repeatedly raised by the respondents is the remarkable uncertainty that pervades everyday life. They emphasised that they do not plan because they are uncertain of the future. Despite this assertion, they anticipate the future through shared positive expectations. However, everyday risk-taking is characterised not only by hedging against uncertainty through calculated practices that involve processes of self-organisation, adaptation and self-responsibility but also by the creation of risks. On Peace Island, for example, residents control run-off and erosion by digging drains to divert water elsewhere, thereby

shifting the risk to other residents. This is the source of constant conflict in the settlement.[33] Mining sand on the beach is a cheap way for contractors to obtain building materials and a way for the residents of West Point to generate income. However, this practice accelerates coastal erosion and increases the risk of coastal flooding.[34]

However, this everyday experience of uncertainty is not considered "normal". Instead, people always describe this situation as stressful.[35] This raises the question: how can one live a "normal" life in a time saturated with uncertainty and instability? In conversations with several older residents of Peace Island, they speak of "normal days", a time that denotes the pre-war period, compared to "these days", which are characterised by extraordinary insecurity. This is not to say that there was no insecurity before the civil wars. But what they are experiencing now is exceptional.

2.8. Conclusion

The riskscapes of Monrovia's unplanned settlements reveal a landscape of risk and opportunity shared and managed by different actors. The multiple understandings and interpretations of 'risk' and 'resilience' inspire practices of different actors, shaped by multiple priorities, scales, contexts, or interests. However, unequal power dynamics mean that the practices of state actors influence the residents of unplanned settlements and subtly coerce them to integrate these practices into their strategies, with the resulting governmentality more about meeting the demands of the state rather than a desired course of action. The risk governance framework is thus one in which the interests and priorities of state actors prevail.

The current disaster risk reduction framework does not place sufficient emphasis on local participation. In addition, there is a lack of coordination between national authorities, a focus on key risks (rather than the conditions that lead to vulnerability) and a reliance on limited knowledge of unplanned settlement practices. Although there is no formal platform for collaboration or negotiation with government agencies, productive collaboration between residents, NGOs and CSOs in West Point and Peace Island offers the potential for co-production. Building resilience amidst the complexities of riskscapes requires collaborative governance and practical engagement based on flexibility and negotiation, involving the diverse stakeholders - from residents, state actors, civil society and NGOs - in developing a shared risk reduction strategy, rather than imposing standardised plans from above. Although government agencies are often indirectly involved in these informal collaborations or negotiations, the outcomes are often the continuous reproduction of expert

[33] Focus Group Discussion, Peace Island, February 8, 2020
[34] Focus Group Discussion, West Point, February 18, 2020
[35] Focus Group Discussion, Peace Island, February 8, 2020; Focus Group Discussion, West Point, February 18, 2020

knowledge in local spaces and governmentality.

Co-production can be understood as a process of shared learning and micro-negotiation in which heterogeneous groups pursue a common goal (Duque Gómez & Jaglin, 2017). In Liberia's resilience initiatives, co-production has rarely been used as a method for the urban poor to develop their local organisation and build their capacity to negotiate with the state. Currently, top-down approaches dominate, accompanied by a donor-driven intervention that involves the imposition of ready-made initiatives already planned by third parties. Furthermore, as riskscapes represent different realities for different stakeholders, the question of how to coalesce them into a common risk reduction or resilience strategy is relevant. This calls for a thorough understanding of exactly what kind of resilience stakeholders are seeking and how the different approaches and practices fit into the local risk governance mosaic. Riskscapes are multiple and variegated, and so is the resilience that stakeholders seek.

It is difficult for CSOs such as SLUMDAL to reduce disaster risk in a way that changes physical conditions in unplanned neighbourhoods, as they lack the necessary tools and financial resources. It can be said that residents have a good understanding of the risk situation and have developed coping strategies, but they do not have the means to change their situation in a meaningful way. While the authorities have the means, they often lack the knowledge of local conditions that would allow them to act with greater precision and certainty. In this risk-saturated environment, with multiple priorities, arguments and interests, it makes sense to set up co-production processes that lead all stakeholders to a negotiated outcome.

The lack of recognition of multiplicity in terms of riskscapes and resilience by current hegemonic risk governance means that actors' risk reduction strategies often have different emphases. For example, interventions shaped by scientific risk assessments focus on the geophysical risks such as coastal erosion or environmental degradation such as the threat unplanned settlements pose to the Mesurado Wetlands. Residents, on the other hand, are more concerned about the "everyday risks" arising from the lack of infrastructure and services. This divergence calls for a repositioning of risk governance, with a more evolutionary approach that recognises the co-evolutionary elements and configurations that link discourses, actors, institutions, power and knowledge, to create a platform that concretises the links between risk perception, risk assessment and risk management. This complementary approach allows us to understand how residents live with these risks and, more importantly, which hazards are risks for them. Ongoing demolitions or restrictions on the use of the mangrove forest are risk reduction practices that establish the state as the master of the spatial configuration but do not address issues of rights and justice (Ziervogel et al., 2017) or emphasise a “negotiated resilience" that takes into account the interests and priorities of the

residents of unplanned settlements (Harris et al., 2018), or addresses the multi-scalar dimensions of managing complex riskscapes (Müller-Mahn et al., 2020; Raman, 2020).

Given the multiplicity of riskscapes, and by extension resilience, it is important that their multiple ontologies and multi-scalar dimensions are captured through participatory approaches that build local resilience through negotiated and co-productive processes (Harris et al., 2018; Ziervogel et al., 2017). As Harris et al. (2018) highlight, negotiated resilience does not necessarily reflect a "formal process", but negotiations are "often informal, uncertain, time-consuming, and may even be conducted through avoidance rather than direct deliberation and participation." However, the possibility of informal negotiations does not necessarily preclude formal arrangements. Formal mechanisms may even be preferable to informal ones, especially for marginalised groups. While state actors, as well as powerful local actors, can easily manipulate informal negotiations to their advantage due to unequal power dynamics, formal mechanisms can create a balance that promotes compromise and trade-offs and allows marginalised voices to be heard.

The spatial heterogeneity of unplanned settlements is also discussed in this paper. There are a variety of unplanned morphologies in Monrovia, and although informal adaptations are similar across unplanned settlements, resilience-building may take different paths depending on socio-spatial characteristics. Peace Island is newer and therefore emerged during a period of heightened awareness of sustainability. Peace Island can therefore potentially be upgraded in situ. However, West Point has experienced exponential population growth, and its extreme land scarcity and vulnerability to coastal erosion make it an unsuitable candidate for upgrading. The contrast between the two settlements shows that spatial characteristics are important in designing interventions.

Despite exposure to a precarious environment characterised by geophysical hazards, the legacy of devastating civil wars, social vulnerability, among others the decision of locals to stay in these settlements vary and range from little or no knowledge of alternatives or the lack of the wherewithal to pursue alternatives. This situation also highlights the risk perception paradox, where people choose to stay in the hope of financial gain or because of other trade-offs and considerations. What is constant, however, is that they live in an environment saturated with risks, often translating these risks not only into hazards but also opportunities. But these risk translations must also interact with the multiple interpretations of spatial risks by state actors and other stakeholders, such as CSOs and NGOs, leading to multiple, and sometimes contradictory, practices; hence, the multiplicity of riskscapes.

In West Point, there is the issue of spatial and temporal uncertainty. In an environment where trust in the capability of authorities to implement coastal protection projects is low, the community's survival depends

on the implementation of a coastal protection project. Here, expectations do not match reality. Coastal erosion is aggressive, but because people are attached to the area and fear for their livelihoods, and because of other intervening factors, they continue to harbour faint hopes that the settlement can be saved. Peace Island, however, is making progress towards its upgrading goals, despite a lack of official recognition because of collaboration with international organisations, NGOs, and government agencies. Therefore, West Point represents despair, whereas Peace Island represents hope.

In this sense, the dichotomy between hope and despair corresponds with Stokes (1963) concept of 'slums of hope and despair, which describe the heterogeneous material and social conditions of poor neighbourhoods in developing countries. Residents of the unplanned settlements that represent "hope", such as Peace Island, are portrayed as ambitious and positive and living in conditions that can gradually improve, while residents of the area that represents "despair", such as West Point, are on a downward trend, are more pessimistic about the future and live in a state of uncertain stagnation. In this context, rapid urbanisation in many cases means an accumulation of risks, but it also offers promising opportunities for socio-economic development.

As we recognise the importance of the multiplicity and fluidity of overlapping and sometimes contradictory riskscapes, the gap between disaster risk and everyday risk narrows. In this context, recognising “multiplicity”, rather than a single conceptualisation of "risk" and a single pathway to "resilience" creates a flexibility that allows for a more inclusive process of building resilience. This ensures the integration of different agendas, and local knowledge and capacities, and creates a platform for compromise and negotiation between actors within a flexible risk governance arrangement.

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CHAPTER 3: RISK GOVERNANCE

3. The interplay of riskscapes and risk objects in unplanned settlements in Monrovia[36]

Abstract: This paper explores how the concepts of riskscapes, and object formation can be incorporated into governance theory to provide an analytical lens for risk governance in the context of a plurality of practices. In this context, the Monrovia Slum Initiative is examined using data from three unplanned settlements. Competing riskscapes are reflected in object formation, and the resulting object of governance. While manifesting the inclinations of dominant actors, governance objects demonstrate the potential to accommodate a range of interests, groups, ideals, and practices. The slum initiative pursues a development-oriented goal that aims to integrate unplanned settlements into the city. But it equally serves as a device to detach or eliminate unplanned settlements from the city. The 'slum' as an object and the slum initiative as a tool of governance determine which forms of urbanisation are acceptable, which areas are stigmatized, as well as guiding locals' conduct. In this manner, the object alters the riskscape it emerges from. The results indicate that the object formation engendered by the slum initiative and its driving actors remains contested and does not necessarily entail a convergence of riskscapes. Governance tools and objects, therefore, do not consistently represent a uniform grounding. The fruitful integration of riskscapes and object formation in governance theory contributes to the literature on urban risk governance and on southern urbanism by providing a prism for assessing the local construction, spatialisation and navigation of risk in settings where both informality and planning are contested and diverse.

Keywords: Riskscapes; object formation; informal urbanization; risk governance; spatial planning; Liberia

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3.1. Introduction

Monrovia's slum-like unplanned settlements are portrayed in the local media as pariah enclaves characterised by desperation, poverty, and hazards, evoking Fanon's (1961/2005) "crouching village." However, these settlements are physically, economically, and socially integrated into the city. This urban normality/abnormality echoes Mary Douglas's notion of the dualistic divide of society – of clean and unclean, of order and disorder (Douglas, 1966). Monrovia thus symbolises the unresolved tensions between informal self-organised processes as the primary driver of urbanisation and the dominant role of the state as the master of spatial configuration (Hoffmann, 2017).

This paper explores how risk objects and governance instruments accommodate a range of conceptualisations, practices, and motivations that complement and contradict each other in the same space. To this end, the paper examines the not necessarily linear interactions between actors' practices and the interpretive frameworks adopted to construct risk. It further investigates the conceptualisation and ultimately the emergence of risk objects as governance instruments. The paper focuses on urban Liberia and analyses the Monrovia Slum Initiative, an initiative that emerged from the 2008 Poverty Reduction Strategy to improve the conditions of slum dwellers. The Slum Initiative is materialised through various upgrading and formalisation activities. These projects are the result of collaboration between development organisations such as Cities Alliance and Habitat for Humanity and government agencies like the National Housing Authority (NHA) and the Monrovia City Corporation (MCC).

This article explores how the concepts of riskscapes and object formation can be integrated into governance theory to provide valuable insights into the functioning and governance of unplanned settlements. Furthermore, it provides a useful prism for assessing risk in local contexts without losing sight of the complex, multilevel processes that shape risk. We expand on Müller-Mahn and Everts' (2013) concept of riskscapes, which they employ to describe the intricate linkages between risk, time, space, and practice. Riskscapes are supported by collectively imagined risk landscapes (Müller-Mahn et al, 2018), but they also serve as connectors between (collective) agency, discourse, and the materiality of risk. We combine the riskscapes approach with the notion of object formation developed by Van Assche et al. (2014b) in the framework of evolutionary governance theory, an analytical lens for tracing the construction, consolidation, and codification of governance objects. Given the need to contextualise urban theory to the Global South, these concepts are assessed within African urbanism (Ernstson et al, 2014; Lawhon et al, 2014; Parnell & Robinson, 2012; Parnell & Pieterse, 2016). We will argue that the understanding of risk and informality which emerges from our perspective, contributes to the discussion on southern urbanism, and, in fact, on the risks managed and posed by planning. Neither the riskscapes concept nor the object formation theory,

developed by Van Assche et al, leaning on Foucault, can perform the analytic task at hand by itself. Yet we will demonstrate how they can complement each other in an understanding of governance sensitive to the relations between the interpretation of space, risk, and governance.

The resulting perspective on the construction, spatialisation and navigation of risk in the interplay between formal planning and other forms of organisation in a southern context can provide a practical basis for evaluating risk reduction measures designed to stabilise urban space amid unplanned urban growth. This is achieved by assessing the not necessarily linear relationships between actors' practices and the interpretive frameworks they use to construct risk, but also the emergence of risk objects and how they ultimately unfold in the development of risk governance.

The remainder of the paper presents the fundamental concepts underlying the study, followed by a section on context and methodology. The empirical section begins with an overview of the "slum problem" in Monrovia. It then turns to the interaction between riskscapes and risk objects, followed by a subsection on how locals navigate the risk and opportunity landscapes. The main results are presented in the concluding section.

3.2. Conceptualising riskscapes and risk objects in Monrovia

A methodological challenge in risk governance is the complexity of the intersection of multiple risks (Neisser & Müller-Mahn, 2018). Unplanned settlements are vulnerable and exposed to overlapping and interacting risks that cannot be managed separately. Diverse perspectives of risks are analysed and managed in terms of actors, interests, epistemologies, and competing paradigms, as well as the potential instrumentalisation of risk through governance (Rebotier, 2012; Van Asselt & Renn, 2011; Zeiderman, 2012).

In this context of intersecting risks, risk governance emerges to provide integrated and comprehensive mechanisms for managing the diverse riskscapes that emerge from a variety of practices and institutions, including formal and informal arrangements (Legese et al., 2018; Renn et al., 2018; Van Assche et al., 2014a). As Zeiderman (2012) has shown, governance instruments are a result of the instrumentalisation of risk, with objects stabilising over time, redefining the landscape, and contributing to the emergence and cascading of new risks.

3.2.1. Riskscapes

Due to institutional and resource constraints, cities in the South are overwhelmed by complex urban risks and their interactions. For example, floods can cause property damage, loss of livelihoods, waterborne infectious diseases, and disruption of critical infrastructure and social services (Dodman et al., 2017). Riskscapes represent landscapes of intersecting risks that influence practices (Müller-Mahn et al. 2018). They refer to the ways in which actors represent, articulate, and shape the multiple and sometimes contradictory relationships between risks and practices (Müller-Mahn & Everts, 2013). Riskscapes accommodate a variety of histories, ideas, and materialities that intersect at local and global scales (Müller-Mahn et al., 2018). They are socially constructed as individuals and communities assign knowledge and perceptions of potential risks and opportunities in space and act in relation to them (Müller-Mahn & Everts, 2013; November, 2008).

It is important to note that riskscape represents multiple themes. One such axis connects the themes of fluidity, connectivity, and multiplicity. In this regard, riskscapes are "landscapes of risk that exist in relation to practice" (Müller-Mahn et al,2018). Riskscapes connect practice to geography, time, and risk (Müller-Mahn and Everts, 2013). That is, it involves both the materialities of and discursive conceptualisations of the landscape and the practices it engenders. Furthermore, riskscapes can be shared by residents identifying as a group as well as other actors (collective or individual) interacting with the same resident-inhabited space (Gebreyes & Theodory, 2018). Riskscapes also capture individual interpretations of landscapes of risk and opportunity (Lundgren, 2018). Therefore, this article, through a reflection on the history of Monrovia, shows the evolving landscapes of interrelated risk conceptualisations - individual and collective - that shape practices.

Riskscapes thinking is in continuous development (Müller-Mahn et al, 2018), and has been applied to a variety of different contexts. As its proponents additionally note, there is room for further development of the concept, together with a more systematic linkage to risk governance via its intellectual lineage, including Appadurai's global flow of ideas and Schatzki's practice theory. In governance, actors and discourse compete and collaborate, in their influence on the coining and use of institutions (Pierre & Peters, 2021), and hence, the formation and implementation of collectively binding decisions (Luhmann, 1990).

As in governance, a plurality of worldviews coexists. As some worldviews in the community are unrepresented in the governance system, the competition within is likely to be complemented by contestations between formal and informal institutions. This, in some cases, results in tensions between parallel governance systems. Groups and spaces do coexist, at times peacefully, sometimes in tension, and

their riskscapes may differ significantly. Informality and riskscapes can thus relate in hierarchical manners, with state definitions of risk imposed on or loosely coupled on often marginalised groups and places. They could also relate in more pluralist modes, with several informalities or formal and informal coexisting, without much imposition (or support) occurring between the two systems (cf von Benda- Beckmann et al, 2016).

3.2.2. Risk Objects and Objects of Governance

We explore the Monrovia Slum Initiative as a tool of governance – a tool that connects to a plurality of riskscapes – using theoretical work based on evolutionary governance theory (Boezeman & Kooij, 2014; Duineveld & Van Assche, 2011; Duineveld et al., 2013; Kooij, 2014; Van Assche et al., 2014b). The ‘slum’ as an object and the 'slum initiative' as an object of governance materialise through the initiative. The notion of contested processes of object formation in governance owes to Foucault and is placed in the context of a never entirely stable governance configuration. Actors and institutions, power and knowledge co-evolve and co-construct objects of governance.

Techniques of object formation are reification, solidification, and codification (Van Assche et al., 2015). Reification represents the creation of an object in discourse, solidification reflects the articulation of elements within an object, and codification is the delimitation of an object (Duineveld et al., 2013; Van Assche et al. 2015). Object formation is accompanied by techniques of stabilisation and irreversibility that increase the likelihood of an object's permanence. These include objectification, the social construction of the object as "objective truth," and naturalisation, in which the object is considered part of the natural order of things. Through objectification and naturalisation, the object becomes unquestioned and transforms from a desired outcome to an actual reality (Duineveld et al. 2013; Van Assche et al. 2015).

The discursive construction of risk governance objects constitutes the interpretive core of this work. Objects are presented as means of shaping space and society, while 'subjects' refer to a range of actors and non-actors. Locals, places, values, assets, and resources can be identified as at-risk; this happens in a continuous co-evolution of tightly coupled definitions, assessments, and management ideas of risk (cf Legese et al, 2018). Risk governance is consequently the recognition, selection and ranking of risks and its translation into collective action, into collectively binding decisions. This process, from our unfolding perspective, will draw in competing riskscapes from different individual and groups of actors. This may or may not result in a stable synthesis, into a shared riskscape, which legitimately underpins the rules guiding space.

Governance, thus, involves a series of interactions among actors – individuals, civil society, government, and non-governmental organisations – who "govern" the same space, coordinating or deploying competing governance instruments. Evolutionary governance does not define who ‘should’ be included in risk governance; it also does not specify which objects should be included. What can be normatively deduced though, is whether the risk objects, definitions, assessment, and riskscapes of locals who identify as a group, or individuals, who share a riskscape, are included in governance or not. Zeiderman (2012) for example, speaking of Bogota, asks, "How did 'high-risk' zones come to be located on the territory of the poor?" In examining the reasons for "high-risk zones," Zeiderman notes that this object did not exist in Bogota before the 1990s, at least not as an instrument for managing people and space. The creation of "high-risk zones" shows how risk objects become instruments of spatial control.

In urban governance, risk objects can manifest in several ways. One avenue through which actors fulfill their spatial visions is planning (Hillier & Gunder, 2005). Ideals in planning, however, may reflect the homogenised aspirations of political elites or experts (Flyvbjerg, 1996; Gunder, 2005; Muchadenyika & Williams, 2017; Watson, 2009; Yiftachel, 1994). Therefore, the objects of governance may be at odds with locals' ideals (Gunder, 2003). As a result, the formation of objects of governance encounters multiple forms of resistance from subjects, which in turn leads to different counterstrategies. The ideals projected on space come with a corollary of risks avoided by those doing the projection. Here, the riskscapes of those not involved in governance are easily overlooked in the process.

The question of how and why certain urban phenomena become problematic and therefore need to be managed is at the heart of governance. In the case of Monrovia, initiatives to address the "slum problem" have been used as both planning and risk reduction tools. Planning for informal settlements in the global South is often informed by the discourse of eradication, formalisation, and gentrification. There is, therefore, an "uncanny" relationship with unplanned settlements – an unease that results from the simultaneous experience of the familiar and the unfamiliar (see Ballard, 2004; Wilton, 1998). Freud’s (1919/1955) notion of the "uncanny" reference situations in which objects, like slums, can be simultaneously familiar and unfamiliar, engendering an uncomfortable sense of incongruity for some stakeholders. Although unplanned settlements represent the most recognizable form of urbanisation, they generate a social alienation that borders on "otherness" for those stakeholders who perceive them as an anomaly. However, Roy (2009) contends that cities in the Global South are also informalised by state actors. Policies, either as a by-product of general deregulation, or intentionally to offer elites the space to manoeuvre are instruments of such informalisation (Roy, 2009). Furthermore, the Global South can be understood not as ‘lagging behind’ but as forerunners in acknowledging the pronounced role of self-

organisation in urbanisation more easily than western states used in their own planning illusions (cf Scott, 1998).

We do not subscribe to this latter view. Rather, we leave the door open for observations of problematic elite manipulation and eradication of informality, in line with Roy (2009) and the others referred to. And we accept that not only spatial planning (with its risk governance assumptions and implications), but also other domains of governance can have implications for the riskscapes of underprivileged groups and places. The discourse of risk reduction itself has been criticised for exploiting the poor while benefiting the wealthier classes (Agyeman et al., 2016; Anguelovski et al., 2016; Blok, 2020).

It is vital to consider how the planning and categorisation of unplanned settlements as risk spaces pathologise informal urban growth (Alvarez & Cardenas, 2019; Kamete, 2013). The term "pathologisation" is used here to relate the socially generated features of "othering" in illness and disease with the marginalisation and exclusion of informal communities. The uncritical application of northern theory and the adoption of theoretical frameworks rooted in African exceptionalism is associated with such discursive pathologisation. Imposing inappropriate conceptual models of urbanity invariably clash with pre-existing institutions and practices on the ground (Ernstson et al., 2014; Lawhon et al. 2014; Pieterse 2010, 2013; Robinson, 2008; Simone, 2013).

3.3. Study context and methods

3.3.1. Background and Study Area

Modern Monrovia emerged in 1822 when freed slaves from the United States of America established a settlement. Infrastructure development has traditionally focused on areas associated with the Americo-Liberian elite. The original indigenous enclaves of the city have largely morphed into today's "slums." In addition, chaotic and precarious land tenure and the state's laissez-faire approach to housing regulation have helped informality flourish (Fraenkel 1964; Hoffmann, 2016; McAuslan, 2011).

The civil wars from 1989 to 2003 triggered an influx of displaced people to Monrovia, increasing the population from 600,000 to about 1.5 million in 2008.[37] Many remained after the wars. Political stability beginning in 2005 led to rapid urbanisation with an influx of capital from international financial institutions, NGOs, and UN agencies, as well as returning Liberians. The resulting development-induced displacement led to the uprooting of displaced people, the creation of new slums, and the expansion of existing slums.

[37] The last census of Liberia was 2008.

Considering this, the Monrovia Slum Initiative emerged in the post-war years to develop strategies to address the challenges of informal and ad hoc growth of the city. The initiative reflects the government and international partners' anticipation and planning for demographic and socio-economic changes in a rapidly evolving environment.

Monrovia, the capital of Liberia, was selected as the primary urban context for the study because of its long history of unplanned urbanisation in a risk-saturated and fragile post-conflict context. Current estimates suggest that up to 70% of Monrovia's residents live in an informal settlement (UN-Habitat, 2019; World Bank, 2020).

Three unplanned communities were selected as study sites: West Point, Clara Town, and Peace Island. It should be noted that these are not the only slums in Monrovia. According to the 2008 census, there are more than 20 slums in the city. These three sites were selected to provide a snapshot of informal communities in Monrovia because they are typical of other unplanned settlements: self-organizing, officially classified as squatted areas, and face similar risks and practices (see Table 3.1). The fact that the data collector knew some residents of these communities influenced their selection. This is because it was more straightforward to establish rapport with the 'gatekeepers', the people who stand between the data collector and a potential respondent, prior to the fieldwork. Safety concerns were also addressed through the existence of trusted local contacts, as they provided researchers with a level of security that was unavailable elsewhere. Monrovia and especially its slums can be dangerous due to roving gangs, many of whom are former drug-addicted child soldiers. Another factor that influenced the selection of these three settlements was the fact that, although they are among the best-known informal communities in Liberia, except for West Point, very scant scientific research has been conducted on them.

3.1: General characteristics of the three selected unplanned settlements.

General Characteristics	West Point	Clara Town	Peace Island
Infrastructure	• Some power grid connections • No potable water Clogged or converted storm drains/sewers	• Some power grid connections • No potable water Clogged or converted drains/sewers	• No grid connection • No potable water • No sewer systems
Location	Low-lying coastal zone	Marshland	Wetland zone with an elevated slope

General Characteristics	West Point	Clara Town	Peace Island
Access/Isolation	• Poor accessibility and internal mobility	• Better internal mobility and accessibility	• Access road impassable for several weeks annually due to flooding
Tenure	• No title; right to occupy is annual "Squatters' Rights Certificate"	• Some have quasi-ownership under customary law	• All residents are officially squatters
Climatic Hazards	• Flooding from Mesurado River • Coastal erosion during rainy season (June-October)	• Annual flooding (July-September)	• Flooding during rainy season near the swamp • Erosion on elevated slopes
Non-Climatic Hazards	• Fire • Diarrheal diseases, typhoid, and malaria • Pollution from "hanging toilets" on Mesurado River • Open defecation on the beach • No household toilets; inadequate communal toilets • High teenage pregnancy rates • High crime rates • Domestic violence • Waste dumping • Conversion of waterways into residential areas	• No fire accidents reported (as of February 2020) • Littering • No household toilets; inadequate communal toilets often overflow	• Fire accidents • Diseases such as typhoid, malaria, and diarrheal diseases • Garbage dumping in the swamp • Some residents use suspended toilets above the swamp; others have septic tanks, but no potable water to function properly
Actors' Practices	• Settlement not considered viable due to vulnerability	• Settlement has largely escaped discussion on upgrading and demolition	• Rudimentary zoning enforced by community leadership

General Characteristics	West Point	Clara Town	Peace Island
	• Difficult to upgrade due to traffic congestion, subsurface conditions, and marine erosion • State institutions favour resettlement/development • Locals push for a coastal protection system • Annual scramble for shrinking land causes conflict	• Lack of unity in solving community-wide problems	• Some state institutions advocate for slum upgrading • Others highlight the threat to Mesurado Wetlands • Residents jointly clean the community 3-4 times a year • Manual maintenance of the access road

West Point, Clara Town, and Peace Island are three prominent communities in Monrovia with distinct histories and demographic characteristics (see Fig. 4). West Point, Liberia's best-known slum, has a population variably estimated between 40,000 and 80,000. It emerged in the 1940s when itinerant anglers settled on a sandy peninsula off the Atlantic coast, aided by land reclamation. Clara Town, located on Bushrod Island, was once one of the numerous indigenous enclaves on the outskirts of Monrovia and now has a population of approximately 75,000. Peace Island, a peninsula partially surrounded by the Mesurado wetland and protected under the Ramsar Convention, was uninhabited before the civil war. It is situated near the Congo Town suburb and has an estimated population of 20,000 to 30,000 people.

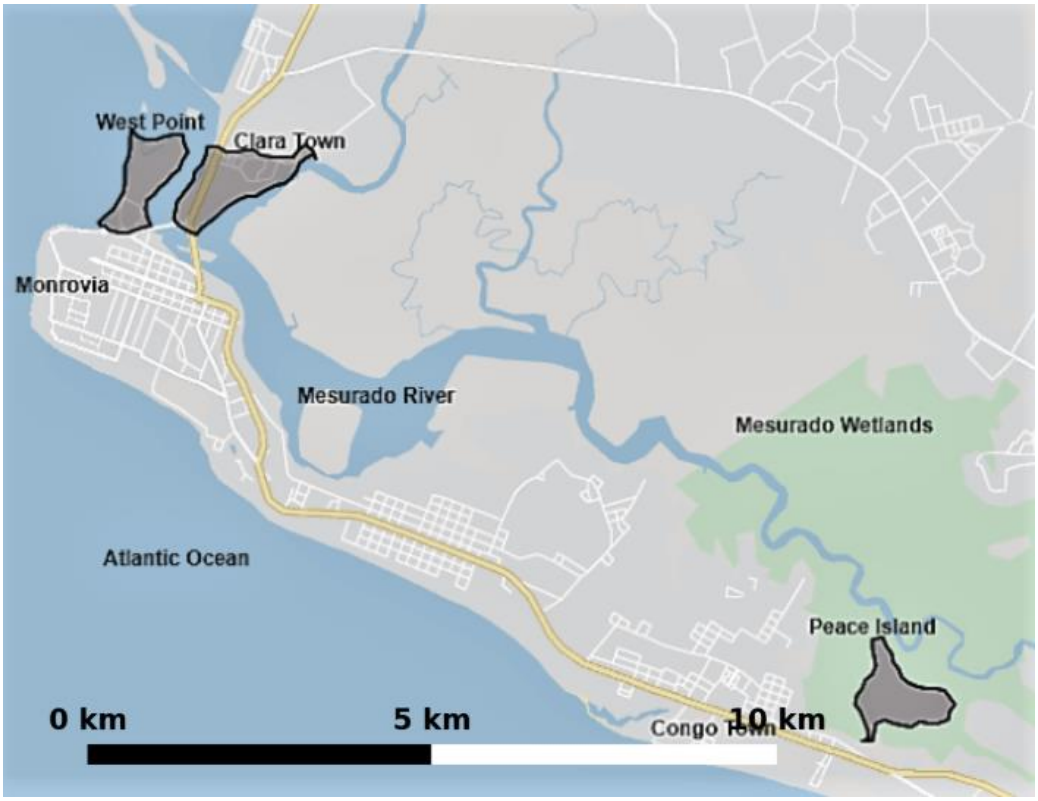

Figure 4: Map of Study Communities in Monrovia, Liberia (OpenStreetMaps,2021).

3.3.2. The Methods of data collection

Data collection took place in Monrovia between August 2019 and March 2020. The methods utilised were semi-structured interviews, focus group discussions, document reviews, and direct observations (see Table 3.2).

Table 10: Overviews of Interviews

Type of Interviews	**Number of Interviews**			**Number of Participants**		
	Male	Female	Sum	Male	Female	Sum
Residents	23	16	39	23	16	39
Focus Group Discussions	3	3	6	24	24	48
Government Officials	11	7	18	11	7	18
NGOs/Civil Society/Academia	5	7	12	5	7	12
Total Respondents	**42**	**33**	***75***	**63**	**54**	***117***

Seventeen (17) officials from 13 organisations (government and non-government) were purposively selected, while the rest (13 officials from 11 organisations) were determined through a snowballing process, as were the focus group participants and local interviewees (see Table 3.3). Interviews were conducted in standard English and Koloqua (Liberian pidgin English). All interviews took place in Monrovia, with institutional interviews being performed at the institution's premises and local interviews in the community.

Table 11: Institutional interviews

Preselected Institutions	**Number of Officers**
National Disaster Management Agency	2
Environmental Protection Agency	2
Ministry of Public Works	1
Monrovia City Corporation	2
National Public Health Authority	1
Liberia Land Authority	1
Habitat for Humanity	1
Liberia Water and Sewer Corporation	1
Liberia Institute of Statistics and Geo-Information Services	1
National Housing Authority	1
Township Commissioners Council	1
Liberia Electricity Corporation	2
Liberia National Police	1
Institutions Selected through Snowball Sampling	
Slum Dwellers Association of Liberia	1
University Researchers	2
West Point Women's Health and Development Organisation	1
Development Consultants	2
Office of the Township Commissioner of West Point	1
Human Rights Lawyer	1
Garwolor Township	1
Congo Town	1
Ministry of Internal Affairs	2
Federation of Petty Traders and Informal Workers Union of Liberia (FEPTIWUL)	1

Total	30

Documents containing information on institutional responses to unplanned settlements were identified and reviewed. The data was evaluated using Atlas.ti, primarily through content analysis. The texts were analysed using a critical discourse analysis technique to uncover underlying meanings, motivations, ideologies, and power dynamics (both interviews and document reviews). Codes were utilised to capture emerging themes and practices, such as sanitation, sewage, and waste disposal. Password protection and encryption of all storage devices were instituted to prevent data loss and leakage.

3.4. Monrovia's 'Slum Problem'

Modern Monrovia evolved in tandem with the growth of unplanned settlements. Some of these communities were originally indigenous enclaves that grew significantly over the years as they increasingly served as temporary homes for migrant workers. Historically, these areas were tolerated as transient communities of migrants who retained their "home" in the countryside while working and living seasonally in Monrovia (see Hoffmann, 2017). This practice links to squatting, which is one of three methods of acquiring land in Liberia, alongside vested and customary ownership. In the past, the city government provided annual land occupation certificates to residents of most informal settlements for a fee. This gave the squatters temporary rights of occupation but no protection against eviction. Fraenkel (1964) aptly described Monrovia in the 1950s as 'not a city in the true sense of the word' but 'a group of communities participating to varying degrees in a common social and economic structure'.

A 'slum problem' did not always exist, even if the deplorable conditions in informal settlements were acknowledged. However, the end of the civil wars and the restoration of democratic rule in 2006 saw the state adopting a more hostile stance towards the proliferation of unplanned informal settlements. This shift can be explained in two ways.

The first was the post-war acknowledgment of informal settlements as an enduring feature of the city. This occasioned a focus on not only the challenges connected with unplanned urban growth, but also the broad spectrum of risks associated with slums and their impact on health, income, and livelihoods. For example, the Poverty Reduction Strategy and the Monrovia City Corporation's Slum Initiative Report, both published in 2008, raised the visibility of the hazards and social vulnerabilities of slum-like settlements. Subsequently, the Slum Upgrading in Greater Monrovia 2016-2018 project, led by Habitat for Humanity and City Alliance emerged, followed by other undertakings to address the slum problem.

Second, post-war institutional reforms came to be, to a greater extent, inclusive with spatial planning policies extending beyond the formal to the informal. National agencies like the Environmental Protection Agency (EPA) and the National Disaster Management Authority (NDMA) became more active in planning in the 2000s, leading to a considerable emphasis on disaster risk and environmental precarity in the patterns of informal urbanisation. The marginalisation and exclusion of most Liberians were considered a primary cause of the civil wars, so "inclusiveness" became a mantra for post-war state-building. State-building in Liberia has taken place at a time of increased interest in notions of sustainable development. Since the 2000s, global thinking in post-conflict contexts has been conditioned by ideological and political debates about the suitable approach to improving social well-being, greater equality, sustainability, inclusion, and security (Allouche, 2020; Bah, 2017). In other words, the hitherto 'ignored' segments of society have gradually become areas of considerable emphasis in the drive to develop sustainable cities.

The post-war emergence of the slum problem as an object of concern and its subsequent problematisation as an object of risk is the result of multiple ideals, bounded by a common thread but accommodating opposites. A closer look at Monrovia's slum problem unpacks a spectrum from an apparent desire to improve the lives of the urban poor in slums to imaginaries in which slums are portrayed as the opposite of the modern, ordered city. Consequently, this continuum reflects a variety of underpinnings, from risk and resilience to spatial planning.

The thinking behind correcting the disorder that "slums" are perceived to represent in Monrovia can best be described as Freudian. It is about enforcing a homogeneous notion of the city. In achieving this endeavour, a familiar manifestation of the collective self is suppressed, namely the ubiquity and persistence of unplanned urbanisation. For example, the main outcome document of the Second National Urban Forum on the Development of a National Urban Policy (2019) asserts that informal settlements are an anomaly. The report also calls for "appropriate urban planning" to "reduce the spread of informal settlements." The National Housing Policy (2014) also recommends upgrading slums and preventing the creation of new ones.

Foucault's (1972) thoughts on the "authority of delimitation", on the way a phenomenon is described within a domain to make it "manifest, nameable and describable", are instructive for understanding object formation in Monrovia. The 'authorities' delimiting, designating, and defining the 'slum problem' represent a constellation of formal institutions involved in environmental management, spatial planning, climate change, health, and risk governance, including the city government, alongside development organisations like Cities Alliance. This highlights the power dynamic that exists in managing risk, as it is the experts, that is, development professionals, planners, engineers, etc., who determine the definition, structure, and

boundaries of the slum problem.

The amplification of the slum problem in the discourses, policy texts and practices of actors reinforces its stability. Through these channels, it is gradually integrated into the discourse of planning and governance. The "slum problem" thus becomes a channel through which a specific group of actors give meaning to unplanned settlements. This is done, for example, through shared narratives such as linking rising crime to poverty and lack of opportunities in West Point, or the argument that Peace Island expansion could harm the Mesurado wetland ecosystem. These narratives are not necessarily always pejorative. Peace Island, for example, is acknowledged for its self-organizing ability in line with the city government's vision. This is a characteristic that makes the community a viable candidate for a formalisation approach that does not compromise the long-term interests of its residents.

The fundamental premise of the slum initiative, namely the upgrading of viable informal settlements and the elimination of non-viable ones, is challenged by locals' solutions, interpretations, or reconceptualisation of it. To illustrate, we use the example of West Point. This is an area deemed non-viable for habitation. Locals, however, prefer to remain. This so-called space of risk represents harbingers of opportunity for them, when hedged against counterfactual or alternative places of residence. Risks are therefore perceived and assessed in relation to the incommensurable trade-offs of living in this precarious location; one that delivers inexpensive land and housing proximate to the city and allows locals to tap on the opportunities that access to it provides. So, they invariably contest the notion of the non-viability of their settlement. Instead, they engaged in hedging characterised by a shaky intertwining of calculative practices and unreliable knowledge punctuated by uncertainty. This is reflected in their everyday practices. For example, locals have been engaging in beach sand mining as an inexpensive way to generate income and improve their livelihood. However, this practice accelerates coastal erosion and is a practice disapproved by state institutions like the EPA. On Peace Island, locals dig drains to control surface runoff and erosion by diverting water to other areas, thereby transferring the risks. Therefore, we observe practices emanating from local solutions or their interpretations of the landscape involving processes of self-organisation, adaptation, and coping, but also the co-creation of risks.

The result is a constant evolution and reshaping of the slum problem and the slum initiative. The persistence of unplanned settlements is thus rooted in their ability to confront change without slipping into a new identity. Therefore, in local spaces, the "slum problem" reorients itself as a confluence of manifold inclinations in a context of multiple risks, risk governance, urban development pressures and informality. The plurality of governance between the local, traditional, and state authorities, as well as NGOs and

development agencies, creates an institutional dynamic in which diversity thrives. We understand this from the multiple riskscapes of different actors to the definitions and delineations of risk objects, to the possible solutions. What matters is how the practices of experts (i.e., planners and development professionals) intersect, complement, and diverge with those of locals to shape and reconfigure risk governance.

3.5. Riskscapes and Object Formation

The "at-risk" landscapes of unplanned settlements are enacted by a range of actors – residents, development experts, and government – often at the intersection of risk and livelihood activities. The conversion of storm drains to residential use, for example, exacerbates flooding although it produces space for more dwellings in Clara Town. Peace Island residents are using wetland resources to enhance their livelihoods, but this is a hostile encroachment on a protected marshland. The conceptualisations and practices of actors regarding a phenomenon unpack why and how it becomes an object and how the governance instruments to manage it evolve. This is where the intersections of riskscapes and object formation can be useful in interpreting the emergence of governance objects and how political actors and locals manage them.

While riskscapes are socially constructed, the interaction of objective versus subjective instruments unpacks the methodological choices, conceptualisations, and philosophical perspectives of actors. This is especially visible in how government institutions such as the Ministry of Public Works (MPW) and the EPA utilise objective assessments and tools to present risk data, including vulnerability indices, IT tools and maps. Locals are, however, guided by subjective perceptions and selectivities when classifying or observing risks. Thus, subjective tools will include varying modes of evaluating historical hazard events or cognitive processes in which actors adopt a specific course of action. West Point, a settlement long condemned to demolition, illustrates this interaction. Scientific assessments established that the settlement is vulnerable to sea erosion and that a 0.5 m rise in sea level would be sufficient to obliterate it (e.g., Wiles, 2005). EPA and NDMA officials interviewed emphasised that the arguments for demolishing West Point and relocating residents are based on "objective risks." That is, they are based on scientifically and statistically measurable projections, not on residents' subjective perceptions of risk, which are contradictory, variable, and at times inconsistent with scientific assessments. Residents who oppose resettlement give different reasons for their decision. For example, they state that they are habituated to the difficulties of cyclical resettlement caused by flooding and erosion. Others emphasise that the lack of infrastructure and basic services, as well as violent crime, pose a greater risk than sea-level rise. We, therefore, note both objective and subjective facts imbricated in existing riskscapes (See Fig. 5).

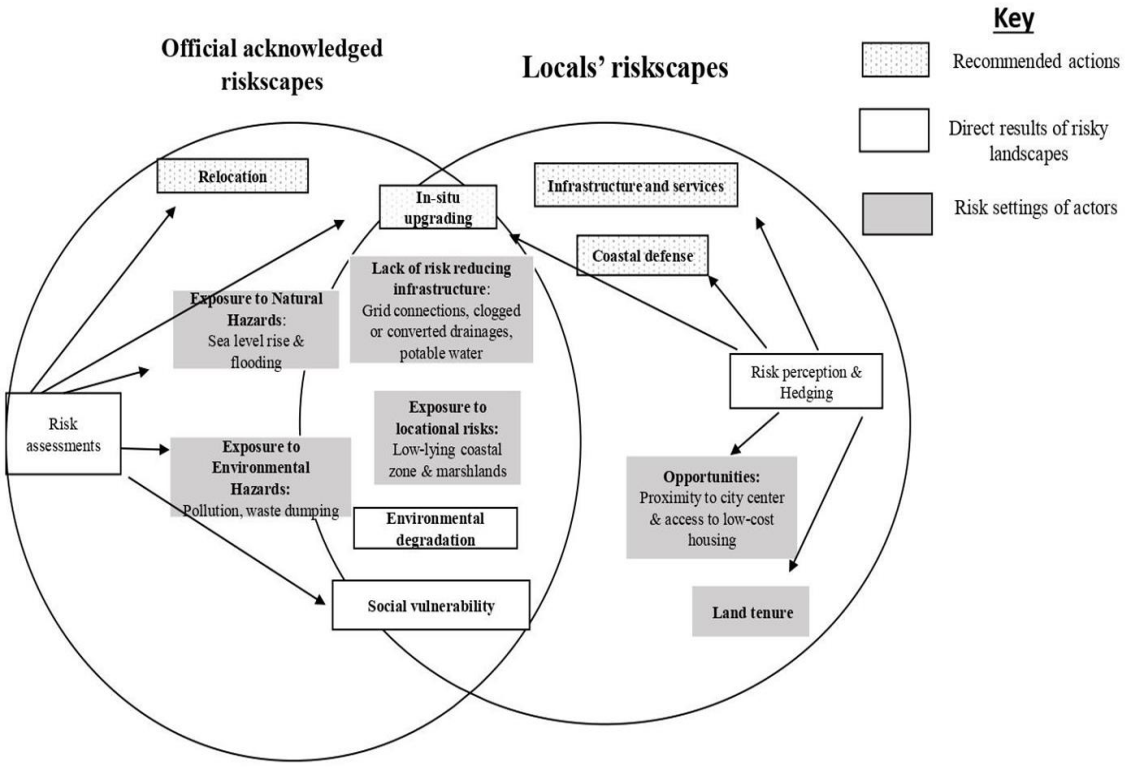

Figure 5: Emerging Riskscapes of Informal Settlements in Monrovia (Author, 2022)

There is a significant overlap of risks in the three unplanned communities, particularly with respect to livelihood security. For example, flooding overlaps with inadequate waste management and unsanitary conditions, leading to epidemics and affecting livelihoods in multiple ways: People get ill and exhaust their scarce resources at health centres, while the floods affect their mobility and income levels, as they typically work in the informal sector. Meanwhile, people remain trapped in a vicious cycle of poverty due to a lack of essential services, financial resources, and meaningful external interventions. The constellations of risks interact with each other in various practices in the same space, challenging the ways in which policy actors and local people imagine and manage risk in space and time.

How did Monrovia's slum initiative, through the overlapping and multiple riskscapes, emerge and become a tool of risk governance? Which objects were central? And how do objects and riskscapes relate? We examine two crucial aspects of the transformation of the "slum problem" into the "slum initiative" to explore these issues further. *The first* is the persistence and proliferation of slum-like informal settlements, despite their perceived transience, and the government's efforts to integrate them into municipal development.

‘Transience’ itself, just as ‘informality’ has become contested. *The second* aspect is more anchored in spatial planning, where post-war initiatives to reconstruct the city aligned with both modernist and sustainable development ideals of the government, inevitably making the risky landscapes of unplanned settlements more visible among experts. The contemporary imagined context of an ideal made some areas stick out and these became the slums and a ‘problem’. The following paragraphs will look more closely at these two aspects to demonstrate how riskscapes and object formation intersect to properly explain the emergence of the Monrovia Slum Initiative.

Monrovia's informal settlements have generally been tolerated, but also marginalised and portrayed as blights. However, most of the city's population lives in informal settlements. The uniquely African character of Monrovia suggests it should be understood through the fragmentation and splintering of material and discursive space with the set of urban configurations constructed by residents seemingly excluded and disconnected from the city, yet intimately connected to the city's existence, as Mbembe and Nuttall (2004) note. The organizing categories of both property rights and planning, together the basis of modern urban governance, never worked very well, were never very clear and typically represented the fantasies of (neo-) colonial regimes or contested elites. Therefore, the boundaries between formal and informal remain inevitably fluid in Monrovia, even in unplanned settlements.

As for the second dimension, we consider Liberia's post-war state-building efforts. These efforts have been guided by a series of externally led and funded reconstruction programs that tend to reinforce the ideals of an ‘ordered’ and ‘green’ city. The programs include the Rapid Urban Sector Profiling for Sustainability (2004), the Emergency Monrovia Urban Sanitation Program (2009-2016), the Agenda for Transformation (2012-2016), and the Cities Alliance Community Upgrading Fund (2016-2021). The nature and implementation of these donor-led state-building efforts shifted the authorities' approach from a laissez-faire tolerance to one that sought to correct the perceived urban challenges associated with slums. For example, in 2013, the municipality began clearing slums in the Sinkor suburb, with the mayor declaring: "We are working to establish this city the greenest and cleanest in West Africa.”[38] In official circles, slums are deemed a "threat to peace and stability".[39] This interpretation of Monrovia's slums as a disorder is at odds with the logic on the ground as unplanned urbanisation remains the dominant form of urban growth. One can speak of a norm that never became a rule or a normal that never became acceptable.

[38]Liberian Homes Demolished as Global Leaders Meet. January 31, 2013, Inter Press Service (IPS). http://www.ipsnews.net/2013/01/liberian-homesdemolished-as-global-leaders-meet/

[39]Ministry of Finance and Development Planning (2020). Voluntary National Report on the implementation of the 2030 Agenda for Sustainable Development. https://sustainabledevelopment.un.org/content/documents/26287VNR_2020_Liberia_Report.pdf

Shifts in the state's attitude toward unplanned settlements, as mentioned above, are not necessarily unique to Liberia but can be observed in other post-war developing countries. Since 2006, the authoritative role of international organisations in public institutions has remained a key feature of state-building. Experts from international organisations like the World Bank and the IMF have been hired as consultants to all public institutions. At the same moment, development agencies began providing greater support to the Monrovia City Corporation. For example, the first Slum Initiative report, issued in 2008, is the product of a project overseen by World Bank experts, while the initiative is currently spearheaded by international organisations, most notably Cities Alliance and Habitat for Humanity. Consequently, the post-war government pursued a neoliberal agenda based on a capitalist development path consistent with those championed by international actors. Significantly, the policies pursued, and the positions assumed by state institutions were largely geared towards satisfying donor preconditions for funding post-war state-building initiatives.

To conclude, the Monrovia Slum Initiative, as a governance tool and later object, has become discursively stabilised via the recognition that it is one of the answers to Monrovia's perceived difficulties with uncontrolled urbanisation and slums. Despite being naturalised by discourse and institutionalised by codification across policies, laws, and planning, the initiative's character is constantly being re-evaluated in local spaces. This happens through the interplay of locals' resistance, reinterpretation by locals, and state actors restructuring the implementation paths through negotiated outcomes. These often-contradictory tilts are typical of actor-specific riskscapes. Additionally, there exists a seeming conflict within the slum initiative. One dimension positions the slum initiative as a device that helps slums become an integral part of the city. The other paradoxically manifests as a tool to further marginalise and detach unplanned settlements from the city. This unresolved contradiction illustrates how different actors interpret the intersecting landscape of risks and opportunities, and that this extends to actors in the initiative itself, as a mode of organisation.

3.6. Risk translation and navigation

In the previous section, we described the dimensions of the Monrovia Slum Initiative and the multiple orientations it embodies. In this section, we demonstrate how the Monrovia Slum Initiative unfolds in unplanned neighbourhoods in three different ways: first, through a degree of tolerance characterised by neglect (Clara Town); second, through demolition and relocation (West Point); and third, through formalisation and upgrading (Peace Island).

The slum initiative in Clara Town manifests itself in a tolerance marked by neglect. The demolition debate has been largely ignored here. The settlement is less vulnerable than West Point, and some residents own

property (mainly through customary rights). With minimal upgrading efforts like the 2016 International Labour Organisation (ILO) -supported project to improve sanitation, environmental conditions, and hygiene, and to promote youth employment, the community has largely been left to its own self-organisation. The principal participants in the slum initiative – NHA, MCC, Cities Alliance and Habitat for Humanity – are barely present.

West Point represents a second way that the Slum Initiative's second manifest locally: through the discourse of demolition and eviction. Until 2021, the community's existence was dominated by this debate. This is because it is widely seen as highly vulnerable and exposed to various hazards, especially marine erosion, and riverine flooding. Relocation remains a daunting prospect for a host of reasons. The most important thing is that the location provides access to the city. This is particularly important for low-income day labourers, and allows for fishing, which is one of the most essential occupations for residents. The failed relocation efforts suggest there is still a strong tendency to remain in Monrovia or a nearby location. This was the case in 2015 when the community was partially relocated to the suburb of Banjor. Most of those relocated returned to West Point within a few months. Demolition and resettlement, the preferred solutions in the past, are premised on the high risks posed by the interaction of geophysical features and social vulnerability. Reorienting land-use practices is therefore unlikely to be compatible with the slum upgrading initiatives. Indeed, upgrading efforts, like road, water, and sewerage improvements, are hampered by the geophysical characteristics of a high-water table, weak soil (loose sand with low bearing capacity for structures erected on it) and low-lying terrain prone to erosion and flooding. These geophysical features interact with socio-demographic challenges like severe land scarcity, high population density, lack of essential infrastructure, and poverty to create a high-risk habitat that is difficult for the overstretched authorities to manage.

The opportunities that slum upgrading provides for communities represent a third way that slum initiatives manifest locally. Peace Island offers opportunities for in-situ upgrading because its recent provenance means that it is less congested than other settlements like Clara Town and West Point. Moreover, its emergence in the post-war period came with a considerably broader awareness of the challenges those unplanned settlements pose to urban governance. Additionally, the opportunities for its growth in this period of increased awareness are equally recognised, particularly the potential for self-organisation in line with the initiative's vision. Evidently, Peace Island's growth has incorporated external motivations, including those of the city government. Since the settlement's inception in 2005, community members have adopted a rudimentary approach to land use that has mimicked urban planning. Many residents believe that upgrading programs, led by state organs and NGOs, demonstrate the legitimacy of their settlement. Furthermore, they believe it could provide other benefits, including land security and certainty of the

settlement's existence. However, residents are less convinced the NHA possesses the capacity, resources, and political will to achieve these goals. Thus, hope and uncertainty coexist across time and space. The fact that residents imitate the characteristics of the slum initiative represents an act of anticipation that subtly demonstrates the community's vulnerability to the city government's vision; hence, the local efforts to tackle it.

It is important to note that Peace Island's self-organisation strategies have assumed a positive place in the debate on informal settlements in Liberia. Authorities believe that the community offers the most reasonable prospects for on-site upgrading to date. This position is instructive for planning purposes. The presence of key stakeholders in the Peace Island Slum Initiative and the promotion of on-site upgrading demonstrates how planning has evolved from the modernist fantasies of the early postwar years to a more contextual and participatory approach that recognises the value of local self-organisation in planning.

The preceding examples of the implementation of the initiative in the settlements indicate its codification in a series of plans, projects, and documents. It also shows that its execution on the ground is characterised by active acceptance and participation, passive acquiescence, or resistance. The reason for the spatial differences, as the evidence shows, is principally due to spatial-demographic characteristics. The examples illustrate that elements of the slum initiative are viewed as either a risk (e.g., West Point) or an opportunity (e.g., Peace Island) for various areas. People interpret and traverse the constantly shifting landscape of risk, often out of necessity. The state does not simplify the terrain by trying to stabilise it, but rather feeds the volatility that drives local peoples' practices to evolve.

We have identified that the local responses to the implementation of the slum initiative vary spatially and as well as at various stages of its execution. We use West Point as an example to explain the temporalspatiality of the shifting implementation on the ground. The slum initiative pursued demolition and relocation on disaster risk grounds until 2021. Several unsuccessful attempts to pave the way for demolition, including relocation of residents, were reversed. At the same time, preserving the settlement was deemed futile. For example, when coastal protection projects were implemented for other settlements like New Kru Town, West Point was excluded. However, in October 2021, with funding from the Green Climate Fund, the current mayor launched the Monrovia Metropolitan Climate Resilience Project (MMCRP) to develop revetments at West Point. This is the result of protracted negotiations with residents who advocated for the continued existence of the settlement rather than its relocation. The shift from possible demolition to coastal protection systems reflects the residents' resistance, but also involves alliances created through cross-scale cooperation between locals and state actors. West Point, a stronghold of the current ruling establishment, exercised its "power" — its votes — to influence this decision. Their

affinity with the governing party provided the basis to forge an inclusive space for alliance and negotiation to achieve this goal.

3.7. Conclusion

Riskscapes enable novel interpretation of risks in space, and they enable collective coordination. Stories about place and risk, about overlapping and dominating risks morph into a reading of space which has been encoded in risk governance. The concept of riskscapes therefore already conceptualises a tight coupling, a co-evolution of risk perception, risk assessment and risk governance (cf Legese et al, 2018). Muller- Mahn et al (2018) indicate that riskscape thinking can be further developed by becoming more aware of power relations and multiplicities. Our Monrovia story accepted this challenge by giving governance a central place.

Riskscapes are not only constructed in governance. The multiplicity of riskscapes present inside and outside the governance configuration renders the analysis immediately one of a discursive construction: of power relations, of inclusion and exclusion. The Monrovia story also demonstrated what could be logically deduced from the construction of the theories combined here: that governance, through its impact on collectively binding decisions, through its discursive competition and power, is the place where not only risk and riskscapes are conceived, but also the things that can be risky. Sometimes this means that risks are ascribed to things and places already prominent in discourse and amplified through their position in new governance discourse and in new policies, plans and laws (institutions) or organizations (like the slum initiative). Sometimes the construct is new, and the object formation entirely takes place within governance.

How exactly this happens, and which actors, institutions, discourses and materialities are involved, is contingent, and will differ per case. In Monrovia, we observe urban risk governance emerging from numerous rationalizations rooted in spatial planning, local urban history, modernist urban ideals, local community strategies, as well as more recent policy concepts and domains related to climate change and resilience. Riskscapes promoted by the government did not coincide with, or did not represent a negotiated middle ground between, the competing riskscapes in governance. Therefore, the pattern of inclusion/exclusion in governance shifted, depending on shifting power relations in multi-level governance. At the same time, one cannot reduce the game to the imposition of one riskscape (by the government), overriding all others and reinforced by the central object of the ‘slum’.

This study demonstrates how the multiple riskscapes manifest in object formation, but also how the resulting governance object expresses the inclinations of dominant actors. Governance objects, however, also accommodate a range of interests, groups, ideals, and practices beyond the propensities of the dominant

actors. Objects and subjects are in a constant process of emergence, as well as the range of actual and potential problems and interventions. Appropriate interventions to resolve them are addressed through governance. In this process, objects take shape not only as epistemological mechanisms but also as technologies of power, for example, as instruments of spatial control. In Monrovia, the governance of urban risk is closely linked to spatial planning. This is evident in the frequent emergence of objects from Monrovia's problem areas, namely "slums" and "unplanned urbanisation." In addition, spatial planning often pursues other goals (e.g., related to climate change). Objects need not be material to be real, as a seawall at West Point might suggest; they become an aspiration, a response to perceived risks, a potential transformation of local riskscapes, and a countermove to a demolition plan.

As the paper has shown, the notion of the slum in Monrovia became an object of governance and risk for different actors. Local actors in the settlements diverge significantly in their citywide perceptions of risk. Locals perceive government risk management interventions, often in the form of planning, as a risk in itself, but sometimes as an opportunity. The internal disjunctions within the most recent manifestations of the slum initiative, which became hegemonic at the local level, enabled a calculated acceptance and a calculated dismantling of slums. But it enabled other actors to create space for strategies, including copying the official discourse. Local experiences inspired practices under different postwar governments based on calculations, memories of instability, dominant discourses, and practices of other actors. Translations of risks and opportunities shaped the riskscapes of the city for dominant actors. Concomitantly, this guided the formation of internal micro-level riskscapes within unplanned settlements. Meanwhile, the discourse on informal settlements shifted toward positive and pluralistic interpretations, while planning moved away from modernist fantasies toward context-sensitive and participatory approaches.

Modernism did not die, however. It survived in the urban imaginaries of many elites and technocratic discourses associated with climate change, environment, resilience, and health. And it continues to represent a force to reckon with in the state-led construction, assessment, and governance of risk, in its delineation of riskscapes and objects. The legacy of informality in Monrovia, as elsewhere in the global South, makes it very hard for riskscapes and its key objects to coalesce into a shared riskscape, which could constitute the basis for more widely supported and legitimate planning, governance, and risk governance. We can interpret this as a problem; however, it reflects the unicity of conditions in Monrovia. It further shows the functioning of informal checks and balances, and we can take it as a more realistic basis for integrating risk governance and spatial planning, more realistic than the modernist fantasies of objective risk management of slum clearance.

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CHAPTER 4: NAVIGATING LANDSCAPES OF RISKS AND OPPORTUNITIES

4. Permanent incompleteness: slow electricity roll-out, infrastructure practices and strategy formation in Monrovia, Liberia[40]

Abstract: Liberia's post-war infrastructure projects are characterised by significant delays that confound the present and the future, but also occasion multiple possibilities. This paper draws on concepts from evolutionary governance theories and infrastructure planning studies to analyse how actors respond and adapt to the complexity of delayed and incomplete infrastructure. The study, using data from two neighbourhoods in Monrovia, focuses on two themes: first, the impact of delayed and incomplete infrastructures on actors' strategies and second, the prospects for inclusive community strategies that engage key stakeholders in a common framework. The notion of delayed infrastructure implementation/roll-out is framed as a landscape consisting of tactics and emerging strategies, of reactions and thorough analysis. Delayed roll-out, thus, unfolds as a landscape of risks and opportunities, competing strategies, collectives and commons, and the coupling of emerging collective actions to government policies and visions. This requires a reconnection with the world of policy and practical development issues, as the landscape of tactics and strategies that emerge from a particular pattern of infrastructure delays and incompleteness shapes options for policy planning and implementation. Material dependency, path dependency and path formation emerge in the process of adapting to delayed electricity infrastructure and the incompleteness thereof, with the resulting pattern constraining the future evolution of the spatial configuration of infrastructure and settlement, and the evolution of the governance configuration associated with that space. The results reflect the fact that governments cannot always be counted on to provide electricity, at least in terms of completeness.

Keywords: Community Strategy, electricity system, slow implementation/rollout, urban incompleteness, Liberia,

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4.1. Introduction

Liberia's post-war infrastructure reconstruction efforts are complicated by a multitude of competing priorities amid limited resources, often occasioning significant delays and uncertainties, with some infrastructural projects never fully completed. Therefore, the city's infrastructure, like the city itself, is incomplete, in transition and almost always primed for reconfiguration and evolution.

As this paper focuses on access to electricity, it seeks to satisfy the question: How do practices interact and shape access to electricity in a landscape where electricity rollout is slow, completion uncertain, and supply is increasingly fragmented? The objective, therefore, is twofold: first, the impact of delayed and incomplete infrastructures on actors' strategies and second, the prospects for inclusive community strategies that engage key stakeholders in a common framework. To achieve the objectives, we examine the incomplete electricity landscape in two neighbourhoods of Monrovia and the emerging and evolving infrastructural practices thereof. In addition, the study examines interlocking and mutually reinforcing practices — from state to community — that not only shape the landscape of slow and delayed implementation, but also enable or hinder strategies that coalesce key actors onto a common platform. It further explores individual and collective action within and across governance, focusing on patterns of continuous adaptation and risk management, emerging strategies and recognition of possibilities. The study employs a combination of qualitative methods, with data collected by the first author in Monrovia between September 2019 and February 2020.

Infrastructural failures and institutionalised informality have been utilised as theoretical leads to explore practices that shape and are shaped by urban infrastructure (Bjorkman, 2014; Eledi Kuusaana et al., 2023; Graham, 2010; McFarlane, 2012; Rao, 2014). This approach is particularly relevant for cities in the Global South, as spatially defined practices and meanings, as well as disparities in access, can emerge within the urban infrastructure network (Chelcea & Pulay, 2015). Previous publications in this journal have considered practices emerging from landscapes of energy poverty that help to rethink the way people in the Global South realise their everyday energy needs (Eledi Kuusaana et al., 2023; Munro & Bartlett, 2019; Teschner et al., 2020).

This paper contributes to the theorisation of delayed/slow infrastructure implementation and the associated practices it elicits. Theoretically, infrastructural incompleteness is presented as a landscape consisting not merely of tactics but also of emerging strategies, not only of reactions, but also of analyses and targeted uses. It is an evolving landscape of risks and opportunities, and of competing strategies, collectives and commons, and the coupling of emerging collective actions to government policies and visions. This requires

a reconnection with the world of policy and practical development issues, as the landscape of tactics and strategies that emerge from a particular pattern of infrastructure fragmentation and delay will thoroughly shape options for policy planning and implementation.

The results demonstrate that material dependency, path dependency, and path formation all play a role in the process of adapting to incomplete and delayed electricity infrastructure, with the resulting pattern constraining the future evolution of infrastructure and space, as well as the evolution of the governance configuration associated with that space. This study is not about technical implementation, but about a landscape that is far from having a sustainable electricity supply and where a range of reactions can be observed, both as a short-term adaptation and with a long-term view (as delays are expected to last forever). As a result, one may speak about tactics and strategy, as well as private and collective responses (Kornberger, 2022). That is because the landscape embeds multiple interests, motivations and pathways to possible solutions, with disparate groups of actors pursuing sometimes similar, but also different trajectories to tackle the "problem".

This study does not approach incomplete infrastructure from a planning and implementation perspective. Instead, the focus is on strategy, particularly community strategy. This is because while planning is about anticipation, preparation and direction setting, it frequently takes a much more formal shape. The need for an all-encompassing energy access agenda for poor urban communities has been articulated in various forms; however, these proposals are generally strongly tied to formal planning mechanisms (Castán Broto et al., 2018; Christley et al., 2021; Singh et al., 2015). Self-organisation can lead to community strategy, where the long term and a collective interest is envisioned, but as can be expected, counterstrategies for private gain are likely to emerge too, both with governmental and other actors. This basic picture will be detailed in the rest of the paper, an endeavour which requires us to reconsider self-organisation and the nature of community strategy in a context of dire scarcity and weaknesses in governance which make it difficult to count on governmental actors to provide electricity, at least in terms of completeness. We will also argue, however, that governmental actors should be enrolled in any sustainable form of community strategy, as the materiality, stability, and scale of electricity infrastructure render alternatives vulnerable.

The following section provides an overview of the electricity supply situation in Liberia. Section 3 unfolds the conceptual framework that links the community strategy to the everyday practices triggered by the delayed rollout and resulting incompleteness of electricity infrastructure. Section 4 introduces the study site and data collection methods. Section 5 describes and analyses the delayed and incomplete infrastructure landscape, while Section 6 examines infrastructure practices. Section 7 examines the factors that facilitate

and hinder the development of a community strategy to address the delayed deployment and incompleteness phenomenon. Chapter 8 summarises the main findings of the study and its contribution to scholarship.

4.2. Electricity supply in Monrovia

Monrovia's energy infrastructure was virtually destroyed during Liberia's devastating civil war from 1989 to 2003. At the same time, the city's population grew from around 500,000 before the war to over one million today. Faced with growing demand, the energy sector is struggling with huge gaps in power generation, transmission and distribution. Due to the lack of supply, most urban households still rely on self-generation, mainly using diesel generators. These generators are relatively expensive compared to grid connections: they average US$3.96 per kilowatt hour, while the Liberia Electricity Corporation (LEC) charges around US$0.22.[41]

The Emergency Power Plan (2006-2012), funded by USAID and the World Bank, marked the restoration of Monrovia's post-war power infrastructure. It involved the installation of diesel generators and basic transmission and distribution facilities. The Mount Coffee Hydro Power Plant (MCHPP), Liberia's main source of electricity, was rehabilitated in 2017. The facility, located in Harrisburg, Montserrado County on the Saint Paul River, is some twenty-seven kilometres (km) northeast of Monrovia. As there is no reservoir, the power generation capacity during the dry season is only about 10 MW, based on the average flow of the river.

The 88 MW of the MCHPP power plant and the smaller, thermal power plant on Bushrod Island with a capacity of 38 MW are operated by the LEC, the country's public electricity utility. Liberia's total installed capacity in 2022 was 126 MW, a significant decline from the pre-war peak of 191 MW. Less than 50% of the nation's total power demand was met at the pre-war peak, and most of the nation's power supply was privately produced by concessionaires in mining, agriculture or other sectors (MLME, 2009). The grid's maximum operational capacity of 126 MW has been drastically reduced to 88 MW (60 MW at Mount Coffee hydroelectric plant and 28 MW at Bushrod thermal plant) since 2021 due to the failure of two generators at Bushrod thermal plant and one of the four turbines at Mount Coffee hydroelectric plant.

[41] Interview with official of Liberia Electricity Regulatory Commission (LERC), November 15, 2019

4.1: Access numbers to grid transmitted electricity in Monrovia and the rest of the country

Description	Monrovia			Rest of Liberia		
	Households	% of Population	Country (%)	Households	Rest of population (%)	Country (%)
Current Connections	65,000	22	7	10,000	2	1
Anticipated Connections (end of 2022)	105,000	35	12	30,000	5	3
Total	170,000	57	19	40,000	7	4

Source: World Bank, 2021

According to a recent World Bank study from 2020, only around 8% of Liberia's population – and roughly 22% of Monrovia residents – have access to electricity (World Bank, 2021). Even where there are grid connections, supply is intermittent, necessitating the use of backup generators — an alternative that is too costly for the urban poor. In 2021, the LEC recorded only 65,000 legal connections. Its network was largely limited to Monrovia and its surroundings (see Table 4.1).

Aside from capacity constraints, the LEC faces administrative challenges in the form of technical and marketing inefficiencies, particularly high tariffs and a lack of effective revenue protection systems, resulting in widespread illegal connections. The company's total loss ratio dropped slightly to 63% in 2020 before rising to 66% by the end of 2021 (World Bank, 2021). Recently, initiatives have been launched to cut excessive running costs and prevent theft. In 2019, the Criminal Code was revised to make electricity theft a crime, and tamper-proof meters were allegedly installed.

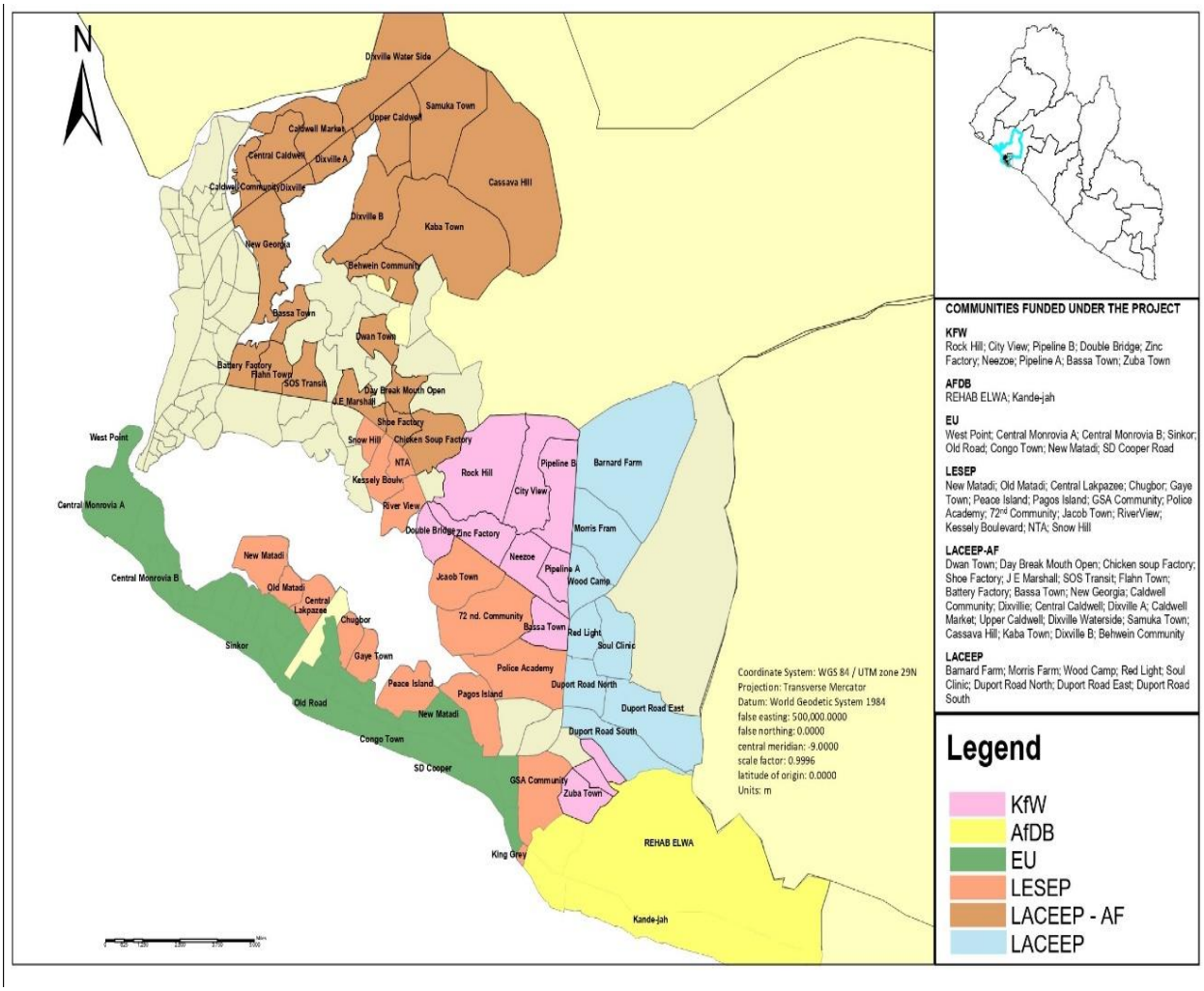

Figure 6: Donor-funded power extension project areas in Monrovia (LEC, 2022)

Some neighbourhoods have been bypassed in Monrovia's post-war infrastructure restoration. International partners, particularly multilateral financial organisations, have helped the government link diverse communities to the grid. As part of the grid expansion project, Monrovia and its environs are separated into donor-funded electricity expansion zones (see Fig. 6). Despite this, donor funding is limited, and grid connectivity in donor-funded regions is not always assured.

4.3. Conceptualising community strategy for fragmented and delayed infrastructure

4.3.1. Delayed and incomplete Infrastructure

Incomplete infrastructure can be interpreted through the prism of dysfunction or deficiency (Chakrabarty, 2007; Choplin & Ciavolella, 2017; Eledi Kuusaana et al., 2023; McFarlane, 2009; Ricci, 2016), but also

through post-coloniality as an inevitable outcome of the legacy of spatially differentiated modernisation processes in of colonialism in the global South (Graham & Marvin, 2001; Silver, 2014). In this study, however, incompleteness is conceived as a path of 'incrementalism', taking the form of different assemblages within the diverse and evolving rhythms of the city and as a landscape with unlimited potential (De Boeck, 2014; Pieterse, 2008; A. Simone, 2008). This perspective illustrates that 'incompleteness' does not necessarily refer to the absence of something, but to a state of becoming that comes with unlimited possibilities, allowing for adaptation, innovation and development (Guma, 2020; Silver, 2014; A. Simone, 2015; A.-M. Simone, 2014; Zapata Campos et al., 2023).

In this study, infrastructure practices are positioned as practices that influence or are influenced by the everyday need, utilisation, and variability of urban infrastructure, but also how established epistemic notions of infrastructure, as well as use, construction, ebb and flow, management and routines of infrastructure can evolve or be disrupted and reconfigured (Bjorkman, 2014; Meckin, 2020; von Wissel, 2019).

Delayed implementation of infrastructure projects evokes a sense of 'suspended present' when intended users cannot access its transformative potential (Carse & Kneas, 2019; Kirchherr et al., 2018). This is particularly the case when operational infrastructure exists but is 'uncompleted', in the sense that it remains inaccessible to segments of the beneficiary population. This landscape goes beyond modernist notions of grid electricity access, resulting in a postmodern energy landscape that is neither conventional nor modern, but rather the fragmented consequence of a multitude of social and economic processes (Eledi Kuusaana et al., 2023; Munro & Bartlett, 2019).

However, the concept of urban incompleteness itself is contested; it may be a misconception of the 'real' African city, but it may also be by design a deliberate government strategy to delegitimise certain communities, like slums, or a strategy that responsibilises local communities to fill the void left by the state's inability to provide the needed infrastructure (Amoako, 2016; Star, 1999; Zapata Campos et al., 2023). Thus, incompleteness can be a tool of infrastructure governance and a deliberate strategy, or simply a perception, an inability to ‘size up' the true nature of the urban South (Graham & Marvin, 2001; Lawhon et al., 2018; A. Simone, 2004).

Peoples’ tactics and strategies to access urban infrastructure is a key reference point for this study. Delayed and incomplete infrastructure pose a quandary. People are proximate to but cannot access them, and therefore cannot exploit their transformative potential. This study therefore employs the term delayed infrastructure to refer to projects that have passed their commissioning deadline but are not yet operational;

their completion is, however, possible, albeit delayed (Carse & Kneas, 2019; Gómez-Urrego, 2019; Schmidt, 2020). In Liberia, as in many other sub-Saharan African countries, it is not out of the ordinary that delays are frequently accompanied by uncertainty about whether the project will be completed at all. Using the notion of urban incompleteness (Bjorkman, 2014; Guma, 2020; A. Simone, 2015; Zapata Campos et al., 2023), interpretations of 'incomplete' and 'delayed' infrastructure can be re-delineated spatially and temporally. Networked communities with operational infrastructure, whose projects have been officially declared complete, frequently do not experience a sense of completion, as intermittent breakdowns continue to occur, sometimes causing significant disruption, and the timetable for damage recovery is often shrouded in uncertainty.

Delayed infrastructure, and the resulting uncertainty, stimulate tactical inventiveness (Guma, 2020). But they also elicit responses whereby people pursue pathways to navigate the material and discursive landscapes of risk and opportunity in the long term, individually or collectively (Anderson, 2010; Cooper & Pratten, 2015; Nunbogu et al., 2018). The term "landscape" allows us to conceptualise the material, social, cultural, and cognitive processes that produce patterns of form and function of electricity infrastructure practices in space. This study therefore articulates a geographical notion of electricity infrastructure as a sequence of interacting 'riskscapes' that manifest themselves in fluidly interconnected 'complete' and 'functional' landscapes and 'unfinished' and 'delayed' landscapes (Müller-Mahn et al., 2018; Müller-Mahn & Everts, 2013). Riskscapes draws attention to the contextual, irregular, and relational ways in which understandings of electricity scarcity risks are organised and operationalised in geographical and temporal contexts.

4.3.2. Community Strategy

We follow the view that strategy formation, in the community context, blends long-term visions with policy instruments and works as an institution, reflecting a "collective" tendency (Van Assche, Duineveld, et al., 2021). We agree that strategy is possible and necessary outside organisations and can be fruitfully utilised to pursue collective goals (Kornberger, 2022; Van Assche et al., 2020; Van Assche, Greenwood, et al., 2022; Van Assche, Verschraegen, et al., 2021). In local spaces in developing countries, we see collective and self-organised actions by residents for the provision of vital infrastructure, but there are also problems of free-riding, characterised by illegal connections. The role of collective action and self-organisation in local energy projects or goals, from sustainability to energy transition, has been studied (Grimley et al., 2022; Hasanov & Zuidema, 2018). In this context, we acknowledge governance provides a framework in

which multiple interpretations, competing interests and conflicting objectives can be accommodated and managed. We also recognise this leads to a diversity of coexisting strategies, but also to the potential future strategies (Pierre & Peters, 2000; Van Assche et al., 2020). Exposure to the goals and strategies of other actors and their non-strategic perceptions and interpretations of the past, present, future is therefore part of strategy formation in and through governance (Brorström, 2020; Kornberger, 2013; Van Assche et al., 2020). Therefore, a community strategy rarely tackles a single riskscape, but rather multiple overlapping and inevitably interacting riskscapes.

We follow Van Assche, Gruezmacher, et al. (2022) who define community strategy as the set of formal and informal visions of the future and actions that a community or its members consider relevant. This definition indicates that strategies can be formal, like strategic plans or economic development policies, but they can take many forms beyond formal plans. Community members can develop a shared vision of the future and, through formal or informal plans, begin to formulate the actions needed to achieve their vision. Collectively, these visions and planned actions constitute the strategy to which at least some community members aspire, and it is these community members who steer the strategy. Strategy is therefore manifest as both a vision of the future and a plan to achieve that goal (Doganova & Kornberger, 2021; Kornberger, 2013; Mintzberg, 1987).

Community strategy is examined like “strategy in governance" (Van Assche et al., 2020; Van Assche, Verschraegen, et al., 2021). Strategies in governance, from an evolutionary governance theory perspective, refer to the strategies of communities linked by collective decisions within a governance framework (Van Assche et al., 2020; Van Assche, Greenwood, et al., 2022; Van Assche, Verschraegen, et al., 2021). For a governance strategy to work, it must function as an institution; at the most basic level, this means integrating and coordinating existing institutions, but also creating new ones (Beunen et al., 2017; Van Assche et al., 2020). Policies and plans thus reflect the complex institutions that organise interactions, serving as tools for coordinating strategy (Van Assche et al., 2020). In this context, we are confronted with a plurality of ideas and perspectives in a malleable space. Actors do not always 'agree’ and plans and policies to address infrastructure failures may complement as well as diverge. A local collective strategy incorporates all the formal and informal future-oriented ideals and activities that communities or their members undertake in response to their aspirations (Van Assche, Gruezmacher, et al., 2022). For example, when locals have a specific goal for their community, they take steps to bring about the necessary changes, linking these actions to the overall well-being of the community.

If we see community strategy as a strategy in and through governance, we should note it has to take account of the diversity of worldviews in the landscape. As some worldviews of the community are unrepresented in governance, competition within the community is likely to be complemented by contestation between formal and informal institutions. Individuals, groups, and spaces co-exist, sometimes peacefully, sometimes in tension, and their riskscapes may differ considerably. Complexity also emerges, with multiple long-term perspectives requiring coordination and integration to work (Gunder & Hillier, 2016; Van Assche et al., 2020). Coordination toward a shared future is possible, but here, a strategy will require a genuine buy-in, whether through new, appealing coalescing ideas or the adoption of existing long-term perspectives.

4.4. Methods

Data collection focused on two neighbourhoods in Barnesville Township, located in the Greater Monrovia District, about nineteen kilometres north-east of central Monrovia. The two communities, Dry Rice Market and Maryland Centre, are not typical informal settlements as some residents have legal land titles, while others are squatters, and some occupy customary land. However, development in these areas remains unplanned and takes place without government zoning or building regulations.

The study areas were selected for two reasons. First, both communities are only partially connected to the electricity grid. Second, they are synonymous with the unplanned growth of Monrovia, with diverse, sometimes fragmented and heterogeneous infrastructure systems. Moreover, since the research assistant already had relationships with key stakeholders in these two communities, it was easier to find gatekeepers willing and able to introduce the research team to key local actors. Moreover, these previous relationships and knowledge of the area provided the research team with a degree of security, as Monrovia, with its high crime rate, is generally unsafe for outsiders, especially in the poorer communities. The two neighbourhoods generally have lower crime rates than other communities in similar locations. Finally, the two communities are easily accessible by public transport, which made it easier for the research team to commute daily.

The first author collected the data in Monrovia between September 2019 and March 2020 as part of his PhD field study. The information was gathered mostly through semi-structured interviews, field trips and observations, focus group discussions.

A total of sixty-nine people were interviewed, including sixteen focus group participants, twenty-four residents, eleven government officials and eleven representatives of non-governmental organisations, universities, civil society organisations and development agencies (Table 4.2). Koloqua (Liberian Pidgin English) and standard English were used in the focus group discussions and interviews. The interviews were recorded and transcribed with the full consent of the participants. Two research assistants who are

native speakers of Koloqua and fluent in English conducted the transcriptions. Language specialists from the University of Liberia's English Department validated the transcripts.

A snowball strategy was used to select participants for the focus group discussions and interviews, with participants carefully selected with the help of community leaders and the research assistant. From nine non-governmental organisations, eleven respondents were selected through a snowball process, while eleven government officials from seven government agencies were purposively pre-selected (Table 4.3).

Institutional interviews were conducted on respondents' premises. Individuals were interviewed at home or a central location. Individual interviews were around 60 minutes long, whereas focus groups lasted roughly 90 minutes. FGDs were mixed, with equal numbers of males and females.

The first author developed the interview guide, starting with a list of all topics and questions relevant to the research questions. The guide was then refined by putting relevant questions together and removing those that were deemed repetitious. Questions that could be answered with a simple 'yes' or 'no' were avoided, as were 'leading' questions. Questions to locals focused on strategies that tackle infrastructure incompleteness created by slow roll-out. Questions to state actors centred on why and how post-conflict energy project delays persist, how local infrastructure practices interact, favourably or adversely, and how state actors react. Questions were ordered thematically and in the sequence in which they were to be asked. Flexibility was key given that interviewee's responses could likely help refine subsequent interviews. The outline was kept brief to focus on the interviewees' responses.

Narrative analysis was the preferred method of analysis for respondents' perspectives on delays and unfinished infrastructure. This provides a layered interpretation. The first step is to explore how respondents conceptualise and communicate their narratives of everyday practice. In the second layer, we investigate how these narratives evolve or emerge. Narrative analysis can provide in-depth interpretations as it often examines texts or discourses to locate the concepts that actors employ to identify and describe a phenomenon (Alasuutari et al., 2008; Sovacool et al., 2018). The utilisation of narrative analysis enabled data analysis that offered depth, explanation and meaning. Several narrative-based studies have been published in the Journal of Energy Research & Social Science (Bushell et al., 2017; Debnath et al., 2021; Hermwille, 2016; Karhunmaa, 2016; Moezzi et al., 2017; Muto, 2017). Semi-structured interviews, the main form of data collection, facilitate narrative analysis by allowing respondents to move towards storytelling and fully explore their internal narratives. The focus of our narrative analysis was on verbatim transcription of the narrative interviews. We used deductive coding, starting with a set of codes that grew over the course of the interviews. The codes were first divided into categories such as electricity sources

and services, existing strategies and tactics for grid connection, short- and long-term narratives and views, goals for implementing grid connection, among others.

4.5. The landscape of delayed and incomplete infrastructure

We begin with an empirical description detailing the characteristics of the delayed and incomplete infrastructure landscape before moving to the analytical level, which focuses on three interrelated elements that characterise the incomplete infrastructure landscape of the two communities studied. Since 2016, several neighbourhoods in Barnesville, including the Patience Shop and Barnesville Junction, have been gradually connected to electricity. However, some communities, such as Maryland Centre and Dry Rice Market, are only partially or fully connected. LEC officials say the pattern of phased connections is determined not only by limited resources, but also by how easily infrastructure can be installed in congested and haphazardly built neighbourhoods.[42]

Respondents to one of the focus groups indicated some residents begun lobbying the LEC through intermediaries by July 2017.[43] Informal agreements with technicians to cover the cost of labour and materials (cables, circuit breakers, poles and meters) emerged as a typical practice. The phase of electricity deployment covered by this practice is the one where the electricity infrastructure is already in place, but the residential buildings or business centres are not yet connected. It is therefore mainly about the final stages of grid connection, that is, from the mains to buildings. In neighbourhoods where the electricity infrastructure is completely absent, there are usually protests - sometimes violent - by the residents to attract the attention of the authorities. However, this did not preclude a formal application to the LEC. This practice, although officially prohibited, flourishes. The LEC could not explain why they approved applications without prescribing a clear timeframe for connection, or why its technicians readily provided materials like meters for an unsanctioned activity.[44] This reflects an existing, uncoordinated informal strategy: one in which locals can achieve the goal of grid-connection, and one in which the overburdened LEC shares the cost. The practice also shows that such an adaptive strategy, resulting from the delayed roll-out of electricity, is fraught with sustainability problems and is open to exploitation, especially because state actors are not fully enrolled.

At the analytical level, we unpack three interlocking features which define the landscape of delayed and unfinished infrastructure. *First*, we note that incomplete electricity emerges as a risk object (Innis & van

[42] Interview with LEC official, February 12, 2020
[43] FGD, Dry Rice Market, November 14, 2019
[44] Interview with LEC official, February 14, 2020

Assche, 2022) that is weaponised. Engineers exploit delays to pressure residents to assume the responsibility of funding grid connections. LEC officials who claim that this practice is unacceptable ignore the situation on the ground. Once structures are connected through this method, it is considered lawful. This landscape unpacks risk: susceptibility to abuse. There have been reports of scammers posing as LEC technicians, and of technicians not delivering after being paid. As the practice is 'officially' unsanctioned, swindled locals often have no recourse. Yet, the landscape also reflects the potential for strategy formation through the LEC's unacknowledged recognition of the potential to engage locals in electricity deployment given the LEC is overstretched.

Second, locals actively assume the burden of funding the completion of power connections as a local strategy for establishing "stability" amid the uncertain terrain of delayed implementation. The roll-out lacks certainty, with some of the targeted projects lingering in a state of incompletion a decade after it commenced. Shifting responsibility to residents represents an informal cost sharing that does not acknowledge the residents' roles but enables locals to achieve their goal. This is, therefore, a self-organising practice involving both state actors and locals, but without any discernible coordinating collective strategy that includes an overarching plan. Therefore, this informal strategy itself becomes fraught with uncertainty.

Third, uncertainty abounds as no specific procedure exists to identify the mechanisms that permit strategy creation and coordination between government electrification programs and those local initiatives. Self-organisation or self-governance are not affected only by the absence coordination, coherent plans and strategies but also the constraints of historical trajectories. There is no institutional memory and future orientation: most residents are experiencing state-led community electrification for the first time, and the LEC lost not only its infrastructure, but also its pre-war staff and archives.

This landscape depicts the interplay of evolving infrastructure practices impacted by the delayed rollout of electricity. To govern the landscape, actors at all levels, from state to local, employ variety of strategies. Locals, for example, use public rallies and demonstrations to pressure the authorities to expedite grid connection. Local expectations and the uncertainty associated with slow implementation are, on the other hand, exploited by the LEC to subtly obligate locals to fund the connections from the mains to residences.

Additionally, this landscape demonstrates that with or without the explicit articulation by actors, whether formal or informal, practices that straddle the line between legitimacy and illegitimacy can become permissive. It also provides an understanding of how and why institutionalised informality emerges as a key feature of infrastructure implementation in the South, particularly when governments are unable to

provide infrastructure in terms of completeness, and how this shape practices, as can be seen in the case of state actors using delays to induce local actors to co-manage infrastructure.

4.6. Infrastructure practices: individual and collective responses

This section delves into electricity infrastructure practices. That is, practices that influence or are influenced by the everyday need, utilisation or ebb and flow of electricity. We therefore examine the spatial-temporal manifold of actions, both individually and collectively, that seek to control the problematic landscape of slow roll-out of electricity and the resulting incompleteness.

Coordination of collective action to address delayed and unfinished infrastructure, an essential element of the community strategy, manifests itself in various ways. The role of intermediaries, who lobby the LEC on behalf of local communities, is however the most obvious in coordination. Intermediaries fill the institutional, legal and informational gaps that exist between the local community and the state. Intermediaries are empowered by a long-standing pyramidal patronage system in Liberian society, which manifests itself in a reciprocal arrangement between state actors (patrons) who manage public resources and others (clients) who benefit from their support or influence (Gerdes, 2015; Gobewole, 2020; Lowenkopf, 1972; Reno, 2017).

Community organisations also serve as facilitators of more participatory community engagement. At the same time, they can also undermine individuals and even stifle innovation. For example, when the local legislator in Barnesville established an energy task force, a stakeholder group of young people who wanted more engagement in the local energy discussion was rebuffed. Many community members felt that the task force, with the legislator's connections to political power, was far better placed to represent their interests than a local youth organisation, whose tactics often seemed confrontational.

Unlike group actions, which are coordinated through intermediaries, individual activities are not necessarily coordinated. The impression of synchronised actions is because the electrification process is uncertain and opaque, requiring vigilance and alertness. Residents must constantly observe each other and evaluate hearsay to decide when to act. People are constantly looking for new sources of information or, more importantly, allies who have access to information on how to accelerate their connection to the electricity grid.

The nature of the slow and delayed infrastructure landscape demonstrates how infrastructure (non-)provision shapes practices, with emerging practices impacting on long-term hybridised infrastructure systems that span formal and informal and the legal/illegal boundary. More importantly, practices such as

illegal connections highlight the central role of free-riding, especially for informal electricity providers. These informal providers hostilely co-opt the grid into their informal supply system, which is typically based on diesel generators.[45] Some grid-connected local informal suppliers maintain an illegal direct connection or customised or manipulated meters, therefore only a fraction of consumption, or none, is recorded.[46] Locals who patronise local informal suppliers do so as a stop-gap measure as they await the promised electricity connection.[47] In a way, these practices are a direct product of the delayed and incomplete landscape. But the practices also shape the delayed landscape. Illegal connections are blamed for slowing down the pace of connections in Monrovia, overloading the current system and causing the LEC to reallocate resources and staff to tackle illegal connections.[48]

From an analytical perspective, we can draw on a key element of infrastructure practice that applies to cities in the South: the ongoing evolution and reconfiguration of infrastructure shapes and is shaped by local infrastructure practices. But more than that, this landscape also highlights the key and significant role of intermediaries in managing the landscape of slow implementation. These practices are not necessarily a symptom of defectiveness, but rather a recognition that incomplete infrastructures reflect constantly changing configurations, always in the making, subject to the miracles of improvisation, and straddling the lines between legality and illegality. This is a landscape of contested but sometimes cooperative practices between the various actors who manage and control the hybridised infrastructure system. This forms the basis for constant low-intensity confrontations between community members and authorities, but also provides opportunities for exploitation by the technicians who control connections and reconnections.

4.7. Community Strategy Formation

The previous section examined infrastructure practices as spatial-temporal multiplicity of actions to navigate the incomplete infrastructure landscape. We find there are informal interactions between local and high-level actors, but also informal strategies. These represent mechanisms, we argue, that can influence strategy formation and the synchronisation of various narratives surrounding local electrification goals and approaches. However, we note that this is a contested landscape. There are dissonances between local expectations, the resulting practices, and the broader electrification targets and capabilities of the LEC, but

[45] In one of the most egregious incidents, an informal supplier illegally connected more than five hundred consumers to the grid (see FrontPage Africa, 'Nigerian with 500 Illegal LEC Customers Busted Making More Connections on Pole.', Monrovia, Liberia, Oct. 24, 2018. [Online]. Available: https://frontpageafricaonline.com/front-slider/liberia-nigerian-with-500-illegal-lec-customers-busted-making-more-connections-on-pole/)

[46] Interview with LEC official, February 12, 2020

[47] FGD, Dry Rice Market, November 14, 2019

[48] Interview with LEC official, February 12, 2020

also between the strategies, tactics and narratives of actors. Once a strategy emerges, it typically competes with other strategies, but can also be ignored or undermined by expectations, non-coordination.

This section investigates the feasibility and implementation of current strategies, as well as the opportunities that a community strategy would engender. This is against the backdrop of the apparent lack of a collective strategy that enrols all relevant stakeholders in a common coordinating framework and comprehensively considers all interests, from national to local actors. We do not dismiss existing strategies and plans but envision a "community strategy" that welcomes informality and non-state actors' practices to tackle the risky terrain. Such a strategy has the potential to map out inclusive, state-led participatory spaces where local contributions are recognised and integrated into the urban infrastructure agenda, and even ensure that negative aspects of current local practices are minimised, and positive aspects are exploited.

The presence of high-level actors interacting with locals, even if it is primarily through intermediaries, provides a foundation for strategy formation as it enhances governance capacity by offering the state the opportunity to intervene to shape local practices, without being wholly responsible. A community-based strategy that goes beyond the community and enrols state actors can enhance governance capacity, a key element in developing collective strategies. This "external" intervention represents a positive shock as it lessens the burden of risk management which locals usually bear themselves. More importantly, this means government actors and residents can converge and accommodate the formal and informal in their tactical and strategic pathways. However, this does not necessarily mean a community strategy is anchored in these interactions. What we highlight is there exists the potential for the germination of a community strategy from these interactions, as both state and local actors, the formal and informal, planned and unplanned, are already interacting in the same space. More crucially, the existing spatial-temporal multiplicity of actions prompt the government to rethink its approach to informality: it recognises that it cannot deliver infrastructure and therefore needs to take informality-specific action in a context where locals are already willing and able to positively impact service delivery.

Slow roll-out of electricity, and infrastructure in general, can therefore become a lens through which we understand governance capacity, which is evolving but contested, and which we have defined as the capacity of all actors to solve the collective problem of delayed infrastructure implementation. We say contested because institutional and structural issues affect governance capacity as much as individual actors. Therefore, regardless of the recognised potential for strategy formation, this cannot be achieved without coordination. Certain forms of coordination, particularly that of intermediaries, already facilitate the landscape of delayed electricity infrastructure. Moreover, we see that residents largely rely on

decentralised information exchange, sometimes hearsay, sometimes word of mouth. But that the potential for strategy formation exists is one thing. Whether strategy formation can be actualised is another. Questions about which actors are best placed to coordinate the strategy-making process become relevant, as do unfavourable conditions such as scarcity and consequent rivalry in the urban commons and the sometimes lack of a shared vision among groups of actors.

There are obvious challenges to the formation of a community strategy: the lack of centralised coordination between multi-level actors and the divergent long-term perspectives and narratives. Moreover, scarcity — both resources needed to facilitate local electrification and of electricity itself — puts pressure on the strategic process. Electricity scarcity not only creates the basis for unsustainable and illegal use of incomplete infrastructure, but also encourages fixation on short-term tactics, creating a Faustian arrangement whereby locals fail to develop a long-term perspective and strategy to ensure grid sustainability. Therefore, locals, who must navigate this landscape daily, cannot ideally play the coordinating role. Intermediaries, on the other hand, bring to light a potentially exploitative dimension, where local people become victims of patron relations, political manipulation and exploitation.

This leaves the state as the actor capable of coordinating the instruments and actors needed for a multi-level community strategy, as well as the process of developing the strategy itself. The current system is simply adaptable with sustainability concerns. While it can fill current governance capacity gaps, it also creates new challenges. The absence of effective government intervention can lead to unsustainable outcomes, making people more vulnerable to exploitation. Conversely, when state actors are brought in, there is the prospect of building on previous strategies and plans, where this relationship can strengthen local government, which has hitherto played a minimal role in the electrification process. The inability of the state to provide "complete" electricity provides an important basis for not only more conspicuous engagement in formulating a community strategy, but also leading coordination.

4.8. Conclusion

This paper's theoretical contribution is a re-delineation of slow infrastructure rollout as a landscape comprising not just of tactics but also of evolving strategy, not only of reactions but also of analysis and purposeful exploitation. This necessitates a reconnection with the realm of policy and practical development challenges, as the landscape of tactics and strategy emerging from a specific pattern of infrastructure delay and incompleteness will profoundly affect future planning and implementation alternatives.

Our notion of slow infrastructure roll-out and associated infrastructural incompleteness has wider implications for understanding urban incompleteness in contexts of the Global South. The study's non-

binary approach, in which "incompleteness" is not only the inverse of completeness but also a relativistic phenomenon that resists explanations premised on narratives of dysfunctional infrastructure, contributes to debunking negative renderings of urban incompleteness in the Global South. Beyond this study, infrastructure incompleteness can emerge a categorical explanation for infrastructures that diverge from and a counterbalance to norms that define fragmented and splintered infrastructure systems as defective.

As electricity in our modern society is the infrastructure of infrastructures, the basis for a variety of different activities, possible livelihoods, lifestyles, of materialising dreams and desires (Larkin, 2013), strategising for electricity cannot be disconnected from broader strategies, and community strategy for infrastructure can, as said, be fruitfully connected to the collective reflection on community futures. If more comprehensive forms of planning are not in the cards, if self-organisation and informality need to complement what formal governance can accomplish (for the moment), then open strategies for electricity strategy might be in the cards, might enable a re-linking of formal and informal and accommodate a variety of possible futures (De Boeck, 2013). Therefore, one can argue that infrastructure incompleteness remains an important, if not enabling, aspect of urbanisation, especially in the South.

While we view the existing landscape emerging out of slow rollout of electricity as an adaptive system with sustainability concerns which can be assuaged through a community strategy, stakeholders could continue to rely on a highly adaptive strategy characterised by continuous experimentation, which is not necessarily a negative pathway. What remains difficult in the current situation is to formulate what we call a true community strategy, one that is firmly embedded in governance (formal plus informal), and that can coordinate other institutions towards a long- term infrastructure vision (which underpins a broader vision for the community). A community strategy represents an expression of the complexity of "strategy at scale". That is, it must cross the boundaries of a single community and be construed as a mechanism for organising actors at various levels, including higher level governmental actors, thereby harnessing expertise, resources, and stability state organs provides.

While infrastructure delays may engender uncertainty, yet the prolonged waits for grid-connection or the state of incompleteness represent information and create space for strategy. This information serves as the foundation for future action, including collaboration with the government. There is room for compromise, governance can be reorganised with fewer but achievable commitments, and informality can be properly monitored rather than dismissed. What matters is how important the urban commons (in this example, tangible electricity infrastructure) remain central. In this situation, it seems warranted to propose a rethinking of Liberia's centralised approach to electricity infrastructure to a focus on state-led participatory

spaces where self-organised local initiatives are recognised and integrated into the urban infrastructure agenda to minimise the negative aspects while maximising the positives.

A limitation of this paper is its restrictiveness as it addresses mainly residential type of electricity use, as opposed to economic sectors. Furthermore, given the marked diversity of planning cultures in Africa (Amankwah-Ayeh, 1996; Baruah et al., 2021; Home, 2015; Lee & Schultz, 2012; Nunes Silva, 2015), it is important to be aware of the pitfalls that arise from the tendency to generalise urban phenomena without providing a context, even if different spaces in the South share similarities in terms of incomplete urban infrastructure.

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CHAPTER 5: ADAPTIVE PRACTICES AND GOVERNANCE

5. Searching for stable electricity in Monrovia: co-evolution of energy infrastructure, policy, and practices[49]

Abstract: Development requires action, adaptation, and transformation of both governance and physical infrastructure. Energy infrastructure unfolds as the infrastructure that facilitates the growth of other infrastructures and development. This paper argues it is critical to examine the complex, non-linear evolution of energy infrastructure and policy alongside the intricate, non-linear evolution of governance in general, and planning specifically, in southern cities, particularly those with a history of instability, scarcity and incomplete infrastructure. Monrovia, Liberia, provides a compelling example of the intricate co-evolution of policy, infrastructure and practices in unpredictable and unstable contexts that require adaptability, resilience and innovation. Understanding such a landscape is important because governance reflects characteristics of constant evolution, improvisation and searching within a broader system that is also evolving. The objective is to better grasp how the double and coupled processes of 'searching' and 'planning' interact to shape the landscape of options for tackling incomplete electricity infrastructure. The incompleteness of both governance and infrastructure retains benefits whilst the interplay of searching and planning can allow for positive adaptations in terms of governance and infrastructure; however, we equally know adaptation can take place in unsustainable contexts, thereby engendering the potential for risks and missed opportunities.

Keywords: *Searching, planning, adaptive infrastructure, infrastructure incompleteness, Liberia*

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5.1. Introduction

Energy infrastructure or energy policy development does not occur exclusively in stable systems. While stable landscapes can foster a more predictable and accommodating environment for energy infrastructure development and policy implementation, difficulties and opportunities can exist in any environment, including stable ones. Monrovia, Liberia, provides a compelling example of the intricate co-evolution of policy, infrastructure and governance in unpredictable and unstable contexts that requires adaptability, resilience, and innovation. Unstable landscapes present unique problems, like political instability and policy shifts or limited resources, which can hamper investment in energy infrastructure, delay progress, limit the scope of projects, and diminish institutional capacity (See Tables 1-4).

In the early months of 2006, President Ellen Johnson-Sirleaf identified the critical need for re-electrification as a key factor in stabilising and rebuilding Liberia, which had endured a devastating 14-year civil war. Post-conflict, Liberia grappled with a severe shortage of grid electricity, rendering the Liberia Electricity Corporation (LEC) inoperative. In response to this challenge, an international donor consortium, comprising Ghana, the European Union, the World Bank, and USAID, collaborated to launch an emergency power program. The primary objective was to restore electricity to parts of Monrovia. This marked the beginning of Liberia's challenging, prolonged, and ongoing journey to rehabilitate its severely damaged electricity infrastructure.

However, Liberia's post-war infrastructure development has encountered significant obstacles, primarily stemming from extensive destruction during the civil war, as highlighted by Johnson-Sirleaf (2011) and Bøås and Utas (2014). The resulting challenges include limited resources (Ackerman, 2009; AfDB, 2013), and persistent problems such as institutional weaknesses, corruption, political instability and security concerns (Paczynska, 2016; Reno, 2008; Schroeder et al., 2014). The country's dependence on foreign aid, combined with geographical and environmental challenges, further complicates progress, leading to slow and disjointed reconstruction efforts.

Amidst the backdrop of partial and incremental post-war development, Liberia contends with a multitude of unfinished infrastructure projects. This article intricately examines the approaches adopted by actors to navigate the challenges posed by incomplete electricity infrastructure. The central research inquiry investigates whether incomplete electricity infrastructure inherently exhibits flexibility and a heightened openness to innovation and improvisation as strategies to address its unfinished state.

The context is that infrastructures as well as governance are constantly adapting, and electrical infrastructure is incomplete, deployment is uncertain. Similarly, institutional capacity is not sufficient to

meet people's needs or to enforce all existing formal institutions such as policies, plans or laws. Yet, the countries of the Global South, including those whose landscapes are characterised by scarcity, limited resources, and insecurity, need to sustain their fast-growing economies.

The co-option of the term 'development' in this study serves to indicate a special relationship between energy policy and infrastructure on the one hand and governance evolution on the other. In other words, the perceived need for 'development' requires action, adaptation, and transformation of both governance and physical infrastructure. Energy infrastructure therefore unfolds as special because it can be seen as meta-infrastructure enabling the development of other infrastructures and forms of organisation, private initiatives, and collective visions.

In settings characterised by uncertainty, like post-war Monrovia, the process of expanding electricity infrastructure and formulating policies unfolds within the framework of a "search" for optimal development patterns and economic growth. Given the uniqueness of each experimentation in such scenarios, overarching conceptions or rigid formulae for planning or good governance may not be universally applicable.

Searching can result in new forms of collaboration that influence governance, whereas new collectives, new rules, both formal and informal, shifting patterns of inclusion and exclusion, participation and representation, and other changes in governance systems can have an impact on future infrastructure development and management. We can therefore speak of ubiquitous forms of adaptive governance, where collective decision-making, using formal and informal institutions, must constantly adapt to evolving scarcity, risks and opportunities, as well as to ever-shifting relationships between state and non-state actors (Van Assche, Beunen, et al., 2022; Van Assche et al., 2021; Van Assche, Gruezmacher, et al., 2022; Van Assche, Valentinov, et al., 2022). There is continuous experimentation on all sides, and both state and local actors are constantly adapting their practices; policy frameworks are also becoming adaptive. Moreover, short-term adjustments affect longer-term prospects and vice versa, with the informal sphere influencing the formal and vice versa. However, problematic adaptations to unsustainable contexts can occur.

A fundamental premise of this study is that incomplete infrastructure, planning, and governance are all simultaneously 'under construction', thereby creating a dynamic environment. In this context, the interwoven process of searching and adaptation assume a pivotal role in navigating complexities and fostering positive adaptations. In this dynamic landscape, governance involving collectively binding decisions by different actors both inside and outside government, with formal and informal roles and institutions (Beunen et al., 2015), becomes a facilitator of searching processes. This evolutionary approach to governance in relation to incomplete electricity encapsulates the connection between deficient or

faltering publicly owned utilities intersecting with grassroots infrastructure designed to remedy these inadequacies (Zapata Campos et al., 2023). The improvisational nature of governance in the face of incomplete systems provides an opportunity to explore alternative pathways and create new solutions. At the same time, infrastructure development serves as a canvas for experiments in governance and provides tangible platforms for testing innovative policies and approaches. This dual process of searching and adaptation is in line with many southern cities and communities that thrive on diversity, adaptability and constant change. Embracing this dynamic allows for a more organic and context-specific approach to development, steering away from rigid frameworks that may not align with the intricacies of incomplete infrastructure.

The paper is structured as follows: starting with a background, it moves on to theorise the interplay of searching and planning in incomplete infrastructure. Data collection and analysis methods are then summarised. The discussion covers an overview of incomplete electricity infrastructure, flexibility in post-war electricity development planning, and the searching processes. The main conclusions are presented in the final section.

5.2. Background

Prior to the onset of the 1989 civil war, the Liberia Electricity Corporation (LEC) boasted an installed generation capacity of 191 MW. This comprised 63 MW from the Mt. Coffee hydro facility and 124 MW from Heavy Fuel Oil (HFO) plants (World Bank, 2021b). Notably, this capacity served approximately 35,000 households in Monrovia, representing roughly 7% of the nation's population. Concurrently, the remaining rural county capitals were provided with 13 MW through ten small, isolated power systems (World Bank, 2021b).

Between 1989 and 2003, Liberian civil wars severely damaged the electrical infrastructure, including the Mount Coffee hydroelectric plant, the transmission and distribution infrastructures and smaller plants. The state-run utility, Liberia Electricity Corporation (LEC), completely ceased operations during the 1990s conflicts. Concurrently, Liberia's population grew from 3.5 million in 2008 to 5.2 million in 2022, with approximately 51% living in impoverished conditions (Rodrigues, 2021).

As of 2021, it was estimated that electricity access for the total population is estimated at 29% and 49.5% of urban dwellers have access to electricity (World Bank, 2021a, 2021c). However, the actual number of individuals connected to the electricity grid is notably lower. According to a 2020 project report sponsored by the World Bank, only 8% of the entire country and approximately 22% of the populace in Monrovia are currently connected to the electricity grid (World Bank, 2021b). The targets set forth in the National Energy

Policy (NEP) aim to connect 70% of Monrovia's population and 35% of the entire country by 2030.

In 2022, Liberia's energy sector faced further challenges, including a significant generation deficit and persistent gaps in nationwide transmission and distribution. Hydropower remains the primary source of electricity generation, followed by thermal technology, power imports, and other sources. Of the installed capacity of 126 MW, only 93 MW was operational due to issues at the Mt. Coffee Hydro Plant and the Bushrod Thermal Plant resulting from a turbine and two generators failing, respectively, worsened by seasonal variations affecting the Mount Coffee run-off river system.

5.1: Sources of Electricity Supply in Liberia[50]

Generation type	Installed capacity	Available capacity
Hydro (LEC)	88 MW Mt. Coffee	Mt. Coffee 60 MW Mt. Coffee
Thermal (LEC)	38 MW HFO thermal plants – Bushrod Island	33 MW HFO thermal plants- Bushrod Island
Solar PV/diesel hybrid (TEC)	140 kW Totota	63 kW

The Liberian Electricity Regulatory Commission (LERC) has made substantial strides in reforming the electricity sector, crafting various regulatory tools. Formerly the exclusive provider of electricity generation, transmission, and distribution in Liberia, the LEC yielded its monopoly to private entities following recent sector reforms. Notable license recipients include Jungle Energy Power (JEP) and the Totota Electricity Company.

5.2: Contributions of electricity to the supply industry in Liberia in 2021 [51]

Power Generation Source	Annual Contribution to Electricity Industry (MWh)	Percentage
Hydro • Liberia Electricity Corporation	 227814.70	78.98
Thermal • Liberia Electricity Company (LEC) • Totota Electricity Company (TEC)	 35402.97 158.99	12.33

[50]Adapted from the LERC Annual Report of 2022, retrieved from: https://lerc.gov.lr/others.php?&7d5f44532cbfc489b8db9e12e44eb820=NjUy.

[51]Adapted from the LERC Annual Report of 2022, retrieved from: https://lerc.gov.lr/others.php?&7d5f44532cbfc489b8db9e12e44eb820=NjUy.

Solar • Totota Electricity Company	32.10	0.01
Imports • CLSG and others (including Jungle Energy Power in Nimba County)	25,030.38	8.68
Total	288,439.14	100

Monrovia grapples with significant challenges due to rapid, unplanned post-war urbanisation. The civil war prompted mass displacement, resulting in makeshift, unplanned settlements, and planned communities with substantial unplanned interstices in Monrovia (Fagen, 2011; McAuslan, 2011; Sletto & Palmer, 2017). Furthermore, postwar Liberia contends with resource constraints, weakened governance structures, corruption, and institutional weaknesses that hinder coherent urban planning (B⊘ås, 2009; Signé & Korha, 2016). Unfortunately, long-term urban development planning was not given the same priority as the immediate post-war focus on urgent humanitarian aid and reconstruction efforts, which were mainly aimed at short-term recovery and stabilisation to restore basic services and infrastructure in Monrovia.[52] Additionally, coordination issues among government agencies, non-governmental organisations, and international partners impeded cohesive urban planning efforts. Meanwhile, the influx of internally displaced persons (IDPs) seeking economic opportunities and security exerted intense pressure on urbanisation (R. Williams, 2011). Outdated urban planning laws and a significant portion of the population residing in unplanned settlements further compound challenges (McAuslan, 2011).

5.3. Theoretical thrusts

5.3.1. Unplanned urbanisation and incompleteness

It is crucial to clarify that incompleteness is not exclusive to the Global South; instead, it spans geographical boundaries, manifesting in cities worldwide, including those in the Global North, which are continually evolving. The focus, however, remains on highlighting the specific contours and nuances of incompleteness observed in the South. Nevertheless, it is crucial to approach this analysis with caution, understanding that significant variations exist within regions and countries in both the Global North and South. This recognition is vital to avoid oversimplification and to appreciate the complexity inherent in the diverse manifestations of urban incompleteness worldwide.

In sub-Saharan Africa, the emergence of informal communities is a significant force shaping urban

[52] Interview with NGO development specialist (KI 12), January 22, 2022

development (Kamete, 2013; Watson, 2009, 2014). The urban system in this context intertwines planning institutions and informal urbanisation, revealing their interdependence through self-organisational and co-evolutionary processes influencing co-production (Nunbogu et al., 2018; Rauws, 2016; Silva & Farrall, 2016; Van Assche et al., 2013). This intricate relationship extends to shaping local practices through power dynamics, even in the absence of a formal state presence (Amoako, 2016).

In the Global South, self-organisation and auto-construction manifest as dynamic responses to gaps in formal governance structures, thereby influencing the incompleteness of urban environments. The act of self-building directly addresses the absence of formal housing, influenced not only by governance issues but also by historical legacies, economic disparities, and political instability (Caldeira, 2017). Furthermore, the emergence of informal economies resulting from community self-organisation may be viewed as adaptive strategies rather than mere contributors to urban incompleteness (Nunbogu & Korah, 2017).

The terms "urban incompleteness" and "incomplete infrastructure" are employed as closely linked concepts in this study. We conceptualise urban incompleteness to signify the inadequacy or absence of crucial elements in an urban area, often manifesting as deficiencies in infrastructure, services, or facilities. The term is also positioned to denote splintered and uneven urban infrastructure and services, particularly evident in spatial disparities, highlighting a disconnection between planned urban development and the lived reality of marginalised communities. Our conceptualisation situates incomplete infrastructure specifically as the unfinished or inadequate physical and organisational structures that support urban life, encompassing aspects like transport networks, electricity, and public facilities.

The spectrum of urban incompleteness in the Global South, shaped by challenges accentuated through rapid and unplanned urbanisation, is intricate (Cobbinah et al., 2015). Economic factors, characterised by insufficient financial resources, contribute to this complexity, hindering comprehensive urban planning efforts. Governance issues are significant contributors, evidenced by the illegal and unplanned construction detached from formal systems, a result of both rapid urbanisation and governance shortcomings (Bikis & Pandey, 2022).

The ongoing expansion of informal settlements and slums in the Global South indicates a mode of urban development lacking proper planning and formal infrastructure (Jones, 2017). Challenges such as inadequate sanitation, absence of clean water, and overcrowded living conditions compound difficulties (Zerbo et al., 2020). This predicament exerts undue pressure on cities, rendering them unsustainable especially in the Global South (Davis, 2006; Smit et al., 2017). Furthermore, as emphasised by Chen (2006), the informal economy and its intricate linkages with formal regulations play a pivotal role in shaping the

spectrum of incompleteness. Economic inequalities further amplify these challenges, creating obstacles in financing and maintaining urban infrastructure (A. M. Simone & Pieterse, 2017).

In contrast, the Global North exhibits a different form of urban incompleteness stemming from earlier stages of urban development. The challenges here are more associated with managing aging infrastructure and dealing with deferred maintenance, reflecting the maturity of urban areas (Armbruster et al., 2013). The economic base in the Global North, generally more extensive, enables higher levels of infrastructure financing and maintenance, particularly in wealthier regions. Governance structures are typically more robust, characterized by effective urban planning strategies, comprehensive master plans, and zoning ordinances. Thus, incompleteness in the North often shifts towards addressing established urban norms, legal property issues, and challenges associated with industrialisation and sustained economic growth.

5.3.2. The dynamics of incomplete infrastructure

Having established the characterisation and nexus of urban incompleteness and incomplete infrastructure in the previous section, this segment delves further into the dimensions and subtleties of incomplete infrastructure. The exploration begins with a global overview and gradually narrows its focus to peripheral urbanisation, as outlined by (Caldeira, 2017). The analysis unfolds by delving into the multifaceted ramifications associated with incomplete infrastructure, shedding light on the symbiotic relationship it shares with auto-construction and unravelling the complex challenges that arise from this intricate interplay.

We expand the conceptual horizon by considering different perspectives on heterogeneity, standardisation and established norms that serve as benchmarks to distinguish between success and failure in infrastructure systems. By delving into these nuanced viewpoints, the narrative aims to provide insight into the intricate dynamics that influence the evolution of both infrastructure and associated practices. This evolution unfolds along a continuum that encompasses infrastructure in flux (Guma, 2022b), to cases where established infrastructure exhibits deficiencies (Björkman, 2014), to scenarios of fragmented or disaggregated infrastructure (Graham & Marvin, 2001), to situations characterised by delays in the completion and operation of infrastructure projects (Carse & Kneas, 2019), or practices associated with incrementalism (Silver, 2014). This conceptualisation goes beyond a mere examination of how incomplete infrastructure shapes its immediate surroundings; it also brings to light the reciprocal shaping influenced by socio-cultural, economic and environmental factors. Through this comprehensive approach, a fine-grained understanding emerges that unravels the intricate web of influences and consequences that characterise the landscape of incomplete infrastructure.

Incomplete infrastructure unfolds through spatial gaps, functional deficiencies, absence, and fragmented networks, presenting multifaceted challenges in urban development. The dynamic landscape is shaped by the interplay among elements such as 'finished' and 'unfinished' (Carse & Kneas, 2019), complete or incomplete (Guma, 2020; A. Simone, 2015), absence and presence (Storey, 2023), 'built' or 'unbuilt' (Carse & Kneas, 2019), 'incremental' and 'delayed' (Innis & Van Assche, 2023; Silver, 2014), and breakdown and stability (Björkman, 2014; Gómez-Urrego, 2019; Graham, 2010). Spatial gaps indicate an uneven distribution, occasioned by among others, peripheral neglect, or insufficient infrastructure development in informal settlements. Functional gaps further highlight the incompleteness of urban infrastructure, with service interruptions, undercapacity, and reliance on obsolete technology affecting critical services.

Drawing on Star & Ruhleder (1994, 1996), infrastructure is recognised to have a fundamentally contextualised relationship, both shaping and being shaped by its specific context. This understanding extends to incomplete infrastructure, emphasising its reliance on the specific context. For instance, unbuilt infrastructure in a community can foster practices of auto-construction, diverging in contexts where infrastructure is delayed which might generate practices of illegal tapping. Changes in society, technology, or policies may impact the development or completion of infrastructure over time, influencing user experiences. The incomplete nature of infrastructure can therefore have consequences for functionality, efficiency, and safety, necessitating an examination of the specific context.

This idea, that infrastructure has a fundamentally contextualised relationship, extends to incomplete infrastructure, emphasising the importance of understanding the specific conditions, influences, and consequences associated with its incompleteness within a given context. The claim is not that northern (universalised) infrastructures possess inherent completeness. Rather, it advocates a perspective that considers the heterogeneity of urban infrastructure, challenging completionist tendencies and redefining incompleteness as an enlightening property, emphasizing the need to acknowledge and dismantle universalised norms related to standardised infrastructure (Guma, 2020; Lawhon et al., 2018).

We emphasise that expressions of incompleteness, whether in the form of unbuilt structures or absent infrastructure, harbour unrealised developmental potential. The politics of absence engage residents in navigating action and persistence within the city's margins, striving towards unfulfilled post-war promises (Storey, 2023). Infrastructure projects exist in a perpetual state of planning, blocking, delaying, or abandonment, challenging linear timelines. Unfinished infrastructures are not anomalies but widespread phenomena offering crucial insights into social worlds and temporalities (Carse & Kneas, 2019).

Like urban incompleteness, incomplete infrastructure is ubiquitous, found globally. Disparities in the

Global North, characterised by more economically developed countries, and the Global South, characterised by less economically developed countries, are intricate. Broad categorisations may not fully encapsulate the realities of individual nations or regions within these global divisions. Nevertheless, key distinctions reveal the nuanced nature of incomplete infrastructure in these contexts.

In the Global North, financial resources and economic stability serve as catalysts for comprehensive infrastructure development. Thus, incompleteness here is more likely to stem from project timelines, evolving technology, or changing needs rather than severe financial constraints (Kostka & Anzinger, 2016). Conversely, the Global South faces financial limitations, presenting obstacles to project completion. In particular, limited funding, restricted access to capital, and economic challenges impedes progress (M. J. Williams, 2017). Additionally, technological disparities shape incomplete infrastructure. In Developed countries have access to advanced technologies, influencing project design. Incompleteness may be associated with integrating innovative technologies. In contrast, the Global South faces technological gaps, contributing to incomplete infrastructure. Specifically, the Global South encounter challenges in adopting the latest technologies (Guma, 2022a).

Governance and institutional capacities differ between the Global North and the Global South. Developed countries boast established systems, while Global South grapple with governance, corruption, and institutional challenges. These issues impact project planning, execution, and completion. Global economic conditions influence incomplete infrastructure. Developed countries may face funding challenges during economic downturns, while Global South are more vulnerable to external economic factors, impacting infrastructure development pace.

This study positions electricity scarcity within the broader framework of incomplete infrastructure in the southern region. The challenges, encompassing insufficient generation capacity, aging transmission systems, and inadequate distribution networks, collectively manifest as components of this overarching incompleteness. Incompleteness also manifests in the absence of connectivity or limited coverage resulting in specific communities being deprived of access to electricity and the impacts thereof (Ajide et al., 2023). The unreliability of the power supply, stemming from either outdated systems or insufficient capacity, exacerbates the challenge of incompleteness, leading to escalating demand, and giving rise to inefficiencies, interruptions, and a surge in technical losses within the distribution system, as elucidated by (Adenikinju, 2003).

It is imperative to recognise that these challenges transcend a mere shortage of energy resources; they extend into the realms of governance and institutions (Dagnachew et al., 2020; Gregory & Sovacool, 2019).

The intricate interplay of incomplete infrastructure, governance issues, and institutional deficiencies collectively contribute to the persistent electricity scarcity in the southern region. A holistic approach is imperative, addressing not only the inadequacies in energy resources but also the governance and institutional frameworks that govern the electricity sector.

5.3.3. The interplay of searching and planning

Decision-making within and about cities in Africa is characterised by complex institutions navigated by actors with varying degrees of power. Weak and fragmented governance arrangements act as constraints on capacities to effectively address urban growth and manage change (Dodman et al., 2017; Myers, 2011). Exclusionary planning systems, remnants of the colonial era, contribute to urban development unfolding outside official spatial plans, land markets, and building codes (Dodman et al., 2017). Ambiguities in the roles and responsibilities of local government, traditional authorities, and emerging actors often adversely impact urban risk management. The interplay between formal and informal land use and planning emerges as a critical factor in managing urban risk in Africa.

Post-war landscapes like Monrovia, entail a considerable degree of complexity, volatility, and uncertainty (Cooper & Pratten, 2015; Doevenspeck, 2013; Doevenspeck & Mwanabiningo, 2012). This uncertainty manifests at multiple scales (Scoones, 2019). But more importantly, in post-conflict settings, where past experiences offer little guidance (El-Shaarawi, 2015; Innis & Van Assche, 2023; Kaufmann, 2017; Korf, 2013), actors find it challenging to orient themselves amid the changing social landscape lacking stability and predictability (Emirbayer & Mische, 1998; Vigh, 2009a, 2010).

William Easterly's (2006, 2007, 2008) conceptualisation of "searching" versus "planning" in the realm of development and governance provides a valuable lens for understanding the intricacies of urban governance, particularly in cities like Monrovia, marked by numerous unplanned settlements. Building on this idea, the distinction lies in the decentralised and adaptive nature of searching, where individuals or communities, guided by local knowledge and immediate needs, engage in trial-and-error learning, experimentation, and spontaneous responses to challenges. In contrast, planning involves a centralised, top-down effort where authorities formulate and execute comprehensive strategies based on a broader understanding of development goals, necessitating a more structured and deliberate approach.

We conceptualise landscapes like Monrovia as a combination of searcher-driven innovation and planners' support, reflecting a complementary coexistence rather than the potential of becoming antagonistic or competing in the landscape. For example, a community-led initiative could involve improving sanitation

(to address inadequate infrastructure) while building social cohesion and trust among residents (to address inadequate governance). On the other hand, planners can complement searchers by providing technical expertise and resources when needed, helping scale up successful community projects and ensuring alignment with broader urban development strategies. By leveraging community-driven innovation, technical expertise, and collaborative partnerships, searching encourages adaptive solutions while ensuring resources and support from planners. It recognises the interplay between incomplete urbanisation, incomplete infrastructure, and incomplete governance, aiming to address these issues holistically. Through this approach, Monrovia and similar post-war urban environments can work towards more sustainable, inclusive, and resilient urban development.

It is also important to note that searching is not merely a stochastic process of trial and error. Instead, it is reinforced by little or no expectations of transitions, although a sustainable transition would always be a welcome latent benefit. It is typically an attempt to correct pressing problems, like providing households immediately with electricity amid resource scarcity. It is about gathering information or resources to act in a specific region or context, driven by urgency, rather than building a plan of action or strategy to reach a specific objective or a roadmap or sequence of actions to attain a desired conclusion. The evaluation and selection of information or resources, and subsequent action to be taken, are based on how actors interpret their relevance and usefulness to pressing needs or expectations. On the other hand, planning necessitates a more substantial degree of decision-making that examines many options, assesses risks, and rewards, and involves strategic decisions to meet desired objectives. Searching is, therefore, a non-linear process; it never follows a predetermined sequence. Even planning involves a degree of "searching," like almost all problem-solving techniques, except perhaps random guessing.

5.4. Methodology and Study Area

5.4.1. The selected communities

Methodologically, this analysis utilises empirical, qualitative approaches using first-hand observations and interviews collected during ongoing research in Monrovia since January 2019. Specifically, the study took place in Barnesville Township, located 19 kilometres north-east of Monrovia in the Greater Monrovia District (See Fig. 7). During the field visits led by the first author, the research focused on contextual exploration, with particular attention paid to the Dry Rice Market and Maryland Centre neighbourhoods. A dedicated diary documented remarkable observations and field notes, complemented by photographs capturing exciting infrastructural and technological developments.

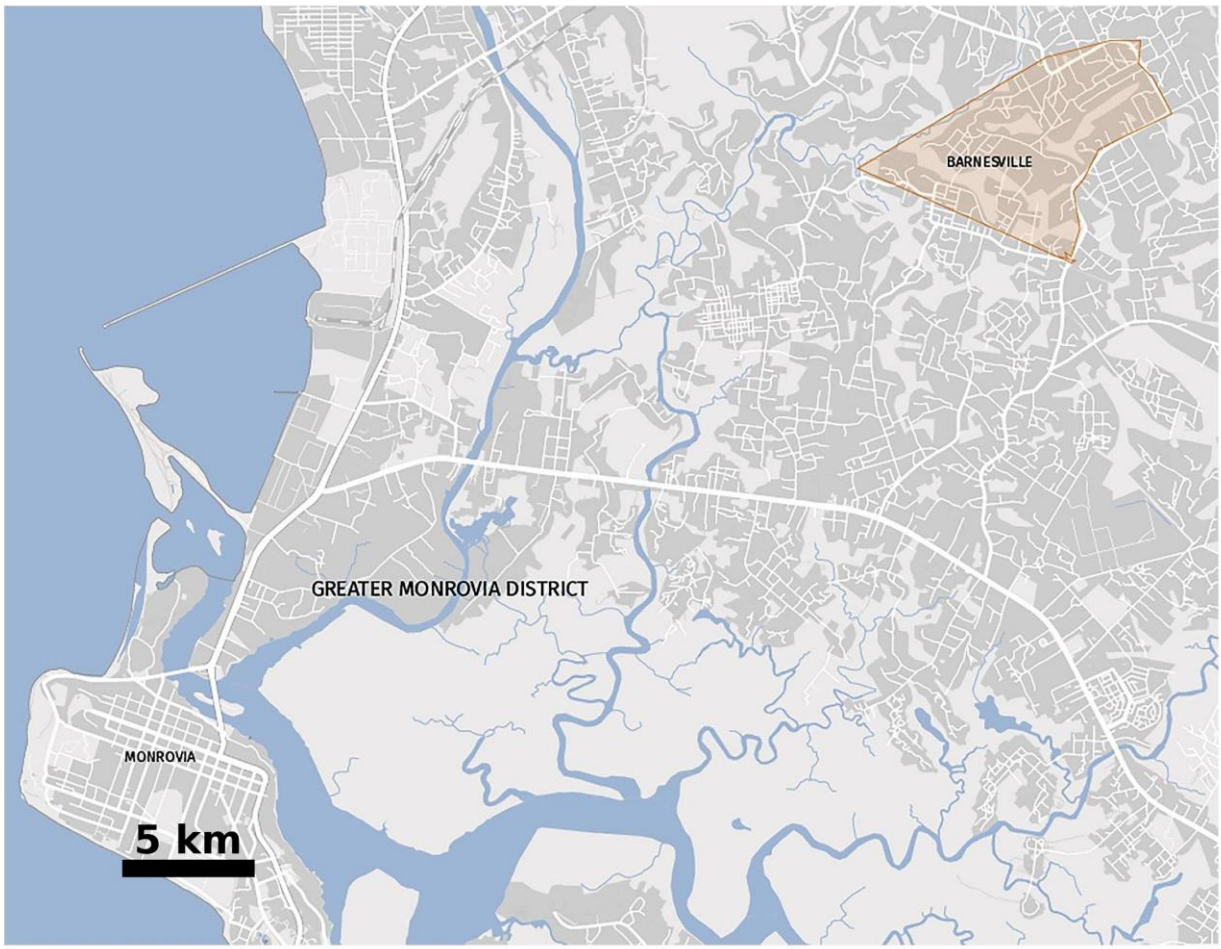

Figure 7: Barnesville Township (OpenStreetMaps, 2024)

The purposeful selection of these sites is driven by various factors. First, these areas exemplify a localised, integrated electricity infrastructure system that combines an incomplete and failing grid with grassroots power supporting the grid. Additionally, these sites, situated on the outskirts of Monrovia, function as a crucial experimental space in infrastructural governance— specifically, the processes and mechanisms by which actors, spanning from formal to informal, plan, build, manage, and regulate electricity infrastructure, whether grassroots or mainstreamed. Third, the first author's prior engagement with local communities through a local interest group not only facilitated access and understanding but also fortified the depth of the study.

The two contiguous and indistinguishable communities, Maryland Centre and Dry Rice Market, together forms part of the Barnesville Road community alongside others like Patience Shop and Barnesville Junction

communities in the Montserrado-11 electoral district. These names are not official, and these communities represent areas with fluid and shifting unofficial boundaries that residents determine differently. The two studied neighbourhoods got their names from two prominent landmarks: Maryland Centre, an early 1980s residence believed to be owned by an individual who migrated from Maryland County in southeastern Liberia, and the Dry Rice Market, a burgeoning market once a modest open-air establishment in the 1980s. This market got its name from its initial offerings of the ingredients of a Liberian dish 'dry rice', a cost-effective meal featuring rice with palm or vegetable oil and fried fish accessible to all.

Understanding the urban development of Barnesville requires a nuanced examination of their historical backgrounds. Unlike typical informal settlements, these communities struggle with the complicated interplay between customary law and formal land tenure, and with the hostile takeover of land that people assume is "public" land that is not government-owned, private or customary, especially swamp areas.[53] But this assumption that these wetlands are universally public and open for habitation is not the case because different perceptions persist within the community.[54]

The Land Rights Act in Liberia, which came into force in September 2018, plays a crucial role in clarifying the different land categories and delineating ownership structures between public, government, customary and private land. However, it is essential to recognise that the law's attempts to address these complexities are gradually evolving and its full implementation and resulting impact will be determined by ongoing developments.

The tension arising from the coexistence of customary and formal land ownership, combined with potential challenges related to wetland encroachment from conflicting acquisitions, largely determines the nature of mixed urbanisation in Barnesville. This tension contributes to incomplete infrastructure, particularly in terms of electricity supply. While formally settled areas often benefit from streamlined planning, electricity construction in Barnesville poses a huge challenge due to factors such as the LEC's limited resources, effective governance, and community collaboration combining with issues arising with the convoluted settlement patterns.

The lack of clear land ownership in some areas complicates the electricity infrastructure planning process. Without a precise understanding of ownership boundaries, it becomes difficult to determine optimal routes for power lines and substations.[55] This lack of clarity has led to community resistance in some cases, with

[53] Focus Group Discussion, Dry Rice Market, November 14, 2019
[54] Interview with official of Liberia Electricity Regulatory Commission (LERC), November 15, 2019
[55] Interview with LEC official, February 12, 2020

concerns ranging from potential land-use changes to compensation disputes and uncertainties about long-term impacts on properties.[56]

Barnesville Township epitomises the slow, fragmented and incomplete post-war reconstruction of Monrovia due to local dynamics, LEC resource constraints and external factors like changes in government priorities and fluctuations in international funding. In 2019, for example, the rehabilitation of the electrification corridor that Barnesville is part of was suspended for over a year because the LEC had not completed a social and environmental impact assessment, which was required to obtain World Bank funding.

This suspension illustrates the complex interplay of local and external factors that affect infrastructure projects. Despite the challenges, the residents of Barnesville Township are demonstrating resilience through adaptive solutions - by embracing informal economies, initiating community-driven electricity initiatives and innovating housing and sanitation approaches.

5.4.2. Power Generation, Expansion and Supply in Study Areas

After Liberia's 14-year civil war, concluding in the 2005 presidential election, the post-war government took on the immense responsibility of national reconstruction. Tasked with rebuilding a nation left in ruins, the government endeavoured to restore essential services and infrastructure decimated during the war. Among the myriad challenges post-war, the shutdown of the Liberian Electricity Corporation (LEC) stood out due to the conflict's damaging effects.

By September 2006, glimmers of progress became evident as certain sections of the city witnessed the illumination of street lights for the first time in over a decade. This seemingly modest yet symbolically significant accomplishment represented a decisive stride towards recovery. The focal point of the restoration efforts strategically targeted key areas in Monrovia, encompassing the Mamba Point enclave, Central Monrovia, and the Sinkor to Congo Town corridor.

These areas, distinguished by meticulous urban planning and remnants of intact zoning codes, were not only the abode of crucial public institutions and diplomatic missions but also served as thriving hubs for international organisations and expatriates. Understandably, the real estate values in these central and well-connected zones soared significantly.

Contrary to misconceptions, the prioritisation of specific areas in restoration efforts was not arbitrary or

[56] Focus Group Discussion, Dry Rice Market, November 14, 2019; Interview with LEC official, February 12, 2020.

biased towards empowering certain communities and neglecting others.[57] Instead, it was the result of careful planning and practical considerations. The selection of key zones, including the Mamba Point enclave, central Monrovia and the corridor between Sinkor and Congo Town, was driven by the inherent advantages of their layout. This deliberate choice allowed for a seamless connection to the Kru Town substation near the centre of Monrovia and represented a strategic move that went beyond mere expediency.[58]

Focusing on these well-organised and central areas went beyond the immediate goal of restoring electricity; it was strategically aligned with the city's economic and administrative epicentre and contributed to the overall revitalisation of the urban landscape.[59] The spillover effect of this targeted approach not only kick-started the process of electrifying Monrovia, but also strengthened the city's core and created a favourable environment for broader socio-economic development.

Conversely, other parts of the city, such as the suburb of Barnesville Township, where the study communities are located and which blends planning with organic urban growth, or the more typical informal squatter settlements such as West Point or Slipway, have presented greater challenges due to haphazard planning and/or topography.[60] The development of these areas would have required extensive planning and funding - resources that were not readily available to the new government at the time.

In the initial phase of the revitalisation, the public power grid was powered by large diesel generators supplying 22 megawatts of electricity. However, the Gardnersville suburb was connected to the power grid only after the Mount Coffee hydroelectric plant, operated by LEC and located about 27 kilometres northeast of Monrovia in Montserrado County, was rehabilitated.

Originally designed as a river diversion project, the power plant has a dam and spillway structure with 10 radial gates that optimise hydraulic head at Mount Coffee (See Table 5.3). A channel leading to the powerhouse, combined with an excavated channel, facilitates controlled management of water flow and optimal development of hydraulic potential.

5.3: Specifications and technical features of the Mount Coffee Hydroelectricity Plant

Component	**Specification**
Overview of Plant	
Intake Structure	Designed for six units

[57] Interview with official (KI 6) of LEC, November 15, 2019
[58] Interview with official (KI 14) of the Ministry of Finance and Development Planning, March 14, 2022
[59] Interview with official (KI 14) of the Ministry of Finance and Development Planning, March 14, 2022
[60] Interview with Official (KI 01) of the Ministry of Public Works, February 2, 2020

Powerhouse Construction	Four units constructed
Civil Works for Units 5 and 6	Partial excavation for powerhouse extension
Commissioning Year (Units 1 and 2)	1966
Commissioning Year (Units 3 and 4)	1973
Technical Characteristics of Original Plant	
Gross Head	21.6 m
Unit Rated Flow	85 cubic meters per second
Unit Rated Capacity (Units 1 and 2)	15 MW
Unit Rated Capacity (Units 3 and 4)	17 MW
Plant Rated Capacity	64 MW

During Liberia's tumultuous period of civil wars from 1989 to 2003, the operational efficiency of Mount Coffee's spillway gates was disrupted, halting power generation. This interruption led to reservoir overloading, eventually causing parts of the dam to breach in August 1990, eroding about 180 metres of the 12.2-metre-high dam to the bottom.

Uncontrolled discharge continued through both the partially open spillway and the breached section until the start of rehabilitation works in January 2014. During this phase of suspended power generation, the Mount Coffee power plant became the victim of large-scale vandalism, characterised by the removal of crucial equipment such as power generation components and the radial gate. Moreover, the deliberate removal of the plant's cladding created even greater challenges during the subsequent restoration work.

In 2016, the four original units, which were destroyed during the post-war period, underwent rehabilitation using the same type of turbine—a Francis turbine, but with enhancements. The improved turbine units are now linked to the grid, each generating 22 megawatts. This has led to a substantial increase in output compared to the previous machinery, with the power per turbine elevated by about one third.

Barnesville Township, including Maryland Center and Dry Rice Market, has undergone re-electrification through the World Bank-funded Accelerated Electricity Expansion Project-Additional Financing (LACEEP-AF). Collaborating with international donors such as the Government of Norway (GON), Japanese International Cooperation Agency (JICA), USAID, and the European Union (EU), the ongoing project falls within the Monrovia-Bomi Corridor and involves the reconstruction of the Gardnersville Substation. Despite positive impacts like a decrease in crime rates in grid-connected communities, power

theft remains prevalent due to unconnected homes, reducing the load weight for legitimate users.[61]

5.4.3. Data Collection and Analysis

As part of the first author's doctoral studies, ethnographic research was conducted in Monrovia between September 2019 and February 2020, and between April 2022 and December 2022. Several techniques were used to produce a multi-level analysis of electricity incompleteness in the context of the interplay of searching and planning – a process in which different and multiple governance experimentation take place.

There were fifty-three (53) semi-structured interviews and two focus group discussions (FGD), each with eight (8) participants. A wide range of actors involved in energy and urban governance were interviewed, including national and local decision-makers, utility officials, built environment professionals, civil society actors and residents.

The focus group discussions and interviews with residents were conducted in Koloqua (Liberian Pidgin English). The remaining interviews were conducted in English. All interviews were recorded and transcribed with the participants' full consent. Most of the respondents were selected through purposive sampling, however, the participants in the focus groups were chosen through a snowballing approach. Reviewing documents, newspaper articles, and field observations enhanced or triangulated the data acquired through interviews.

To assure the findings' reliability and credibility, the First Author took steps to ensure rigour and mitigate bias. First, a multidisciplinary data collection team with prior experience collecting, processing, and interpreting qualitative data in Liberia was assembled to ensure to eliminate data interpretation bias. Second, the First Author was self-aware of personal inclinations, preconceptions and opinions that could influence the study and therefore, critically reflected on them throughout the data gathering and analysis process. Third, purposive sampling was used to ensure the participants' experiences were relevant to the research question. Fourth, multiple data collection methods were used, including interviews, observations, newspaper articles, and document review, with these triangulation processes assisting in ensuring consistency of findings.

In addition, a thematic approach was employed to analyse of the data. Following the analysis, the First Author's interpretations were cross-checked with the participants of the interviews and FGDs during face-to-face discussions or workshops to ensure consistency and avoid misinterpretation of their experiences and

[61] Interview with Community Leader (KI 17), Dry Rice Market, December 4, 2019

help validate the interpretations. Finally, peer briefings were conducted with colleagues and experts who could provide an outsider's perspective, give feedback and challenge possible biases or interpretations, discussing the research design, data collection and analysis process. This was achieved by the first author presenting the data collection and preliminary analysis in seminars/colloquia at their home university as well as at the University of Liberia.

5.5. The Fragmented Electricity Landscape

This section examines the nuanced responses of various stakeholders, including authorities and community members, as they navigate challenges and develop strategies in response to the intricate nature of electricity shortages. Despite the Liberia Electricity Corporation's (LEC) initiation of grid electricity connections from the Mount Coffee Plant in Monrovia since 2016, a significant portion of the two scrutinized neighbourhoods still lacks access almost a decade later. Within both communities, while some areas have established grid connections, others remain without, resulting in a fragmented infrastructure landscape with locals relying on a variety of energy sources.

Electricity scarcity provokes a range of reactions and disrupts the wider landscape of access to electricity, even for legally connected customers. For example, residents without access to electricity often resort to unauthorised connections.[62] Some residents remain unconnected despite having applied for a legal connection.[63] In addition, people in connected neighbourhoods experience significant load shedding or constant power outages, which is contrary to the minimum service levels outlined in LERC's Customer Service and Quality of Supply Regulations (CSQOSR).[64] Additionally, when electricity is available, poor service occurs due to unauthorised users drawing too much power, leading to overloading of transformers and distribution lines.[65]

Businesses, especially those reliant on continuous power faces diminished operating hours and output.[66] Running emergency generators for prolonged periods proves costly, as noted by a shopkeeper who restricts generator usage from 11 am to 4 pm during extended outages.[67] Enterprises heavily dependent on stable electricity, such as cold stores, highlight the vulnerability of businesses dealing with perishable goods like

[62] FGD 1, Barnesville, November 14, 2019
[63] FGD 1, Barnesville, November 14, 2019
[64] Interview with official (KI09) of LERC, November 15, 2019
[65] FGD 2, Barnesville, November 26, 2019; Interview with local community leader (KI14), Barnesville, March 15, 2022
[66] Interview with local shop owner, January 4, 2020
[67] FGD 2, Barnesville, November 26, 2019

fish or meat. Conversely, some merchants posit that this challenge has given rise to markets for dried fish and meat, as smaller traders, unable to afford electricity, opt to dry their goods for an extended shelf life.

The prevailing viewpoint is that individuals connected to the grid experience more reliable access to power in comparison to those depending on small-scale informal electricity vendors.[68] These vendors lack the capacity to provide power on a commercial scale, primarily catering to households with electricity during specific hours, mainly for lighting and operating household appliances like televisions, phones, and laptops at night. Retailers intentionally discourage the use of energy-intensive appliances such as air conditioners. [69] Consequently, off-grid consumers relying on these vendors encounter difficulties in expanding their energy-dependent economic activities. Some vendors primarily operate during the day, utilising small kiosks or makeshift shops dedicated to charging small devices like phones, batteries, and tablets.

Electricity scarcity and breakdowns echoes across all demographic segments. In the two examined neighbourhoods, this issue amplifies existing disparities in development. While certain residents enjoy intermittent yet relatively superior access to electricity, thereby elevating their overall quality of life, others who remain unconnected to the grid find themselves compelled to divert a considerable portion of their limited resources towards securing alternative electricity sources.[70] These alternatives include backup generators or dependence on inefficient yet expensive small-scale vendors.

Furthermore, the presence or absence of electricity not only influences gentrification but also shapes patterns of disinvestment and urban decay. Enhanced access to and reliability of electricity, in areas around the Johnsonville Road and Jireh Church in the Dry Rice Market vicinity, has led to an upswing in property values and rents.[71] Conversely, further down around the Mount Olive's Baptist Church area where the LEC has yet to connect numerous homes, property prices have maintained relative stability over time.[72]

The landscape unfolds a nuanced interplay between scarcity and adaptability, intertwining both infrastructure and governance dynamics. This complex interplay illuminates how communities, organisations and systems respond to challenges and environmental change. The LEC's inability to provide the necessary meters for legal connections has given rise to illegal connections,[73] creating a perception that

[68] FGD 1, Barnesville, November 14, 2019; Interview with small-scale commercial electricity retailer, (KI24), January 13,2020
[69] FGD 1, Barnesville, November 14, 2019
[70] FGD 1, Barnesville, November 14, 2019; FGD 2, Barnesville, November 26, 2019.
[71] FGD 1, Barnesville, November 14, 2019.
[72] FGD 2, Barnesville, November 26, 2019.
[73] Interview with engineer of LEC (KI 06), February 16, 2022.

the LEC has not lived up to its promises, despite receiving payments.[74]

In tackling this challenge, the LEC strategically embraced a community-focused approach (See Fig. 8). Awareness programs were implemented to educate residents about the perils of power theft. Collaborative efforts with local leaders, NGOs, and community-based organisations formed a cohesive network against power theft. Dialogue with community members played a pivotal role, facilitating an understanding of their concerns and the collaborative discovery of solutions. A short-term measure was briefly put in place, involving monitored connections without meters near the Dry Rice Market and Maryland Centre, following a pattern observed in other communities. However, it was swiftly abandoned due to concerns about potential misuse.[75]

Figure 8: LEC public awareness team engaging residents (Author, 2023)

In response to the pressing challenge, government and regulatory bodies heightened their support. Their concerted efforts aimed to expedite the procurement and deployment of meters in underserved areas, with the Minister of Finance pledging to find a comprehensive solution. The scarcity, within this context, imposes limitations on the LEC's ability to expand grid connections due to budget constraints. This reciprocal relationship between scarcity and the LEC's delivery challenges becomes apparent as the sluggish expansion into residential areas supposedly fuelled unauthorised connections. Consequently, this not only leads to revenue loss but also impedes progress in enhancing the pace of grid connections.

[74] FGD 1, Barnesville, November 14, 2019; FGD 2, Barnesville, November 26, 2019.
[75] Interview with engineer of LEC (KI 06), February 16, 2022.

Upon closer analysis, the investigation into the electricity deficit in Barnesville neighbourhoods unravels a complex landscape marked by various facets of incompleteness, notably reflected in the incomplete and fragmented electricity infrastructure. From a technical viewpoint, these gaps manifest in challenges related to distribution and transmission. An observable discrepancy in electricity generation becomes apparent, as the LEC's assertion of having the capacity to produce sufficient electricity for all of Monrovia appears incongruent with its inability to accelerate the pace of connections.

In essence, electricity scarcity is not merely a product of incompleteness; it extends to how this incompleteness gives rise to spatial-temporal effects and influences phenomena such as gentrification, scarcity, and adaptability. It transcends the portrayal of challenges faced by communities, providing valuable insights for scholarly discussions on governance, development, and the enduring impacts of historical conflicts on both infrastructure and society.

The investigation into the electricity deficit in the Barnesville neighbourhoods reveals a complex and multifaceted landscape characterised by various dimensions of incompleteness, prominently evident in the fragmented electricity infrastructure landscape. From a technical standpoint, these gaps materialise as challenges in distribution and transmission mechanisms and not necessarily power generation. A distinct and noticeable incongruity in electricity supply becomes apparent when considering the LEC’s claim of possessing the capacity to generate sufficient electricity for the entire city of Monrovia, but yet, grid-connection in local communities remains slow.

In essence, the issue of electricity scarcity transcends mere incompleteness; it permeates into the realm of how these deficiencies give rise to intricate spatial-temporal effects, influencing not only electricity access, but also phenomena such as grassroots infrastructural governance, scarcity, and adaptability challenges. This extends beyond a mere depiction of challenges faced by communities; it serves as a rich source of valuable insights for scholarly discussions on governance, development, and the enduring repercussions of historical conflicts on both infrastructure and societal structures.

5.6. Flexibility in Planning

Over the past four years, Liberia has witnessed a notable transformation in its energy policy, marked by a deliberate embrace of an adaptive framework for hybrid energy solutions facilitated by the Liberia Electricity Regulatory Commission (LERC). Departing from its historical reliance on hydroelectricity from the Mount Coffee Plant, Monrovia's contemporary electricity approach is characterised by a sophisticated and flexible policy framework, actively encouraging the seamless integration of diverse energy sources.

This strategic evolution stems from the recognition of the imperative for a diversified energy mix. The government, acknowledging this necessity, actively promotes the development of hybrid systems.[76] These innovative systems blend traditional grid connections from the Mount Coffee Plant with the 33 MW Heavy Fuel Oil (HFO) thermal plant on Bushrod Island. Additionally, there is a strategic anticipation that ongoing initiatives in decentralised renewable energy sources will gain momentum soon.[77]

A pivotal milestone in this transformative journey occurred in 2023 when the government granted licenses to private investors, notably Jungle Energy Power (JEP) and Totota Electricity Company (TEC). These licenses empower these entities to implement an innovative hybrid energy system, harmoniously combining existing grid infrastructure with state-of-the-art solar-powered installations.

Recognising the constraints of traditional grid expansion, the government has crafted inclusive regulatory policies actively championing off-grid solutions. In August 2021, the Commission issued a Large Micro Utility Distribution License to Jungle Energy Power (JEP), granting the authority to operate among others isolated grids and off-grid systems, with a capacity threshold of 10MW or the ability to serve up to 20,000 customers within a singular network.

The government's commitment extends beyond regulatory frameworks to the establishment of unambiguous guidelines for the seamless integration of decentralised renewable energy systems. Incentives are designed to encourage private companies and local communities to invest in and proficiently operate off-grid electricity solutions. This multifaceted approach is progressively coalescing into an off-grid empowerment program, providing subsidies, tax breaks, and essential regulatory support.[78]

Through extensive outreach programs, LEC's community engagement teams have adopted policies addressing power theft issues and emphasising demand-side management and energy conservation. The primary goal is to improve the efficient utilisation of existing electricity resources, relieving pressure on the grid and reducing the need for continuous capacity expansions. Given the constraints, prioritising flexibility becomes imperative for the involved actors.

Examining the findings reveals that the prioritisation of flexibility in Monrovia's electricity landscape is critical, overseen by both formal entities like the Liberia Electricity Regulatory Commission (LERC) and informal grassroots infrastructural governance. Studies, such as Chirambo (2016), assert the indispensability of an adaptive policy framework in addressing dynamic challenges within the energy

[76] Interview with official (KI02) of Liberia Electricity Regulatory Commission (LERC), November 15, 2019
[77] Interview with official (KI 11) of The Rural and Renewable Energy Agency (RREA), February 2, 2020
[78] Liberia Electricity Regulatory Commission Annual Report 2021

sector. Monrovia's deliberate departure from a rigid reliance on hydroelectricity demonstrates a proactive response to the evolving needs of the energy landscape. Furthermore, the city's adoption of hybrid energy solutions aligns with contemporary discussions on sustainable energy transitions and underscores the recognition of the necessity for diversification in the energy mix.

The establishment of inclusive regulatory policies, highlighted in studies by Bhattacharyya & Palit (2021) and Jeuland et al. (2019), is consistent with the pivotal role of regulatory frameworks in shaping the energy landscape. This inclusive approach creates an enabling environment for diverse stakeholders, including private companies, to participate in the energy sector—an evolution from historical practices in Liberia. The conceptualisation of off-grid solutions as an empowerment program resonates with broader discussions on decentralisation and community-driven energy initiatives, emphasising the significance of community engagement in sustainable development.

Off-Grid empowerment trajectory resonates with notions sustainable development, as evidenced by works such as Podmore et al. (2018), Urmee & Md (2016), and Palit & Chaurey (2016). It underscores the socio-economic benefits of empowering local communities to manage their energy needs.

Additionally, the emphasis on demand-side management, discussed in academic works like Bakare et al. (2023), aligns with the importance of understanding consumer behaviour to optimise energy resources. Studies showcasing successful demand-side management strategies in various urban contexts reinforce the broader discourse on sustainable urban development, emphasising the need for a holistic approach beyond infrastructure expansion to incorporate efficient consumption patterns.

The argument that actors have no option but to foreground flexibility finds support in academic literature on adaptive governance and resilience in the face of constraints, exemplified by Alves Rolo et al. (2021). Framing flexibility as a response to constraints aligns with theoretical discussions on adaptive governance, emphasising the significance of dynamic decision-making in complex and uncertain environments.

All governance systems are not inherently flexible, varying widely in structures, policies, and adaptability. But flexibility in a governance system enables the various actors to respond and adapt to changing circumstances, challenges, and the evolving needs of the society it governs. While some governance systems are designed to be flexible and adaptive, others may be more rigid and resistant to change. The case of Monrovia, Liberia, points to such levels of flexibility in a governance system. It is crucial to note that flexibility is not inherently good or bad; its appropriateness depends on the context and the goals of the governance system. Some level of flexibility is often necessary for effective governance, especially in the

face of dynamic challenges. However, excessive flexibility without adequate checks and balances can lead to instability and uncertainty.

5.7. Searching for solutions

The Liberia Electricity Corporation (LEC) employs a combination of predetermined plans and adaptive measures to address electricity scarcity, facing challenges such as incremental grid expansion, aligning with local expectations, and an increase in electricity theft. The escalating power theft issue is mainly attributed to delays in supplying meters to customers, highlighting a correlation between sluggish grid connections and theft incidents (Johnson, 2023; Mehnpaine, 2023).

In 2018, illicit connections accounted for more than 60% of the annual electricity loss, resulting in a cost of $35 million. Despite concerted efforts, the LEC acknowledges minimal improvement in this aspect.[79] To address this issue, the LEC employs strategies customised with community insights, placing a specific emphasis on surveillance and routine inspections of meters.[80] The goal is to thwart unauthorised connections by non-customers and prevent the resale of electricity by local informal suppliers connected to the grid. However, challenges persist in accurately gauging the success of surveillance efforts and determining whether legally connected customers refrain from reselling electricity.[81]

Residents collaborate with the Liberian Energy Access Practitioner (LEAP) for innovative energy solutions. Small-scale solar setups, featuring panels, LED lights, and batteries, are prevalent sources for household lighting in non-grid-connected homes. Larger installations, observed in three residences in the Dry Rice Market area, efficiently power multiple lights and appliances.[82] Street lights are also powered by solar energy (See Fig. 9). Despite successful initiatives like the local business Sun Star Green Energy's solar lanterns, the widespread integration of renewable energy remains limited, with many relying on backup generators or purchasing electricity from small-scale vendors.

[79] Interview with LEC official (KI 03), February 12, 2020
[80] Interview with LEC official (KI 03), February 12, 2020
[81] Interview with LEC engineer (KI 06), February 16, 2022
[82] During field visits by First Author on September 28, 2019, and January 14, 2022

Figure 9: Solar-powered Street lights at Dry Rice Market, Barnesville Road (Author, 2023)

In April 2022, the Liberia Accelerated Electricity Expansion Project-Additional Financing (LACEEP-AF) distributed transformers and light poles in Barnesville. Despite this positive step, the subsequent effort to combat theft employed a searching approach with pilot projects, including introducing smart meters with anti-tampering features.[83] Despite the integration of advanced technologies, a significant drawback emerged: the smart meters vulnerable to bypassing. Moreover, the adoption of smart meters did not address dissatisfaction among unconnected locals who fuels the illicit connections.[84] Recognising these limitations, LEC reverted to the traditional method—physically checking household meters to ensure they are not bypassed or tampered with.[85]

Facing a shortage of meters and surging demand for grid connections, LEC explored the provision of direct connections to customers at a flat rate without meters. This strategy initially alleviated the challenges posed by the demand for grid connections, albeit temporarily. However, by 2020, it was abandoned due to vulnerabilities to abuse.

LEC actively collaborated with local leaders and residents to address concerns in discontented communities advocating for electricity grid connections. At least two meetings occurred in 2019 in the Dry Rice Market area. Residents were encouraged to report illicit hookups, and public education campaigns highlighted the detrimental consequences of illegal tapping on grid connection progress.[86] Amnesty was extended to illegal users, subject to a US$50 fine, with the assurance that LEC would speed up legalising their unauthorised

[83] Interview with LEC engineer (KI 07), February 22, 2022
[84] FGD 1, Barnesville, November 14, 2019; FGD 2, Barnesville, November 26, 2019.
[85] Interview with LEC engineer (KI 06), February 16, 2022
[86] FGD 1, Barnesville, November 14, 2019; FGD 2, Barnesville, November 26, 2019.

connections.[87]

The inquiry emerges: why are disparate strategies applied in different segments of the two neighbourhoods or comparable communities to tackle electricity scarcity, notwithstanding overarching plans? The answer resides in recognising the distinctive socio-economic, cultural, or environmental factors within Monrovia, which instigate varied approaches to address the landscape of electricity scarcity. For instance, both unconnected residents and connected residents functioning as small-scale electricity producers engage in theft for different reasons. This divergence is deeply ingrained in the culturally dynamic nature of these communities, where communal activities may shape electricity theft behaviours, and community members might be hesitant to report violators due to diverse cultural considerations.

At the analytical level the question of striking a balance between long-term planning and searching-experimentation is raised. While searchers are essential for innovation and immediate needs, planners provide the overarching framework for long-term development.

So, what insights can one glean in terms of searching within and through governance? *First*, the landscape prompts insights into searching within governance. Actors prioritise exploring options with immediacy, acknowledging that optimal solutions are not immediately clear. There is a learning process from the local context, avoiding over-reliance on imported solutions. Searching emphasises short-term solutions, adaptability in governance, and quick evolution in the administrative domain of energy.

Second, there a conspicuous learning process from the local context and not the usual over-reliance on cut-and-paste from other areas imported to Liberia. The incomplete electricity infrastructure invariably leads to unique challenges and constraints based on space, as we see in Barnesville. Searching enables a deeper understanding of the local context so that context-specific solutions can be tailored. Searching encourages more pronounced engagement with local stakeholders, as we see in the collaboration between residents and power theft response teams.

Searching reveals the immediacy of the pragmatic solutions adopted by actors. Diesel generators, despite offering quick fixes, entail high acquisition and maintenance costs, adverse environmental impacts, and lack the reliability of the electricity grid. Illegal tapping poses significant risks to humans and infrastructures. The state's approach of encouraging self-reporting by illegal users or accepting more meter connection applications without a viable plan for timely connections undermines sustainability. While these practices highlight the resourcefulness and adaptability, they fall short in addressing the fundamental issues of incomplete and unreliable electricity infrastructure. Moreover, they do not ensure the sustainability of

[87] FGD 2, Barnesville, November 26, 2019.

these practices or support a transition away from environmentally harmful fuels, as seen in other cases (Kimemia & Annegarn, 2016).

The process of navigating electricity challenges in Monrovia reveals a focus on localised and immediate solutions. Responses are shaped by a mix of thorough considerations and experimentation due to the complex and diverse landscape, often influenced by limited time or resources. However, the broader significance in the Global South lies in the imperative for adaptability in governance and the administrative domain of energy. This adaptability can arise through intentional practices and policies or may naturally evolve swiftly as governance and infrastructure adapt to changing circumstances. The urgency for rapid adaptation is fuelled by factors like incompleteness, various forms of scarcity, informality, a history of quick adjustments, survival skills, and entrepreneurial acumen among local traders, among other influential elements.

5.8. Conclusions and policy implications

This study sheds light on the nuanced interplay of electricity scarcity, adaptability, and practices of actors, offering insights into the challenges faced by the LEC and the broader energy landscape. The shift towards flexible hybrid energy solutions and the adoption of a community-focused approach by the LEC contribute to the understanding of sustainable energy policies. Furthermore, the exploration of diverse strategies within neighbourhoods and the balance between short-term innovations and long-term frameworks provide valuable lessons for shaping effective energy governance models, emphasising contextual responsiveness in addressing complex challenges.

Monrovia grapples with enduring challenges in electricity accessibility, despite substantial post-war efforts aimed at restoration. While grid connections from the Mount Coffee Plant exist, certain neighbourhoods still lack access, resulting in a fragmented electrical infrastructure landscape. This deficiency significantly impacts various sectors, particularly businesses reliant on continuous power, exacerbating disparities in development.

The interplay of scarcity and adaptability involves both infrastructure and governance dynamics. For instance, the LEC adopts a community-focused approach, conducting awareness programs and collaborating with local leaders, NGOs, and community-based organisations. However, budget constraints and the reciprocal relationship between scarcity and service delivery challenges hinder grid expansion. Technical challenges contribute to incomplete infrastructure, revealing a disparity between claimed capacity and the sluggish pace of grid connections.

Liberia has shifted its energy policy towards a more flexible framework for hybrid energy solutions, facilitated by the sector's regulator, LERC. The approach embraces a diversified energy mix, departing from historical reliance on hydroelectricity. Private investors now hold licenses for innovative hybrid systems. The government actively incentivises private companies and communities to invest in off-grid solutions, contributing to a multifaceted off-grid empowerment program.

The findings underscore the critical importance of prioritising flexibility in Monrovia's electricity landscape, overseen by both formal entities like LERC and informal grassroots infrastructural governance. Inclusive regulatory policies create an enabling environment for diverse stakeholders, emphasising the significance of community engagement in sustainable development.

The LEC addresses electricity scarcity through a blend of predetermined plans and adaptive measures. Challenges, including the slow pace of grid expansion not aligning with local expectations and combating electricity theft, drive the need for flexible strategies. Power theft, linked to delays in meter supply, remains a persistent issue, with illicit connections causing substantial annual losses. To address this, LEC employs community-specific surveillance and routine meter inspections, aiming to deter unauthorized connections and prevent electricity resale. Collaborative initiatives with residents and organisations like the Liberian Energy Access Practitioner (LEAP) involve innovative solutions, such as small-scale solar setups,

The diverse approaches within Monrovia's neighbourhoods to tackle electricity scarcity highlight the influence of socio-economic, cultural, and environmental factors. Distinctive strategies arise due to community dynamics, where both unconnected and connected residents may engage different practices for different reasons. Balancing long-term planning with searching experimentation also becomes a crucial consideration.

Insights from Monrovia's electricity landscape extend beyond local challenges, emphasising the significance of searching within governance. The learning process from the local context and the avoidance of over-reliance on imported solutions underscore the need for adaptability in governance. Searching within governance prioritises immediate options, acknowledges the complexity of local challenges, and fosters engagement with local stakeholders. Navigating electricity challenges in Monrovia reflects a focus on localised and immediate solutions, highlighting the imperative for adaptability in governance, particularly in the face of factors such as incompleteness, scarcity, informality, and historical adjustments.

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CHAPTER 6: CONCLUSION

6. Concluding Reflections: Navigating Everyday Risks, Urban Challenges, and Opportunities in Monrovia's Unplanned Settlements

6.1. Introduction

This investigation explores the intricate urban risks and challenges encountered by unplanned neighbourhoods in Monrovia, Liberia, within the context of a rapidly evolving post-war landscape. It specifically examines the spatial dimensions of risk and the implications of inadequate infrastructure on the landscape.

The legacy of prolonged civil wars which destroyed infrastructure and institutions, coupled with the subsequent post-conflict integration of state-building practices by various international actors, interacts to a degree that erodes local orientation and institutional memory, adding another layer to a complex landscape where diverse actors respond to the risks and challenges in an already resourced-constrained context where locals are constantly experimenting and state actors inadequately respond given the hurried demands of locals and the inadequacy of the authorities to adequately address risks.

In instances where historical pathways are present, they can either reinforce or undermine practices that shape Monrovia's landscape. This study investigates how these risks and challenges affect the daily experiences of actors, including local residents, state authorities, and non-governmental organisations (NGOs). Additionally, it delves into the complexities of governance dynamics, highlighting the emergent practices and potential outcomes—sustainable or otherwise—that arise from these interactions. Ultimately, this research aims to provide a nuanced understanding of the interplay between spatial risk dimensions, urban challenges, actor practices, and governance dynamics, illuminating the possibilities that may arise within this complex environment.

6.2. Contributions to Science

This dissertation makes a substantial contribution to the understanding of the urban risks and challenges present in Monrovia's unplanned communities, showing how these risks simultaneously present both threats and possibilities. The findings reveal that through improvisation and innovation, these risks give rise to possibilities that can be either sustainable or unsustainable, depending on how they are addressed. The co-evolution of governance, infrastructure, and risk management is a central theme in this study, highlighting the dynamic interplay between formal and informal systems of urban development.

Co-evolution of Formal and Informal Urbanisation through the Lens of Riskscapes and Everyday Urban Challenges

This study contributes to urban governance theory by analysing the co-existence and co-evolution of formal and informal urbanisation within Monrovia's post-war landscape, utilising the analytical framework of riskscapes. While the riskscapes lens is established in the literature, its application here provides unique insights into how everyday risks—encompassing socio-political, environmental, economic, and even mundane household challenges—are not merely encountered passively; rather they are actively shaped, navigated, and mitigated by local communities. This approach illuminates the intricate intersections of spatial dynamics, governance interventions, and local practices, which together create complex and often conflicting landscapes of risks that profoundly influence both governance strategies and the lived experiences of residents.

By employing the riskscapes framework, this research analyses the unequal power relations that characterise state-led risk management efforts and the adaptive practices of communities in response to these risks. Additionally, the risk perception paradox, which demonstrates that, despite objectively high risks—such as those associated with coastal erosion or unplanned urbanisation—local residents frequently choose to remain in these areas due to their proximity to livelihoods and social networks. These finding challenges conventional risk management approaches that rely heavily on objective assessments, revealing the necessity of integrating subjective risk perceptions into governance frameworks. Moreover, while adaptive strategies are vital for immediate resilience, they can exacerbate long-term vulnerabilities if not incorporated into broader governance frameworks.

This contribution enriches theoretical discussions on urban development in post-conflict settings by demonstrating that governance must be flexible and responsive to a landscape characterised by improvisation and evolving risks. It argues that effective resilience-building requires more than formal interventions; it must derive from a comprehensive understanding of how riskscapes shape and are shaped by governance dynamics at both local and state levels. This work lays the groundwork for developing more equitable and inclusive governance frameworks that incorporate insights from everyday risks and practices into formal governance strategies. Thus, the study advocates for a rethinking of governance in unplanned urban environments, where the co-evolution of formal and informal processes is both inevitable and crucial for creating sustainable and resilient urban systems.

Integration of Riskscapes and Object Formation in Governance

A significant contribution of this dissertation is its innovative integration of riskscapes and object formation into the study of governance, which offers a novel framework for understanding how governance evolves in response to risks in dynamic urban environments like Monrovia. The riskscapes framework illustrates how risks are spatially distributed across urban landscapes and actively shaped by actors. Simultaneously, object formation highlights how these risks crystallise into formal governance interventions, such as state initiatives for slum clearance or the formalisation of informal settlements. Together, these frameworks provide a nuanced comprehension of the complexities inherent in urban risk governance.

A significant finding of this study pertains to the subjective and fluid nature of risk conceptualisations, as elucidated through the riskscapes framework which demonstrates that the perceptions held by various actors profoundly influence their everyday practices and interactions with their environment. The complementary concept of object formation further elaborates on this dynamic by examining how these lived experiences are institutionalised into governance objects—such as slums or designated intervention zones. This institutionalisation is instrumental in shaping policy decisions, thereby highlighting that governance cannot be understood in isolation from the lived realities of local communities.

However, it is crucial to recognise that these risk objects and governance tools may primarily reflect the conceptualisations of a dominant group of actors, such as the government or non-governmental organisations (NGOs). Yet, these governance mechanisms exert significant influence over the practices of informal local actors. For example, in Peace Island in Monrovia, residents actively engage in implementing infrastructure projects—such as leaving spaces for the construction of roads, alleys, and other communal amenities—which they believe may facilitate the future formalisation or upgrading of their community. This proactive engagement highlights that local actor are not merely passive recipients of state policies; they actively shape the governance landscape, invariably implementing practices that reflect the state's policies, even when the state is largely absent from such spaces. In contrast, older settlements like West Point and Clara Town often see residents feeling disenfranchised and disconnected from formal governance structures. In these areas, governance mechanisms may be less effective or entirely overlooked, illustrating the variability in local governance responses based on spatial dynamics, such as each community's history, resources, and social dynamics.

These dynamic highlights that governmentality extends beyond mere state control; it encompasses a complex web of negotiations wherein informal actors play a vital role in shaping governance outcomes, particularly in areas where the state may be formally absent. Such an understanding necessitates a re-

evaluation of traditional notions of urban risk governance, especially regarding how the emergence of certain spaces as risk objects might influence local practices to align with the state's policies.

This nuanced perspective invites a broader consideration of urban governance frameworks that incorporate the active role of informal actors and the particular contexts of various communities. By recognising the agency of local populations, urban risk governance can be better informed and more effectively implemented, ultimately leading to improved resilience and sustainability in urban settings.

By employing both riskscapes and object formation, this dissertation captures the entire cycle of risk governance—from the initial perception of risks to the everyday practices shaped by those perceptions and the formal governance responses that follow, and the formal and informal implementation of those policies. This holistic perspective enriches our understanding of how risks are governed in complex urban environments. Ultimately, it reveals that governance practices, whether formal state interventions or informal local responses, are deeply interconnected and shaped by evolving risk perceptions. This work not only advances theoretical discussions on urban governance but also lays the groundwork for more inclusive and responsive governance frameworks in post-conflict urban contexts.

Adaptive Strategies in Infrastructure Governance

This study also contributes to the field of infrastructure governance by analysing how delayed and incomplete infrastructure projects shape actors' strategies and governance frameworks in post-conflict settings like Liberia. Drawing on evolutionary governance theory and infrastructure planning studies, the research reframes delayed infrastructure not simply as a failure, but as a dynamic landscape of risks and possibilities.

Key insights include:

a) **Delayed Infrastructure as a Landscape of Risks and Possibilities**: The study redefines infrastructure delays as spaces where actors' strategies evolve in response to shifting risks and emerging possibilities. This perspective uncovers how delays can create an interplay between government policies, local actors, and community-led initiatives. By viewing infrastructure delays as opportunities for action and innovation, the study challenges the assumption that delays are solely negative.

b) **Path Dependency and Material Dependency in Infrastructure Governance**: The research highlights how delayed infrastructure projects create path dependencies, locking communities and governments into specific developmental trajectories. These dependencies influence not only the

spatial configuration of infrastructure and settlements but also shape governance frameworks, limiting or steering future policy options.

c) **Innovative Collective Action and Governance Integration**: Focusing on the responses of communities and stakeholders, the study reveals the potential for inclusive, community-driven strategies to adapt to infrastructure challenges. It shows how collective actions and emerging strategies can align with government visions, creating opportunities for collaboration and co-creation of governance frameworks.

This research contributes to a deeper understanding of how delayed infrastructure shapes governance and community responses in post-conflict urban environments. By treating delays as both a risk and a catalyst for change, the study provides new insights into how actors navigate incomplete infrastructural landscapes, with important implications for policy planning and sustainable urban development.

Co-evolution of Urban Risk and Challenges, Governance, and Infrastructure in Post-conflict Environments

Finally, this dissertation advances the understanding of how energy infrastructure and governance co-evolve in complex, high-risk urban environments like Monrovia, Liberia. The study's focus on the non-linear, intertwined evolution of energy infrastructure, governance, and planning offers a novel perspective on urban adaptation in the Global South.

Key contributions include:

1. **Co-evolution of Infrastructure, Governance, and Urban Risk**: The research introduces the concept of co-evolution between governance, energy infrastructure, and urban risks and challenges. It shows how their development is not linear but shaped by continuous adaptation in response to the challenges of unstable urban environments. This new perspective reframes unfinished infrastructure as both a challenge and a driver of governance innovations.

2. **The Role of 'Searching' and 'Planning' in Managing Urban Challenges**: The study reframes governance and infrastructure planning as interconnected cycles of 'searching' and 'planning,' showing how they address urban risks and challenges. It demonstrates how these processes influence development options, highlighting the need for resilient governance to handle ongoing vulnerabilities.

3. **Adaptation in Risk-laden and Fragmented Systems**: By exploring the benefits and risks of adaptation in contexts of incomplete infrastructure, the research underscores the dual nature of

adaptability. It can foster positive innovations and risk management practices, but it can also lead to unsustainable responses that exacerbate urban risks.

In sum, this dissertation provides a comprehensive analytical framework for understanding the complex, non-linear co-evolution of infrastructure, governance, and urban risk in post-conflict cities. It offers new insights into how adaptive governance and infrastructure strategies can shape responses to urban challenges, with significant implications for policy planning, sustainable development, and risk governance.

6.3. Summary of Key Findings and Reflections

6.3.1. Spatial Distribution of Risks and Community Resilience in Monrovia's Unplanned Settlements

The research findings in Chapter 2 apply the concept of riskscapes, as developed by Müller-Mahn et al. (2018) and Müller-Mahn & Everts (2013), to everyday risks in a post-war developing context. This framework helps understand how risks are spatially distributed and socially constructed in Monrovia's unplanned communities. It highlights the relationship between environmental hazards, such as flooding and erosion, and infrastructure deficiencies in these areas.

For example, low-lying settlements like West Point are more vulnerable to flooding, while higher areas such as Peace Island face risks like surface erosion. These risks are shaped by both environmental and socio-economic factors. Monrovia's unplanned settlements, a product of post-conflict reconstruction, reveal both community resilience and the shortcomings of urban planning. The study shows how residents adapt to challenges like inadequate housing and infrastructure, often in the context of poverty and limited access to services.

The case studies of West Point and Peace Island illustrate innovative coping strategies. West Point residents, facing construction challenges due to high-water tables and erosion-prone soil, have adopted communal housing approaches. In contrast, Peace Island benefits from more stable ground and has opportunities for spatial development, with residents initiating self-driven improvement projects despite lacking formal recognition. These examples underscore the dynamic interplay between riskscapes, resilience, and urban development in Monrovia's informal settlements.

Table 6.1: Characteristics of Two of Monrovia's Typical Unplanned Settlements

Components/Characteristics	**West Point**	**Peace Island**
Status	Informal but officially recognised as a township	Informal, not officially recognised
Land Conditions	High-water table; sandy soil	Stable ground conditions
Construction Challenges	Groundwater saturation; low shear strength; high erosion risk	Better foundation for construction; less erosion risk
Infrastructure	Limited and inadequate infrastructure	Informal but evolving infrastructure and community projects
Economic Stability	Informal economies; high poverty rates	Emerging informal economies; self-initiated projects
Environmental Hazards	High flooding risk due to low elevation	Lower flooding risk due to relatively higher elevation
Community Initiatives	Shared housing model; communal living, and little or no prospects for spatial or vertical expansion	Self-initiated development projects
Government Policy	Limited benefits from formal recognition	"Tolerated informality" approach

Key insights include the following:

Tolerated Informality and Its Implications

State actors, including government officials and local authorities, play a significant role in shaping the dynamics of unplanned communities through their policies and practices. One such approach is the policy of **"**tolerated informality," which permits informal land tenure in areas like Peace Island without granting formal recognition. In contrast, in West Point, the Monrovia City Corporation (MCC) has historically issued permits to squatters, giving them temporary land-use rights without formal property protections. These policies reflect a pragmatic balance between managing rapid urbanisation and dealing with resource constraints.

By allowing incremental development, the state permits communities to self-develop and adapt, reducing the need for large-scale infrastructure investments. This fosters a strong sense of community as residents

collaborate on informal solutions to improve their living conditions. However, these informal tenure arrangements also limit long-term security and leave residents vulnerable to future urban developments (see Table 6.6).

Table 6.2 Practices Governing Unplanned Communities in Monrovia

Policy	**Description**	**Implications for Settlements**
Tolerated Informality	Informal land tenure without formal recognition	Permits incremental development; avoids large-scale investments
Informal Tenure	Legal recognition of informal settlements under specific conditions	Balances urbanisation pressures with resource constraints
Community-Based Initiatives	Resident-led local development projects	Fosters resilience and self-reliance; fills gaps in formal planning

The Paradox of Formal Recognition

West Point presents a paradox of formal recognition**,** where its official township status does not translate into tangible benefits. Environmental challenges like high-water tables and sandy soils, combined with inadequate infrastructure and public services, negate the advantages of formal recognition. Residents face daily risks from poor waste management, limited access to clean water, flooding, and erosion.

Despite its formal status, West Point struggles with the same socio-economic challenges as other unplanned settlements. In contrast, Peace Island, which lacks formal recognition, benefits from informal governance that allows more flexible, community-driven initiatives, resulting in greater resilience and self-improvement efforts.

This comparison between West Point and Peace Island underscores the complexities of urban governance. Formal recognition alone cannot address the everyday risks and challenges faced by informal settlements, highlighting the need for more adaptive, community-centred urban policies.

Table 6.3: Housing Risks, Opportunities, and Characteristics of West Point and Peace Island

Components/Characteristics	**West Point**	**Peace Island**
Status	Informal but officially recognised as	Informal, not officially recognised

Components/Characteristics	West Point	Peace Island
	a township	
Land Conditions	High-water table; sandy soil	Stable ground conditions
Construction Challenges	Groundwater saturation; low shear strength; erosion risk	Better foundation; less erosion risk
Infrastructure	Limited and inadequate	Informal but evolving
Economic Stability	Informal economies; high poverty rates	Emerging informal economies; self-initiated projects
Environmental Hazards	High flooding risk	Lower flooding risk
Community Initiatives	Shared housing; limited prospects for expansion	Self-initiated development projects
Government Policy	Limited benefits from formal recognition	"Tolerated informality" approach

This framework illustrates how urban policies and environmental conditions shape the resilience and adaptability of informal settlements in Monrovia, revealing the critical role of governance in determining the lived experiences of residents.

The Integrated Nature of Unplanned Communities with the City of Monrovia

Unplanned communities in Monrovia play a central role in the city's economic, spatial, and social dynamics, challenging the traditional view of informal settlements as marginal (see Table 24). These communities contribute significantly to the city's urban ecosystem, acting as economic stabilisers, spatially integral nodes, and hubs of social resilience.

Table 6.4: The Integrated Roles of Unplanned Communities in Monrovia

Dimension	Role	Description	Examples
Economic	Economic Stabilisers	Provide affordable goods, support local trade, and buffer economic fluctuations.	West Point fish market, informal street vending
Spatial	Central Urban Nodes	Strategically located to enhance connectivity and accessibility.	West Point near Waterside Market; Peace Island on Tubman Boulevard

Dimension	Role	Description	Examples
Social	Hubs of Resilience and Support	Foster social cohesion, provide communal support, and strengthen the social fabric.	Communal networks in West Point, Peace Island, Clara Town

Economically, unplanned settlements like West Point serve as stabilisers, where informal markets play a key role in local trade and act as buffers during economic downturns. Spatially, these settlements are strategically located, enhancing connectivity within Monrovia, and challenging the notion that informal settlements are peripheral. Socially, these communities foster resilience and cohesion, making them essential to the city's social fabric.

This perspective shifts the understanding of urban planning, highlighting the need for more inclusive strategies that recognise the contributions of these communities. Urban authorities must consider how to integrate these vital components into broader development plans, reflecting their economic, spatial, and social significance.

The Tension between Formalisation and Elimination in Monrovia's Unplanned Settlements

Monrovia's approach to informal settlements often oscillates between formalisation and elimination, reflecting a deeper tension between integrating and eradicating these communities (Innis & Van Assche, 2022).

Table 6.5: Tension between Formalisation and Elimination

Approach	Description	Positive Aspects	Negative Aspects
Formalisation	Legal recognition and infrastructure improvements.	Increased rights, improved services.	Gentrification, disruption of social networks.
Elimination	Dismantling settlements through forced relocations.	Urban renewal potential.	Forced relocations, exacerbation of poverty.
Tolerated Informality	Allowing settlements without formal recognition.	Incremental development, self-reliance.	Lack of long-term planning, risk of future conflicts.

Formalisation can lead to gentrification and social disruption, while elimination through forced relocations displaces communities and worsens poverty. The “tolerated informality” approach allows incremental development, preserving social networks but limiting formal support and long-term planning.

Monrovia’s post-war socio-political context intensifies these challenges, making it essential to recognise informal settlements as resilient, adaptable communities. This analysis suggests a shift in urban governance, where the focus moves from viewing informal settlements as planning failures to understanding their role in providing affordable housing, strong social networks, and flexible living arrangements. This understanding is crucial for developing urban policies that align with the lived realities of informal communities.

Influence of State Actors and Cross-over of Expert-recommended Approaches

In Monrovia, the role of state actors in managing unplanned settlements showcases a nuanced form of urban governance that challenges traditional views of state power and community agency. State actors employ strategies such as withholding services and direct interventions (e.g., evictions) as tools to manage urban growth amidst limited resources (Innis & Van Assche, 2023). This deliberate absence of services creates space for informal practices to emerge, reflecting a subtle form of governance that goes beyond conventional intervention or non-intervention frameworks.

Additionally, the concept of governmentality (as defined by Michel Foucault) illuminates how residents in areas like Peace Island adopt expert-recommended practices—such as conducting surveys and reserving land for public infrastructure—to align with state expectations and avoid eviction. This bottom-up formalisation shows that informal communities internalise state directives to navigate precarious conditions, challenging the notion of governmentality as strictly top-down.

The cross-over of expert recommendations further illustrates how formal urban planning concepts are integrated into informal settlement practices. Residents adapt these principles to address their challenges, revealing a unique interplay between formal and informal governance.

Moreover, environmental concerns add complexity to this dynamic. For instance, Peace Island's proximity to the Mesurado Wetlands highlights how environmental regulations intersect with state policies, shaping both governance and informal settlement practices.

This research offers fresh insights into how state actors use service withholding, how communities engage with expert recommendations, and how environmental issues shape urban governance, contributing to the understanding of post-conflict urban development.

Table 6.6: Influence of State Actors and Cross-over of Expert-recommended Practices in Unplanned Communities

Aspect	**Description**	**Insights**
Strategic Withholding of State Services	Absence of services as an indirect urban management tool	Service deprivation shapes urban growth and development.
Governmentality through Expert Practices	Adoption of expert-recommended approaches to avoid eviction and seek formalisation	Illustrates community-driven adaptation to state expectations.
Cross-over of Expert Recommendations	Integration of formal planning concepts by informal communities	Shows how informal settlements adapt formal principles to navigate challenges.
Proximity to Environmental Concerns	Environmental regulations influencing state policies and informal settlement dynamics	Highlights the role of environmental issues in shaping urban governance strategies.

These findings enrich the broader discourse on state control and community resilience in urban studies, particularly within post-conflict contexts.

The Application of Riskscapes to Everyday Risks in Monrovia's Informal Settlements

In Monrovia's informal settlements, the concept of riskscapes offers a fresh lens for understanding how everyday risks like flooding, poor infrastructure, and social tensions are navigated. While riskscapes have been studied in urban contexts, this research focuses on how these daily risks are managed through a dynamic mix of local practices, expert recommendations, and state interventions.

This study expands the riskscapes framework by examining the adaptive strategies employed by residents of settlements like Peace Island and West Point. In Peace Island, residents take proactive measures such as conducting surveys and mapping spaces for future infrastructure, aligning with expert recommendations to secure formalisation and avoid eviction. This shows how local practices integrate expert advice to form effective resilience strategies (Innis, 2023; Innis & Van Assche, 2023).

Similarly, in West Point, residents address risks like flooding and sea erosion through makeshift solutions such as building flood barriers and diversifying businesses. These responses reflect the informal, adaptive measures that shape the riskscapes in these areas (Innis, 2022).

Table 6.7: Riskscapes and Adaptive Responses to Everyday Risks in Monrovia's Informal Settlements

Aspect	**Description**	**Insights**
Community-Driven Initiatives	Local efforts in Peace Island to address flooding and other risks through informal measures.	Demonstrates how community actions align with expert advice to tackle urban challenges.
Adaptive Measures	Residents' strategies for dealing with flooding and erosion.	Highlights the dynamic, informal approaches to managing everyday risks.
Everyday Risks Framework	Application of the riskscapes framework to daily challenges.	Provides a new angle on urban resilience by focusing on routine risks.
Strategic Interaction	The interaction between community practices, expert advice, and state policies.	Shows how risk management evolves through coordinated efforts among stakeholders.

The originality of this research lies in its application of riskscapes to everyday urban risks, illustrating how routine challenges are managed through the complex interactions between residents, experts, and authorities. This perspective broadens existing theories, offering new insights into urban resilience in informal settings.

The Risk Perception Paradox: Bridging Technical Assessments and Community Perspectives in Monrovia's West Point

In Monrovia's West Point, a paradox arises in how risk is perceived and managed. Despite technical assessments deeming West Point unsuitable due to severe sea erosion, residents resist relocation and instead advocate for constructing a seawall (Innis, 2023). Their opposition is shaped by daily experiences, emotional ties to the area, and socio-economic realities that make relocation undesirable (See Table 6.11).

Table 6.8: The Risk Perception Paradox in West Point's Urban Risk Management

Aspect	**Description**	**Significance**
Objective Risks vs. Subjective Perceptions	Residents face significant erosion risks but push for a seawall instead of relocation.	Highlights the contrast between technical assessments and community-driven responses to risk.
Community-Driven Advocacy	Resistance to relocation driven by economic hardship and attachment to the place.	Shows how socio-economic conditions and place attachment shape risk management strategies.
Government Response to Public Pressure	Government builds revetments following public pressure, reflecting compromise with residents.	Illustrates the challenge of aligning expert advice with local community demands.
Inclusive Risk Management	Emphasising the need to integrate community perspectives into risk management strategies.	Advocates for balancing technical assessments with local socio-economic and emotional factors.

This paradox underscores the complexity of urban risk management, where technical recommendations often clash with community preferences. Residents' demands for a seawall reflect how their socio-economic challenges and emotional connections to West Point shape their risk perceptions. The government's eventual decision in 2020 to construct revetments under public pressure illustrates the difficulty of balancing expert recommendations with community-driven demands.

This case demonstrates the importance of inclusive risk management, where both technical evaluations and community needs are considered. The study reveals that effective urban planning and risk management must bridge the gap between expert assessments and the lived experiences of residents, ensuring that strategies reflect local realities and attachments.

Hope and Despair Dynamics: Emotional Geographies and Urban Uncertainty in Monrovia's Unplanned Settlements

In Monrovia's unplanned communities, the interplay between hope and despair reveals a complex emotional geography shaped by uncertainty (Anderson & Smith, 2001; Brickell et al., 2017; Meth, 2009). Residents

navigate a precarious balance between aspirations for formalisation and fears of eviction, highlighting the complexity of their lived experiences (Innis, 2023; Innis & Van Assche, 2022).

In informal settlements like West Point, this dynamic is illustrated through advocacy for infrastructure projects such as a proposed seawall, driven by hopes for stability and improved living conditions (Innis, 2023). This hope contrasts with ongoing fears of eviction and environmental threats. While experts advocate for relocation due to vulnerability to sea erosion and flooding, residents' push for a seawall represents a hopeful strategy to transform their precarious situation into a stable future (Innis, 2022).

This observation examines how hope and despair are intricately linked to the spatial and temporal contexts of informal settlements. Existing theories of emotional geographies often focus on emotions as responses to environments; this study expands this by showing how emotional states also influence residents' interactions with their surroundings and urban policies. The dynamic interplay between emotional experiences and the contexts of urban uncertainty offers a new perspective on emotional geographies, demonstrating that residents' hopes and fears shape, and are shaped by, their urban environments and planning processes.

The research reveals that hope and despair in Monrovia's informal settlements are central to understanding urban uncertainty and resilience strategies. For instance, residents' aspirations for formalisation through projects like the seawall are deeply embedded in specific urban contexts and future uncertainties. This focus on the spatial and temporal dimensions of emotional experiences introduces a new angle to the study of emotional geographies, illustrating how these emotions reflect broader socio-environmental and political factors (See Table 6.12).

Table 6.9: Dynamics of Hope and Despair in Monrovia's Unplanned Communities

Aspect	**Description**	**Significance**
Emotional Geographies	Residents' experience hopes for formalisation and despair from eviction threats.	Explores how emotions shape and are shaped by informal settlement contexts.
Spatial and Temporal Contexts	Emotional states are tied to specific locations and uncertainties.	Offers a new perspective on spatial and temporal aspects of emotional experiences.
Drivers of Resilience	Hope and despair influence residents' coping strategies.	Highlights how emotions drive resilience and survival strategies.

Aspect	Description	Significance
Strategies		
Liminality in Urban Settings	Residents exist in a liminal state between marginalisation and formalisation.	Deepens understanding of liminality through emotional geographies.

Moreover, the study contributes to theoretical discussions on emotional geographies by demonstrating how hope and despair drive resilience strategies and reflect residents' agency in shaping their urban environments. The engagement with liminality (Lamiña & Sletto, 2024; Nyakabawu, 2020; Ramakrishnan, 2014; Sletto & Palmer, 2017) illustrates the uncertainty residents face between the risks of eviction and hopes for formalisation, linking emotional experiences to urban risk management.

6.3.2. Constructing Risks: A Case Study of Urban Governance in Monrovia's Informal Settlements (Chapter 3)

Integrating Object Formation Theory and Riskscapes significantly enhances our understanding of urban risk governance in contested spaces, particularly in Monrovia’s unplanned communities like Peace Island and West Point (Innis & Van Assche, 2022). Object Formation Theory (Kooij, 2015; Boezeman & Kooij, 2015; Barba Lata, 2015) provides a framework for examining how risks are constructed, framed, and managed through the interactions of various stakeholders, including residents, government agencies, and NGOs.

In West Point, for instance, sea erosion emerges as a critical risk initially identified through technical assessments. However, its significance evolves as community members advocate for seawall construction, highlighting the risk's importance in their discussions with policymakers. The government’s response, culminating in the construction of revetments in 2020, demonstrates how this risk transforms into a concrete governance object shaped by public pressure and advocacy.

Similarly, in Peace Island, challenges related to land tenure and inadequate infrastructure are shaped through continuous interactions among community members, policymakers, and international development organisations. Residents actively seek formal recognition and infrastructure improvements, showcasing how their everyday experiences and socio-economic conditions influence the understanding and management of these risks.

The cases of West Point and Peace Island exemplify how risks are constructed and managed in informal settlements through processes of reification, solidification, and codification. In West Point, the community's push for a seawall illustrates effective public engagement in risk management, while in Peace Island, advocacy for formalisation highlights the incorporation of risks into urban planning frameworks.

Moreover, Riskscapes enrich Object Formation Theory by providing a nuanced perspective on how risks are experienced and navigated in unplanned communities. While Object Formation Theory emphasises the discursive evolution of risks, Riskscapes addresses their spatial and temporal dimensions. In West Point, for example, the threat of sea erosion is not only constructed through advocacy and government action (Object Formation) but is also a daily reality for residents facing the encroaching sea (Riskscapes). In Peace Island, the struggle for secure land tenure reflects both formal recognition and residents' adaptations to ongoing infrastructural and social challenges.

By bridging these theories, we achieve a holistic understanding of urban risk governance, revealing the dual nature of risks as socially constructed objects and dynamic, multi-dimensional experiences.

The key insights from this integration will be discussed in the following sections.

Frameworks for Governance: Integrating Riskscapes and Object Formation

The integration of Riskscapes and Object Formation creates a comprehensive framework for understanding urban governance in Monrovia's unplanned communities. This combined approach provides new insights into the conceptualisation, management, and adaptation of urban risks over time, as well as the specific governance tools employed to address these challenges.

Riskscapes focus on the spatial and temporal dimensions of risks, highlighting how they are experienced within specific contexts. For instance, in West Point, the riskscape reveals the precarious positioning of homes close to the coastline, exacerbated by increasing tidal surges (Innis, 2022).

This spatial analysis underscores how environmental risks evolve, necessitating their framing as governance objects. This process is essential for systematic management, prompting ongoing dialogues among community leaders, NGOs, and government agencies to shape perceptions and responses (Innis & Van Assche, 2022).

Object Formation, on the other hand, examines how risks are constructed as governable objects that require policy attention and resources. In West Point, the advocacy for seawall construction transforms the threat of coastal erosion into a governance object, illustrating how community mobilisation can attract resources

and policy support (See Table 29). This dynamic demonstrates that risks are not static; they require continuous negotiation and adaptation through stakeholder engagement.

Table 6.10: Examples of Riskscapes and Governance Objects in Monrovia's Informal Settlements

Community	**Risk**	**Spatial Dimensions**	**Temporal Dimensions**	**Governance Object**	**Stakeholder Actions**	**Outcomes**
West Point	Coastal erosion	Proximity to sea	Increasing tidal surges	Seawall construction	Community advocacy, NGO support, government negotiations	Policy attention, resource allocation
Peace Island	Insecure land tenure	Marginal land occupation	Historical neglect, eviction threats	Land rights documentation	NGO advocacy, community associations, legal action	Formal recognition, policy influence

In Peace Island, challenges such as insecure land tenure and inadequate infrastructure highlight the importance of framing risks through governance objects like land rights documentation and infrastructure plans. The historical neglect and eviction threats faced by residents emphasize the need for secure land tenure, prompting community advocacy supported by NGOs to influence policymakers toward more inclusive urban strategies (See Table 29). These examples illustrate how different risks are perceived and managed through the lens of governance.

The integration of these frameworks illuminates the motivations behind governance tools. In West Point, the push for seawall construction reflects a desire to assert community rights and preserve social cohesion. This advocacy involves technical assessments, fundraising efforts, and negotiations with government entities (See Table 30). Such stakeholder interactions reveal how lived experiences shape governance strategies and drive policy decisions.

Table 30 illustrates the integration of Riskscapes and Object Formation, outlining the conceptual focus, key elements, analytical approaches, and implications for urban risk governance. This detailed analysis

underscores the significance of viewing risks through both spatial-temporal experiences and the processes of risk framing and management.

Table 6.11: Integration of Riskscapes and Object Formation in Urban Risk Governance

Characteristic	**Riskscapes**	**Object Formation**	**Integration**
Conceptual Focus	How risks are constructed and navigated through dynamic interactions over time and space	How risks are framed as governable objects, along with the policies and tools developed to manage them	Combines spatial-temporal experiences of risk with the processes of risk framing and management
Key Elements	Spatial distribution, temporal changes, lived experiences	Framing risks as objects of governance, stakeholder narratives	Links experiences with policy responses through risk framing and management
Analytical Approach	Descriptive and analytical of physical and social aspects of risk	Analytical of how risks are constructed as governance objects	Combines spatial-temporal risk analysis with risk construction and management
Understanding Risks	Risks as dynamic phenomena influenced by context	Risks as governance objects created through discourse	Provides a dual perspective: lived experiences and governance objects
Stakeholder Interactions	How actors experience and react to risks	How risks are negotiated and institutionalised	Examines the influence of lived experiences on governance strategies
Governance Strategies	Derived from understanding risks as spatial-temporal phenomena	Developed from framing risks as governance objects	Combines experiences with governance strategies
Implications for Urban Risk Governance	Reveals how risks are experienced and adapted to	Reveals how risks are framed and managed	Offers a framework addressing both experiences and management of risks
Contribution to Theory	Expands the notion of risks as dynamic phenomena	Expands understanding of risks as constructed objects	Integrates dynamics of risk experiences with construction and management processes

Ultimately, this integrated framework provides a robust foundation for future research and policy development, emphasising the importance of recognising diverse perspectives in effective urban

governance practices. By understanding the complexity of risks and the varied motivations of stakeholders, this approach fosters more inclusive and adaptive risk management strategies in Monrovia's informal settlements.

In conclusion, the fruitful integration of Riskscapes and Object Formation enhances our understanding of urban risks in Monrovia by revealing how these risks are shaped by both environmental contexts and socio-political interactions. This comprehensive approach not only enriches theoretical perspectives on urban governance but also serves as a practical model for addressing urban risks in similar contexts globally.

Dynamic Nature of Governance Objects in Urban Development

This study explores the evolving and contested nature of governance objects in the urban Global South, particularly focusing on terms such as "slum," coastal erosion, and land tenure issues. This exploration is significant for understanding southern urbanism, as it demonstrates that governance objects are not static; they develop through ongoing negotiations among various stakeholders (Innis & Van Assche, 2022). While often defined by dominant actors like government agencies and experts, the definitions of these objects can shift in response to changing societal contexts.

In Monrovia, the term "slums" has historically carried negative connotations, depicting them as symbols of urban dysfunction, especially post-war during rapid unplanned urbanisation and the push for sustainable development (Innis & Van Assche, 2022). Initially, the government's approach in the mid-2000s focused on eviction and removal of slum dwellers. However, persistent advocacy from residents and NGOs, such as Cities Alliance and Habitat for Humanity, shifted the perception of slums to valuable urban areas needing sustainable solutions. This change is reflected in current policies emphasizing urban renewal and community-led initiatives (Table 6.16).

Table 6.12: Evolution of Governance Responses to Coastal Erosion in West Point

Community	**Initial Governance Approach**	**Evolved Governance Object**	**Stakeholder Actions**	**Motivations for Change**	**Outcomes**
West Point	Eviction due to coastal erosion	Construction of a seawall	Community advocacy, NGO support, government negotiations	Preservation of homes, community cohesion	Policy changes leading to the construction of a seawall

Similarly, the initial governance response to coastal erosion in West Point was eviction due to perceived environmental risks. However, through tireless advocacy from residents and NGOs, there was a significant policy shift that led to the construction of a levee, reframing coastal erosion from a fatalistic issue to one needing systematic intervention (Table 32).

Regarding land tenure issues faced by Peace Island residents, initial efforts focused on legal measures to document land rights and protect the Mesurado wetland (Innis & Van Assche, 2022). Over time, these measures expanded to include broader socio-political issues, such as access to public services and political representation. For instance, a bill to recognize the community as a borough was introduced in 2017, highlighting the evolving nature of land tenure as part of broader urban reform efforts (Table 32).

Table 6.13: The Dynamic Nature of Governance Objects

Governance Object	**Initial Perception**	**Evolved Perspective**	**Influencing Factors**	**Stakeholder Contributions**	**Long-term Implications**
Slums	Urban problems	Sites of resilience and opportunity	Policy shifts, community advocacy	Community efforts, NGO involvement	New urban planning strategies, inclusive development
Coastal Erosion	Hazard to be avoided	Risk being managed and mitigated	Advocacy, environmental concerns	Community action, expert recommendations	Implementation of protective infrastructure
Land Tenure	Legal documentation	Comprehensive reform for stability	Socio-economic needs, political dynamics	Legal advocacy, international support	Improved land rights, enhanced urban planning

This analysis enhances our understanding of urban governance, illustrating that governance objects are dynamic constructs shaped by stakeholder interactions. Examining how slums, coastal erosion, and land tenure evolve through negotiation reveals the complexity of urban governance in development contexts. Recognizing this dynamic nature suggests that future research should explore how similar processes impact governance across different contexts. Policymakers are encouraged to develop flexible strategies that respond to evolving urban risks and diverse stakeholder motivations, potentially leading to more inclusive approaches to urban challenges in developing countries (Table 32).

6.3.3. Strategy Formation and Community-Driven Solutions in the Face of Infrastructure Delays (Chapter 4)

This study also examines the complex urban challenges resulting from delayed infrastructure development in the Global South, using Barnesville Township in Monrovia as a case study. While delays are often seen as planning and execution failures, the research offers an alternative perspective, highlighting how communities adapt through strategic improvisation and resource-limited solutions.

The findings reveal that infrastructure delays create fragmented urban development, with reliance on informal and costly alternatives, such as standby generators and unofficial electricity suppliers. In Barnesville, residents navigate incomplete grid connections by hiring unofficial technicians from the Liberia Electricity Corporation (LEC), showcasing how delays can spark innovative but temporary community responses.

The study also introduces the concept of "governance by delays," where delays drive new forms of local governance and adaptation by both residents and state actors. While these solutions offer short-term relief, they expose the limitations of formal systems and underscore the need for sustainable, long-term infrastructure planning. The research advocates for shifting from centralized planning models in Liberia to more flexible, inclusive frameworks that engage communities in addressing urban challenges.

The findings have significant implications for policymakers and urban planners in post-conflict settings, encouraging future research on community-driven governance strategies and comparative studies of infrastructure development across the Global South.

Urban Risks and Strategic Improvisation amid Infrastructure Delays in the Global South

This research explores the urban risks and challenges caused by infrastructure delays in the Global South, focusing on how these delays create fragmented development and informal, often unsustainable, solutions. While such delays heighten urban risks—especially for communities with limited resources—they also open opportunities for strategic improvisation, where local actors innovate to mitigate the immediate effects of these delays.

In Barnesville Township, for instance, residents and businesses face high financial costs from unreliable alternatives such as standby generators or informal electricity suppliers, many of whom engage in illegal practices like tapping into the mains. These actions further undermine the financial stability of the Liberia Electricity Corporation (LEC), straining its capacity and damaging its reputation.

Community-driven responses, such as hiring informal technicians or pooling resources to purchase materials for grid connections, offer temporary relief but reveal gaps in formal governance. These adaptive measures, while providing short-term solutions, highlight the need for sustainable, long-term infrastructure plans supported by government and institutions.

Government efforts to address these challenges include policy reforms, public-private partnerships, and capacity-building initiatives, but progress is hindered by resource constraints. As a result, short-term fixes and unequal access to services persist, reinforcing existing inequalities and exposing communities to ongoing risks.

While strategic improvisation by local actors offers resilience in the face of delays, it also risks obscuring the root causes of infrastructural inefficiencies. In Barnesville, residents have engaged LEC technicians in unofficial arrangements to complete grid connections, reflecting a form of adaptive resilience. However, these solutions are highly context-specific and lack formal support, making them unsustainable in the long run.

The research underscores the importance of integrated planning, institutional support, and the development of partnerships between government, communities, and private entities to ensure that strategic improvisations lead to resilient and sustainable infrastructure solutions.

Table 6.14: Dynamics of Urban Challenges Due to Infrastructure Delays and Community Responses

Characteristics	**Description**	**Implications for Various Actors**	**Responses**
Urban Risks Due to Delays	Fragmented development, informal solutions, and limited government resources.	Financial strain on residents, reputational risks for LEC.	**Unsustainable:** Costly, unreliable alternatives; increased inequality.
Community Responses	Improvised solutions like hiring informal technicians, joint material purchases.	Provides temporary relief; exposes governance gaps.	**Sustainable:** Innovative adaptations. **Unsustainable:** Informal practices, lack of legal frameworks.

Characteristics	Description	Implications for Various Actors	Responses
Government Responses	Policy reforms, public-private partnerships, capacity-building initiatives.	Aims to address root causes of delays and improve infrastructure.	**Sustainable:** Strategic reforms. **Unsustainable:** Short-term fixes, limited reach.
Challenges of Strategic Improvisation	Temporary solutions, masking deeper structural issues.	Short-term relief without addressing root problems.	**Sustainable:** Potential for resilience. **Unsustainable:** Temporary fixes that overlook long-term issues.
Institutional Support Issues	Lack of formal recognition and support for community-driven solutions.	Risks of fraud and non-performance by informal technicians.	**Unsustainable:** Absence of official support, fraud risks. **Sustainable:** Policies supporting community innovations.
Opportunities for Partnerships	Strategic improvisation can lead to formal partnerships and collaborative governance.	Collaborative governance can result in resilient infrastructure solutions.	**Sustainable:** Effective partnerships and participatory planning.

By focusing on the risks and opportunities within Monrovia's delayed infrastructure landscape, this study highlights how local actors, in the absence of formal support, adapt to evolving challenges. It argues for a shift from centralised planning to more flexible, participatory governance models that empower local communities to be active participants in their urban development.

Delayed Infrastructure Roll-out as a Complex Landscape:

Post-war infrastructure development in Liberia, particularly in the Barnesville community, has faced significant delays, reflecting a broader complexity rooted in historical, technical, and socio-political factors. These delays, more than mere operational setbacks, are tied to the lasting impact of the civil war, which

severely damaged infrastructure and depleted institutional capacity. The destruction of pre-war infrastructure, alongside the erosion of technical expertise, continues to affect timely project implementation. For example, Barnesville's ongoing struggle with unreliable electricity underscores the persistent challenges linked to Liberia's post-war legacy.

Limited financial resources and a shortage of skilled specialists further compound these delays, affecting both the speed and quality of infrastructure projects. In Barnesville, residents often rely on makeshift energy solutions like generators and unauthorised grid connections, which pose safety risks but also spotlight the pressing need for technical capacity and better resource management.

Political dynamics and competing priorities also influence infrastructure development. In Barnesville and across Monrovia, residents have used activism, including road blockades and sit-ins, to demand electricity connections. While political instability may hamper both formal and informal solutions, community activism has prompted political responses, bringing attention to neglected areas and reshaping resource allocation.

Despite these challenges, delays have spurred community-driven innovations. In Barnesville, residents have created informal water distribution systems using recycled materials, addressing gaps in formal water supply. These grassroots solutions highlight local resilience and creativity, but for long-term sustainability, systemic reforms must align with these efforts.

Viewing delayed infrastructure as part of a complex, evolving landscape reveals the interplay between formal systems and community adaptations. Effective interventions should integrate both approaches, ensuring that innovative local practices are supported by broader structural reforms. Addressing immediate needs alongside long-term sustainability will enable resilient infrastructure development to meet the demands of a growing urban population.

Governance through Delays:

This analysis extends Evolutionary Governance Theory (EGT) and the concept of riskscapes to explore "governance through delays," focusing on how communities and governance systems in the Global South adapt to prolonged infrastructure challenges. Traditionally, EGT examines the evolution of governance under pressure, while riskscapes address the spatial and temporal dimensions of risks in socio-environmental contexts. Integrating these concepts deepens the understanding of how infrastructure delays reshape landscapes of risks and opportunities, prompting immediate community adaptations and creating precarious pathways towards sustainable solutions (Innis & Van Assche, 2023).

Infrastructure delays require more than short-term survival strategies; they evoke innovative responses that may build resilience, although these outcomes often remain unstable. This instability reflects the dynamic nature of governance in post-war urban environments, where riskscapes are continuously negotiated. For example, in Barnesville, the delay in the installation of electricity mains since 2016 has led residents to engage unofficial technicians and pool resources, demonstrating grassroots adaptations.

From an EGT perspective, these local initiatives exemplify adaptive governance, highlighting how communities fill the gaps left by formal systems. As formal governance falters, informal networks of technicians, community leaders, and residents emerge to address immediate risks. These networks offer flexible, responsive solutions that complement or substitute formal mechanisms, demonstrating the co-evolution of informal and formal governance systems. The feedback loop of trial and error within grassroots efforts strengthens community resilience, as residents continuously adjust to evolving conditions.

Riskscapes further unpack how infrastructure delays transform risk landscapes spatially and temporally. Spatially, delays in reliable electricity create hazardous conditions through unsafe, informal setups. Temporally, prolonged delays exacerbate vulnerability, forcing communities into a continuous cycle of adaptation. This evolving riskscape illustrates the dynamic interplay between formal delays and informal solutions.

However, while informal solutions provide immediate relief, they carry risks concerning safety and inequality. Unregulated and temporary, these practices can deepen disparities and hinder their integration into formal governance frameworks. Furthermore, states may exploit these delays to control informal settlements, presenting a risk of exploitation rather than empowerment. To address these issues, mechanisms must be explored to integrate informal solutions into formal governance, ensuring safety, quality, and sustainability while preserving local relevance.

Understanding Practices Arising from Delayed Infrastructure Projects: Material Dependency, Path Dependency, and Path Formation

The urban landscape of Monrovia, particularly in informal settlements like Barnesville, faces significant urban challenges, including those stemming from delayed infrastructure projects. To understand these challenges comprehensively, it is essential to examine the concepts of material dependency, path dependency, and path formation through the framework of Evolutionary Governance Theory. These concepts provide critical insights into how actors navigate the complexities associated with delayed infrastructure, particularly concerning electricity provision (Innis & Van Assche, 2023).

Material Dependency highlights the reliance on existing infrastructure and resources, which constrains future development opportunities and exposes communities to increased risks when those resources are unreliable. For instance, in Barnesville Township, the prolonged delay in connecting homes to the electricity mains—initiated in 2016 and persisting into 2023—has forced residents to depend on unreliable and costly alternatives. These include private generators and informal suppliers known as “community current.” Consequently, this dependence creates barriers to long-term investment, as the high costs of maintaining generators divert funds away from sustainable solutions. Furthermore, the unpredictability of these temporary solutions exacerbates financial uncertainty, making it challenging for residents and businesses to plan for sustainable infrastructure. As a result, the lack of stable power disrupts business operations, hindering expansion and discouraging investment in enduring solutions.

Despite these significant challenges, material dependency also drives innovation within the community. In response to the lack of reliable electricity, residents have developed local networks for sharing power and created makeshift energy storage systems to meet immediate needs. While these adaptations may not lead to a resilient or sustainable landscape, they foster experimentation and cultivate a more resourceful and self-reliant community over time.

Path Dependency, on the other hand describes how established practices and past decisions influence current decisions and outcomes, often restricting innovation and adaptability. In the case of Barnesville, the government hydro-powered electrical grid project expansion has significantly shaped community expectations. Despite ongoing delays, residents have persistently petitioned the government for project completion, often overlooking alternative energy solutions. Notably, local NGOs have reported that proposed solar energy projects have not gained traction, suggesting that the community's fixation on the promised infrastructure limits the exploration of viable alternatives.

However, it is important to note that path dependency does not inherently lead to negative outcomes in unplanned communities. For the Liberia Electricity Corporation (LEC), this dependency provides stability in project implementation; drastic strategy shifts could cause confusion and fragment efforts, ultimately hindering progress. Moreover, adherence to established plans can foster trust among residents, reassuring them that their long-term needs are being considered. Nonetheless, prolonged delays create uncertainty, leading to frustration and eroding confidence in the completion of promised projects.

Finally, Path Formation involves developing new strategies and responses when existing pathways are blocked or ineffective, enabling communities to adapt to changing circumstances. In Barnesville, residents have organised to create their own solutions by pooling resources to hire unofficial technicians for

makeshift electrical connections. This grassroots initiative not only provides immediate relief but also lays the groundwork for future community-driven infrastructure projects. By establishing cooperative societies to purchase electrical materials in bulk, residents are fostering resilience and self-sufficiency. This proactive approach has the potential to influence formal governance structures to incorporate adaptive strategies. However, it is essential to acknowledge that the lack of regulation in these informal solutions raises concerns about safety, sustainability, and equity, as not all residents can participate equally.

Table 6.15: Analysis of material dependency, path dependency, and path formation in response to delayed infrastructure roll-out in Barnesville

Dependency Type	Description	Examples in Barnesville Township	Potential Advantages	Potential Disadvantages
Material Dependency	Reliance on existing infrastructure and resources, which can restrict future development.	Residents depend on unreliable and costly alternatives like private generators and car batteries.	Fosters resilience and innovation as residents find creative solutions to meet needs.	Limits ability to invest in long-term solutions; high operational costs affect economic growth.
Path Dependency	Tendency for projects to follow established paths, limiting innovation.	Residents and state actors adhere to the government plan for a hydro-powered electrical grid expansion, despite delays.	Ensures stability and consistency in project implementation.	Stifles innovative approaches that could provide interim relief or long-term benefits.
Path Formation	Creating new pathways or strategies in response to delays, shaping future planning and implementation.	Residents pool resources to hire unofficial technicians for makeshift electrical connections; establish cooperative societies to purchase materials.	Proactive community-led innovations drive future planning; potential to influence formal governance structures.	Informal solutions may lack regulation and standardisation, introducing risks related to safety and sustainability; may lead to inequalities.

Figure 6.14 illustrates the interrelationships among material dependency, path dependency, and path formation, highlighting how these concepts interact to shape the urban landscape of Monrovia.

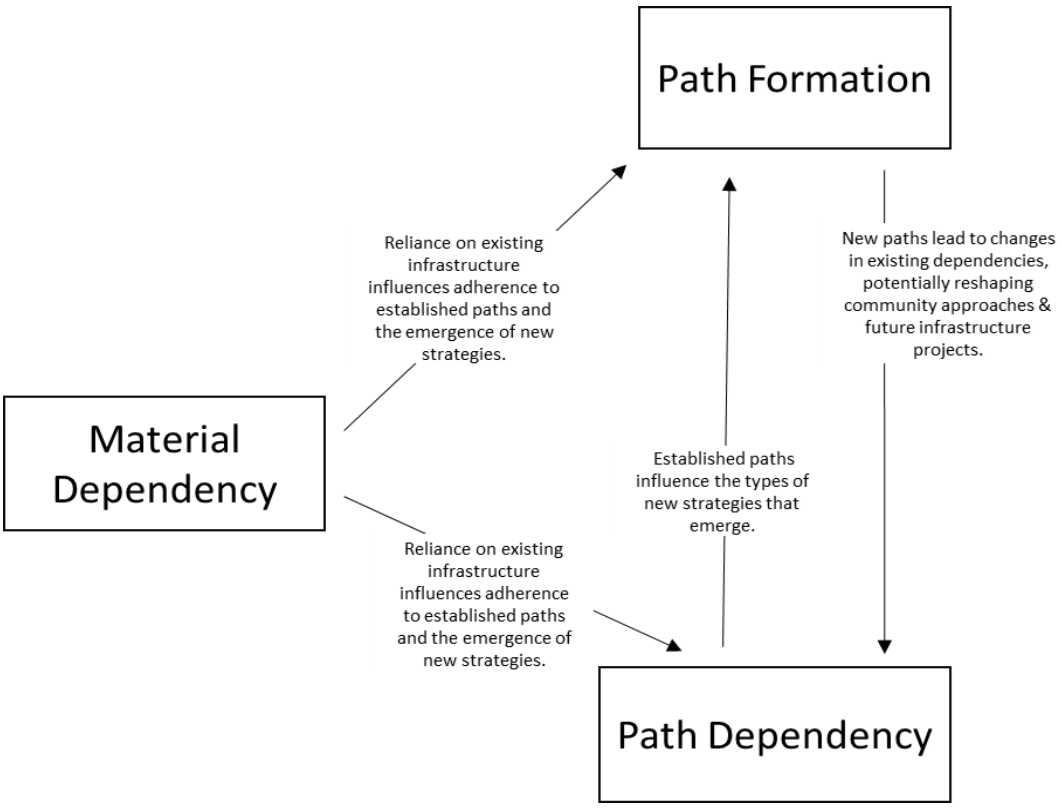

Figure 10: Material dependency, path dependency, and path formation (Author, 2023)

Community Strategy and Infrastructure Development:

Despite the challenges posed by the delayed infrastructure projects, opportunities for inclusive community strategies still emerge. Engaging key stakeholders—such as community members, local businesses, and non-governmental organisations—in a collaborative framework is essential for collectively addressing infrastructure challenges.

In Monrovia's unplanned settlements, where centrally coordinating mechanisms are absent, delayed infrastructure projects exacerbate existing issues. Without a central coordinating mechanism, communities often fend for themselves in addressing infrastructure challenges, leading to fragmented efforts and uneven development. In Barnesville, the prolonged delay in rolling out a conventional hydro-powered electrical grid has significantly shaped the community's responses.

As already noted in the previous sections, residents have repeatedly petitioned the government, and sometimes use unorthodox means, such as violent protests and demonstrations, force the planned grid connection project sped up. However, with little to no alternative energy solutions explored during the study

period, the community remains largely dependent on unreliable and costly temporary power sources such as community current, private generators and car batteries. This reliance places a significant financial burden on residents and businesses, diverting funds away from potential long-term investments and exacerbating financial uncertainty.

Despite these challenges, the Barnesville landscape offers a unique opportunity for strategy formation through the ongoing interactions among residents, NGOs, and state actors. These interactions hold significant potential for both formal and informal strategies to emerge. For example, community members have mobilised resources to complete connections under the guidance of electricians, in an unapproved cost-sharing mechanism with the utility company. This initiative fosters cooperation among stakeholders and aims for long-term stability in power supply. While these collaborations are informal and ad hoc, they provide leadership and direction in the absence of a central coordinating mechanism.

NGOs have also proposed alternative energy solutions, such as solar power projects. Although these projects have not been widely adopted, they highlight the potential for diverse energy solutions to be integrated into community strategies. Establishing formal collaborative frameworks that include residents, NGOs, and the Liberian Electricity Corporation (LEC) can enhance the coordination and effectiveness of infrastructure projects. Such frameworks can facilitate the sharing of resources, knowledge, and responsibilities, leading to more sustainable and inclusive development.

Community groups and NGOs can engage in policy advocacy to influence government priorities and secure support for alternative energy projects. This approach can help align state and community efforts, ensuring that infrastructure projects are responsive to local needs.

However, there are challenges and limitations to these informal strategies. They may lead to fragmented efforts and inequities, as not all residents may have the means to participate in or benefit from these initiatives, potentially exacerbating existing social and economic disparities. Moreover, unregulated, makeshift electrical connections pose significant safety risks and may result in substandard infrastructure and long-term sustainability issues. The community's fixation on the promised government hydro-powered electrical infrastructure can also hinder the exploration and adoption of alternative solutions, limiting innovation and prolonging reliance on temporary and costly power sources.

While the absence of central coordination and reliance on informal strategies present challenges, these dynamics foster resilience, improvisation, and local ownership. By recognising and integrating these grassroots efforts into formal planning processes, a more robust and adaptive infrastructure strategy can be developed. The interactions among residents, NGOs, and state actors in Barnesville provide fertile ground

for strategy formation. Acknowledging the existing unwritten strategies and addressing potential counterarguments can help achieve a balanced and comprehensive approach to community-led infrastructure development.

Rethinking Infrastructural Incompleteness as a Continuum of Flux and Functionality

This research reconceptualises infrastructure as a dynamic entity in a constant state of change, embodying a landscape rich with both risks and opportunities. Established literature supports the view of infrastructure as 'in motion,' highlighting its adaptability to the complexities of urban life (Anand, 2015; Guma, 2020; Mwaura & Lawhon, 2024; Simone, 2006). This perspective allows us to see infrastructure not merely as a static asset but as a living system shaped by socio-political forces, technological advancements, and community actions.

Understanding infrastructure in this manner unpacks the conceptual uncertainties surrounding terms like "infrastructural incompleteness," suggesting that completeness might be an attainable state, which, is not what I argue. While this research employs the term "infrastructure incompleteness," it emphasises the inherent flux of infrastructure, arguing that the concepts of 'completeness' and 'incompleteness' retain substantial analytical and practical value within urban studies discourse.

These terms serve as critical lenses through which we can explore and assess user experiences, illuminating the diverse and multiple realities that characterise infrastructural landscapes, particularly in contexts marked by socio-economic disparity. In the informal settlements of Monrovia, for example, users' perceptions of electricity access exemplify this dynamic interplay. Those fortunate enough to enjoy a reliable supply of electricity may confidently assert their infrastructure is 'complete.' This assertion starkly contrasts with the experiences of individuals who endure frequent power outages or complete disconnection from the grid. For these users, their lived experiences compel them to categorise their access as 'incomplete.'

This divergence illustrates that completeness and incompleteness are not absolute; they are contingent upon individual experiences and the broader socio-economic context. Such contextuality underscores the necessity of understanding infrastructure as a fluid construct evolving in response to local governance structures, community engagement, and the technological landscape.

Framing the discussion around completeness and incompleteness enables a nuanced exploration of the multiple infrastructural realities faced by different user groups. It invites us to consider not only the technical and operational aspects of infrastructure but also the lived experiences that inform users'

perceptions. Ultimately, embracing completeness and incompleteness as dynamic, context-dependent notions fosters a robust analytical framework, enriching both theoretical discourse and practical approaches to urban governance and infrastructural development.

While terms like 'completeness' and 'incompleteness' offer valuable insights, applying them outside of their necessary context-specific frameworks—such as assessing infrastructural functionality or user access—risks oversimplifying the complexities inherent in these systems. Such usage may create binary distinctions that obscure the nuanced and fluid realities of infrastructure. To mitigate this, it is essential to conceptualise completeness and incompleteness within the broader framework of infrastructure as a dynamic and evolving entity. This approach acknowledges that these categories are not static but reflect ongoing transformations shaped by socio-political forces and user agency. Recognising this complexity helps prevent oversimplification and fosters solutions that consider both user experiences and structural constraints

5.3.4 The Interplay of Searching and Planning in Urban Energy Governance: Insights from Monrovia (Chapter 5)

The post-war landscape of Monrovia presents significant challenges for governance and infrastructure development, particularly in electricity provision. Liberia's civil wars (1989–2003) devastated the country's infrastructure, creating a legacy of destruction. Since 2006, reconstruction efforts have struggled with incomplete and non-functional projects, highlighting the complexities of rebuilding in a post-conflict context where resources and expertise are scarce.

Chapter 5 examines the evolution of energy infrastructure and policy in unplanned areas of Monrovia. It focuses on the interplay of planning and searching that shapes the urban environment, emphasising flexibility, community involvement, and the balance between long-term goals and immediate needs to address infrastructure challenges in disadvantaged neighbourhoods.

Searching involves continuous experimentation and adaptation, allowing residents and the Liberia Electricity Corporation (LEC) to explore various solutions for electricity access. However, identifying the most effective solutions is challenging. In unplanned communities like Barnesville, residents often resort to improvisation due to limited resources and knowledge. For instance, Barnesville residents frequently try different alternatives, expecting a grid connection to resolve their energy issues. Unfortunately, even areas with grid connections face inconsistent supply and frequent outages.

In contrast, planning entails strategic decision-making to guide long-term development. Integrating searching with planning allows for strategic plans informed by real-time feedback and local insights,

ensuring development efforts remain relevant and effective.

In Monrovia, this integration has been crucial for addressing immediate needs while laying the groundwork for sustainable growth. The city's incomplete electricity infrastructure exacerbates economic, social, and safety issues. A purely top-down approach from the LEC has often neglected the needs of slums and unplanned areas, while the experimental efforts of residents in areas like Barnesville often lack coherence and long-term vision. Combining these methods helps refine strategic plans through practical insights and community feedback.

The interplay of searching and planning is vital for adapting strategies based on real-time feedback, but this feedback does not always result in effective changes. In resource-scarce areas like Barnesville, feedback can lead to improvisation rather than innovation. Excessive reliance on experimentation may result in fragmented practices and instability, undermining long-term planning. For instance, the LEC implemented resource-intensive experiments that diverted funds from immediate needs, such as allowing homes to connect directly to the grid where meters were unavailable. This led to significant losses as individuals exploited these connections to resell electricity, straining the system further.

Therefore, while integrating searching and planning is essential, it must be done carefully to avoid resource wastage and further marginalisation. Effective integration ensures feedback is used constructively to support sustainable development in communities like Barnesville.

Despite these challenges, the urgent need for development in post-conflict environments drives the necessity for experimentation to address infrastructure issues. Collaborative efforts that incorporate local insights into planning can better align infrastructure development with community needs, leading to more effective and sustainable solutions. Involving local stakeholders in this integrated approach is crucial for tackling the unique challenges faced by unplanned communities like Barnesville, ultimately fostering a more resilient urban environment.

These insights deepen our understanding of urban governance and infrastructure development in post-conflict cities like Monrovia, highlighting the importance of combining searching and planning approaches to address complex urban challenges. Applying these concepts to electricity scarcity in post-war Monrovia offers a new perspective and underscores the crucial role of experimentation and collaboration in infrastructure development.

The main findings from Chapter 5 are discussed in detail below:

Co-Evolution of Energy Infrastructure, Policy, and Practices

The co-evolution of energy infrastructure, policy, and practices in Monrovia's unplanned communities addresses the urban challenge of electricity scarcity. This evolution reflects the interplay of technological needs, regulatory frameworks, and community practices, shaped by historical dependencies and contemporary challenges.

Monrovia's energy infrastructure has historically relied on the Mount Coffee Hydroelectric Plant. However, its single-source dependency has limitations, especially during low water levels and operational disruptions. To diversify, the Liberia Electricity Corporation (LEC) is integrating hybrid energy systems that blend hydroelectric power with Heavy Fuel Oil (HFO) thermal plants. While this is a step forward, critics highlight that reliance on HFO raises environmental and logistical concerns.

In 2023, policy innovations transformed the electricity landscape, with the government issuing licences to private investors like Jungle Energy Power (JEP) and Totota Electricity Company (TEC) for hybrid energy systems. TEC's system combines traditional grid infrastructure with solar installations, reflecting an adaptive policy shift. However, this reliance on private investors may prioritise profit over equitable energy distribution, leaving vulnerable populations underserved.

Local practices are vital in addressing energy needs. In unplanned areas like Barnesville, residents collaborate with organisations such as the Liberian Energy Access Practitioner (LEAP) to implement small-scale solar systems, providing lighting for non-grid-connected homes. Larger installations in areas like Dry Rice Market showcase community-driven innovation. Nonetheless, the long-term sustainability of these solar systems faces challenges, including maintenance and battery disposal.

The LEC adopts community-informed strategies, such as surveillance and routine meter inspections, to prevent unauthorised connections. Despite the deployment of smart meters with anti-tampering features, challenges persist, revealing a gap between policy and practice where technological solutions require corresponding behavioural changes.

Table 6.16: Co-evolution of Electricity Infrastructure, Policy, and Community Practices

Element	Details
Electricity Infrastructure	• **Historical Dependence:** Reliance on Mount Coffee Hydroelectric Plant.
	• **Hybrid Systems:** Integration of hydroelectric power and Heavy Fuel Oil (HFO) thermal plants enhances energy reliability.

Element	Details
	• **Decentralised Renewables:** Inclusion of solar power diversifies energy sources in the post-war period.
Policy Innovations	• **Licensing Private Investors:** In 2023, licences granted to Jungle Energy Power (JEP) and Totota Electricity Company (TEC) for hybrid energy systems.
	• **Inclusive Policies:** New regulations promote off-grid solutions, such as JEP's Large Micro Utility Distribution Licence.
Community Practices	• **Small-Scale Solar Setups:** Collaborations with LEAP to install solar systems for non-grid-connected homes.
	• **Community-Driven Installations:** Larger solar projects in Dry Rice Market highlight local energy innovation.
State Measures	• **Anti-Theft Strategies:** LEC implements surveillance and meter inspections to combat unauthorised connections.
	• **Smart Meters:** Deployment aims to reduce power theft and improve monitoring.

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Infrastructural Practices in Post-Conflict Urban Environments

In Monrovia, electricity scarcity underscores significant issues in infrastructural practices. The Liberia Electricity Corporation (LEC), constrained by limited resources and infrastructural deficits, struggles to provide reliable electricity coverage. As a result, communities are compelled to devise their own solutions to meet their energy needs.

In response to these deficiencies, residents in Monrovia's informal settlements develop adaptive solutions. These community-driven initiatives include establishing makeshift power networks, utilising small-scale solar installations, and forming cooperative arrangements to share limited resources. Such efforts are essential for the community's functionality and resilience in the face of inadequate state support.

The interaction between state and community practices reveals the complex dynamics of infrastructure management. The constraints faced by the LEC necessitate exploring adaptive strategies, potentially involving partnerships with private entities or NGOs to expand service coverage. Meanwhile, residents and

informal sector actors address state gaps with innovative solutions, highlighting infrastructure as both a physical entity and a contested space.

Theoretical frameworks offer valuable insights into these dynamics. For example, Larkin's exploration of infrastructure as a reflection of cultural politics enhances our understanding of how infrastructural practices in Monrovia actively shape societal norms (Larkin, 2013). The development of informal power networks and community-based energy solutions reflects local values and practices in response to state failures, demonstrating how infrastructure serves as a medium through which cultural and societal norms are contested and reconfigured.

Simone's concept of "people as infrastructure" applies directly to Monrovia, illustrating how community practices function as critical infrastructural elements (Simone, 2006, 2014, 2015). This study reveals how local knowledge and social networks become vital resources for managing and expanding energy access. By detailing residents' initiatives—such as small-scale solar installations and informal power networks—this research extends Simone's idea to encompass the resilience and adaptability of informal practices in post-conflict settings.

Building on Star's notion of infrastructure as relational and embedded, the research highlights how infrastructural practices integrate into the everyday lives and governance processes of Monrovia's residents (Star, 1999). Informal economic activities, adaptive housing solutions, and community-based projects are deeply embedded in social contexts, expanding Star's framework to include the evolving nature of infrastructure in post-conflict urban environments.

Furthermore, Graham and Marvin's concept of "splintering urbanism" elucidates the challenges of infrastructural fragmentation in Monrovia (Graham & Marvin, 2001). The study demonstrates how community-driven responses, such as small-scale solar installations and informal economic networks, counteract infrastructural splintering. By exploring how these localised adaptations contribute to urban resilience amid fragmented and rapidly changing conditions, the research offers new insights into cultivating urban resilience in the face of infrastructural challenges.

In conclusion, "infrastructure practices" encompass the diverse actions and strategies undertaken by various actors to manage and influence infrastructure where formal systems fall short. By integrating evolutionary governance theory with concepts of riskscapes and object formation, this research extends existing theoretical frameworks. It illustrates how infrastructural practices shape societal norms and governance in post-conflict settings, providing valuable insights for scholars, policymakers, and practitioners in similar

contexts.

6.4 Limitations and recommendations for future research

Limitations in research often arise from various contextual, methodological, and theoretical factors that influence the scope and applicability of findings. These constraints can stem from specific geographical settings, data availability, and the inherent complexities of the subjects being studied. Recognising these limitations is crucial, as it not only contextualises the research but also highlights areas for future exploration and improvement, ensuring a more comprehensive understanding of the issues at hand.

This study's focus on Monrovia offers vital insights into the complexities of unplanned communities. However, it is essential to recognise that the broader applicability of its findings may be constrained when applied to regions with different geographical and cultural contexts. While this research aspires for theoretical generalisability—or transferability—the specificity to Monrovia provides rich, localised knowledge that can inform broader research across the Global South. Expanding future studies to diverse regions will not only deepen our understanding of the shared challenges but also illuminate the unique aspects of risk, infrastructure development, and governance practices in various settings.

The application of theoretical concepts presents its own challenges, particularly regarding riskscapes. Although the notion of riskscapes elucidates the multifaceted nature of everyday risks in Monrovia's informal settlements, it also underscores the complexities inherent in applying such frameworks. This complexity reinforces the value of riskscapes by emphasising how social, environmental, and infrastructural factors converge to shape risk perceptions and governance responses. By recognising the dynamic interactions among these elements, the riskscape framework allows for a nuanced understanding of how risk is experienced and managed in specific contexts, thereby offering a more tailored approach to risk governance.

Similarly, the term "incomplete infrastructure" presents both challenges and insights. From a scientific perspective, infrastructure is generally understood to be in constant flux. Consequently, using the term "incomplete infrastructure" can be misleading, as it might imply a static state of being, which is not the assumption of this study. Rather, it contends that infrastructure is perpetually evolving. In this light, infrastructure may be perceived as incomplete when residents have only partial access to services, such as electricity. For instance, residents who experience intermittent electricity service may view their access as incomplete, while communities still awaiting grid connection perceive the infrastructure itself as lacking.

This logic extends to functionality; areas where infrastructure operates with minimal disruptions convey a

sense of "completeness," whereas those facing frequent interruptions may experience their functionality as incomplete. Understanding infrastructure through this lens facilitates a more granular analysis of access and service reliability, yielding critical insights for governance strategies aimed at enhancing infrastructural equity.

The application of evolutionary governance theory (EGT) further enriches our comprehension of governance dynamics in Monrovia's unplanned settlements. Although the absence of comprehensive data in informal settlements complicates the full application of EGT, the theory remains a powerful tool for exploring how governance structures adapt to shifting risks and community needs. Despite these data limitations, EGT provides a flexible framework for understanding the evolving nature of governance in response to both internal pressures and external interventions, rendering it a valuable approach for future studies.

Additionally, this research is situated within a post-war context, which may influence the dynamics of unplanned settlements differently than in other temporal settings. Nevertheless, Monrovia's post-conflict nature offers valuable insights into the unique challenges and opportunities associated with recovery and rebuilding. Future studies could greatly benefit from incorporating longitudinal research and historical analyses to capture the evolution of governance and riskscapes over time, thereby facilitating broader applicability across diverse temporal and spatial contexts.

While this study acknowledges the challenges posed by limited data infrastructure in Liberia, it simultaneously underscores the pressing need for improved data collection methods in informal settlements. Collaborating with local authorities and communities will be crucial for gathering accurate, reliable data on risks, infrastructure, and governance. Such efforts not only enhance the validity of future research but also lay the groundwork for more effective urban planning and policy development.

To broaden the applicability of these findings, conducting comparative studies across different cities or regions facing similar challenges is highly recommended. Such research would facilitate the identification of both commonalities and differences, enriching the transferability of findings and supporting context-specific policy recommendations. Detailed methodologies for comparative and longitudinal studies should be developed, focusing on relevant variables to track and potential data sources to utilise. In particular, longitudinal studies are essential for revealing trends and understanding the impact of governance interventions over time.

Despite these considerations, this study provides valuable, in-depth insights into Monrovia's local dynamics,

which are crucial for informing targeted policy interventions and governance strategies. The findings derived from this post-war context offer important lessons for other post-conflict regions and highlight the necessity for tailored approaches to urban governance. By addressing the outlined challenges and building upon these recommendations, future research can contribute to a more comprehensive understanding of risk, infrastructure, and governance in unplanned communities, ultimately leading to more resilient and adaptive urban systems.

6.4. Conclusions

This dissertation makes theoretical and conceptual contributions to various fields, including urban resilience, environmental sociology, infrastructure studies, and energy governance. The interdisciplinary approach adopted in this study offers crucial insights into the multifaceted nature of urban risks and challenges, shedding light on the resultant practices and their implications for urban development.

The comprehensive analysis of riskscapes in post-war urban settings goes beyond isolated examinations of specific risks, presenting an integrated perspective that considers the interplay of spatial, social, and governance dynamics. This approach enriches our understanding of urban risks by highlighting the complex interactions between different factors and how they shape the urban landscape.

Furthermore, the study explores the evolution of informal and unplanned communities from being perceived as mere risk objects to active subjects of governance. This shift in perspective offers nuanced insights into the emergence of tools to regulate these spaces, highlighting the need for adaptive governance strategies that can respond to the dynamic nature of urban environments.

Moreover, the investigation into urban challenges such as electricity scarcity reveals interconnected practices that shape the urban landscape. This highlights the adaptive nature of governance and institutional arrangements in addressing challenges arising from urban incompleteness and pervasive scarcity. The introduction of concepts like 'urban incompleteness' and 'pervasive scarcity' offers innovative approaches to conceptualising the challenges encountered in post-war urban settings, providing a fresh lens through which to analyse urban development dynamics.

Additionally, the study's integration of searching and planning in the governance of urban challenges expands our understanding of urban governance and infrastructure development in post-conflict cities. By unpacking the complexities arising from limited resources, slow infrastructure reconstruction, and incomplete governance structures, this integration provides valuable insights into the challenges and opportunities associated with urban development in post-war environments.

The research also offers valuable insights that can inform policy decisions related to risk management, urban planning and development in fragile post-war environments, with a particular focus on Monrovia. The study sheds light on the historical and contemporary planning and urbanisation dynamics in post-war Monrovia, providing a nuanced understanding of the challenges and opportunities associated with rapid urban growth. This understanding can serve as a foundation for policymakers, helping them develop strategies that are tailored to the specific context of post-war urban environments.

Moreover, the analysis of riskscapes and governance responses contributes to the development of effective risk governance strategies. By understanding how risks are socially constructed and managed, policymakers can develop policies that enhance resilience in the face of urban challenges. The study offers potential policy recommendations for addressing these challenges, emphasising the importance of adaptive governance practices in response to pervasive scarcity. Policies that encourage adaptive strategies in rapidly growing cities can help cities better cope with the uncertainties and complexities of urbanisation in post-war settings. By integrating insights from urban studies, risk governance, and evolutionary governance theories, the study offers a holistic understanding of urban challenges and provides practical policy recommendations for enhancing urban resilience and sustainability in post-war cities like Monrovia.

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